(23,459)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1913.

No. 397.

DES MOINES GAS COMPANY, APPELLANT,

vs.

CITY OF DES MOINES ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

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25	—Capital City Gas Light Company, stockholders' and directors' minutes, volume I (omitted in printing).....	1107	
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27	—Des Moines Gas Company, stockholders' and directors' minutes, volume I (omitted in printing)...	1508	
28	—Des Moines Gas Company, directors' minutes, 10 pages, covering meetings of April 24, 1911, May 22, 1911, June 26, 1911, July 10, 1911, and July 24, 1911 (omitted in printing)	1749	
29	—Plat of property adjacent to gas works, showing assessed valuation thereof, prepared by James Parker (omitted in printing).....	1760	
30	—Report of James Hall, of Marwick, Mitchell and Company, on the Des Moines Gas Company.....	1761	3611
31	—Des Moines Gas Company, rate regulation account for the years 1909 and 1910.....	1831	3662
32	—Figures made by Mr. Hall in endeavor to reconcile Defendants' Exhibit 30 with Complainant's Exhibit 23 (read in record page 3146 of testimony).		
33	—Report of James Hall, of Marwick, Mitchell and Company—investment value of plant, Des Moines Gas Company, December 31, 1910 (omitted in printing).....	1835	

	Original.	Print
Defendants' Exhibit 34—Explanation of Wisconsin theory of investment value, using as a basis an original investment of $1,000 with annual additions of $1,000 for 20 years, prepared by James Hall, of Marwick, Mitchell and Company (omitted in printing).....	1843	
35—Summary of plant investment as per books, January 1, 1895, to December 31, 1910, prepared by James Hall, of Marwick, Mitchell and Company (read in record page 3458 of testimony).		
36—Estimated average investment and return from estimated revenue, prepared by James Hall, of Marwick, Mitchell and Company (read in record page 3461 of testimony).		
37—Contract, Des Moines Gas Company and Percival Porter Co., agent, *in re* street main extension (read in record page 3601 of testimony).		
38—Capital City Gas Light Company, Des Moines, Iowa, cash invested in construction and working capital, December 31, 1894, as shown by affidavit of Edw. G. Pratt, filed June 14, 1895, in cause No. 2033, equity, in the U. S. circuit court, southern district of Iowa, being Capital City Gas Light Company *vs.* City of Des Moines.....	1845	3666
39—Affidavit of Edw. G. Pratt, June 7, 1895, in case of Capital City Gas Light Company *vs.* City of Des Moines	1848	3668
40—A part of the affidavit and statement of Edw. G. Pratt as filed in the case of Exhibits Nos. 38 and 39, *supra.*	1853	3672
41—Transcript of testimony in No. 2360, equity, Capital City Gas Light Company *vs.* City of Des Moines.	1855	3673
42—Affidavit of Edw. G. Cowdery, June 6, 1895, in cause No. 2330, equity, Capital City Gas Light Company *vs.* City of Des Moines.....	1879	3691
43—Report of Edward W. Bemis on the Des Moines Gas Company.....	1895	3700
44—Pamphlet entitled "The Issue in the Foreground—Gas" (omitted in printing).....	1987	

	Original.	Print
Defendants' Exhibit 45—Price of cast-iron pipe, Des Moines Gas Company—Edw. W. Bemis (read in record page 4252 of testimony).		
46—Illustration of sinking fund method of financing depreciation, by E. W. Bemis (read in record page 4262 of testimony).		
47—Operating expenses and profits, 1910 and 1911, Des Moines Gas Company, by E. W. Bemis (read in record page 4341 of testimony).		
48—Bill, Des Moines Gas Company to the U. G. I. Company for fee paid A. B. Cummings, March 23, 1906	2017	3747
49—Bill, Des Moines Gas Company to the U. G. I. Company, expenses of F. C. Morgan, March 14, 1906 (read in record page 4418 of testimony).		
50—Bill, Des Moines Gas Company to the U. G. I. Company, expenses of D. D. Reinhardt, March 31, 1906 (read in record page 4420 of testimony).		
51—Bill, Des Moines Gas Company to the U. G. I. Company for notary services, April 3, 1906 (read in record page 4425 of testimony)	2018	3747
52—(Not offered.)		
53—Bill, Des Moines Gas Company to the U.G. I. Company, October 31, 1906, October time of J. S. Harrison	2019	3747
54—Bill, Des Moines Gas Company to the U. G. I. Company, September 30, 1906, September time of J. S. Harrison	2020	3747
55—Letters between Jansen Haines and Lewis Lillie *in re* journal entry of September 15, 1910 (read in record page 4513 of testimony).		
56—Treasurer's check book, Des Moines Gas Company on First National Bank, Philadelphia (read in record page 4477 of testimony).		
57—Voucher, September 15, 1911, Des Moines Gas Company to the U. G. I. Company (read in record page 4515 of testimony).		

	Original.	Print
Defendants' Exhibit 58—Voucher, September 15, 1911, Des Moines Gas Company to the U. G. I. Company (read in record page 4516 of testimony).		
59—Analysis of accounts, Des Moines Gas Company with the U. G. I. Company, March 1, 1906, to December 31, 1910.....	2021	3747
61—The U. G. I. Company, statement taken from Moody's Manual Service, 1910 (read in record page 4590 of testimony).		
67—Des Moines Gas Company, operating expenses for 8 months ending December 31, 1910.....	2027	3748
68—Des Moines Gas Company, additions to plant Jan. 1, to Aug. 31, 1911..	2031	3751
69—Des Moines Gas Company, note of gas sales for 12 months to February 28th in each year, 1907 to 1911...	2032	3752
70—Mr. Sangster's figures analyzing the account of the U. G. I. Company and Des Moines Gas Company, being the same as Complainant's Exhibit No. 69.		
71a—Ordinance of the city of Minneapolis passed February 23, 1910 (read in record page 4658 of testimony).		
71b—Ordinance of the city of Minneapolis passed March 24, 1910 (read in record page 4674 of testimony).		
72—Letter, J. R. Hanna to Jansen Haines, dated February 7, 1911 (read in record page 4713 of testimony).		
73—Letter, Jansen Haines to Mayor J. R. Hanna, dated February 14, 1911 (read in record page 4715 of testimony).		
74—Prof. Bemis' analysis and correction to Complainant's Exhibit No. 65.	2033	3752
75—Prof. Bemis' correction for page 92 of his report, Defendants' Exhibit No. 43.....	2039	3756
76—Prof. Bemis' margin between price of gas on the one hand and manufacturing expenses, leakage, and taxes, on the other hand, in Des Moines and in seven Massachusetts cities.....	2040	3757

	Original.	Print
Defendants' Exhibit 77—Des Moines Gas Company, rate regulation expense, January 1 to August 31, 1911, prepared by Mr. Sangster.....	2042	3758
78—Semi-annual statement of Commercial Trust Co. of Philadelphia at close of business on July 31, 1911 (omitted in printing).....	2053	
79—Capital City Gas Light Company, copies of improvement and repair authorizations Nos. 439, 460, and 467, covering the million-foot holder and 8 ft. 6 in. water gas set.	2054	3779
80—Summary of data on which were based the tables Nos. 91 and 92 in the report of E. W. Bemis, Defendants' Exhibit No. 43 (read in record page 4933 of testimony).		
81—Wisconsin theory, summary of investment account after crediting depreciation charge and on operating expense, July 1, 1886, to December 31, 1910, prepared by James Hall, of Marwick, Mitchell and Company (omitted in printing)...	2057	
82—Bill, Des Moines Gas Company in account with Blaise and Blaise, dated April 1, 1911.....	2058	3781
83—Voucher, Des Moines Gas Company to Blaise and Blaise, April 1, 1911.	2059	3781
84*a*—Extract from U. G. I. Ledger 7*a* and 8*a*, Des Moines contract No. 87. (omitted in printing).....	2060	
84*b*—Extract U. G. I. Ledger 7*a* and 8*a*, Des Moines contract No. 52 (omitted in printing).....	2079	
84*c*—Transcript from construction records of George J. Roberts, showing detailed cost of constructing oil plant and water gas apparatus at Des Moines, Iowa (omitted in printing)	2098	
84*d*—Transcript from construction records of George J. Roberts, showing detailed cost of constructing gasholder at Des Moines, Iowa (omitted in printing).....	2103	
84*e*—Extract from U. G. I. Ledger 8*a*, showing account with Des Moines Gas Company, March 1, 1906, to December 31, 1910 (omitted in printing)	2108	

	Original.	Print
Defendants' Exhibit 84*f*—Contract, Stacey Manufacturing Company and George J. Roberts, October 18, 1902, for erection of gas-holder on land adjoining gas works of Capital City Gas Light Company at Des Moines, Iowa (omitted in printing)	2153	
Clerk's certificate to part three (exhibits)	2167	3782
Clerk's certificate to complete transcript	2169	3783

a UNITED STATES OF AMERICA, *ss:*

Filed November 20th, 1912. Wm. C. McArthur, Clerk.

To City of Des Moines, James R. Hanna, John MacVicar, Charles W. Schramm, John Wesley Ash, Zell G. Roe, and Robert O. Brennan, Greeting:

You are hereby cited and admonished to be and appear at a Supreme Court of the United States, at Washington, within thirty days from the date hereof, pursuant to an order allowing an appeal filed in the Clerk's Office of the District Court of the United States for the Southern District of Iowa, Central Division, wherein Des Moines Gas Company is appellant, and you are appellees, to show cause, if any there be, why the decree rendered against the said appellant should not be corrected, and why speedy justice should not be done to the parties in that behalf.

Witness, the Honorable Willis Van Devanter, Associate Justice of the Supreme Court of the United States, this 18th day of November, in the year of our Lord one thousand nine hundred and twelve.

WILLIS VAN DEVANTER,
Associate Justice of the Supreme Court of the United States.

Due and legal service of the above Citation and the receipt of a copy is hereby acknowledged, at Des Moines, Iowa, this 20th day of Nov. 1912.

R. O. BRENNAN &
H. W. BYERS,
Attorneys for Appellees.

b Pleas and proceedings before Honorable Smith McPherson, Judge of the District Court of the United States for the Southern District of Iowa, as successor of the Circuit Court of the United States for the Southern District of Iowa, in a certain cause lately pending in the Central Division of said Court being No. 71-M Equity, wherein the Des Moines Gas Company is Complainant and the City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, John Wesley Ash, Zell G. Roe, and Robert O. Brennan, are Defendants.

Appearances:

Nathaniel T. Guernsey, Des Moines, Iowa; George H. Carr, Des Moines, Iowa; William L. Read, Des Moines, Iowa, Attorneys for Complainants.

Robert O. Brennan, Des Moines, Iowa; Howard Webb Byers, Des Moines, Iowa, Attorneys for Defendants.

WM. C. McARTHUR,
Clerk, Des Moines, Iowa.

c Be it remembered that at a stated term of the Circuit Court of the United States for the Southern District of Iowa, Central Division, now District Court of the United States for the Southern District of Iowa, Central Division begun and holden in the City of Des Moines on the third Tuesday in November A. D. 1910, the same being November 15th, 1910, there was filed on the 29th day of December 1910, the same being a day of the November 1910 term of said Court a Bill of Complaint by the Des Moines Gas Company against the City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, John Wesley Ash, Zell G. Roe and Robert O. Brennan, which said Bill of Complaint is in the words and figures as follows to-wit:

1 In the Circuit Court of the United States, Southern District of Iowa, Central Division.

(Filed Dec. 29, '10. W. C. McArthur, Clerk.)

(#71-M). In Equity.

DES MOINES GAS COMPANY, Complainant,

vs.

THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Bill of Complaint.

To the Honorable Judges of the Circuit Court of the United States for the Southern District of Iowa:

The Des Moines Gas Company brings its bill of complaint against the City of Des Moines, James R. Hanna as Mayor of the City of Des Moines, J. W. Ash, Zell G. Roe, John MacVicar and C. W. Schramm as members of the City Council of the City of Des Moines, and R. O. Brennan as City Solicitor, and thereupon your orator complains and alleges:

I.

Your orator is a corporation created, organized and existing under and by virtue of the laws of the State of Iowa, and is a citizen of the State of Iowa, having its principal office and place of business in the City of Des Moines, Iowa.

II.

The City of Des Moines is a municipal corporation, being a city of the first class, having a population of upwards of 86,000 people, organized on what is known as the "Commission Plan" under
2 the provisions of Chapter 67 of the Laws of the 33rd General Assembly of the State of Iowa, its legislative and executive powers being vested in and exercised by a mayor and city council

consisting of four councilmen. The defendant James R. Hanna is the duly elected and acting mayor of the city, and defendants J. W. Ash, Zell G. Roe, John MacVicar, and C. W. Schramm are the duly elected and acting councilmen of the said city, and defendant R. O. Brennan is the city solicitor of the said city and as such is the head of the legal department thereof and as such is charged with the duty of enforcing violations of the city ordinances.

III.

The amount involved in this controversy exceeds, exclusive of interests and costs, the sum of Two Thousand ($2,000.00) Dollars, and this controversy involves the construction of certain provisions of the constitution of the United States, to-wit:

1. Those prohibiting impairing the obligation of the contract existing between complainant and the defendant city and between the complainant and the State of Iowa, growing out of complainant's incorporation under the statute of the State of Iowa and of the city ordinance, giving the right to plaintiff to lay its mains and supply gas to the residents of said city.

2. Those prohibiting the taking of complainant's property for public use, without just compensation therefor.

3. Those prohibiting the taking of its property without due process of law; and,

4. Those guaranteeing complainant equal protection of the law.

IV.

Your orator, under and by virtue of its charter and articles of incorporation, is empowered to construct, own, operate and maintain gas works in the City of Des Moines and it has established, erected and owns, and is now maintaining and operating within the
3 City of Des Moines, gas works consisting of a manufacturing plant, holders, mains, pipes and a large amount of other property in the City of Des Moines, used in its business of manufacturing and distributing gas for illuminating and fuel purposes to consumers. The present value of its said property exceeds the sum of $2,700,000.00.

V.

There is now an ordinance of the City of Des Moines permitting complainant to charge and receive for gas for illuminating, fuel or other purposes, furnished by it to the City of Des Moines or its inhabitants, $1.00 per thousand cubic feet where payment is made on or before the 15th day of the month following that in which the gas was consumed, and $1.10 per thousand cubic feet where payment is made subsequent to the 15th day of the month following that in which the gas was consumed.

VI.

Under the said ordinance complainant received a gross income from the sale of gas for the twelve months ended September 30,

1908, the sum of $457,105.95, and the twelve months ended September 30, 1909, the sum of $491,944.49, and for the twelve months ended September 30, 1910, $526,293.50. The average annual gross revenue for the three years period ended September 30, 1910, was $491,781.31. For the twelve months ended September 30, 1908, complainant's operating expenses and taxes in the City of Des Moines was the sum of $281,613.48, for the twelve months ended September 30, 1909, $283,339.06, and for the twelve months ended September 30, 1910, $345,282.43. The average annual operating expense and taxes for the three-year period ended September 30, 1910, was $303,411.66. After deducting from the average annual gross revenue for the said three-year period, the average annual expenditure and operating expense and taxes for the same period, there remains an average annual net earning for the said period of $188,369.65. From this sum there must be deducted annually for depreciation the sum of $49,178.13. The average annual net amount received
4 by the company for interest and profits upon its investments under the rate established by the said ordinance is the sum of $139,191.52 during the said three-year period. During the said three-year period complainant received as interest and profits upon the valuation of its said property from its net earnings but 5.15% annually. The said rate of $1.00 per thousand cubic feet yields an income on the investment far below the interest earnings upon similar investments in the City of Des Moines.

VII.

That the said ordinance passed in 1896 was for fifteen years, and by its terms expires January 1, 1911.

On the 21st day of October, 1910, the City Council of the City of Des Moines passed a resolution, directing the Superintendent of the Department of Streets and Public Improvements and the legal department to recommend to the council a new schedule of rates and regulations for the sale and distribution of gas. The defendant, John MacVicar, is the superintendent of said department of Streets and Public Improvements. Shortly thereafter he advised complainant of his purpose to recommend an ordinance, reducing the rates for the sale of gas.

On the 22nd day of November, 1910, complainant submitted to the defendant, John MacVicar, Superintendent of Streets and Public Improvements of the City of Des Moines, a communication showing in detail the average annual net revenue of complainant for the three-year period ended September 30, 1910, as set forth in this Bill of Complainant, and invited him or the superintendent of finance and accounts, or a committee of the council to examine the books of the company for the purpose of verifying the correctness of said statement as to revenue and expenditures; and offering to furnish every facility for an exhaustive and satisfactory investigation. It further informed the said Mr. MacVicar in said communication that an inventory and valuation of the company's property and assets was being taken, and invited him to have the city engineer co-operate

with the engineers of complainant's engaged in making said
5 inventory and valuation. That the said MacVicar notified complainant of his acceptance of said offer, and detailed one of the city engineers to co-operate with engineers of complainant in making the said appraisements and valuations.

Complainant immediately employed a large force of engineers with their assistants to inventory and appraise said property in the City of Des Moines and the work has been prosecuted with all reasonable dispatch, but is not yet completed. While the engineer of the defendant has co-operated with the engineers of complainant in inventorying and valuing the property of complainant, the defendants have not taken any steps to verify the statement of complainant as to revenue and expenditures. Complainant's purpose in asking the defendant to co-operate in an appraisement and valuation of its property and to verify its revenues and expenditures was to furnish the city the fullest information as to facts upon which a just and equitable rate should be based, and to convince the defendants that any reduction of the present rate would be unjust, unfair and confiscatory of complainant's property.

VIII.

On the 27th day of December, 1910, without having availed themselves of complainant's offer to submit to an investigation, for the purposeof verifying its statements as to its revenues andexpenditures, and without waiting for the inventory and valuation of its property, and without any knowledge with respect to the value of said property, and without making any investigation as to whether the present rate was fair, just and compensatory, and as to whether a reduction of the said rate would result in confiscation of complainant's property, the said MacVicar introduced an ordinance reducing the rate to ninety cents per one thousand cubic feet, and the same was immediately passed by the City Council, under a suspension of the rules, requiring a separate reading on three separate days. The said ordinance is entitled, "An Odrinance to fix the price of gas supplied
6 or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas and prescribing penalties for a vioaltion thereof", and is by its terms to become operative and in full force and effect after the first day of January, 1911, under an urgency clause thereof, that it is necessary for the immediate preservation of the public peace, health and safety. The said ordinance contains a provision, making it a misdemenor punishable by a fine not exceeding One Hundred Dollars, or imprisonment in the city jail for a period not exceeding thirty days for any officer or agent of complainant to collect or receive any rate or compensation for gas supplied or distributed in excess of the rate fixed by said ordinance.

IX.

The limit of consumption of gas in the City of Des Moines has been practically reached and will not be increased by a lowering of the rate as proposed by the said pretended ordinance to any material extent. That the amount of gas consumed in the City of Des Moines under the present ordinance will not be materially increased on account of any reduction in the rates and the income of the complainant under the proposed ordinance if it be enforced, will be reduced far below its income under the existing ordinance, while its taxes and expenditures will not be reduced, and the said rates will not furnish complainant a fair return on the value of its property.

X.

Your orator further alleges that said pretended ordinance fixing a 90c. rate is unreasonable to the extent that its enforcement will amount to the taking of complainant's property for public use without just compensation and that it will operate as confiscation of the property of complainant. That the enforcement of said
7 ordinance will deprive complainant of its property without due process of law and will deny to complainant equal protection of the law. Its enforcement would impair the existing contract between complainant and defendant city and between plaintiff and the State of Iowa, growing out of plaintiff's incorporation under the statute of the State of Iowa and of the ordinances of the City of Des Moines, giving the right to complainant to lay its mains and supply gas to the residents of the said city.

Your orator further alleges, that unless defendants are restrained by the orders of this court, that they will enforce the provisions of the said pretended ordinance and will prevent complainant from charging or receiving in excess of ninety cents per thousand cubic feet for gas sold and distributed.

XI.

And for as much as your orator can have no adequate relief, except in this court, and to the end that the defendants may, if they can show why your orator should not have the relief herein prayed for, that defendants answer this, your orator's bill, according to the course of practice of this court, but not under oath, answer under oath being hereby expressly waived, and that it be declared by the decree of your honor's that the provisions of the ordinance above referred to, passed December 27, 1910, is in violation of the constitution of the United States for the reasons herein before stated, and for such other and further reasons as may by your honor be found to exist, and that the said ordinance be decreed void and of no effect, and that defendants and each of them be enjoined and restrained as follows: That the city of Des Moines, and each of the other defendants and their successors in office, be temporarily and permanently restrained and enjoined from any attempt to compel your orator, its officers, agents or representatives to obey or comply with the said pretended ordinance and from putting in force or

effect the rates sought to be prescribed therein. And further, be temporarily and permanently restrained and enjoined from taking or causing to be taken any action, step or proceeding against
8 your orator, or any of its officers, agents or representatives, for failing or refusing to comply with said pretended ordinance or to charge and receive the rate for gas so prescribed therein.

May it please your honors to grant unto your orator a writ of injunction, issuing out of this Honorable Court and under the seal thereof, directed to defendants herein and to their successors in office, temporarily and perpetually enjoining and restraining the defendants and each of them, and their successors in office as herein before prayed.

That your orator have and recover judgment for its costs herein expended; that it have such other and further relief as the circumstances of this case require and is conformable with equity and good conscience; that a writ of subpœna of the United States of America issue, directed to the defendants and each of them, commanding them and each of them at a day herein named, to appear and answer unto this Bill of Complaint and to abide and conform to such orders and decree in the premises as to the court shall seem meet and as is required by the principles of equity and good conscience.

(Signed) CARR, CARR & EVANS AND
READ & READ,
Solicitors for Complainant.

(Signed) GEO. H. CARR AND
W. L. READ,
Of Counsel.

9

Copy.

STATE AND SOUTHERN DISTRICT OF IOWA,
County of Pottawattamie, ss:

I, Jansen Haines, being duly sworn, depose and say, that I am the Manager of the complainant company. That I have read the foregoing bill of complaint and know the contents thereof and the matters and things therein alleged are within my personal knowledge and that said bill is true except as to matters therein stated upon information and belief, and as to those matters, I believe them to be true.

(Signed) JANSEN HAINES.

Signed and sworn to before me this 29th day of December, 1910.

(Signed) CHAS. G. SAUNDERS,
Notary Public, Pottawattamie County, Iowa.

[Charles G. Saunders, Iowa, Notarial Seal.]

10 & 11 And thereafter to-wit: On the same day December 29th, A. D. 1912, there was filed in said cause a Motion for Preliminary Injunction which said motion is in words and figures as follows to-wit:

* * * * * * *

(Omitted in printing per stipulation.)

12–17 And thereafter to-wit: On the 31st day of December, A. D. 1912, there was filed in said Court, Views of the Trial Court, which said views of the trial court *is* in words and figures as follows to-wit:

* * * * * * *

(Omitted in printing per stipulation.)

18 And thereafter to-wit: On the same day, December 31, A. D. 1912, there was filed in said Court a Temporary Restraining Order which said Temporary Restraining Order is in words and figures as follows to-wit:

19 Copy.

(#71-M. Filed Dec. 31 '10. W. C. McArthur, Clerk.)

In the Circuit Court of the United States for the Southern District of Iowa, Central Division.

In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Temporary Restraining Order.

And now on this day the Complainant's bill of complaint and motion for temporary injunction restraining the defendants as prayed in the Bill of Complaint, are duly considered by the court, the same having been submitted to the court December 29, 1910, by the complainant, defendants not being represented. And the court being advised, it is ordered that said motion for temporary injunction be heard at Council Bluffs, Iowa, on the 6th day of January, 1911, at 10 o'clock A. M., and that of such hearing at said time and place, the defendants be given three days' notice, it further appearing to the court upon the allegations of the bill of complaint that complainant may sustain great and irreparable injury from the ordinance passed on December 27, 1910, by the City Council of the City of Des Moines, referred to in said bill, becoming

operative and its provisions being enforced by the defendants. It is further ordered that pending the hearing of the said application for a temporary injunction, and until the further orders of the court, that defendants and each of them be restrained from putting into effect or in any wise enforcing the provisions of said ordinance passed by the city council of the City of Des Moines on the 27th day of December, 1910, being an ordinance entitled, "An
20 Ordinance to fix the price of gas supplied or distributed to the City of Des Moines or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the city in supplying or distributing such gas and prescribing penalties for a violation thereof."

Done at Council Bluffs, Iowa, this 31st day of December, 1910.

(Signed) SMITH McPHERSON, *Judge*.

(Ent. Record V 159.)

21 & 22 And thereafter to-wit: On the 31st day of December, A. D. 1912, there was filed in said cause a Præcipe for Appearance of Defendant's solicitors which said præcipe is in words and figures as follows, to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

23–25 And thereafter to-wit: On the 6th day of January, A. D. 1911, there was filed in said cause a Notice of Hearing for Temporary Injunction which said Notice is in words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

26 And thereafter to-wit: On the same day January 6th, 1911, there was filed in said cause an order granting leave to amend bill of complaint which said order is in words and figures as follows, to-wit:

27 Copy.

In the Circuit Court of the United States for the Southern District of Iowa, Central Division.

#71-M. Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES et al.

It is hereby ordered that the complainant have leave to file an amendment to the bill of complaint herein.

Done at Des Moines, Iowa, this sixth day of January, A. D. 1911.

(Signed) SMITH McPHERSON, *Judge.*

(Filed January 6, 1911. Wm. C. McArthur, Clerk. Ent. Rec. V, Page 170.)

28 And thereafter to-wit: On the same day, January 6th, 1911, there was filed in said cause an Amendment to the Bill of Complaint, which said amendment is in words and figures as follows to-wit:

29 **Copy.**

(Filed Jan. 6, 1911, Wm. C. McArthur, Clerk.)

In the Circuit Court of the United States, Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,

vs.

THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Amendment to Bill of Complaint.

Comes now complainant, the Des Moines Gas Company, and by and with leave of the court first obtained, amends its bill of complaint on file herein as follows:

I.

By striking out of the second paragraph in and from the 7th, 6th and 5th lines from the bottom of the first page of said bill of complaint, the following words: "Under the provisions of Chapter 67 of the Laws of the 33d General Assembly of the State of Iowa", and inserting in lieu thereof, the following: "Under the provisions of Chapter 14-C of title 5 of the Supplement to the Code of Iowa and the amendment thereto in Chapter 64 of the Laws of the 33d General Assembly".

II.

By striking out of the said second paragraph, the word "violations" in the third line from the top of the second page and inserting in lieu thereof the word "provisions".

III.

By striking out from the last line of the fourth paragraph the words and figures "exceeds the sum of $2,700,000.00" and by inserting in lieu thereof the words and figures "is the sum of $4,092,000.00".

30

IV.

By striking out from the 17th line of the sixth paragraph the figures "$49,178.13" and inserting in lieu thereof "$83,608.00". Also by striking from the 19th line from said paragraph six, the figures "$139,191.52" and by inserting in lieu thereof the figures, "$104,761.65"; and also by striking from the 22d line of said paragrpah six the figures "5.15%" and by inserting in lieu thereof the figures "2.56%".

(Signed) CARR, CARR & EVANS,
READ & READ,
Solicitors for Complainant.

(Signed) W. L. READ AND
GEO. H. CARR,
Of Counsel.

31

Copy.

UNITED STATES OF AMERICA,
State and Southern District of Iowa, County of Polk, ss:

I, Jansen Haines, being duly sworn, depose and say that I am the manager of the complainant company. I have read the foregoing amendment to the bill of complaint and know the contents thereof, and the matters and things therein alleged are within my personal knowledge and that the said bill is true except as to matters therein stated upon information and belief, and as to such matters, I believe them to be true.

(Signed) JANSEN HAINES.

Signed and sworn to before me this 5th day of January, 1911.

(Signed) GENEVIEVE WILLIAMS,
Notary Public, Polk County, Iowa.

[Genevieve Williams, Iowa, Notarial Seal.]

32 & 33 And thereafter to-wit: On the same day January 6th, 1911, there was filed in said cause an Affidavit of John H. Blair which said affidavit is in the words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

34–36 And thereafter to-wit: On the same day January 6th, 1911 there was filed in said cause an Affidavit of Simon Casady which said affidavit is in words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

37–55 And thereafter to-wit: On the same day January 6th, 1911 there was filed in said cause an Affidavit of Wm. A. Baehr which said affidavit is in the words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

56–65 And thereafter to-wit: On the same day, January 6th, 1911 there was filed in said cause an affidavit of Jensen Haines, which said affidavit is in the words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

66–88 And thereafter to-wit: On the same day January 6, 1911 there was filed in said cause a second affidavit of Jansen Haines which, said affidavit is in the words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

89 & 90 And thereafter towit: On the same day January 6th, 1911 there was filed in said cause an affidavit of F. M. Hubbell which said affidavit is in words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

91–94 And thereafter to-wit: On the same day January 6th, 1911 there was filed in said cause an affidavit of B. F. Kauffman, which said affidavit is in the words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

95 And thereafter to-wit: On the same day January 6th, A. D. 1911 there was filed in said cause the Joint and Several Demurrers of the Several Defendants to the Bill of Complaint which said Demurrer is in words and figures as follows to-wit:

96 (Filed Jan. 6, 1911. Wm. C. McArthur, Clerk.)

In the Circuit Court of the United States, Southern District of Iowa, Central Division.

#71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

The Joint and Several Demurrers of the Several Above Named Defendants to the Bill of Complaint.

And now come the defendants, The City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, and not confessing any of the matter in the bill to be true, demur to the bill herein filed and say:

I.

That it appears by the Complainant's own showing by the said bill that this court may not by law entertain jurisdiction of said suit in this—That Complainant and defendants are citizens of the State of Iowa, the Complainant being a corporation organized under the laws of said State and the defendant, the City of Des Moines, Iowa, being a municipal corporation, organized and existing under the laws of said state, and that the several other defendants named in the bill are officers of said City of Des Moines and citizens of the City of Des Moines and State of Iowa, and that the said suit is not a suit arising under the Constitution or laws of the United States.

97 If this court shall entertain jurisdiction of said suit, these defendants, without confessing any of the matters in the bill to be true, doth further demur to said bill and for cause thereof show:

II.

That the said bill does not state any matter of equity entitling Complainant to the relief prayed for, nor are the facts as stated in said bill sufficient to entitle complainant to any other relief against these defendants or any of these defendants.

III.

That it appears by complainant's own showing by the said bill that the City Council of the City of Des Moines in passing the ordinance referred to in said bill, and of which complain*ant* is made, to-wit, the ordinance passed on the 27th day of December fixing the price to be charged for supplying and distributing gas to the City of Des Moines, Iowa, was passed by said council in the exercise of its legislative functions.

IV.

That complainant fails to allege or show in said bill the total amount of gross revenue by it from all sources in the conduct of its said business at the City of Des Moines, Iowa; and further, that complainant alleges the amount of gross revenue received from the sale of gas only and fails to allege that the gross revenue received from the sale of gas is all of the revenue which the complainant receives in the operation and conduct of its gas works, and in supplying and distributing gas in the City of Des Moines, or otherwise.

V.

That it appears by the complainant's own showing by said bill that complainant would realize some profit on the money actually invested in its gas plant and distributing system, and complainant fails to show the actual present value of its said plant or what sum would be required to now construct a plant of equal efficiency, and fails to allege or show what percentage of profit at the rate
98 fixed in the ordinance in controversy would or could be realized on the basis last stated.

VI.

The bill fails to show that the result of the enforcement of the ordinance complained of will result in the confiscation of complainant's property or any part thereof, and on the contrary the facts set forth and alleged in the bill show that the enforcement of the said ordinance will not be confiscatory of complainant's property.

VII.

The bill shows by the facts alleged therein that unless the ordinance complained of is enforced, the complainant will be permitted, if given the relief demanded, and especially if the restraining order issued shall be continued, to charge the inhabitants of the City of Des Moines an unreasonable or exorbitant rate for gas, the said bill alleging that the only agreement or regulation between the city and the complainant has by its terms expired, and if the ordinance complained of is not permitted to be enforced, then the complainant will be without regulation.

VIII.

That complainant fails to allege or show in said bill facts entitling it to a temporary injunction in this, that complainant does not show that it could not recover from the City of Des Moines or other consumers any sum or sums which it might fail to collect or receive during the pendency of this suit and before final decree if the said ordinance should, on final decree, be held to be void in respect to the rates fixed in said ordinance; and complainant fails to allege or show that the rate which complainant is now charging for gas and which it asks in effect the aid of this court to enforce pending this suit, is a reasonable or just rate.

IX.

The bill of complainant fails to show that complainant is willing or will in the event that the ordinance complained of should
99 be found to be legal, to refund to the City of Des Moines or to the various consumers taking gas from the complainant, the difference between the rates allowed in the ordinance complained of and in any of the rates the complainant may charge, demand, receive or collect.

Wherefore, and for divers other causes of demurrer appearing on the said bill, these defendants demur thereto. And defendants pray the judgment of this honorable court whether they shall be compelled to make any answer to the said bill; and they humbly pray to be hence dismissed with reasonable costs in this behalf sustained.

(Signed) ROBERT O. BRENNAN,
JAMES M. PARSONS,
Solicitors and Counsel for Defendants.

I, Robert O. Brennan, Solicitor for defendants in the above cause, do hereby certify that the foregoing demurrer in my opinion is well founded in law.

(Signed) ROBERT O. BRENNAN,
Solicitor.

STATE OF IOWA,
Polk County, ss:

James R. Hanna, being sworn deposes and says that he is the Mayor of the City of Des Moines, and defendant in the above entitled cause, and is one of the defendants in said cause; and he says that the foregoing demurrer is not interposed for delay.

(Signed) JAMES R. HANNA.

Sworn and Subscribed before me the 5th day of January, 1911.

(Signed) EDWARD C. LYTTON,
Notary Public in and for said County.

[Edward C. Lytton, Iowa, Notarial Seal.]

100 And thereafter to-wit: On the same day January 6th A. D. 1911 there was filed in said cause an order granting a Temporary Injunction which said order is in words and figures as follows to-wit:

101 Copy.

(Filed Jan. 6, 1911. Wm. C. McArthur, Clerk.)

In the Circuit Court of the United States, Southern District of Iowa, Central Division.

#71–M.

DES MOINES GAS COMPANY, Complainant,

vs.

THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Order.

This cause coming on for hearing upon the application of the complainant for a preliminary writ of injunction pursuant to the order of the court heretofore made, notice of which hearing was duly given as required by said order, and the parties now appearing by their solicitors and being heard upon said application, and it appearing that cause exists for the granting of the writ of injunction pending the final hearing of this cause:

It is therefore ordered, adjudged and decreed, that the restraining order heretofore granted herein be continued in full force and effect upon a bond being given by the complainant within ten days from this date in the penal sum of one hundred thousand dollars, with sureties to the approval of the Clerk of this Court, conditioned as hereinafter provided. That upon the filing and approval of said bond a writ of temporary injunction shall issue herein as prayed, restraining and enjoining the defendant, the City of Des Moines, and each of the other defendants and their sucessors in office, from putting into effect or in any wise enforcing or attempting to enforce the provisions of the ordinance referred to in the bill of complaint passed by the city council of the city of Des Moines on the 27th day of December, 1910, being an ordinance entitled:

102 "An ordinance to fix the price of gas supplied or distributed to the city of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the city in supplying or distributing such gas, and prescribing penalties for the violation thereof."

And the said writ remain in force until the further orders of this court.

To the end that the rights of the respective parties may be and remain in statu quo pending the final hearing, it is further ordered, complainant consenting thereto, that until the further orders of the court in the premises it shall continue the manufacture, sale and distribution of gas in the city of Des Moines under and in accordance with the provisions of the ordinances of the city of Des Moines in

effect on the 27th day of December, 1910, prior to the passage of the ordinance on December 27th, 1910, above referred to by title and date of passage. That it shall be permitted to charge and receive for gas sold and distributed by it at the rate of one dollar and ten cents per thousand cubic feet, provided that on all bills paid on or before the 15th day of the month following the month in which the gas was used, a discount of ten cents per thousand cubic feet shall be allowed, and shall continue the payment to the city of the two per cent license fee for use of streets in distributing gas provided in the ordinances of the city prior to the passage of the said ordinance of December 27, 1910, but in the event the said ordinance of December 27th, 1910, is held valid, then on final decree the amounts of license fee from January 1st, 1911, shall be adjusted on the basis of said ordinance. Provided, however, that in the event that it shall be determined by the final decree in this cause that said ordinance of December 27th, 1910, is valid, that complainant shall refund on demand to the persons by whom payment was made, all sums of money collected by it for gas sold and delivered from and after the
103 first day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910. That the bond required to be given by complainants shall, in addition to the usual provisions of such bonds, be conditioned for the performance of the obligations hereby imposed upon the complainant.

It is further ordered that defendants' demurrer to the complainant's bill of complaint is over-ruled pro forma and without passing upon the merits of the questions thereby presented. To the end that a speedy determination of this controversy may be had, it is further ordered, by and with the consent of both parties, that the defendants shall file answer to the bill of complaint as amended by the first day of February, 1911, and complainants shall plead thereto within five days thereafter.

It is further ordered that this cause be referred to a special master to be later appointed to take the evidence and report his findings of fact and conclusions of law. The taking of said testimony to be begun at Des Moines on the first day of March, 1911, and continue with all reasonable diligence until completed. The master shall file his report containing his findings of fact and conclusions of law thirty days prior to the first day of the May, 1911, session of this court at Des Moines.

Signed this 6th day of January, 1911.

[Signed.] SMITH McPHERSON, *Judge.*

(Ent. Record V. P. 170).

104 And thereafter to-wit: On the 13th day of January A. D. 1911 there was filed in said cause a Bond by the Complainant for the Temporary Injunction which said bond is in words and figures as follows to-wit:

105 THE UNITED STATES OF AMERICA,
Southern District of Iowa, Central Division:

71-M. C. D.

Know all men by these presents: That the Des Moines Gas Company, a corporation, organized and existing under and by virtue of the laws of the State of Iowa, as Principal, and the American Surety Company of New York as Surety, are held and firmly bound unto the City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe and R. O. Brennan in the penal sum of One Hundred Thousand ($100,000.00) Dollars, to the payment of which they bind themselves, each for itself and its successors, firmly by these presents.

The condition of the above obligation is such, that whereas the Des Moines Gas Company, a citizen of the State of Iowa, having filed on the chancery side of the Circuit Court of the United States for the Southern District of Iowa, a Bill against the said City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, and having obtained an allowance of the injunction as prayed for in said Bill from said court; now if the said Des Moines Gas Company shall abide by the decision of said court, and shall pay all moneys and costs which shall be adjudged against it, in case the said injunction shall be dissolved, and shall further pay all such sums as shall be required to be paid by the order of said court made on the 6th day of January, A. D. 1911, a copy of which said order is hereto attached as a part hereof, then these presents shall be void; otherwise to remain in full force.

In testimony whereof, the said Des Moines Gas Company and the American Surety Company has caused this obligation to be
106 executed on the 12th day of January, 1911.

DES MOINES GAS COMPANY,
By CARR, CARR & EVANS AND
READ & READ, *Its Attorneys.*
AMERICAN SURETY COMPANY OF NEW YORK,
[SEAL.] By F. H. NOBLE, *Res. Vice-Pres.*

Attest:
B. C. MATHER, *Res. Ass't Sec'y.*

(Endorsed:) Approved by Wm. C. McArthur, Clerk by Hattie Blank, Deputy. Filed January 13, 1911. Wm. C. McArthur, Clerk by Hattie Blank, Deputy.

107 Copy.

(Filed Jan. 6, 1911. Wm. C. McArthur, Clerk.)

In the Circuit Court of the United States, Southern District of Iowa, Central Division.

#71-M.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Order.

This cause coming on for hearing upon the application of the complainant for a preliminary writ of injunction pursuant to the order of the court heretofore made, notice of which hearing was duly given as required by said order, and the parties now appearing by their solicitors and being heard upon said application, and it appearing that cause exists for the granting of the writ of injunction pending the final hearing of this cause:

It is therefore ordered, adjudged and decreed, that the restraining order heretofore granted herein be continued in full force and effect upon a bond being given by the complainant within ten days from this date in the penal sum of one hundred thousand dollars, with sureties to the approval of the Clerk of this Court, conditioned as hereinafter provided. That upon the filing and approval of said bond a writ of temporary injunction shall issue herein as prayed, restraining and enjoining the defendant, the City of Des Moines, and each of the other defendants and their successors in office, from putting into effect or in any wise enforcing or attempting to enforce the provisions of the ordinance referred to in the bill of complaint passed by the city council of the city of Des Moines on the 27th day of December, 1910, being an ordinance entitled:

108 "An ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the city in supplying or distributing such gas, and prescribing penalties for the violation thereof."

And the said writ remain in force until the further orders of this court.

To the end that the rights of the respective parties may be and remain in statut quo pending the final hearing, it is further ordered, complainant consenting thereto, that until the further orders of the court in the premises it shall continue the manufacture, sale and distribution of gas in the city of Des Moines under and in accordance with the provisions of the ordinances of the city of Des Moines in

effect on the 27th day of December, 1910, prior to the passage of the ordinance on December 27th, 1910, above referred to by title and date of passage. That it shall be permitted to charge and receive for gas sold and distributed by it at the rate of one dollar and ten cents per thousand cubic feet, provided that on all bills paid on or before the 15th day of the month following the month in which the gas was used, a discount of ten cents per thousand cubic feet shall be allowed, and shall continue the payment to the city of the two per cent license fee for use of streets in distributing gas provided in the ordinances of the city prior to the passage of the said ordinance of December 27, 1910, but in the event the said ordinance of December 27th, 1910, is held valid, then on final decree the amounts of license fee from January 1st, 1911, shall be adjusted on the basis of said ordinance. Provided, however, that in the event that it shall be determined by the final decree in this cause that said ordinance of December 27th, 1910, is valid, that complainant shall refund on demand to the persons by whom payment was made, all sums of money collected by it for gas sold and delivered from
109 and after the first day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910. That the bond required to be given by complainants shall, in addition to the usual provisions of such bonds, be conditioned for the performance of the obligations hereby imposed upon the complainant.

It is further ordered that defendants' demurrer to the complainant's bill of complaint is over-ruled pro forma and without passing upon the merits of the questions thereby presented. To the end that a speedy determination of this controversy may be had, it is further ordered, by and with the consent of both parties, that the defendants shall file aswer to the bill of complaint as amended by the first day of February, 1911, and complainants shall plead thereto within five days thereafter.

It is further ordered that this cause be referred to a special master to be later appointed to take the evidence and report his findings of fact and conclusions of law. The taking of said testimony to be begun at Des Moines on the first day of March, 1911, and continue with all reasonable diligence until completed. The master shall file his report containing his findings of fact and conclusions of law thirty days prior to the first day of the May, 1911, session of this court at Des Moines.

Signed this 6th day of January, 1911.

(Signed) SMITH McPHERSON, *Judge.*

(Ent. Record V. P. 170.)

110 *Extract from the Record Book of the Board of Trustees of the American Surety Company of New York.*

The first quarterly meeting of the Board of Trustees of the American Surety Company of New York, after the annual Stockholder's meeting, was held at the office of the Company, No. 100 Broadway,

New York City, on Wednesday, January 19, 1910, at 12 o'clock noon.

"The Secretary read the report of the Nominating Committee as follows:

"To the Board of Trustees of the American Surety Company of New York.

"GENTLEMEN: The Committee appointed by the Executive Committee of this Company at their meeting held Tuesday, December 14, 1909, for the purpose of nominating officers of the Company, * * * for the ensuing year and until their successors are elected, beg leave to report as follows:

"We nominate for * * *

Place.	Resident Vice Presidents.	Resident Assistant Secretaries.
Des Moines, Ia.	Jos. G. Rounds. Chas. H. Martin. Arthur Reynolds. E. D. Samson. F. H. Noble.	F. H. Noble. E. D. Samson. B. C. Mather.

* * * * * * *

"Whereupon, it was "Resolved, that the Secretary be authorized to cast one ballot on behalf of the Trustees present for the officers, members of the Executive Committee, Finance Committee, Committee on Accounts, Committee on Capital Box, and Counsel, as recommended by the Nominating Committee for the ensuing year, which was done, and thereupon the aforementioned persons were declared to have been unanimously elected to their respective offices for the ensuing year.

* * * * * * *

"The following resolution was adopted:

"Resolved, that the Resident Vice Presidents be and they hereby are, and each of them is hereby, authorized and empowered to execute and deliver and to attach the seal of the Company to any and all obligations for or on behalf of the Company, such obligations, however, to be attested in every instance by the Resident Assistant Secretary."

* * * * * * *

STATE OF NEW YORK,
County of New York, ss:

I, F. J. Parry, Assistant Secretary of the American Surety Company of New York, do hereby certify that I have compared the foregoing extracts and transcripts, from the Record Book of the Board of Trustees of the American Surety Company of New York, with the original record of said Board, and that the same are correct extracts and transcripts therefrom as they appear of record and are set forth and contained in said Record Book; and I further certify that I have compared the foregoing resolutions with the originals thereof, as

recorded in the Minute Book of said Company, and do certify that the same is a correct and true transcript therefrom, and of the whole of said original resolutions; and that the said resolutions have not been revoked or rescinded.

Given under my hand and the seal of the Company, at the City of New York, this 28th day of July, 1910.

[Seal American Surety Company.]

(Signed) F. J. PARRY,
Assistant Secretary.

111 & 112 And thereafter to-wit: On the 18th day of January A. D. 1911 there was filed in said cause the Subpœna in Chancery with the Marshal's return of service thereon which said Subpœona in Chancery is in words and figures as follows to-wit:

(Omitted in printing per stipulation.)

* * * * * * *

113 And thereafter to-wit: On the same day January 18th, 1912 there was filed in said cause the Writ of Temporary Restraining Order with the Marshal's return of service thereon which said Writ of Temporary Restraining Order is in the words and figures as follows:

114 (Copy.)

#71-M. Equity.

UNITED STATES CIRCUIT COURT,
Central Division, Southern District of Iowa, ss:

To The President of the United States to the City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, clerks, attorneys, agents, servants and workingmen, Greeting:

Whereas, Des Moines Gas Company has exhibited its Bill of Complaint to the Honorable Smith McPherson, one of the Judges of our Circuit Court of the United States for the Southern District of Iowa, against you praying to be relieved touching certain matters therein compalined of; and

Whereas, by an order of said Judge, entered on the 31st day of December, A. D. 1910, it was ordered that a restraining order issue under the seal of said Court to restrain you, and each and every one of you, from doing the things complained of in said bill of complaint.

We, therefore, in consideration thereof, do strictly command you, and each of you, the said City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, your clerks, attorneys, agents, servants and working men, under the pains and penalties which may fall upon you and each of you

in case of disobedience, that pending the hearing of the said application for a temporary injunction, and until the further orders of the Court, that defendants and each of them be restrained from putting into effect or in any wise enforcing the provisions of said ordinance passed by the City Council of the City of Des Moines on the 27th day of December, 1910, being an ordinance entitled "An Ordinance to fix the price of gas supplied or distributed to the City of Des Moines or its inhabitants, and to prescribe the payment of a license of occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas and prescribing penalties for a violation thereof." And the court being advised, it is ordered that said motion for temporary injunction be heard at Council Bluffs, Iowa, on the 6th day of January, 1911, at 10 o'clock A. M.

Hereof, you are not to fail at your peril.

To the marshal of the Southern District of Iowa to execute and to make due return hereon how you have executed this, our writ:

Witness, The Honorable John Marshall Harlan, Senior Associate Justice of the United States, at Des Moines, in said District, on this 31st day of December, A. D. 1910.

[Seal U. S. Circuit Court, Southern District of Iowa.]

(Signed) WM. C. McARTHUR,
Clerk U. S. Circuit Court, Southern District of Iowa.

(Filed Jan. 18, 1911. Wm. C. McArthur, Clerk.)

115 *Marshal's Return.*

This writ came into my hands for service on the 31st day of Dec., 1910, and served the same on the within named persons as follows, to-wit: On the city of Des Moines by delivering a true copy to James R. Hanna, Mayor of said city, on Zell G. Roe, J. W. Ash, John MacVicar, C. W. Schram, James R. Hanna, and R. O. Brennan, city solicitor, by delivering a true copy to each of them on the 31st day of December, 1910, at Des Moines, Iowa.

FRANK B. CLARK,
U. S. Marshal,
(Signed) By GEO. E. BIDWELL, *Deputy.*

116 And thereafter to-wit: On the 24th day of January, A. D. 1911, there was filed in said cause the Writ of Temporary Injunction with the Marshal's return of service thereon which said Writ of Temporary Injunction is in words and figures as follows to-wit:

117 UNITED STATES CIRCUIT COURT,
Central Division, Southern District of Iowa, ss:

To The President of the United States to City of Des Moines, James R. Hanna, as Mayor of the City of Des Moines; J. W. Ash, Zell G. Roe, John MacVicar, and C. W. Schramm, as members of the City Council of the City of Des Moines, and R. O. Brennan, as City Solicitor, clerks, attorneys, agents, servants and workingmen, Greeting:

Whereas, Des Moines Gas Company has exhibited its bill of complaint to the Honorable Smith McPherson, one of the Judges of our Circuit Court of the United States for the Southern district of Iowa, against you praying to be relieved touching certain matters therein complained of and,

Whereas, by an order of said Judge, entered on the 6th day of January, A. D. 1911, it was ordered that a temporary injunction issue under the seal of said Court to restrain you, and each and every of you, from doing the things complained of in said bill of complaint.

We therefore, in consideration thereof, do strictly command you, and each of you, the said City of Des Moines, James R. Hanna as Mayor of the City of Des Moines, J. W. Ash, Zell G. Roe, John MacVicar and C. W. Schramm as members of the City Council of the City of Des Moines, and R. O. Brennan as City Solicitor, your clerks, attorneys, agents, servants and workingmen, under the pains and penalties which may fall upon you and each of you in case of disobedience, that you forthwith cease and desist from putting into effect or in any wise enforcing or attempting to enforce the provisions of the ordinance referred to in the bill of complaint passed by the City Council of the City of Des Moines on the 27th day of December, 1910, being an ordinance entitled "An ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas, and prescribing penalties for the violation thereof," and that said writ remain in force until the further order of the court.

Hereof, you are not to fail at your peril.

To the marshal of the Southern District of Iowa to execute and to make due return hereon how you have executed this, our writ.

Witness, The Honorable Edward D. White, Chief Justice of the United States at Des Moines, in said District, on this 13th day of January, A. D. 1911.

[SEAL.] WM. C. McARTHUR,
Clerk U. S. Circuit Court, Southern District of Iowa,
By HATTIE BLANK, *Deputy.*

[Endorsed:] No. 71-M. Eq. Injunction. Circuit Court of the United States, Southern District of Iowa, Central Division. Des

Moines Gas Company vs. The City of Des Moines et al. Filed January 24th, A. D. 1911. Wm. C. McArthur, Clerk. By —— ——, Deputy. Carr, Carr & Evans et al., Comp't's Sol. Residence, Des Moines, Iowa.

I received this writ January 14, 1911, at Des Moines, Iowa; the same day at Des Moines, Iowa, I served it on the City of Des Moines, Iowa, by delivering a copy hereof to James R. Hanna, Mayor thereof—and on James R. Hanna, Mayor, and on C. W. Schramm, Councilman, by delivering a copy to each personally. On January 16, 1911, I served this writ on Zell G. Roe and on R. O. Brennan, and on January 17, 1911, on J. W. Ash—all being served at Des Moines by delivering a copy hereof to each.
$12.36 Fees, .15 Exp.

FRANK B. CLARK,
U. S. Marshal,
By FRANK A. NICHOL, *Deputy.*

118 And thereafter to-wit: On the 31st day of January, A. D. 1911, there was filed in said cause the Answer of the defendants to the Bill of Complaint and the Amendment to the Bill of Complaint which said Answer is in the words and figures as follows to-wit:

119 Filed Jan. 31, 1911. Wm. C. McArthur, Clerk.

In the Circuit Court of the United States, Southern District of Iowa, Central Division.

#71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Answer.

The Answer of the Above-named Defendants to the Bill of Complaint and Amendment to Bill of Complaint.

I.

The defendants, the City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, reserving all manner of exceptions that may be had to the uncertainties and imperfections of the bill and the amendment to the bill, come now and answer thereto or to so much thereof, as they are advised is material to be answered and say:

That they both generally and specifically deny each and every

allegation in said bill of complaint and amendment thereto contained as fully and completely, and to the same extent, as if each allegation thereof were separately traversed and in like manner denied, save and except such matters only as are hereinafter in this answer expressly admitted.

II.

The defendant City of Des Moines, admits that it is a municipal corporation organized and existing under the laws of the State of Iowa, and is located in the Southern District of said State,
120 and alleges that for more than twenty-five (25) years prior to the sixth day of April, A. D., 1908, defendant was organized as a city of the first class, and is now, and at all times since the first Monday of April, 1908, has been organized as a city under the provisions of Chapter Forty-eight (48), Acts of the Thirty-second (32) General Assembly of Iowa, as the same appears in Chapter Fourteen-*c* (14-*c*) of Title V (5) of the Supplement to the Code, 1907, and acts amendatory thereof, being Chapter Sixty-four (64) of the Acts of the Thirty-third (33) General Assembly of Iowa.

III.

These defendants admit that said James R. Hanna is Mayor of the City of Des Moines, that John MacVicar, C. W. Schramm, J. W. Ash and Zell G. Roe are members of the City Council of the City of Des Moines and that R. O. Brennan is the City Solicitor thereof; and admit that the amount in controversy exceeds two thousand dollars ($2,000.00) exclusive of interest and costs. Defendants admit that the Complainant, Des Moines Gas Company, is a corporation for pecuniary profit under the laws of Iowa, with its principal place of business at the City of Des Moines in said State. That whether complainant, Des Moines Gas Company, under and by virtue of its charter and articles of incorporation is empowered to construct, own, operate and maintain gas works in the City of Des Moines, defendants have neither knowledge nor information sufficient to form a belief.

Defendants admit that the complainant, Des Moines Gas Company, is maintaining and operating gas works in the City of Des Moines, and admit that said gas works are substantially as described in the bill and consist of the manufacturing plant, holders, mains, pipes and certain other property, but deny that said gas works and the property connected with or belonging thereto exceeds in value the sum of two million seven hundred thousand dollars ($2,700,000.00) as is alleged in the original Bill of Complaint, or exceeds in value the sum of four million ninety-two thousand Dollars ($4,092,000.00) as is alleged in the amendment to the Bill of Complaint,
and defendants aver and charge the fact that said sums are
121 each largely in excess of the true value of said gas works and the property connected with or belonging thereto actually and necessarily used in manufacturing and distributing gas for illuminating and fuel purposes to consumers.

IV.

Defendants do not have knowledge nor information sufficient to form a belief as to the actual amount of complainant's operating expenses, and deny that the operating expenses of complainant, and the amount of its income are as stated in the bill; deny that complainant is entitled to have deducted annually for depreciation the sum of Eighty-three thousand six hundred eight Dollars ($83,-608.00).

Defendants deny that a rate of one dollar ($1.00) per thousand cubic feet for gas yields an income on the investment far below the interest earning upon similar investments in the City of Des Moines, and allege that said rate was much higher and largely in excess of the rate and price necessary to produce and afford a reasonable compensation and return to complainant for the gas furnished and service rendered, by or from said gas works, and for the use of the property actually and necessarily used in the operation of said gas works in the manufacture and distribution of gas to consumers.

V.

Defendants admit that on the 27th day of December, 1910, the City Council of the City of Des Moines passed Ordinance No. 1767 entitled, "An Ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporations, occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas and prescribing penalties for a violation thereof," and allege that said ordinance was passed in the proper exercise of the legislative powers and authority duly vested in the City of Des Moines by the statutes and laws of the state of Iowa, and under the power and authority duly conferred to regulate and fix the rates
122 and prices to be paid for gas furnished for public and private use.

Defendants deny that said ordinance prescribes a rate that is unreasonable; deny that the enforcement of said ordinance will amount to the taking of complainant's property for public use without just compensation, and that it will operate as confiscation of the property of complainant. Deny that the enforcement of said ordinance will deprive complainant of its property without due process of law, and will deny to complainant equal protection of the law, or will impair the obligation of any contract, or will deprive complainant of any of the benefits or immunities guaranteed by the Constitution of the United States; and defendants deny that the rate for gas in said ordinance provided, to wit: ninety cents (90c.) per thousand cubic feet, will, if enforced, be insufficient to afford an adequate return or reasonable and just compensation, and allege that the rate in said ordinance provided, will, if enforced, afford reasonable or adequate compensation and return for all gas furnished and service rendered, and the return derived from the operation of complainant's gas works and business under said rate, will be ample to afford

a reasonable and adequate return upon the value of said gas works, upon the capital actually invested, and upon the property actually and necessarily used in the operation thereof.

Defendants deny that the limit of consumption of gas in the City of Des Moines has been practically reached, and will not be increased by a lowering of the rate as prescribed in the ordinance in controversy, and allege that the rate adopted by the City Council of the City of Des Moines as provided in said ordinance if given a fair test will result in a very material increase in the amount of gas consumed in the City of Des Moines, and the complainant will, if said ordinance is enforced, very materially increase its earnings and income on account thereof; that the cost to complainant of furnishing such increased amount of gas occasioned by the passage of said regulatory ordinance will be much less in proportion to the increased amount of gas consumed under said ordinance, and that the rate fixed in said ordinance complained of, will, if enforced, afford
123 reasonable and adequate remuneration or return to the complainant after providing for all reasonable expense of operation, taxes, depreciation and all other expenses and charges necessary to be provided for.

VI.

Defendants admit that at the time the complainant exhibited its Bill of Complaint in this case, there was an ordinance of the City of Des Moines permitting complainant to charge and receive for gas furnished by it to the City of Des Moines or its inhabitants, one dollar per thousand cubic feet when payment was made on or before the 15th day of the month following that in which the gas was consumed, and one dollar and ten cents ($1.10) per thousand cubic feet where payment was made subsequent to the 15th day of the month following that in which the gas was consumed, but defendants allege that the said ordinance by its terms expired January 1, 1911.

VII.

Defendants deny that the ordinance of which complaint is made in the bill was passed by the council of the defendant City of Des Moines without making any investigation as to whether the rate fixed therein was fair, just and compensatory, and allege that said ordinance was duly and legally adopted by the City Council of the defendant City of Des Moines in the exercise of its legislative functions, and in the legitimate exercise of governmental powers, and deos not deprive complainant of any rights or privileges to which it is entitled under the constitution of the United States, in that said ordinance grants to complainant just reward upon the value of its gas works, upon its capital actually invested, and upon the property actually and necessarily used in the operation of said gas works and rendering the service in manufacturing and distributing gas for illuminating and fuel purposes to consumers; and defendants deny each and every allegation in the bill or amendment thereto which is inconsistent with or controverts any of the above statements.

124 Defendants having thus made full answer to all matters and things contained in the bill and the amendment to the bill, pray to be dismissed hence with their costs in this behalf incurred.

(Signed) R. O. BRENNAN,
(Signed) H. W. BYERS,
Solicitors for Defendants.

125 And thereafter to-wit: On the 4th day of February A. D. 1911 there was filed in said cause the Replication of the complainant to the answer of the defendants which said Replication is in the words and figures as follows to-wit:

126 In the Circuit Court of the United States for the Southern District of Iowa, Central Division.

71–M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Filed Feb. 4, 1911, Wm. McArthur, Clerk, By Lewis J. Adelman, Deputy.

Replication of the Above-named Complainant to the Answer of the Above-named Defendants.

This repli-ant, saying and reserving to itself all and all manner of advantages of exception which may be had and taken to the manifold errors, uncertainties and insufficiencies of the answer of the defendants, for replication thereunto saith that it doth and will aver, maintain and prove its said bill to be true, certain and sufficient in the law to be answered unto by said defendants, and that the answer of the said defendants is very uncertain, evasive and insufficient in law to be replied unto by this repli-ant; without that, that any other matter or thing in the said answer contained, material or effectual in the law to be replied unto, and not herein and hereby well and sufficiently replied unto, confessed or avoided, traversed, or denied, is true; all of which matters and things this repli-ant is ready to aver, maintain, and prove as this honorable Court shall direct and humbly prays as in and by its said bill it hath already prayed.

CARR, CARR & EVANS,
READ & READ AND
GUERNSEY, PARKER & MILLER,
Solicitors for Complainant.

127 And thereafter to-wit: On the 16th day of May A. D. 1911 there was filed in said Court an Order appointing Robert Sloan Esq., Special Master in Chancery which said order is in the words and figures as follows to-wit:

128 In the Circuit Court of the United States, Southern District of Iowa, Central Division.

No. 71–M. In Equity.

DES MOINES GAS COMPANY, Complainant,

vs.

THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Order.

The Court hereby appoints Robert Sloan, Esq., of Keosauqua, Iowa, as Special Master herein. He will have the hearing in the United States Court Room at Des Moines, Iowa. He will call to his aid a stenographer and have all the oral testimony transcribed and report the same, together with all exhibits and documentary evidence, to the court. He will make findings of fact and adopt conclusions of law and report the same to the court, together with such decree as he may recommend. All of which he will do more than thirty days prior to the next term of this Court. He, after consultation with counsel, will fix the time for the said hearing.

Done in open court, this 16th day of May, A. D. 1911.

(Signed) SMITH McPHERSON, *Judge.*

Filed May 16 1911.

W. C. McARTHUR, *Clerk.*

129 And thereafter to-wit: On the 20th day of May A. D. 1911 there was filed in said cause the oath of office of Robert Sloan, Esq., Special Master in Chancery which said oath of office is in the words and figures as follows to-wit:

130 In the Circuit Court of the United States, Southern District of Iowa, Central Division.

No. 71–M. In Equity.

DES MOINES GAS COMPANY, Complainant,

vs.

THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Oath of Office.

UNITED STATES OF AMERICA,
Southern District of Iowa, Van Buren County, ss:

I, Robert Sloan, having been appointed by said Court as Special Master in said case, do hereby accept the said appointment.

And I, Robert Sloan, on my oath, do say that I will support the Constitution of the United States, and that I will perform the duties of Special Master in said case to the best of my ability, skill and understanding; so help me God.

(Signed) ROBERT SLOAN.

Subscribed in my presence and sworn to before me by him, the said Robert Sloan, this May 16", A. D. 1911.

[SEAL.] (Signed) B. B. TRUAX,
Clerk, District Court, Van Buren County, Iowa.

(Endorsed:) Filed May 20, 1911. Wm. C. McArthur, Clerk, By Louis J. Adelman, Deputy.

131 And thereafter to-wit: On the 12th day of July A. D. 1911 there was filed in said cause an Order of Robert Sloan, Special Master in Chancery setting the time for the hearing of said cause which said order is in the words and figures as follows to-wit:

132 (In Duplicate.)

In the Circuit Court of the United States, Southern District of Iowa, Central Division.

No. 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, Defendants.

Order.

Pursuant to the authority and directions contained in an order made in the above cause by the Circuit Court of the United States, Southern District of Iowa, Central Division, Hon. Smith McPherson, Presiding Judge, on the 16th day of May, A. D. 1911, appointing the undersigned Special Master therein, with direction to fix the time for hearing, after conference with counsel;

Now, therefore, after conference with counsel for the complainant and defendants heretofore had, and agreement therein made, it is hereby ordered that said cause be set for hearing before the undersigned in the United States Court Room at Des Moines, Iowa, commencing on the 12th day of July, A. D. 1911, at 10 o'clock A. M. of said day, and continuing from day to day until the same has been fully completed as provided by said order.

Witness my hand this 15th day of June, A. D. 1911.

(Signed) ROBT. SLOAN,
Special Master.

The above named complainant and defendants are hereby notified of the above order, and are hereby summoned to appear at the time

and place therein fixed and proceed with the hearing of said cause as provided by said order of reference.

Witness my hand this 15th day of June, A. D. 1911.

(Signed) ROBT. SLOAN,
Special Master.

133 We, the undersigned solicitors for the complainant, do hereby acknowledge due, legal and timely service of the foregoing order and summons for ourselves and the complainant at Des Moines, Iowa, this 17th day of June, A. D. 1911.

CARR, CARR & EVANS,
GUERNSEY, PARKER & MILLER.
READ & READ.

The undersigned solicitors for defendants hereby acknowledge due, legal and timely service of the foregoing order and summons for defendants and ourselves at Des Moines, this 23rd day of June 1911.

(Signed) ROBERT BRENNAN,
H. W. BYERS,
Solicitors for Defendants.

Filed July 12, 1911. Wm. C. McArthur, Clerk, By Louis J. Adelman, Deputy.

134 And thereafter to-wit: On the 30th day of October A. D. 1911 there was filed in said cause a Notice that application for an order directing the Complainants to turn over certain exhibits to the defendants will be filed which said Notice is in words and figures as follows to-wit:

In the Circuit Court of the United States in and for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, Defendants.

On Hearing Before Hon. Robert Sloan, Special Master.

Notice.

To Des Moines Gas Company, Complainant, or George H. Carr, W. L. Read, N. T. Guernsey, Its Counsel of Record:

You will please take notice that application for an order directing the complainant and its officers to turn over and deliver to defendants' counsel certain exhibits will be filed with his Honor, Robert Sloan, Special Master herein, a copy of which application and

motion is hereto attached for your information. Said application will be presented on the 27th day of October, 1911, or as soon thereafter as practicable, to his Honor, Judge Sloan, Special Master.

(Signed) ROBERT O. BRENNAN.
H. W. BYERS.
ESKIL C. CARLSON.

Service of the foregoing notice is hereby accepted and receipt of copy of the application therein referred to acknowledged this 25 day of October, 1911.

(Signed) GEO. H. CARR.
W. L. READ.
N. T. GUERNSEY.

(Endorsed:) Filed Oct. 30, 1911. Wm. C. McArthur, Clerk, By Louis J. Adelman, Deputy.

135 And thereafter to-wit: On the same day October 30th A. D. 1911 there was filed in said cause an Application for order requiring the complainant to turn over certain exhibits to the defendants which said Application is in the words and figures as follows to-wit:

In the Circuit Court of the United States in and for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,
v.
CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, Defendants.

On Hearing before Hon. Robert Sloan, Special Master.

Application for an Order Directing the Officers of the Complainant Company to Deliver to Counsel for Defendants Certain Exhibits.

The defendants respectfully move the Master for an order herein directing Mr. Jansen Haines the President of Complainant Company, and one of the witnesses herein, to turn over and deliver to counsel for the defendants Defendants' Exhibits Nos. 27 and 28; Exhibit No. 27 being the Des Moines Gas Company's stockholders' and directors' Minute Book with opening entry under date of March 1, 1906; Exhibit 28 being loose leaf or draft of Minutes of stockholders' and directors' meeting of the Des Moines Gas Company, commencing with entries under date of April 24, 1911; and as grounds therefor states:

That Exhibits 27 and 28 contain the record and minutes of the action of the stockholders and directors of the Des Moines Gas

Company covering a period beginning about March 1, 1906, to and including July 24, 1911. That both of said exhibits were offered in evidence in this case by the defendants for the purpose of assisting the Master and counsel in ascertaining the value of complain-
136 ant's property used by it in the manufacture and distribution of gas in the city of Des Moines, and in so far as possible showing the receipts and expenditures for all purposes of the said complainant Gas Company in the operation of its plant in the defendant City. That these two exhibits are made up and composed of several hundred pages, upon each page of which are numerous entries.

That said exhibits have not been copied into the record so far made in this case, nor does your applicant have copies thereof.

That on the 14th day of October, 1911, the further hearing in this cause was postponed to be resumed on the 14th day of November; that said postponement was ordered largely, if not entirely, for the purpose of giving counsel on both sides time and opportunity to make preparation for oral presentation of their respective sides to your Honor; that in making such preparation counsel for your applicant finds it not only important but necessary to have access to said exhibits 27 and 28, and to make constant reference thereto.

That both of said exhibits are in the possession and under the control of Mr. Jansen Haines, president of the complainant Company; that on or about the 21st instant Mr. Eskil Carlson of counsel for the defendant called upon Mr. Haines and asked for said exhibits for use in preparing the argument for the defendant, stating to Mr. Haines at the time that the exhibits would be returned each night for safe keeping. That the said Haines refused to permit counsel to have said exhibits, but offered to permit counsel to examine the exhibits and have access to them in the office of the complainant Company.

That upon the refusal of the said Haines so made as above stated, request was made of Mr. George H. Carr, counsel for the complainant company for said exhibits, and Judge Carr, as your
137 applicant is informed and believes, stated to said Haines that if he had charge of said exhibits he would not hesitate to permit counsel for the defendant to take the same, but, notwithstanding such suggestion by counsel the said Haines refused to allow counsel for defendants to take said exhibits and still refuses.

The defendants further state that said exhibits contain items of competent and material evidence not only important but vital to an intelligent and just determination of the issues in this case. That on account of the large number of exhibits and the great mass of evidence and records as well as on account of other engagements and demands upon the time of defendants' counsel it is neither convenient nor possible for them to go to complainant's office to prepare for the final presentation of this case to your Honor.

Wherefore, The defendants pray that an order be made and endorsed hereon commanding and directing the complainant Company and the said Jansen Haines, its president, to forthwith turn over and deliver to counsel for the defendants the said exhibits 27

and 28 for such time and under such conditions as to your Honor may seem appropriate and just under all the circumstances.

(Signed) ROBERT O. BRENNAN,
H. W. BYERS,
ESKIL C. CARLSON,
Solicitors for Defendants.

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Eskil Carlson, being duly sworn upon oath depose and say; that I am one of the counsel for the defendants, that I have read and know the contents of the foregoing application, and that the statements and averments above are true as I verily believe.

(Signed) ESKILL CARLSON.

138 Subscribed and sworn to before me by the said Eskil Carlson this 25th day of October, 1911.

[SEAL.] (Signed) R. H. GOLDSMITH,
Notary Public.

(Endorsed:) Filed October 30/11. Wm. C. McArthur, Clerk.

139 And thereafter to-wit: On the same day October 30th, A. D. 1911 there was filed in said cause a Resistance to the Application for an order requiring the Complainant to turn over certain exhibits to the defendants which said Resistance is in the words and figures as follows to-wit:

140 In the Circuit Court of the United States for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainants,
vs.
CITY OF DES MOINES et al., Defendants.

Resistance to Application for an Order Directing Jansen Haines, President of Complainant, to Turn Over and Deliver to Counsel for Defendants, Defendants' Exhibits 27 and 28.

Complainant respectfully resists the application of defendants for an order requiring it to turn over and deliver to counsel for defendants, defendants' Exhibits 27 and 28, for the reasons set forth in the affidavits hereto attached, and for the further reason that counsel for defendants are not entitled, as a matter of right, to take these exhibits into their custody, but are only entitled to an order directing complainant to deposit the documents in the hands of the clerk of this court, with leave to the defendants to inspect them and take copies. In this case no such order is necessary, as full op-

portunity is offered defendants to inspect them and to take copies if they desire.

(Signed) W. L. READ,
N. T. GUERNSEY,
GEO. H. CARR,
Solicitors for Complainant.

(Endorsed:) Filed Oct. 30/11. Wm. C. McArthur, Clerk.

141 UNITED STATES OF AMERICA,
Southern District of Iowa, County of Polk, ss:

I, Geo. H. Carr, being duly sworn, depose and say that on the 21st day of October, 1911, Mr. Eskill Carlson, one of the counsel for defendants herein, called at my office; he stated that he had just come from Mr. Haines' office; that he had requested from Mr. Haines that he be permitted to take to the office of counsel for defendants, defendants' exhibits 27 and 28, Exhibit 27 being the Des Moines Gas Company Stockholders and Directors Minute Book, with opening entry under date of March 1st, 1905; Exhibit 28 being loose leaves or drafts of the minutes of the stockholders and directors meetings of the Des Moines Gas Company; and that Mr. Haines had declined to permit the exhibits to be taken from his custody, but that he had offered to afford every facility to counsel for defendants to examine the records at the office of the Company. I asked Mr. Carlson what the objection was to that, and he stated that it would subject them to some inconvenience. I then went down to Mr. Haines' office and had an interview with him. He told me, as set forth in his affidavit hereto attached, that he had told Mr. Carlson he would produce the exhibits at the office of the Company for the inspection of counsel for defendants, giving them every facility and every opportunity for making as full and thoro an examination of the exhibits as they might desire, and would permit them to copy the same or any portion thereof, if they desired. He stated that his reasons for not turning the records over to the possession of counsel for defendants were that they were the only copies the company had of the minutes of the Meetings of its stockholders and board of directors; that they were of the greatest value to the company and could not be replaced; that they had been entrusted to his care, and

142 that he felt personally responsible for their safe keeping, and that unless it was his duty to permit them to go out of his custody, he did not want to do so, at the same time telling me that if I directed him to turn them over, he would do so. I told Mr. Haines that I did not think they were entitled to take them from his custody as a matter of right, and that feeling the personal responsibility he did as to their safe keeping, I would not direct him to surrender their custody, in view of the fact that he had offered to afford every facility for their examination at the offices of the Company, and that counsel for defendant would be put to only a slight inconvenience in making the examination at the offices of the Company.

I thereupon returned to the office and advised Mr. Carlson of the result of the interview, telling him I did not think, under the circumstances, that I ought to ask Mr. Haines to permit the records to leave his custody.

And further deponent saith not.

(Signed) GEO. H. CARR.

Subscribed and sworn to before me by the said Geo. H. Carr this 26th day of October, 1911.

[SEAL.] (Signed) GENEVIEVE WILLIAMS,
Notary Public, Polk County, Iowa.

(Endorsed:) Filed October 30/11. Wm. C. McArthur, Clerk.

143 In the Circuit Court of the United States for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,

vs.

THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe and R. O. Brennan, Defendants.

Affidavit of Jansen Haines.

UNITED STATES OF AMERICA,
Southern District of Iowa, County of Polk, ss:

On the 21st day of October, 1911, Mr. Eskil Carlson, Assistant City Attorney, called at my office and stated that General Byers, Corporation Counsel, had sent for the minute book and loose leaves of minutes of the stockholders and Board of Directors of the Des Moines Gas Company. I told Mr. Carlson that I would let Mr. Byers come to the office and examine these exhibits and make notes or memoranda, or copy them, but I did not want to let them go out of the office, as they were valuable records. I repeated that I would provide every facility for Mr. Byers to examine and copy the exhibits at the office at any time.

A few minutes later Judge Carr came in and stated that Carlson had been to see him about these exhibits, and I told Judge Carr of my interview with Mr. Carlson and what I had said. I told Judge Carr my reasons for not giving up these records, which were that they are the only records that this company has of the minutes of the meetings of its stockholders and Board of Directors; that the books were intrusted to my custody and that I was personally responsible for them; that they could not be replaced if lost or destroyed, and that unless it was clearly my duty I would not give them up; but that I would, if he directed me to do so. Judge Carr stated to me that what I had done was proper, and that he would not direct me to give them up.

I have at all times during this trial provided three suitable private

rooms, which were at the disposal of the City's accountants,
144 engineers or attorneys, for the examination of our papers and records, and have provided light, heat and suitable chairs, tables and stationery for the defendants in this case, and they have frequently availed themselves of these facilities for the examination of our records. The City Attorney's offices are but a few minutes walk from these offices, and these offices are open from nine o'clock in the morning to six o'clock in the evening, after which time the records are placed in fireproof vaults till morning.

(Signed) JANSEN HAINES.

Subscribed in my presence and sworn to before me by the said Jansen Haines this 26th day of October, A. D. 1911.

[SEAL.] (Signed) KATHERINE HARRIS,
Notary Public in and for Polk County, Iowa.

Filed Oct. 30 1911. Wm. C. McArthur, Clerk.

145 And thereafter to-wit: On the same day October 30th, A. D. 1911 there was filed in said cause an order of Hon. Robert Sloan, Special Master in Chancery requiring the Complainant to turn over the said certain exhibits to the defendants which said Order is in the words and figures as follows to-wit:

146 In the Circuit Court of the United States for the Southern District of Iowa, Central Division.

DES MOINES GAS CO.
vs.
THE CITY OF DES MOINES et al.

Order.

The Defendants apply for an order in the above entitled case, requiring Jansen Haines, President of the Complainant Co., to turn over and deliver to counsel for the defendants, Defendants' Exhibits No-. 27 and 28, offered in evidence in the above entitled case on the hearing thereof, before the undersigned Special Master. Exhibit "27" is the record of complainant company for the stockholders and directors' meetings and proceedings, and, "Dtf'ts' Ex. 26" is the draft of minutes of stockholders' and directors' meetings not yet recorded in book "ex. 27."

These exhibits are now part of the records of the Court in said case, and under the custody of the court, and neither party has the right to take them, therefrom, without leave of court, so to do; but it is usual to permit counsel so to do, to enable them properly to prepare their argument and evidence in the case. In my judgment they will be perfectly safe, in the custody of either counsel for complainants or of the defendants, and, that the order hereinafter made is perfectly legal and proper.

Jansen Haines has no right to take them from the court except by leave, and he has no right to demand that counsel for defendants should only be allowed to examine them in his office.

It is therefore ordered that the said Jansen Haines, on or before the 31st day of October, A. D. 1911, deposit with the Clerk of the United States Circuit Court at his office in the City of Des Moines, Iowa, "Def'ts' Ex. No-. 27 & 28," there to remain until
147 otherwise ordered by the court, with the right, however, for counsel for the complainants or of counsel for defendants, freely to make an examination of said exhibits, and the clerk of the court will receipt therefor and retain custody thereof, until, after otherwise ordered by the court, except as herein otherwise ordered.

It is, however, further provided and leave is hereby granted to the clerk, aforesaid, to permit counsel for the defendants to withdraw said exhibits from the records and retain possession thereof for four days, taking their receipt therefor, they becoming responsible therefor and for their safe keeping and rquiring said counsel to return said exhibits within the time above provided. To give counsel for complainants an opportunity to examine said exhibits, counsel for the defendants are required to exercise their right to withdraw said records between the 30" day of Oct. A. D. 1911, and the 7th day of November, A. D. 1911, and counsel for complainants between Nov. 6 and Nov. 14, 1911.

Like permission is hereby given to counsel for complainants to withdraw said exhibits, to be exercised within the time above provided.

Signed this 27th day of October, A. D. 1911.

ROBT. SLOAN,
Special Master.

In duplicate.

(Endorsed:) Filed October 30/11. Wm. C. McArthur, Clerk.

148 And thereafter to-wit: On the 5th day of April, A. D. 1912, there was filed in said cause the Report of Robert Sloan, Esq., Special Master in Chancery, which said Report is in the words and figures as follows to-wit:

149 Filed April 5, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

In the District Court of the United States in and for the Southern District of Iowa, Central Division. In Chancery.

Number 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, Defendants.

Report of Robert Sloan, Special Master.

To the District Court of the United States in and for the Southern District of Iowa, Central Division. Hon. Smith McPherson, Judge:

Pursuant to an order of May 16, A. D. 1911, of the Court, the undersigned Special Master, after conferring with counsel for both Complainant and Defendants, duly ordered that the hearing
150 of the above entitled cause before him set for the 12th day of July, A. D. 1911, in the United States court room at Des Moines, Iowa, at 10 o'clock a. m. and issued summons and caused the same to be duly served accordingly on counsel for Complainant and Defendants.

Pursuant thereto at the time and place therein named, the hearing commenced, Complainant apearing by William L. Read, George H. Carr and N. T. Guernsey for their respective firms, and the Defendants by R. O. Brennan, City Solicitor, and H. W. Byers, Corporation Counsel of the City of Des Moines. And thereupon by consent of counsel above named, J. P. Blaise and Frank C. Walrath were duly appointed stenographers to report accurately and correctly the evidence and all the evidence offered in the above entitled cause as per order duly made on the 12th day of July, A. D. 1911, which said appointment was duly accepted by each of them and they were duly sworn and thereupon the hearing and taking of the evidence commenced and continued from time to time until the 29th day of November, 1911, when the arguments were completed and the case finally submitted, all of which will fully appear by the certified transcript of the evidence contained in four separate bound volumes, which together with the exhibits referred to and offered in evidence as shown in said transcripts, constitute and contain all evidence offered on the trial of said case before me by either party and objections of counsel thereto, and such rulings as were made by me therein, during the progress of the trial.

My purpose in this report will be to state my findings of fact and

legal conclusions, with the reasons therefor, in such manner that the Court may readily review them. In other words, to make such a report to the Court as I would desire one were our positions reversed.

In the main the questions of law involved are well settled, hence, no long list of authorities are given in the report.

151 The oral arguments of counsel by agreement were duly reported and transcripts then made and are part of the files in the case, also written briefs of counsel. The costs of reporting and transcribing them are, by agreement, to be taxed as part of the costs in the case.

The initials M. C. F. throughout the report mean one thousand cubic feet in measurement of gas.

152 The Special Master begs leave to report as follows:

1. That the Complainant, the Des Moines Gas Company is a corporation duly organized under the laws of Iowa, on or about the 28th day of February, A. D. 1906, and duly authorized to commence business at the date thereof. (A copy of its Articles of Incorporation are hereto attached, marked "Exhibit 'A'" and made a part of this report.)

2. The Council of the City of Des Moines, on the 27th day of December, duly enacted Ordinance No. 1767, which was duly published and its terms, in force from and after January 1st, 1911. (A copy of said Ordinance marked Exhibit "B" is hereto annexed and made a part of this report.) That prior thereto the Complainant had been operating its plant under the provisions of the Ordinance No. 724, as amended by Ordinance No. 751 of said City. (A copy thereof and amendment thereto marked Exhibit "C" is hereto annexed and made a part of this report.)

3. It appears from the evidence in the case, that the establishment of the Complainant's plant for the manufacture and distribution of gas began during the year 1864. It was owned and operated by the Capital City Gas Light Company, until March 1st, 1906, when the Des Moines Gas Company was duly organized under the laws of Iowa, and the entire property, real and personal, of the Capital City Gas Light Company, duly conveyed to it, and the plant has been owned, controlled and operated by the latter company ever since, and it still owns and controls it. It appears from the evidence that The United Gas Improvement Company of Philadelphia, Pa., became the owner of the entire stock of the Capital City Gas Light Company on or about June 1st, 1886, and its authorized capital stock was

153 then 3,000 shares of par value of one hundred dollars each, and later on, or about the 1st day of May, 1897, by proper proceedings, its capital stock was increased to 6,000 shares of the par value of one hundred dollars each. (Vol. 3, page 3148.) The growth of the City of Des Moines and increased demand for gas rendered it necessary, not only to increase its manufacturing facilities, but also to extend its mains and add many additional house and street lamp services, as well as to install many additional meters. In so doing, the Capital City Gas Light Company became indebted on account for cash advanced, and otherwise, to The United Gas Im-

provement Company to the amount of $105,526.49 (Defendant's Exhibit No. 30, page 3), and also for the 1,132 M. C. F. Holder $103,958, at the time of the organization of the Des Moines Gas Company on the 28th day of February, A. D. 1906. It also owned $400,000 on bonds secured by mortgage on its plant. On the 1st of March, 1906, the Capital City Gas Light Company transferred and conveyed all its property, real and personal, together with its rights, privileges and franchises in the City of Des Moines to the Complainant and passed out of existence. The authorized capital stock of the new company was 22,500 shares of the par value of one hundred dollars each. At the time of this transfer, the new company executed to The United Gas Improvement Company $800,000 stock contracts bearing 6 per cent interest until paid, and also authorized and executed to the Commercial Trust Company of Philadelphia, Pa., a deed of trust to all property of the Des Moines Gas Company transferred to it as aforesaid to secure the payment of $1,500,000 5 per cent gold bearing interest bonds payable semi-annually, which were to be issued as provided by said mortgage. The sum of $240,000 bonds were issued at the date of execution of the mortgage, one-half thereof used in payment of the debt due The United Gas Improvement Company for the 1,132 M. C. F. Holder, and
154 the other to pay the amount due on account to said company.

On the 1st day of January, 1907, there were also issued $400,000 of these bonds to pay the bonds then due of the Capital City Gas Light Company. When the transfer was made $45,000 was issued to pay for the Valley Junction property. This is a town adjacent to Des Moines, and something like six miles from the gas works of the Complainant, to which the gas is transmitted by high pressure mains through the city, by a distribution system therein. No evidence has been introduced of the value of the Valley Junction property, except a high pressure main, which is also used in distributing gas in the city. Extensions and improvements have been made to the works and distribution system since the 1st day of March, A. D. 1906, up to the 1st day of January, A. D. 1911, to the amount of $412,704.51, and as provided by the mortgage bands have been issued by the trustee to the amount of $1,097,000 and these bonds have all been purchased by The United Gas Improvement Company. The total discount on these bonds is $33,950; $267,000 discounted at 10 per cent and the balance, $145,000, at 5 per cent. No dividend had ever been declared by the complainant on its stock but the interest upon the stock contracts and bonds has been regularly paid, and $389,000 has been paid on the principal of the stock contracts, leaving January 1st, 1911, only $411,000 unpaid.

These payments have been made out of the profits derived from the operation of the plant. The Complainant corporation was organized by the direction of its stockholders, and the transfer from the old to the new company was duly authorized by the stockholders The officers of the Complainant are elected by The United Gas Improvement Company, who own and control all the stock, and these officers are in the main, also, officers of The United Gas Improve-

ment Company, and the latter company through them con-
155 trol the Complainant Company and its business But the legal title and ownership of the gas plant, together with its rights, privileges and franchises, is in the Complainant, and it holds the same in trust for its stockholders, as any other Iowa corporation and has the right to maintain any action for the protection thereof, and the real parties in interest are bound by the result thereof.

II.

While the Capital City Gas Light Company owned and operated the gas plant in question there arose a controversy, evidently in regard to the rates which it should charge for gas, and a suit was instituted in this court in relation thereto, but the pleadings and proceedings in said case were not offered in evidence in the case, except a transcript (Defendants' Exhibit Nos. 39 to 42, inclusive) of a part of the evidence which purports to have been offered therein, and hence, the result of said action does not appear except as indicated by Ordinance No. 724, as amended, of the City of Des Moines. (Exhibit "C" to Master's Report.)

The provisions of this ordinance were evidently accepted by the Capital City Gas Light Company and the Company operated, extended and improved their plant thereunder until March 1st, 1906, when it was succeeded by the Complainant, which, since that time and up to the 1st day of January, 1911, has been operated by the Complainant under the provisions of said ordinance.

Among other things therein contained, this ordinance provided as follows:

1. That for the years 1896 and 7 the price of gas should be $1.30 per M. C. F. net; for the years 1898 and 9, $1.25 net; for the years 1900 and 1, $1.20 net; for the years 1902, 3 and 4, $1.15 net; and for the year 1905, $1.10 net; and for the years 1906 to 1910,
156 $1.00 net with the proviso that it may add 10 cents per M. C. F. to each of these prices but shall be required to discount that sum for the payment by or before the 15th day of the month following that in which the gas was consumed.

2. That the City pay for the term of fifteen years for each street lamp, $18.00 per year, until they should reach 500, when it should be reduced to $17.00 for each lamp.

3. That its gas should not be less than 22 candle power.

III.

The City of Des Moines on the 27th day of December, A. D. 1910, passed Ordinance No. 1767, which reduces the price of gas to 90 cents per M. C. F. without the right to add anything for a failure to pay on or before the 15th day of the month following that in which the gas was consumed, and requires the same candle power and the price for suplying the same to the city is also fixed at 90 cents per thousand cubic feet of gas, and requires it to pay, as a license or occupation fee, for its mains and services in the streets and alleys, 2 per cent of its gross receipts beginning January 1st, 1911. This Ordi-

nance, by its terms, applies to all companies manufacturing and distributing gas, but, as there are none other in the city, it practically applies only to the Complainant. The license fee required as above stated is the same as the old ordinance.

This ordinance, as did the old ordinance, denies that the Complainant has a franchise from the city, and provides that it shall not "be construed to in any manner recognize any franchise claimed by any person, firm or corporation to use the streets, highways, alleys, avenues or public places of said city for the purpose of laying or maintaining mains and pipes in supplying or distributing gas to said city or its inhabitants." However, it appears that the Complainant, as well as its predecessor, has been so using its streets,
157 alleys and public places therefor for many years last past, with the full knowledge and consent of the city, and its inhabitants, and has invested a large amount of money in so doing, and has paid the city the two per cent on its gross receipts and still owns and controls the same and has rendered to its customers satisfactory service during the time it has been maintaining and developing its plant and business.

The new ordinance does not deny the right so to do, provided it complies therewith. It would be as bad for the city as for the Complainant to require the Complainant to either abandon the mains or remove them, on the ground that it has no franchise and no right in their use, for the lack of a franchise, and there is no claim to that effect by the city. It is simply, by this ordinance, exercising its power over public utilities to regulate the rate at which the Complainant shall furnish gas to its consumers. This brings us to the real issue in the case, which is:

"The validity of Ordinance No. 1767, enacted December 27th, 1910." Which Exhibit is "B" to this report.

158 *Right to Regulate Rates.*

IV.

There is no question of the right of the city council of the City of Des Moines to regulate the rate at which the Complainant may furnish gas to the city and its inhabitants. It is distinctly conferred by Sections 724 and 725, page 131, Supplement of 1907. The latter section provides also that "these powers shall not be abridged by ordinance, resolution or contract," and hence, the powers confirmed by these sections may be exercised at any time, notwithstanding any previous ordinance, resolution or contract, unless possibly the terms of a contract in existence, at the time of the enactment by the legislature, would be violated thereby. This question, however, is not involved in this action. The power to regulate rates does not carry with it the power to destroy, nor the power to establish rates for any public utility, so low that they would be confiscatory.

The power to establish rates is legislative, and when the rates afford the public utility a reasonable compensation for the use of this property, then, the ordinance by which such rates are estab-

lished, is valid and binding. The proper exercise of this power depends upon facts which are not of common knowledge, but which must be ascertained and determined, with reference to the public utility affected thereby. The value of the property and the cost of manufacturing and distributing gas to its consumers are important factors in a proper exercise of the legislative power conferred by these sections upon the City Council, but the legislature of this state has provided no procedure to be followed by the council in
ascertaining and determining the facts necessary and essen-
159 tial to proper exercise of the power to regulate rates, and
hence, no matter what means the council may adopt for determining them the validity of the ordinance is not affected thereby, unless the rates should be confiscatory. Of course, upon a hearing in which both parties are represented, and evidence heard pro and con in their determination, a strong presumption would arise in favor of the result. The Supreme Court of the United States has so clearly and fully expressed its views on this subject in the opinion delivered in the case of Knoxville Water Co., 29 Sup. Court Reports, 149-154 (212 U. S., 1) that we give the following quotation therefrom:

"Regulation of public service corporations, which perform their duties under conditions of necessary monopoly will occur with great or greater frequency as time goes on. It is a delicate and dangerous function and ought to be exercised with keen sense of justice on the part of the regulating body, met by a frank disclosure on the part of the company to be regulated. The courts ought not to bear the whole burden of saving property from confiscation, though they will not be found wanting, when the proof is clear. The legislature, and subordinate bodies, to whom the legislative power has been delegated, ought to do their part. Our social system rests largely upon the sanctity of private property, and that state or community which seeks to invade it will soon discover the error in the disaster which follows. The slight gain to the consumer, which he would obtain from a reduction in the rates charged by public service corporations, is as nothing compared with his share in the ruin which would be brought about by denying to private property its just reward, thus unsetting values and destroying confidence. On the other hand, the companies to be regulated will find it to their everlasting interest to furnish freely the information upon which a just regulation can be based."

There is no necessity of adding anything to the language of the Court just quoted. It is plain and clear, and expresses very plainly
and clearly the duties of the parties affected. In the present
160 case, sometime prior to the enactment of the ordinance in
question, an extensive correspondence was had between Hon. John S. MacVicar of the council, who had the matter in charge, and Jansen Haines, general manager at that time of the Complainant's plant at Des Moines, now its president, in relation to the value of the property, and the reduction of rates by the council. The council claims that it was entirely justified by statement of the facts in the letters of Mr. Haines, and other facts known to it, in passing this ordinance, while the Complainant claims that it was

treated unfairly and given no opportunity to show the value of its property and other facts necessary to a proper regulation of the rates which it was entitled to charge for gas. This correspondence may be found in Complainant's opening statement, page 4 to 16, inclusive, of the record, and are Complainant's Exhibit 7 to 14, inclusive. Much evidence was introduced on this subject by both parties. The mayor, as well as Mr. MacVicar, were examined on the subject and pretty extensively cross-examined on this subject. Much evidence I regard as immaterial. In my judgment, the failure to have such a hearing and investigation as hereinbefore indicated, robs the action of the council of the strong presumption, the result thereof would have induced in favor of the validity of the ordinance, and nothing contained in the letters of Jansen Haines in any way operates as an estoppel, to prevent the Complainant from establishing the real facts affecting the validity of the ordinance. On the other hand, the failure on the part of the council to have such a hearing does not change the rule as stated by Justice Sanborn in the case of Shepard vs. Northern Pacific Railway Company, in the following language:

"When a rate is made under legislative authority, the legal presumption is that it is fair and reasonable, and proof to the contrary must be clear, especially in cases in which the rates challenged
161 have never been in operation and the injunctions are sought while effect is yet speculative."

Shepard vs. Northern Pacific Railway Co., 184 Federal Report, page 807.

In the case of Wilcox vs. Consolidated Gas Company, 122 U. S., 19; 29 Supreme Court, 193, the Court says:

"The rates must be plainly reasonable to the extent that their enforcement would be equivalent to the taking of property for public use without such compensation as under circumstances is just both to the owner and the public. There must be a fair return upon the reasonable value of the property at the time it is being used for the public." San Diego Land and Town Co., vs. National City, 174 U. S., 739, 757. San Diego Land Co. vs. Jasper, 189 U. S., 439. Many of the cases are cited in Knoxville vs. Knoxville Water Co., just decided. (212 U. S., 1.)

"The case must be a clear one before the Court ought to be asked to interfere with state legislation on the subject of rates, especially before there has been any actual experience of the practical result of such rates."

These cases enunciate the rule very clearly and in very much the same language as Justice Sanborn in Shepard vs. Northern Pacific Railway, supra. It is perhaps true that in determining the value of the Complainant's property that a preponderance of the evidence under the circumstances would be sufficient but, it has not been necessary for me to adopt such a rule under the evidence in this case, because findings of value are not only sustained by a preponderance of the evidence, but also by such evidence, as clearly satisfies me of their correctness. It is true that the evidence is quite conflicting, but the conflict therein has been eliminated as far as

possible and when this is done, in my judgment, the conclusions reached are fully sustained by the evidence, which meet the requirements of the rule as enunciated by the Supreme Court
162 of the United States, as hereinbefore shown and at the same time are the same as would have been reached in case the rule only required a preponderance of the evidence to sustain them. In determining the value of the Complainant's plant, it has not been necessary to distinguish between preponderance of the evidence, and clear and satisfactory evidence. Under either rule, the result in my judgment should be the same.

163 *The Value of the Plant.*

V.

In the case of the Des Moines Water Company vs. The City of Des Moines, in this court, the opinion therein filed states the basis that must govern, in determining whether or not the rates fixed by the ordinance are reasonable, in the following language:

"In arriving at a conclusion as to what rates are lawful, we are to have ascertained the value of the plant. The question is, not what it cost, although such evidence is admissable as having a bearing. The question is not what some day the plant may be worth, although evidence with reference thereto may be considered as having a bearing. The question is:

"What is the value of the plant today? There must be a reasonable rate of interest or dividends allowed on the value of the plant. This rule is well settled by the Supreme Court of the United States in the case of Wilcox vs. Consolidated Gas Company, 212 U. S., 41, in the following language: 'There must be a fair return upon the reasonable value of the property at the time it is being used for the public.' Also in the case of Knoxville vs. Knoxville Water Co., 212 U. S., 1, in the following language:

"The first fact essential to the conclusion of the Court below is the valuation of the property devoted to the public uses, upon which the company is entitled to earn a return."—Page 9.

The original cost of the plant is not controlling. Original cost and present value are not necessarily the same, although in determining the present value—that is, the value when the new rates were established—the cost may have an important bearing, but such cost in no sense of the word is controlling. That is particularly true when the plant, as in the present case, has been the growth of years.

164 Under the circumstances it may have greatly depreciated, or increased in value, and hence the present value has authoritatively been held to be the test in determining whether or not the rates fixed by the ordinance are confiscatory. Neither the cost nor the investment are the test thereof. What is fair and reasonable value of the property when used for the public?

165 *The Real Estate.*

VI.

Of course, in a legal sense, the buildings, their contents and the yard structures are real estate, but, what is meant by the term "real estate" is simply the naked ground, minus all improvements situated therein or thereon. The works are on the east side of the river and not far from the business heart of the town, and a good natural location for gas works. On low ground, which is advantageous in connection with their distribution system throughout the city. It is contigious to the river, where water can be had for many purposes connected with the works. It is what is termed "trackage" property, so that coal, coke, oil and other material can be conveniently secured from the railroads, and is in what may be termed one of the best manufacturing districts of the city. It is in four tracts, according to the inventory (Complainant's Exhibit 15, pages 12, 13, and 14), which fully describes it and to which reference is made therefor. Briefly, it is all of Block "C," all of Block "B," except Lots 1 and 2, Lots 9 and 10 "M" (132 ft. square); Lots 3 and 4 in Block "K;" Lots 3, 4, 5, 6, and 7 in Block "T," adjacent to the river 200 ft. by 75 ft. 9 in. The evidence in relation to the value of the ground minus all of the improvements therein or thereon, unless it be that the lot has been raised to some extent artificially, shows that it has never been overflowed.

The Complainant's witness, H. M. Porter, puts the total value at $235,000 (Record, pages 383 and 5, Vol. 1); Mack Olsen, $232,400 (pages 288 to 312); R. R. McCutchen, $225,000 (pages 398
166 to 412); B. F. Kauffman, $223,670 (pages 234 to 7; R. P. Bolton, $221,160 (pages 332 to 347); and Defendant's witnesses, F. A. Mathis, $101,020 (Vol. 2, pages 2260 to 2263); B. S. Walker, $97,500 (Vol. 2, pages 2140 to 2141); A. O. Hauge, $97,000 (Vol. 2, pages 2192 to 2114); W. H. Arnold, $96,200 (Vol. 2, pages 2187 and 2189); A. S. Wilcoxen, $85,000 (Vol. 2, pages 2212 and 2213); E. C. Pease, $92,900 (Vol. 3, pages 3477 and 9). The references are to the pages where the total values are found, but attention is invited to the entire evidence of these witnesses. These witnesses, both for the Complainant and Defendant, appear to be excellent men, and qualified from their occupation and business to testify concerning the market values of this property, but they differ very widely in relation thereto and it is simply impossible to reconcile their evidence. The witnesses for Complainant appeared to be quite radical in their views as to the value of real estate and the future of Des Moines, while the Defendants' witnesses were quite conservative. In my judgment the former are all too high and the latter too low. As a rule, under such circumstances, it has been my experience that the true value lies betwe-n them and have reached the conclusion that $150,000 is about right. In my judgment, should the Complainant sell their property, and undertake to change their location, they could not get as good a place for less than

$150,000 and it is very doubtful if they could get it for that. It is useless to multiply words on this subject, especially in view of the fact that all these men appeared to be honest and candid in their evidence with reference to the property. It is, however, nothing new to find a very wide difference in opinion of witnesses in relation to the value of real estate, which often renders it difficult to reach correct conclusions.

167 *Reproduction.*

VII.

In my judgment, the only practical way to determine the reasonable value of the buildings, their contents, the yard structures and the mains, house and street lamp services and meters, is by the process of estimating the cost of reproducing them new, and then estimating the depreciation which should be deducted, in order to obtain their present value. It would be mere guess work to undertake to do so, by introduction of witnesses, and obtain their judgment as to their value. The evidence relating to the value of the real estate certainly illustrates the futility of any other course. It would be mere guess work. The difficulty is great enough even in undertaking to ascertain the present reasonable value of the property, by the process of reproduction, when, the conflict in the evidence of the different engineers is considered in this case, but it is possible through this process to reach a conclusion that is satisfactory, at least, by properly considering their evidence, and guarding against either over or under valuation.

This mode of determining the reasonable value of the property affected by the rate regulation enacted by legislative authorities is approved in the following cases:

Knoxville vs. Knoxville Water Co., 212 U. S.

168 *The Inventory.*

VIII.

The Complainant causes an inventory in detail to be made of the buildings, their contents, the yard structures, mains, house and stret lamp services, drips, valves, meters, guages, tools used at the works, in the distribution system, meters in stock—in fact of everything belonging to the gas works, including the furniture, not only of the general office, but also at the works, as well as of the books of the company. This inventory is Complainant's Exhibit 15, which shows in detail all the property of the Complainant.

Complainant's Exhibit 16 contains drawings of much of the machinery and buildings, giving the sizes and dimensions thereof. The correctness of the inventory of the mains is shown by the evidence of E. P. Walter, who was requested on cross-examination to prepare a schedule of the mains laid since the year 1889, from the books, and did so; and this schedule so prepared, was verified by

witness (Vol. 2, pages 2063 to 2069, inclusive), and offered in evidence in this case. This exhibit shows the age of the mains and the mains laid each year since 1889 to 1910 and is Complainant's Exhibit 37.

This witness prepared Complainant's Exhibits Nos. 17 and 18 (Vol. 1, page 509). These Exhibits are maps of Des Moines of the eastern and western parts thereof and show the streets in which the mains are laid and the size thereof.

Henry Moul has been in the employ of the Capital City Gas Light Company and Des Moines Gas Company, after the former company passed out of existence, and is still in its employ, since the fall
169 of 1886 as a common laborer for about three years at the first, and since then as foreman of the extension of mains and new service work, continuously (Vol. 1, page 543), and after these maps were made, went over them with Mr. Walter for the purpose of verifying them, and testifies to their correctness. (Vol. 1, pages 559 to 562, inclusive.)

This witness shows remarkable familiarity with the main system of the Complainant, but it is not a matter of wonder, when we consider that it has been his sole business since 1889. There has been maintained a card record of their installation showing the place where laid, cost of labor, and other matters connected therewith, and it was from these cards that Walter made the schedule No. 37 aforesaid. Of course the mains are not visible, and their location and size could not be determined by actual examination, but when the evidence of Walter and Moul is examined and considered, the evidence is quite satisfactory as to the location, character, size and length of the mains, as well as the material out of which made, and the soil in which they were laid. (Walter's evidence is found on pages 486 and 542 and again Professor Marks in his testimony, which will be noted here from 705 to 723, and Henry Moul from 543 to 704.)

W. F. Broadnax, a gas engineer, made the inventory of the manufacturing plant and office contents (Vol. 1, pages 430 and 431) and his work is included in Complainant's Exhibits 15 and 16, beginning November 4th, 1910 (435 to 485).

When the evidence of this witness is examined, it will be found that the inventory from pages 1 to 208, inclusive, of Complainant's Exhibit 15, is shown to be reasonably correct as to amounts, character, material and measurement, including the machinery and apparatus in the buildings, as well as the yard structures and other matters contained therein. The number of brick, however, are disputed by—

170 after. (See also concession of counsel for the Defendants on pages 736 to 738.)

During the progress of establishing the correctness of this inventory there arose a question with reference to the production of the books and papers of the Complainant which will be found on pages 537 to 542. It afterwards resulted in an agreement that the books themselves and other records need not be produced in court, and

were not, except such as were actually required to be produced by request of the Defendants, virtually waiving their production, and conceding that the evidence of the experts for the Complainant, as well as for the Defendant, with reference to their contents, should be considered the same as though the books were actually produced and verified, and hence none of the books and records were produced, verified and offered in evidence, except such as Defendants might desire on cross-examination (Vol. 1, pages 709 and 10) and I have considered the evidence of the experts the same as though the books had been produced, verified and offered in evidence.

Some of them were offered in evidence by Defendants, and the Defendants have very full and complete expert report therefrom by James Hall, assisted by Mr. Sangster, acting for the firm of Marwick, Mitchel & Co., which is Defendants' Exhibit No. 30, and the Complainant has also, by W. J. Hagenah, a very competent expert, a report which is Complainant's Exhibit No. 23. The Court's attention to this matter is called here, because, in my judgment, the evidence of expert accountants is only competent in relation to books of account which involve numerous items, when the books themselves are introduced in evidence, because they are the basis of the evidence of the accountants and the primary evidence of what they contain and show, and experts are then competent to aid the court in reaching conclusions therefrom and the parties against
171 whom they are introduced have the right to test the correctness of the conclusion of the expert by the books themselves, and unless their production and verification is waived, the evidence of the expert for the Complainant is not competent.

However, this would only apply to the Complainant's expert, and not to the Defendants'. Their production and verification having been waived, the evidence in relation thereto is considered with the same force and effect as though they had been produced and verified.

But, to return to the inventory Exhibit 15 and its illustrations; Exhibit 16 and maps of the mains; Exhibits 17 and 18, which are self-explanatory. Their correctness are, in my judgment, fully established by the evidence and are shown to be a proper basis for the valuations placed upon the property therein mentioned by the engineers of the Complainant as shown in Complainant's Exhibits 20, 21 and 22 and Defendants' Exhibit No. 23.

172 *Valuation.*

IX.

The next question which presents itself for consideration is the valuation of the property by the process of reproduction. It is evident that in so doing, that it becomes necessary to obtain:

1st. The unit cost of reproducing the buildings, machinery and apparatus, as well as the mains, meters, house and lamp services and other matters connected with the distribution system and then, determining the proper overhead charges and the proper depreciation thereon in order to obtain the value of this property.

2d. To ascertain the value of the tools and personal property, necessarily used in connection with the plants and which is part of the property used by the Complainant in its business of manufacturing and distributing gas to its consumers.

3d. To ascertain and determine what is a fair and just allowance for working capital.

In obtaining the value of its plant, the Complainant employed three experienced consulting gas engineers, two of Chicago, Henry I. Lea and William Baehr, and one of New York City [William W. Randolph, and the Defendants one of New York City], Prof. William A. Marks. These engineers are each and all competent witnesses, and of large experience in their profession, and qualified to testify in relation to the value of the property of the Complainant. The inventory, Complainant's Exhibit 15, with the drawings and photographs and illustrations in Exhibit 16, were furnished each of them, and each and all of them visited the City of Des Moines, personally inspected the gas plant, and so far as
173 necessary so to do, also inspected the main system, as well as the soil in which the same were laid, and qualified themselves to testify in relation thereto and the value thereof. Their reports are evidence as follows:

Lea, Complainant's Exhibit 20; Baehr, Exhibit 21; Randolph, Exhibit 22, and Marks, Defendant's Exhibit 23.

These Exhibits were each and all duly verified by testimony of the witness making them, as will be seen by the record of the evidence (Lea, Vol. 1, pages 743 to 1295) and recalled as shown by the index, Baehr (Vol. 2, pages 1296 to 1592), Randolph (Vol. 2, pages 1592 to 1660), Prof. W. E. Marks (pages 2288 to 2795). They were each and all extensively examined in chief as well as cross-examined, and their evidence very fully and clearly rendered, their several reports as before stated, competent evidence, in connection with their evidence, and they were each and all duly offered in evidence by the parties calling them as witnesses. These four gentlemen are all experts in matters concerning which they have testified in this case and show themselves conversant therewith, and experienced engineers. The first three were employed by the Complainant to do this work and estimate the value of the property, and were well paid therefor and the same is doubtless true of the Defendants' Expert, Prof. Marks, although I do not recall any evidence to that effect, but it is his business and profession and it is not at all likely that he was working for nothing.

The report of Henry I. Lea, as will be seen by its examination, is much more in detail, than the other two of Complainant's witnesses. Baehr's next, but Randolph less so. These reports all show base figures of their valuation, except Randolph, as well as the overhead charges, and the estimated life of the several structures and mains, per cent condition, and the depreciation deducted to obtain the present value thereof. However, the Base figures
174 in Randolph's report is readily obtained by dividing his total valuations by 120 per cent, as he testified that he added as overhead charges, 20 per cent (Vol. 2, pages 1639 to 1640, inclusive).

As the 20 per cent for overhead charges in Randolph's report was added to the "Base Value or Net Reproduction Cost New," and in order to obtain the "Net reproduction cost new" of all his valuations, it is necessary to divide them by 120 per cent. Deducting 20 per cent from them would not produce the correct result. The Randolph report except the distribution system, shows a depreciation by items, rather than percentage, but he has depreciated the distribution system 10 per cent on the whole amount, without any detailed estimate thereof, according to the life of the property as depreciation is usually estimated. In the reports of all of these witnesses, the items cannot be compared, in anything like minute detail, as to their several valuations, except the totals of the buildings, of the contents thereof, of the yard structures, mains, meters, house and lamp services, and in the comparison of values, it is not undertaken, but, the totals of the "Net reproduction cost new" are compared in Exhibits to this report as follows:

"J," Miscellaneous; "D," Buildings; "F," Contents of Buildings and Yard Structures; "K," Distribution System. It has been very difficult for me at all times to be certain in relation to some of the items of the Randolph report, because he has failed to follow systematically the inventory and designate the values of the several articles and in one or two instances, I have been compelled in a measure to resort to an estimate, because of his valuation of a number of articles as a whole.

In their total units of valuation in the "Net reproduction cost new" it will be seen in comparing the above exhibits, that there is considerable difference in their unit valuation, and to average them, would give a result to which none of them agree.

175 There is always a tendency more or less manifest in different individuals and it was manifest on both sides in this case, to favor the party who has employed them. In so stating, no reflection is intended thereby on any witness, but simply to state a general rule, which experience teaches us, that it is necessary to observe in weighing evidence, which involves matters of opinion as contra-distinguished from matters of fact. This tendency should be guarded against, not only to prevent over-valuation, but also under-valuation, and so far as possible to eliminate it, not only in getting the "Net reproduction cost new," but also, in the overhead charges, as well as in the depreciation. What Henry I. Lea terms "Net reproduction cost new" is termed "Base" by Baehr, and in reaching the value of the property must first be obtained. "The Base Value" of any of the buildings, machinery, apparatus, or other property, is what it would cost to produce it at the present time new, without adding thereto, any overhead charges. Intelligently to examine any of these reports, and properly consider the evidence thereto, it has been my conviction, that this is the first thing to do.

As before stated, an average valuation gives a result to which none of them agree, and which in my judgment, would not result in obtaining a "Base" upon which to build, that would be sustained by evidence in the case. However, it will be observed by the Exhibits to this report as before stated, that the Complainant's three engi-

neers, in fact only agree on the lowest valuation on each item as shown in the comparative valuations as stated in the Exhibits to this report—"J," "F," and "K."

It is true that they do not all agree that it is not worth more than the lowest valuation made by any of them. But the greater includes the less, and when they value it more, then they do
176 agree that it is at least worth the lowest valuation made by any one of them, and we then have a "Base" value sustained by all three of them and sustained by the clear weight of the evidence in the case. Exhibits "C—*a*," "G," "H," "I," and "K" to this report, show the figures selected and the letters "B," "L," "R," show whose valuations they are, followed by the number and page of the exhibit from whence they are taken, and are intended to be self-explanatory and the totals are as follows:

Buildings—Exhibit "C—*a*"	$66,528
Contents of buildings—Exhibit "G"	137,892
Yard structures—Exhibit "H"	206,728
Miscellaneous—Exhibit "I"	57,912
Distribution system—Exhibit "L"	1,505,966
Total "Base Figures"	$1,975,026

177 *Overhead Charges.*

X.

In reaching the physical value of the plant in question by the process of reproduction, it is necessary to bear in mind that the present value thereof, represents much more than the machinery therein, the labor of installing and constructing them, and putting them in place to perform their various functions, ready for the manufacture and distribution of gas to its customers. Were the City of Des Moines without such a plant, and such a one as the Complainant now owns was proposed, it would be found that much more than the mere cost of labor and material would be expended. Such expenditures are termed overhead charges, and are as follows:

1. Time and money expended in the promotion of the enterprise, in the organization of the company and interesting capital therein, including, also, legal expenses, obtaining the necessary franchise, as well as the costs of incorporating the company.

2. Then a competent engineer must be employed to prepare the plans and specifications for the plant, and make the necessary surveys, and when the work began, to superintend the construction thereof, and see that it is done properly and according to plans and specifications. The successful operation of the plant depends largely upon its proper construction.

3. Then losses arising from accidents and injuries to workmen as well as the material during its construction, which is such an amount as the cost of insuring against such losses, which is between 1 and 2 per cent.

178 4. Contingencies are such expenditures as arise from the lack of foresight and care in preparing the plans and specifications. No matter how careful the engineer may prepare them, such expenditures invariably arise. Mr. Alvord testified that his allowance therefor would depend very much upon his knowledge of the engineer who prepared them, but that no matter who prepared them, they would invariably occur, and an allowance should be made therefor. The careful and thorough inventory in this case, reduces very greatly the allowance therefor.

5. The costs of administration, which include the time and money expended by the parties who are engaged in the enterprise, purchasing the material, procuring the money for their payment as needed, and generally superintending the entire enterprise during the construction of the plant.

6. It is estimated that it would take three years to complete the plant in question, and that at least one-half the *the* time the money invested therein would give no return, and that a loss of interest would result therefrom and that such loss should be included in the overhead charges.

7. Taxes during the construction.

The latter is regarded by me as very questionable. It is in a certain sense making taxes an asset rather than a liability, and the amount is so vague and uncertain that it has been given very little consideration and weight in fixing the overhead charges. Either the money or the property should pay taxes.

It must be borne in mind that these expenditures are all made during the promotion and construction of the plant, and are necessarily a part of the cost thereof. No overhead charges that do not inhere in and add to the cost thereof, should be allowed as a part of its physical value. It is not a question of what was actually expended therefor in the plant in question, but what would it
179 cost to reproduce a similar plant at the present time. It is through this method we reach the present value of this plant new, and then when it is properly depreciated, according to the condition, life and age of its various parts, we reach the present value of the plant in its present condition. It is not a perfect method, but it is the best method therefor, and results as nearly as possible in giving the present value of the plant. No other method known has proved so satisfactory. These overhead charges are treated by the various engineers under the subtitles of—promotion, organization, engineering, casualties, contingencies, administration, loss of interest and taxes, and briefly are as follows:

1. Henry I. Lea, (Page 1, Complainant's Exhibit No. 20) gives the total organization, which includes promotion, at $68,023. This also includes the salary of manager and expenses, which is part of the costs of administration. Then on page 4, same exhibit, he estimates 5 per cent for engineering and supervision, casualty liability 2 per cent, and omissions and contingencies at 8 per cent, in all, 15 per cent.

The letter of date June 24, 1911, gives the following total repro-

duction costs, on which the overhead charges are calculated, as follows:

Buildings	$106,934
Work equipment	510,179
Distribution system	1,963,027
Total	$2,580,140
On page 13 of the same exhibit we find that the net construction costs are	$2,056,022
Overhead charges	$524,118

These are in addition to the $68,023, but include the 15 per cent, as well as taxes and interest.

2. William A. Baehr, on page 5 of his report (Complainant's Exhibit 21) gives the overheard charges No. 1 on plants,
180 services and meters at 10 per cent on base value only, under the head of "Contingencies," and for engineering, 5 per cent on base, without contingencies added are same as above, and 1.5 per cent on real estate, on legal organization, liability, and fire insurance on "Base" only, including the foregoing, and meters in stock. Figures interest on full valuation at 6 per cent and taxes on same basis at 2¼ per cent. The interest is calculated only for half the time. These items, Nos. 1, 2 and 3, are referred to in his calculations.

The total items of additional cost are given by him on pages 18, 19 and 20 at $615,603 under that head.

3. W. W. Randolph added 20 per cent to the base cost of the buildings, machinery and distribution system, making them total:

Total	$2,520,514
Discounted 20 per cent	2,100,428
Overhead charges	$420,086

4. Prof. W. D. Marks allows 12½ per cent overhead charges on buildings and works equipment, but nothing on distribution system except services. This will appear throughout his report, when it shows the overhead charges allowed. He claims, however, on the mains this calculation of prices includes contractor's profit at 15 per cent, and regards it the same as an allowance to that extent. (Page — Record.) It is evidently not an overhead charge in any sense of the word.

5. The most satisfactory witness on this subject was John Alvord, although he differs very little in his percentage from that of W. W. Randolph. He is an engineer of large experience, and unquestioned ability. So far as contingencies are concerned, he would vary his estimate upon his knowledge of the engineer who prepared
181 the plans and specifications. (Record, Vol. 4, page 4860) and puts these charges at from 20 to 30 per cent, and regards 20 per cent as very conservative.

It is my recollection that his lowest percentage was 17 per cent, but I am unable to find it in the record, except it be in adding the various amounts together. He makes a very clear exposition of the reason for estimating overhead charges, beginning at the above page and continuing both in direct and cross-examination. (Record, pages 5000 to 5002, Vol. 4.) These show the various items comparing them, minimum and maximum, promotion and organization, up to the time actual work began, 2½ to 5 per cent; engineering, 5 per cent minimum and 7½ per cent maximum; taxes, insurance and casualties, 2 to 2½ per cent; administration, 2½ per cent; interest, 6 per cent on amount of money invested before it is started. This makes the minimum 17½ per cent without including interest. The allowance of interest before the plant is started is approved in Shepard vs. Northern Pacific Railway, 184 Federal Report, page —.

There is in this case a very complete inventory of the entire property, with no suggestion of any omissions in any part thereof, and hence, in my judgment, but very little should be added by way of overhead charges on this account. The organization expenses are shown to have been the sum of $6,922, and after careful consideration of the case, it is my conclusion that 15 per cent in addition to the cost of organization is a fair and just allowance therefor. There is undoubtedly no absolute rule for the amount that should be allowed and care should be taken that they should not be made excessive. They should be reckoned on an economical basis, rather than extravagant one. It is claimed that the evidence of Alvord on this subject is not rebutting and it is questionable, but it simply clarifies the evidence, and should be admitted. It does not change the result.

182 *Depreciation.*

XI.

The "Base Value" with the "Overhead Charges" added, give us the present value of the physical plant new, and in order to get the present value of the physical plant, it becomes necessary to determine to what extent this amount should be depreciated. The plant in question is not new, but much of it has been in use for many years and it is therefore, not as valuable as a new plant would be. The property has been in constant use, but its most valuable extensions and improvements have been made within the fifteen years preceeding the 1st day of January, 1911, and these extensions and improvements are therefore not subject to so great an amount of depreciation as those preceding that period. The Defendants take as the basis on which they reckon the investment, and such a basis indicates a depreciation of $40,597.51, and it appears, also, that there is deduction by both parties; the cost of the water gas patents to the amount of $172,096, presumably because the patents had expired. Otherwise, no account has been taken of

depreciation, unless it be the sum of $264,108.78 taken from the account of profit and loss and charged to plant and property.

The investment, however, is not the basis of depreciation, but the "Base" value, with the "Overhead Charges" added. What Prof. Marks terms "Residual" depreciation, is the correct theory upon which depreciation should be reckoned, not only for the past, but for the future. It contemplates that the plant will be kept in good repair, and so far as the evidence is concerned, that appears to have been true in the past. But no matter how well it has been
183 kept in repair there is, however, still the natural wear and tear of machinery, apparatus, and tools from their constant use, which necessarily lessen their value from year to year. The same is true, also by reason of physical decay, from the operation of the elements upon the various structures, such as buildings, mains, services, and holders. The length of time any structure, machine, apparatus, or tool will last depends very greatly on the material of which it is composed, and the use to which it has been applied, and hence, the average life thereof must necessarily vary greatly. The depreciation made by Lea and Baehr will be found to have been very carefully estimated upon the average life of the various structures and buildings, including machinery and apparatus, in fact, every part of the physical plant, and have carefully calculated therefrom, the composite life thereof, and the average condition per cent of the physical property, excluding real estate, as determined by William A. Baehr, is 88.2 per cent (Complainant's Ex. 21, page 17), and Henry I. Lea at 85.3 per cent (Complainant's Exhibit 20, page 9).

An examination of the report of Randolph is upon a different method entirely, as will appear therefrom (Complainant's Exhibit 22). It is made largely upon his judgment from observation and examination of the condition of the buildings, machinery and apparatus, and upon the distribution system, by deducting 10 per cent from the "Base Value" with "Overhead Charges" added. Prof. Marks does not depreciate the mains, but does the services and meters, as well as the buildings, as will appear from his report. On page 88 of Defendant's Exhibit 23, will be found a table showing the annual statement of gas sold to have been, since June 30, 1887, which totals 4,447,494,868 cubic feet, and estimate that adding thereto, the amount previously sold by the plant, would give five billion cubic feet of gas. In my judgment, this is a fair
184 and correct estimate thereof. The total depreciation by the professor on the entire plant is $363,363, and divided by 5,000,000,000, would give 7.26 cents per M. C. F. depreciation. This is his depreciation for the past, but getting his depreciation for the future he deducts the appreciation for the real estate, estimated at $64,235, and gets $299,128, which makes 5.982 cents per M. C. F., and then takes 6 cents per M. C. F. per annum as his estimate of depreciation for the future. (Defendants' Exhibit 23, pages 77 and 78.) In my judgment, this is not correct for two reasons:

1. Because there is no reason to presume that the physical plant depreciated more in the past than it will in the future

2. Because the Complainant is entitled to the benefit of the increase in the value of its real estate, the same as other people.

Henry I. Lea (Complainant's Exhibit 20, page 9):

Total reproduction cost new of property	$2,839,795
Present value	2,459,786
Depreciation	$380,009

This gives us 7.6 cents per M. C. F. per annum for Lea.

William A. Baehr (Complainant's Exhibit 21, page 17) gives the—

Total reproduction cost new at	$3,531,491
Present value	3,221,166
Depreciation	$310,325

Which on same basis gives 6.2 cents per M. C. F. as the rate of depreciation. William Randolph's total depreciation is $282,381, which gives in the same way 5.64 cents per M. C. F. as the rate of depreciation.

In estimating the life of the buildings and depreciation, both Lea and Baehr have shown great care in their estimates, and
185 the latter makes the rate 88.2 per cent on the entire physical plant, excluding real estate, while Lea makes it 85.3 per cent. In my estimate thereof, the rate found by Lea has been adopted. This report shows the—

Total cost new, with the overhead charges is	$2,271,280
Present value 85.3 per cent	1,937,402
Depreciation	$333,878

In the same way as the other we get a rate of 6.67 cents per M. C. F. It is a little curious that this corresponds with the average of the four engineers, as can be readily seen by adding them together and dividing by four.

The rate of depreciation in determining the present value of the property, calculated on a percentage basis, and reckoning 521,500 M. C. F., excluding Valley Junction, gives a trifle less than 1.8 per cent on the physical value, $1,937,402, and including Valley Junction, 532,000, something over 1.83 per cent on the same valuation.

Prof. Bemis figures on the sinking fund theory, and reaches a rate of 4 cents per M. C. F. for the future, but that rate applied to the past would increase the value of the plant over $130,000.

It must be borne in mind that depreciation cuts both ways, and

it would hardly be consistent to use a different rate for the future than in the past, and believing that the rate so obtained is fair and just to both parties, it will be used in the future.

It is proper to say here that this depreciation includes such apparatus as became obsolete and must be discarded for improved machinery.

The results above stated in relation to depreciation are reached in the manner above stated, and after examining the many phases of the subject by those whom I have regarded competent to
186 speak on the subject, and I was a little surprised that the result is the average of rate as given by the four engineers on the totals of their depreciation.

William A. Baehr, total depreciation	$310,325
W. W. Randolph, total depreciation	282,381
Henry I. Lea, total depreciation	380,009
Prof. Marks, total depreciation	363,363
Total	$1,336,078
Divided by 4	$334,019
Depreciation actually made	$333,878

By comparing these amounts it will be seen there is less than $150 difference in the total amount of depreciation, and the average depreciation of the four engineers, who are really the most competent to speak upon the subject, and hence my conclusion is that it is about as near correct as can be reached by the evidence in the case.

187 *Working Capital.*

XII.

The new ordinance deprives the Complainant of the right to add ten cents per M. C. F. to the price of gas, unless paid on or before the 15th day of the month following that in which the gas was consumed, and the evidence shows that the average working capital for the past five years was $120,000, and that when the ordinance went into effect, that they were then using $142,000 as working capital.

Without the means of enforcing prompt payment, and without any inducement so to do, on the part of their customers, in my judgment, the working capital should not be diminished and the amount allowed is $140,000

To this add real estate	150,000
To organization expenses	6,923
To meters in stock	6,603
Present value of physical property aside from above items.	1,937,402
Total physical value	$2,240,928

188 *Paving Over Mains.*

XIII.

The above valuation includes the cost of mains laid in the streets, when they were not paved at the time, and include the cost of taking up an replacing the pavements.

In estimating this amount, cost of lifting and restoring pavements over mains are used as a basis thereof. Henry Moul (Page 676, Vol. 1 Record) testified that about 25 per cent of the mains were laid under pavements, and of course, the balance were laid when no pavements existed. The total length of the mains as shown by the inventory is 970,923 ft. The total length of mains under pavement January 1, 1910, is 448,191 feet, which is about 46 per cent of the entire length of the mains. Twenty-five per cent of this total percentage, is the amount, according to evidence of Henry Moul, represents the mains laid under pavement. Twenty-one per cent of the amount of mains where no pavement existed when the mains were laid. This, under evidence, cannot be exact, but simply an approximate estimate. In estimating the cost of the pavements, as that given by Baehr was adopted, which is $305,870, to which add 15 per cent overhead charges, and we have $351,750, and depreciated by the percentage 85.3 heretofore used, makes $300,043, which divided according to the percentage, gives us $136,562, but as this is an estimate which I am inclined to believe, rather under, than over estimates the mains laid where pavements existed at the time, the amount is fixed at $140,000 in round numbers, which, in my judgment, is just to both parties.

If we adhere strictly to the process of reproduction to ascertain the value of the plant, then the above amount should be
189 counted, and under a like concession in this case, as in the Water Works Case, would very likely be justified. But the ultimate question in this case is the reasonable value of the property, and reproduction is simply the means adopted to determine it. When mains are laid in streets already paved, the work of taking up and replacing the pavement in so doing, is the work of the Complainant, and should be considered precisely in the same light as taking up and replacing the dirt when no pavement existed. It was done at the Complainant's expense. But where pavements are laid after the mains are installed, they have expended no money in taking up and replacing pavements. An allowance therefore, makes reproduction, the ultimate question, and not the reasonable value of the mains, unless it further appear that the value of the mains are enhanced thereby to the extent of the cost of taking up and replacing pavements, which is not shown in this case. When the whole evidence is considered, the contrary is shown.

The Complainant's engineers make no difference in estimating the life of mains covered by pavements, and those not so covered. The question was not asked them. Prof. Marks is the only one who testified that such is the case, and he testifies that it renders them practically immortal. Of course, if the value of the mains under

pavements is shown to have increased to the extent of the cost of taking up and replacing pavements, then it would be the Complainant's good fortune and he would be entitled to the benefit of it, just as he is entitled to the increase in value of any other property used in its plant. But if it does not, then in this respect, the process of reproduction instead of attaining its purpose, defeats it and my conclusion is that this amount of $140,000 should be deducted from the total amount hereinbefore given.

The authorities on this question are conflicting and the question is not definitely settled. They are fully set forth in the
190 respective briefs of the Complainant and Defendant, and it is not necessary for me to review them. It is, however, true that when the value is to be determined solely from what it would cost on the 1st day of January, 1911, to lay the mains, where pavements already exist, then the value so determined would include this $140,000. But the life of the mains is not enhanced thereby, and no value added to them by reason thereof, then wherein is the justice of giving the Complainant the benefit of this amount, when no enhancement in the actual value resulted therefrom, and not a dollar thereof, used in laying these mains and no right of property acquired in the pavements. There is neither justice nor equity in it, but punishes the people who have spent their money to pave the streets, simply because some other company who desired to put in a gas plant, would have to be at the expense of taking up and replacing the pavement in building their plant. Such added value is wholly theoretical, when no benefit is derived therefrom; but rather the reverse thereto by reason of the increased cost of repairing them. To hold otherwise would be permitting them to reap where they have not sown.

191 *Going Value.*

XIV.

This question as a matter of law is fully determined by the decision in the case of Des Moines Water Co. vs. The City of Des Moines, rendered in this court, September 16, 1911, and hence, the only question considered by me is the amount that should be allowed therefor. A good deal in connection therewith has been said about the effect that should be given, the power of the City Council at any time to fix the rates which the Complainant is entitled to charge and collect for gas from their customers. As this power is qualified to the extent that the rates which they are entitled to establish by ordinance shall be such as will afford a reasonable compensation for the use of their plant; it is fair to presume that they will do their duty and fix such rates as are reasonable and just. In determining the "Going Value" it is assumed that the rates which the Council will prescribe by ordinance will be in accord with the limitation upon their power. Any other view of it would deprive the Complainant of its just rights, and depreciate the value of the property by reason of a wrong which the Council had no

legal right to commit. It strikes me that this is self-evident. That there is such a thing as a "Going Value," in a public utility, is also self-evident, but how shall it be measured, is the difficult question.

Randolph simply allows a lump sum of $500,000 as the cost of developing gas sales from zero to over 510,000,000 cubic feet per year. (Complainant's Exhibit [22], page 1.) It is simply his judgment as a consulting gas engineer of the additional value
192 that should be given Complainant's plant as a going concern. Baehr and Lea, however, have figured it out by a series of calculations to determine the present value of the difference in the earnings in this plant with its established business in full operation, and a new plant in a city exactly similar to Des Moines with no gas plant, which it would take three years to complete, and seven years to bring the business up to the capacity of the Complainant's plant, at that time.

The Court's attention is called to this subject and its treatment in Exhibits 20 and 21 of the Complainant's evidence as well as their evidence in relation thereto as shown by the record. The result which Lea obtains by his calculations is $583,000 (Exhibit 20, page 120), and Baehr $509,795 (Exhibit 21, page 17), as the going value of the plant.

The value of this estimate depends very greatly upon the correctness of the estimate of the business of the present plant in the future, and of the growth and development of the hypothetical plant. I have not undertaken to verify the correctness of their respective estimates, and really doubt my ability to do so. But it is looking a good ways into the future, and should not be accepted as scientifically correct, but as a mere estimate, and in my judgment, would be discounted considerably by a purchaser of the plant, before investing his money. Prof. Marks puts the "Going Value" at $352,000 (Defendants' Exhibit 23, page 98), figuring at 90 cent gas. But I am not inclined to accept without discounting, any of these estimates, but fix the "Going Value" at $300,000. It may be asked on what basis this amount is determined. The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the "Going Value" of this concern is worth more, but I cannot feel satisfied that such is the case, and regard $300,000 as every dollar it is worth over and above its physical value, and in my judgment, it is worth that much more than a plant
193 would be that had to develop its business. But that would be much more rapid, in my judgment, than is estimated. I think a purchaser would be willing to add this amount for its developed business, and that a seller would not be willing to sell unless he got that much more than its phyiscal value, but I could not give the mental process by which this conclusion is reached any more than a jury could do so, under like circumstances, but it is nevertheless my judgment under all the evidence in the case.

The element of "Good Will" as applied to the ordinary merchant or manufacturer dealing with the public generally is not considered in estimating the "Going Value" of Complainant's plant. It cannot be considered in a public utility like the one in question in this case,

because the Complainant has a monopoly of the business in which it is engaged in the City of Des Moines, and those who desire to use its product must buy of it. They have no choice in the matter. But there is a great difference even in a monopoly which has a business already developed and one that must develop it. The plant of Complainant has all its parts working in harmony, performing their several functions in producing and conveying the gas to its customers. These several parts are not only in place, but have been brought to a harmonious operation throughout. Even the employés of the concern are familiar with their duties and experienced in performing them. But without business no matter how perfect it may be, it would be unprofitable. It is ready, however, for business, and has the business to transact. It was a small concern at the start in 1864, but its books show that it has had a steady growth for many years in the past, and every thing indicates that it will continue in the future. There is great difference between such a plant and one whose business must be developed. All a purchaser of such
a plant would have to do would be to take charge of the
194 plant, "Touch the button," and he is making money from
the start. There is no element of uncertainty connected with it.

He can retain its experienced employés as a rule, should he so desire, at the same wages. There is no question that such a plant has a "Going Value," because it is a money maker from the start.

The only difficulty is to determine how much its "going value" is worth. No interest during its construction is allowed, nor anything that is included in the "Overhead Charges," which are part of the physical value. But simply the fact that it has a developed business that will make money for its owner, with reasonable rates allowed for the product which it manufactures and sells.

195 *Investment.*

XV.

The original cost of the plant, in my judgment, should be regarded as the investment, no matter by whom incurred. It has been very difficult for me to determine from the evidence, with any degree of certainty, what has been the original cost thereof.

1. It is evident that the basis from which reckoned, is to some degree, at least, a matter of uncertainty. With what accuracy, the books of the original projectors of the concern, may have been kept, does not appear from the books. Were it a controlling question in the case, on the value of the property, I should investigate the books themselves, but as it is not, I am content to accept the reports of the experts, who have examined them. Excluding the working capital, W. J. Hagenah (Complainant's Exhibit 23, page 5) has a table showing $1,928,016.65, but this includes $120,000 in bonds, given to satisfy the account of The U. G. I. Co. against the C. C. G. L. Co., at the time of the re-organization, March 1, 1906, of $105,526.46, which

deducted, leaves $1,808,016.65, including Valley Junction; excluding Valley Junction, we have $1,763,016.65.

2. This must be very nearly correct, as in the argument, R. O. Brennan used a table, evidently prepared by Prof. Bemis, which under the head of "Additional Investments," gives the amount of $1,807,981.77. (See Record of Argument, pages 5388 to 5400, [5398] and original table herewith returned.) This evidently includes Valley Junction, and deducting it we have $1,762,981.77, which is less the Hagenah amount only $34.88.

196 3. Hall (Defendants' Exhibit 35) gives the total at $1,994,-314.09, but this should be diminished by $172,096, for water gas patents, leaving $1,822,218.09, and deducting Valley Junction, $45,000, leaves $1,777,218.09, which is in excess of the amount used in argument, $14,236.32, and of Hagenah, $34.88 more.

4. Hall's report (Defendant's Exhibit 30, page 20) begins with the appraisement of 1895, which differs from the Hagenah basis $40,597.51, and his total without depreciation, is $1,727,675.67, including Valley Junction, but excluding it, would give $1,682,675.67, but this shows a depreciation of at least $40,597.51, and was evidently the basis of the Ordinance and rates fixed thereby of 1895, and should be regarded at that time as new, for the purposes of depreciation.

5. Then, again, when the Des Moines Gas Company was organized and the property of the Capital City Gas Light Company taken over by it, the stock of the new company was fixed at $2,250,000 par value, but no part of the stock was paid for in cash. The U. G. I. Co. of Philadelphia, owned the stock of the C. C. G. L. Co., and hence, this new stock was issued to it, or to parties in trust for it. There was issued to The U. G. I. Co., March 1, 1906, $800,000 6 per cent stock contracts, of which out of the profits has been paid $389,000. There was issued bonds, $240,000, 5 per cent, to pay for the holder and the general account of $105,526.46, as hereinbefore stated. There was also issued $45,000, to pay for the Valley Junction property. The Capital City Gas Light Company was indebted on bonds due the following January of $400,000, for which 5 per cent bonds were issued at that time, which makes all told $1,485,000, including Valley Junction, and excluding Valley Junction, $1,440,000.

197 Since that time extensions and improvements have been made to the amount of $412,704.51, which makes the sum of $1,852,704.51, excluding Valley Junction, but including it, $1,897,-704.51. There were issued for the extensions and improvements $412,000, and the total discount on bonds was $33,950, but they were all taken by The U. G. I. Co., and so far as the company is concerned, it makes no difference.

Now, it does not appear that The U. G. I. Co. paid anything in money on the stock, but of course, the stock represents the Company's property. In fact, the company's money is evidenced both by the bonds, stock contracts, and also, by the stock, and the interest paid simply amounts to a dividend on the stock, as they own both.

There is nothing in the transaction, however, that changes the amount of the investment.

6. The investment as before shown, does not contain any overhead charges. Now, property depreciates the same, after adding overhead charges, and then add the increase in value of real estate, $110,000, and working capital, meters in stock, and organization expenses, and there is no greater difference than might be expected, in view of the times covering the investment.

198 *Prof. W. D. Marks.*

XVI.

Of course, I have not undertaken to reconcile the evidence of the witnesses on the question of the value of the Complainant's plant on the 1st day of January, A. D. 1911. It cannot be done. The valuation of none of the witnesses has been accepted, but it has been accepted, but it has been reached as hereinbefore explained, and from what appeared to me to be the clear weight of evidence, endeavoring to avoid, on the one hand, over-valuation, which it was evident to me must be done in order to reach a correct conclusion with reference to the value of the plant. The valuation of the physical property by all of the Complainant's witnesses have each and all been reduced very greatly, and the result exceeds the valuation of Prof. W. D. Marks. When his unit valuation of the works and their equipment is ascertained it amounts to $429,004
To this add mains 652,947
House services 274,720
Lamp services 18,653
Meters in use, page 61 188,981
Distribution tools, page 64 2,977
Work Tools, page 63 2,977
Rejected items, page 76 280,081

Total $1,850,340
Add building, omitted by him, at 15,000

Total unit cost $1,865,340
While the unit cost adopted is $1,975,020

An examination of the evidence will show that the professor did not include in his valuation of the mains, any overhead
199 charges, save what he calls contractor's profit, or else I am unable to understand his evidence. (See Record, Vol. 2, pages 2387, 2327 to 30, 2792; 2606 and 7; 2622.) It is not necessary to discuss the Buffalo Chart, from which he obtained the unit prices per foot. I simply invite an examination of his entire evidence.

200 *Prof. E. W. Bemis.*

XVII.

There are very few men, who through investigation, have gained more information in relation to the operation of public utilities of the character in question, than Prof. E. W. Bemis, and he is an experienced man in water works. He is undoubtedly a very valuable man to assist in a case like the one at bar. But he is not a qualified expert upon values.

There is a very great difference between information gained by investigation and from statistics, and that gained by actual experience in the business. It is evident that for some time his efforts have been directed in the work of securing lower rates for the public, who are patrons of public utilities, and his efforts in that direction are laudable, and in this work he has gained a large amount of general information, but any man in so doing will have his eyes open for everything bettering his side of the case. Much of his evidence was purely argument-ive and incompetent, unless made so by the extensive cross-examination by Complainant.

1. His estimate of the value of the property is $1,600,000, but made without investigating the plant, but rather from the evidence in the case. In my judgment, he is not a competent witness thereon and hence, not considered upon that question.

2. He has gone quite extensively into statistics and in a very intelligent and comprehensive manner, but, granting that such evidence is competent, it became evident to me that they are not reliable when accuracy becomes necessary. They may very properly
201 be consulted when we are simply seeking approximate results, but not when accuracy is required.

Similarity of conditions must exist, and similar results are required. It is very doubtful if the same results can be produced each day with the same plant at the same cost. But granting that it can be done, then we must compare the conditions of the plant from which statistics are derived, with the plant in question, before they can be regarded as reliable and accurate. The matters involved in the present case demand as great accuracy as possible, and to get it, we must look to the conditions involved in the plant in question, rather than resort to statistics, which involve conditions of which we have but little, if any, knowledge, without opportunity to investigate, beyond what little is given in the various tables submitted. Whether such evidence is competent has not been considered, but, if so, it is of little value, beyond simply obtaining proximate results and cannot be relied upon for accurate results.

202 *Wisconsin Plan.*

XVIII.

The tables on pages 42 and 43 of Complainant's Exhibit No. 23, as well as Complainant's Exhibit No. 26, by William J. Hagenah, are

based upon the so-called Wisconsin Plan. There are quite a number of exhibits, also by the defendants, which illustrate it.

It is not necessary to set out all of the Defendants' Exhibits therein, because it is evident to me that the evidence is incompetent for the purpose of establishing the value of the Complainant's plant. Among them, however, are Defendant's Exhibits Nos. 33 and 34, and there are perhaps others on both sides which it is not necessary to specify by number. Much time was used by both Complainant and Defendants in exemplifying plan. It was offered by the Complainant and resisted by Defendants. The evidence shows that this plan is used by the Wisconsin Rate Commission, when a public utility has, through no fault on its part, met with losses in delevoping its business, or otherwise, for the purpose of obtaining a basis for value on which to fix rates for the future, which will enable it gradually to recoup its losses. It is not used otherwise. The reckoning in the tables in the Complainant's Exhibits 23 and 26, are made at the rate of 8 per cent interest, but my recollection is to the effect that in Wisconsin the rate of interest of such reckoning is made at 6 per cent. (I am advised that this is not correct as to 6 per cent.)

1. The amount of the investment at the close of the first year, less net profits, if any, is ascertained, and interest reckoned thereon to the close of that year at the rate allowed.

203 2. Then the extensions and improvements determined their cost and interest at same rate, reckoned to the same time for one-half the year.

3. The total expenses of operating the plant for that year determined.

4. Depreciation on the investment at the close of the first year at whatever per cent is allowed, is then calculated.

5. The amounts are then added together, principal and interest as above, and from their total, the gross earnings are deducted, and the balance left thereafter, constitutes the investment at the close of the second year on which interest is calculated to the close of the third year, and the extensions and improvements for the third year for half the time, then the total operating expenses and depreciation determined and from the total amount so obtained, the same as the second year, the gross receipts are deducted, and the amount so obtained constitutes the investment at the beginning of the fourth year. This reckoning is continued from year to year, until the close of the year at which the Commission is about to fix the rates, and the amount obtained at the close of this year constitutes the basis upon which the rates are determined. The amount at 2¾ per cent depreciation on Complainant's plant, beginning with the year ending June 30, 1887, is $3,224,783 (Complainant's Exhibit 23, page 43) at 2½ per cent depreciation, is $3,098,848, (Page 42, Complainant's Exhibit 26) at 2 per cent depreciation, $2,915,781, (Complainant's Exhibit 25), at 2¼ per cent depreciation, $2,007,485.

Now, suppose that the Complainant's plant had during the period over which this calculation, to reach the above amounts, was made, a net revenue of 10 per cent over and above depreciation, the cal-

culation on a basis of 8 per cent would reduce the investments at the rate of 2 per cent of the interest every year, and the most valuable plant would be reduced in value thereby and the least
204 valuable plant increased thereby. This is well illustrated by Defendants' Exhibits Nos. 33 and 34. It is manifest that this plan will in no sense of the word, aid us in reaching the true value of Complainant's plant, hence, no consideration is given thereto by me, because it is regarded and held to be incompetent therefor.

It is my understanding, however, that the Wisconsin Rate Commission do not apply this method, except for the purpose of enabling a company to recoup its losses, as hereinbefore stated, when in their judgment, it is equitably entitled so to do. While it is fair and just under the circumstances in which the Wisconsin Commission apply it, it is manifest that it is not in any sense of the word, competent evidence to prove the value of Complainant's plant, in a case wherein the sole issue is on the rates established by the ordinance in question, in this case so low that they are confiscatory and the ordinance therefore invalid.

205 *Klumpp.*

DEFENDANTS' EXHIBIT NO. 8.

XIX.

This Exhibit has been examined with care.

There are matters in relation to the valuation of the property favorable to the Defendants. It was originally introduced on the claim that it tended to show complicity with Klumpp, in the valuation of the property, by the Complainant's engineers, by reason of similarity in certain valuations in their several reports, but, the surprise to me is that there should be such a great difference between the engineers in their valuations, when it occurr-d to me there ought to be more unity therein.

Klumpp was not used as a witness in the case, but is in the employ of The U. G. I. Co., and holds an important position as such, and it is my recollection, is chief engineer for the company. (Page 15, Exhibit 30) gives a list of the officers of the Des Moines Gas Company, and his name does not appear among them. It does not appear that he had special authority to make the admissions claimed to be contained therein and bind the company thereby. It is only when the admissions of an agent are part of the res gestae that they are admissable against the principal. They are not admissable otherwise, except when they have special authority to make such admissions in behalf of their principal. This rule is just as applicable to corporations as individuals, except in officers who from the nature of their office are clothed with such authority. These rules are elementary Sioux Valley St. Bk. vs. Kellog, 81 Iowa 126; McPherrin vs. Jennings, 66 Iowa, 622). But granting that Klump had the authority, it is well settled that the—

206 "Whole admission is taken together; for though some part of it may contain matter favorable to the party, and the object is only to ascertain that which he has conceded against himself, for it is to this only that the reason for admitting his own declarations, namely, that the great probability is that they are true; yet, unless the whole is received and considered, the true meaning and import of the part, which is good evidence against him, cannot be ascertained. But though the whole of what he said at the same time, and relating to the same subject, must be given in evidence, yet it does not follow that on the part of the statements are to be regarded as equally worthy of credit; but it is for the jury to consider, under all circumstances, how much of the whole statement they deem worthy of belief, including as well the facts asserted by the party in his own favor, as those working against him." (Sec. 201, page 278, Greenleaf, Vol. 1, 13th Ed.)

If this be true of the admissions of the parties themselves, it applies even with greater force, where the admissions are claimed to have been made by an agent with authority so to do. Applying the rule to Exhibit 8 aforesaid, which on its face, purports to be a study of depreciation, and his rate therefor is 9.27 cents per M. C. F., and his rate 21.4 per cent, while that determined in this report is 6.57 cents per M. C. F. and rate 14.7 per cent. The valuation of the entire plant is $2,172,151.89, with going value and working capital deducted.

It is manifest that as a whole it would be a detriment to Defendants rather than a benefit. In my judgment, this Exhibit is of very little value in determining the issues in this case.

207 *Valley Junction.*

XX.

When the Des Moines Gas Company was organized on the 1st day of March, 1905, the property in Valley Junction was paid for in bonds at $45,000, but these bonds were only regarded as worth, at that time, 90 cents on the dollar, which indicates a cash value of $40,500. What additions have been made thereto since does not appear from the evidence, although there has evidently been an increase in the output of gas at that place. No valuation of this property has been made.

At this writing I am unable to say whether or not it can be eliminated, to such an extent that it need be so considered, because I have not yet examined the matter fully enough to determine, with reference to its earnings, but the same manufacturing plant is used for both, and it may be necessary to do so. Should it become necessary to do so, the value will be reckoned at what it cost, on the presumption that it has added enough in the way of improvements to maintain its cost. The depreciation any how, goes against it, and is reckoned on the entire amount of gas sold in Des Moines and Valley Junction combined.

208 *Rate of Return.*

XXI.

The next question, which in its logical order must be determined, is the rate per cent which under the circumstances the Complainant Company is entitled to earn on the value of its plant.

The Supreme Court of the United States in the case of Wilcox vs. The Consolidated Gas Co., 212 U. S., page 41, use this language.

"There must be a fair return upon the reasonable value of the property at the time it is being used for the public."

The question to be determined therefore is, what should that rate be? In the same case on pages 48 and 49, the court says:

"There is no particular rate of compensation which must, in all cases and in all parts of the country, be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality; among other things, the amount of risk in the business is a most important factor, as well as the locality where the business is conducted, and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them. There may be other matters which in some cases, might also be proper when taken into account in determining the rate which an investor might properly expect or hope to receive, and which he would be entitled to without legislative interference.

"One who invests his money in a business of a somewhat hazardous character is very properly held to have the right to a larger return without legislative interference than can be obtained from an investment in government bonds or other perfectly safe security.

The man that invested in gas stock in 1823 had a right to
209 look for and obtain, if possible, a much greater rate upon his investment than he who invested in such property in the City of New York years after the risk and danger involved had been almost entirely eliminated. In an investment in a gas company such as Complainant's, the risk is reduced almost to a minimum. It is a corporation which in fact, as the Court below remarks, monopolizes the gas service of the largest city in America, and is secure against competition under the circumstances in which it is placed, because it is a proposition almost unthinkable that the City of New York would for the purpose of making competition, permit the streets of the city to be again torn up in order to allow the mains of another company to be laid all through them to supply gas which the present case adequately supply. And, so far as it is given us to look into the future, it seems as certain as anything of such a nature can be, that the demand for gas will increase and at the reduced price, increase to a considerable extent. An interest in such a business is as near a safe and secure investment as can be imagined with regard to any private manufacturing business, although it is recognized at the same time that there is a possible element of risk even in such a business.

"The Court below regarded it as the most favorably situated gas business in America, and added that all gas business is inherently subjected to many of the vicissitudes of manufacturing. Under the circumstances, the Court held that a rate which would permit a return of 6 per cent would be enough to avoid the charge of confiscation, and for the reason that a return of such an amount was the return of ordinarily sought and obtained on investments of that degree of safety in the City of New York.

"Taking all the facts into consideration, we concur with the Court below on that question, and think Complainant is entitled to 6 per cent on the fair value of its property devoted to the public use. But assuming that the company is entitled to 6 per cent upon the value of its property actually used for the public, the total fixed by the Court below, is as we have seen much too large."

We have quoted so fully from this opinion, because so much that is said therein applies with equal force to the case at bar.
210 Especially is it true, of what is said in regard to the danger of competition and the rule of law which should govern in fixing the rates. The allowance of a rate which will enable the company to earn 6 per cent on the value of its property in the City of New York by the lower court, is clearly approved by the Supreme Court in its opinion, although on other grounds it was reversed. It was stated by Prof. Marks that the plant in question in the case was perhaps the richest gas territory in the world, unless it be the City of London, and no mains laid less than 8 inches in diameter. Naturally, there would be less hazard under such circumstances, and much less expense in laying and maintaining its mains in proportion to the gas consumed.

The Complainant during the past fifteen years, in order to meet the gains each year over the preceding year, in the consumption of gas, have been compelled to add to their investment, at the rate of $1.93 for every 1,000 cubic feet of gas on the average. This is explained more fully hereafter. It shows that the Complainant has been compelled, in order to take care of its increasing business, to add every year, largely to the investment. This might embarrass a company in straightened circumstances, but it has not done so in this instance. The owners of its stock are well able to meet the requirements of the growth of its business. Only the interest on its bonds and stock contracts have been paid, and the sum of $389,000 on the principal of its stock contracts. Whatever profits there may have been over and above the same, have gone into the plant. The bonded indebtedness during this time has been increased since January 1, 1907, $412,000, and hence the indebtedness of the company has slightly increased.

The Complainant Company during the past fifteen years, according to the table on page 29, Defendants' Exhibit 30, (Hall) has earned on the average during the past fifteen years 9.56 per
211 cent, but this calculation is much upon the depreciated investment, as I understand it. I have not verified these figures, but if calculated upon the investment without depreciation, it would in all probability not exceed 8 per cent. The calculations

made in the Wisconsin Plan, indicates that it did not earn, commencing with 1887, near that rate per cent. But in my judgment, what it may have been earning in the past, whether little or much so far as this particular question is concerned, are the issues herein involved, should be given little, if any, consideration.

So far as the hazards of the business of Complainant are involved in this action are concerned, it is not necessary to discuss them. They are at least as great as in the Des Moines Water Works Case, in which this Court during the past year, held that the company was entitled to 8 per cent. What the evidence may have been in that case cannot be considered here. The evidence in this case clearly justifies 8 per cent under the rule established in the Consolidated Gas Case.

It is authoritatively and very clearly stated by the Court in the following language:

"Such improvements *much* depend greatly upon circumstances and largely, among other things, the account of risk in the business is a most important factor, as well as the locality where the business is conducted, and rate expected and usually realized there upon investments of somewhat similar nature with regard to the risk attending them."

The evidence shows that in the banking business in Des Moines, from 8 to 15 per cent is expected and usually realized, that the rate of interest on notes secured by farm mortgages, from 5½ to 6 per cent; on manufacturing plants from 12 to 25 per cent; on loans secured by mortgage on residence property in the city, from 6 to 8 per cent; on business houses with an assured rental income, from 4½ to 6½ per cent. We call attention to the evidence itself
212 found in Vol. 2, from pages 1852 to 1981, of the record, which speaks for itself.

The Defendants cite the case of Shepard vs. Northern Pacific Railway Co., Supra., in which only 7 per cent was allowed. The Consolidated Gas Case, in which only 6 per cent was allowed by the lower court, and approved by the Supreme Court of the United States, would not be an authority upon which a like allowance should be made in this case, because the risks here would be somewhat greater, and the difference in the localities in the earnings expected and usually obtained in the two localities are not the same. It is a matter of common knowledge that the City of New York is the great money center of the United States, and an investment in the city itself, of so large an amount of capital as invested in the property and business of the Consolidated Gas Company, and its permanency renders it very desirable and would induce the investment of capital therein at a much less rate of return, than in the comparatively smaller plant of the Des Moines Gas Company, and really under the circumstances, 6 per cent of return therein would be a greater return accordingly than 8 per cent in the plant and business of the Complainant herein. Permanency is an important element in considering the rate of return.

In New York case, the taxes were like the case at bar—

"Where properly treated by the company as part of its operating

expenses to be paid out of its earnings before the net amount could be arrived at applicable to dividends."

(See page 52, 212 U. S.) and hence, there is only 2 per cent difference in the two cases. The 6 per cent return in New York was net, as also the 8 per cent here. It is equivalent to 10¼ per cent at least, considering the rate of taxation at 2¼ per cent on the full value of the property, when so assessed, which is not by any means always done in this state.

213 *Operating Expenses.*

XXII.

The question of operating expenses, arise in this case, not for the purpose of determining whether or not the Complainant shall be allowed certain disputed credits which appear upon its books as part of the operating expenses of the plant, but to enable us to judge therefrom, so far as possible, what the future operating expenses of the plant will be in the manufacture and distribution to consumers of gas, in order to enable us to determine what the probable profit to the company will be from the rates which it is permitted to charge under the ordinance in question in this case. There are certain claims which the Complainant makes with reference thereto and which are disputed by the Defendant, that it is deemed best to determine first before proceeding to the main question, which is the future cost of manufacturing and distributing gas, and what will be the probable net profit to the company therefrom, and these questions will be determined under their appropriate head.

1st. Rate Regulation Expense.

Complainant claims that in estimating the net profit for manufacturing and distributing gas to its customers, that there should be taken into account and allowance made for the necessary expenses which it has and will incur in connection with the establishment of rates in this action. In other words, its expenses in this action, not covered by the costs of suit. In my judgment, no allowance therefor can be made in determining the future cost of gas for the following reasons:

214 1. Should this ordinance be held valid, then this action is without merit and should not have been instituted by the Complainant.

2. Should the ordinance be held valid, then the costs of suit, which will be taxed in its favor, are in contemplation of law, the measure of its recovery, so far as this action is concerned, and the recovery of costs against the Defendants satisfies them.

3. Such expenses might result in rendering an ordinance otherwise valid, invalid. The amounts expended in the year 1910 are shown to be the sum of $5,935.15, which were excluded by James Hall in Exhibit 30, page 16, in estimating the cost of producing and furnishing gas to its customers by the company and since, during 1911, about $60,000. (Complainant's Exhibit No. 93.)

The Complainant does not claim, as understood by me, that such expenses should be considered for the years in which they were incurred, but that a reasonable allowance therefor should be made in estimating the future cost of gas, that in the course of time would enable it to recoup such expenses, but for the reasons hereinbefore stated no allowance whatever is made therefor.

2d. Salaries of Officers.

The salary of Jansen Halnes as general manager of the plant at Des Moines, during the month of February, A. D. 1911, raised from $7,500 to $10,000, and hence, the Defendants claim that it should not be considered beyond the original salary. The salary was so established by a vote of the directors of the Des Moines Gas Company, and takes effect from and after January 1, 1911. (See Defendants' Exhibit No. 27, page 208, being the record of the Stockholders and Directors' meeting.)

215 Jansen Haines had been the general manager of the Complainant's works and business at Des Moines since 1903, and has evidently been a very efficient man for the position, and rendered excellent service as such, and no question is made that he has not rendered his employers, as well as the public, satisfactory service. The nature of the business and of the product manufactured demand a man in charge of the works and its business who is an expert gas engineer, as well as a capable business man, in order to to discharge properly and economically the duties of his position, and a salary of $10,000 per year, in my judgment, is not excessive. There is nothing to indicate that the amount of his salary depends in any way on the result of this action. Early in July of the year 1911 he was elected president of the company, without any further increase of salary, and this eliminates any question of the salary of S. T. Bodine, his predecessor.

The increase in salary adds .47 of 1 cent per M. C. F. to the cost of gas per year. (See Defendants' Exhibit 30, page 15.)

4. It appears from the evidence in the case that prior to November, 1909, that The United Gas Improvement Company, owner of the stock of the Complainant Company, had rendered the Complainant a great deal of service for a good many years without any specific charge therefor and the Complainant had never paid anything therefor, and it was finally determined that the services should be remunerated. (Record, page 2810.) As a way of compensation for these services at a meeting of the Board of Directors of the Complainant Company, on the 20th day of October, 1909, the following salaries were voted to the parties below named. (Page 185, Defendants' Ex. No. 27, Stockholders and Directors' minutes.) Record, pages 2810 to 2834, fully explains this matter. At this meeting the salaries to these officers were voted and the in-

216 cumbants until the election of Jansen Haines, President, were as follows:

S. T. Bodine—President	Salary..	$2,500
Walton Clark—Vice President	Salary..	1,800
Lewis Lillie—Treasurer	Salary..	1,600
W. F. Douthirt—Secretary	Salary..	1,600
J. A. Pearson—Purchasing Agent	Salary..	2,500
Total		$10,000

These officers were each and all at the same time also, officers or agents of The United Gas Improvement Company.

The salaries of these officers are all paid to The United Gas Improvement Company, although the salary checks and vouchers are made out in the Treasurer's office in Philadelphia, and sent to Des Moines for signature, and after signed and returned to Philadelphia, and indorsed by officials there. The vouchers are retained in Philadelphia. A journal entry is made charging the salaries and crediting the treasurer's account (Record 3151.) It is evident that the purpose of allowing the salaries in question was in this way to compensate The United Gas Improvement Company for services rendered the Complainant through these parties who were in its employ and paid by it. Page 77. (Record, pages 2834 and 2835.) There is no evidence that shows that the services so rendered are in fact worth the amount represented by these salaries, and in my judgment, their allowance and payment would not be prima facie evidence thereof. Neither is it shown that these salaries are an integral part of the salaries paid by The United Gas Improvement Company, hence their allowance would permit the company to reap a profit upon the salaries of these officers, unless it be so shown by the Complainant, which has not been done. There is, therefore, no basis upon which an allowance can be made therefor, in determining the future cost of producing and distributing gas
217 by the Complainant Company to its consumers, and hence, no allowance is made therefor. This amounts to 1.88 cents per M. C. F. of gas.

5. In the operating expenses under the head of "Expenses Extra," are the following amounts which were paid by the Complainant as contributions to the Greater Des Moines Committee and capital stock of the Coliseum Company. (Defendants' Exhibit 30, page 15.)

Two months ending February 28, 1906	$27.50
Year ending February 28, 1907	1,914.50
Year ending February 28, 1908	1,371.65
Year ending February 28, 1909	2,062.31
Ten months ending December 31, 1909	3,392.36
Year ending December 31, 1910	3,964.78
Total	$12,733.10

A more detailed statement of these expenditures is given by Mr. Hall in his testimony and found on page 3154 of the Record, Vol. 3. For the ten months ending December 31, 1909, they are as follows:

Commercial Club	$265.00
Y. M. C. A	100.00
Material supplied Y. M. C. A	205.25
Methodist Hospital	100.00
Greater Des Moines Committee	1,500.00
Coliseum Co., capital stock	500.00
Christmas gifts to staff	655.00
Haines, for extra expense	67.11
Total	$3,392.36

Year ending December 31, 1910—

Commercial Club subscription	$200.00
Y. M. C. A	100.00
Methodist Hospital	100.00
Greater Des Moines Committee	2,225.00
Mercy Hospital	400.00
Christmas gifts to staff	711.00
Roadside Settlement	50.00
Sundries	178.78
Total	$3,964.78

218 6. In my judgment, no criticism can be made for these expenditures for the past. The Greater Des Moines Committee, as I understand it, is a committee of its citizens for the purpose of "boosting" the city, and as a matter of course any increase in the business prosperity and population, will result beneficially to the Complainant. Its business will at least be affected to some extent, either by the city's prosperity or the lack of it.

The item to this committee is much the largest. The other subscriptions are to be commended. The Christmas gifts to the staff, sundry charities, the subscriptions to the hospitals, Young Men's Christian Association, are all for a worthy purpose, but what shall be allowed for the future is the question. When these gratuities create no binding obligation for the future, and when allowed may not be expended by the company. That something should be allowed is clear. There is no evidence to show that a future subscription to the Greater Des Moines Committee will be allowed or required, or that it will be in any way an obligation against the company, which it should or will be required to meet. The balance, $1,739.78, may very properly be considered, and this is about .30 of a cent per M. C. F. of gas. They will likely be called upon to exercise charity to that extent at least, and should do so. It will not change the result in this case.

7. The United Gas Improvement Company have an Auditing department, and at least each year, its general auditor investigates and audits the accounts of the Des Moines Gas Company quite thoroughly and carefully for the purpose of determining the correctness and integrity of its management.

The expenses of the traveling auditor are charged to the Des Moines Gas Company, while engaged in auditing its accounts. No

charge is made for the time or services of the auditor except
219 the expenses as aforesaid. These expenses, in my judgment, are properly charged to operating expenses. The practice of so auditing its accounts by the stockholders is to be commended, rather than criticized, and tends to promote economy and integrity in its management, to the benefit of the stockholders and the public alike.

8. The repairs for the year 1910 are much greater than for the preceding years. It does not appear that they were unnecessary. This is not surprising, and is a matter of common experience, that some years the cost of repairs will greatly exceed other years. An average of the repairs for at least five years will give more nearly a correct result.

9. In view of the times, and the increased cost of living, an increase in the salaries of the employés was almost inevitable.

10. It is more likely that the taxes will be increased than diminished in the future, should the property be taxed at its value.

3d. Insurance.

11. The ordinary insurance, which the company has been carrying, should and has been, included in the operating expenses. But beyond this none other should be considered. In determining the rate of return, the hazards of the business are all eliminated by casualty insurance, then, the rate of return should be diminished. The Exhiibts of Complainant on this claim No. 89, have been given no consideration beyond fixing the rate of return.

Only the ordinary insurance which are shown by the operating expenses are allowed.

220 *The Cost of Producing and Distribution of Gas.*

XXIII.

W. J. Hagenah, in Complainant's Exhibit 23, on page 14, gives the cost of manufacturing and distributing gas for the year ending December 31, 1910, as follows:

Manufacturing	$165,466.44	Per M. C. F.	31.10c
Distribution	45,187.02	Per M. C. F.	8.47c
Commercial	47,951.04	Per M. C. F.	9.01c
New business	24,173.23	Per M. C. F.	4.54c
Other expenses	31,551.04	Per M. C. F.	5.93c
Taxes	38,580.81	Per M. C. F.	7.23c
Total	$362,909.58	Total	66.28c
		$352,909.58	
This includes—			
Salaries general	$10,000		
Rate litigation	5,602		
Expense, extra	2,225		
		$17,827.00	
Balance		$335,072.58	Per M. C. F. 62.98

This includes Valley Junction.

2. Now we turn to Exhibit "D," Defendants' Exhibit 30, and for the year ending December 31, 1910, we find that the cost of gas is as follows:

Manufacturing	$165,466.14	31.10
Distribution	45,187.02	8.47
Commercial expense	47,951.04	9.01
New business	24,173.23	4.54
General expense	26,024.09	4.89
Taxes	38,420.57	7.22
Total cost	$347,222.39	65.23

221 The difference in the taxes is caused by Hall moving the taxes paid in 1910 to the year 1909. The taxes for 1909 were $1,447.61; and for 1910, $1,287.39, which is the difference in the two years ending December 31, 1909 and 1910, of the Federal taxes. Hagenah puts into his account rate regulation as $5,602, but Hall rejected it and the amount is evidently $5,526.95. Why they do not agree on this amount does not appear from the reports.

Eliminate from Complainant's Exhibit 23, the following items, to-wit:

Greater Des Moines Committee	$2,225.00	
Rate regulation expense	5,602.00	
Salaries, general	10,000.00	
Total amount by Hagenah	$17,827.00	
Which taken from his total		$352,909.00
		17,827.00
Leaves		$335,082.00

and the result is the cost of gas for the year ending December 10, 1910, which is 62.98 cents per M. C. F., and eliminating—

Subscription to Greater Des Moines Committee	$2,225.00	
Salaries, general	10,000.00	
Total amount by Hall	$12,225.00	
Which taken from his total expenses		$347,222.39
		12,225.00
Leaves as total operating expenses		$334,997.39

and the cost of gas per M. C. F. 62.98 cents. Which makes a very slight difference for the year ending December 31, 1910, between Hall and Hagenah.

222 3. We have in Complainant's Exhibit 93, the actual total gas manufactured, and the total cost of manufacturing it, for the first ten months of the year, which is 77.14 cents per M. C. F.

and it includes salaries general, 1.85, and rate litigation, 13.31; and expense extra, .25; which deducted leaves 61.73 cents. The .25 is amount above .30 allowed.

4. Again, the average for the five years ending December 31, 1910, is given on page 5 of Defendants' Exhibit 30, per M. C. F. as 63.34. This includes, however, under the head of "Expenses General," .50 of a cent per M. C. F. and .26 of a cent for "Salaries Extra" above what is heretofore allowed therefor, making a deduction of .76 of a cent and reducing the average for the five years to 62.58.

5. Then, again, take the lowest year ending February 28, 1909, and the total cost per M. C. F. for that year is 59.73 and it includes a fair average for manufacturing, being .06 of a cent different from the average for five years. There is, however, a difference in the taxes for that year of .70 hundredths of a cent, raising it to 60.43. In reckoning for the future cost of gas per M. C. F., all of these figures call for an adjustment of the 2 per cent taxes of .20 of a cent, by reason of the reduction of the rate from $1.00 to 90 cents per M. C. F., but this is taken care of hereafter.

6. Now, let us take each of these rates and add thereto 6.67 in order to ascertain the net revenue thereunder for the year 1910 and in so doing, I am leaving out of consideration Valley Junction, except so far as determining the cost of gas. On the figures under the reports of Hall and Hagenah, which are both the same, we have made 69.65 and gives a profit of 20.35 cents per M. C. F.

7. The total gas sold in Des Moines during that year ending December 31, 1910, was 521,486.354, which would make at 20.35 cents per M. C. F., the sum of.....$106,122.45

223 These figures include miscellaneous sales.

8. The average as having before shown for the five years, minus the estimates made is..... 62.58
With depreciation added, makes..... 69.25
And a net return of 20.75 per M. C. F. on same amount of gas gives us.....$108,208.50

This includes miscellaneous sales.

9. Then, take the cost of gas for the first ten months of the year 1911, which is..... 61.73
As shown before and with depreciation added, we have. 68.40
And a net return of..... 21.60
Which on same amount of gas gives a net return of....$114,912.00

Add miscellaneous sales.

10. Take the lowest year with difference in taxes, .70 added and then add 6.67 for depreciation and we have 67.10 with a net return of 22.90 per M. C. F., which on the same amount of gas gives us a net revenue of $119,420.35—with miscellaneous sales added.

11. The reckoning for the year 1910 does not include the increase of .47 of one cent, caused by the increase in salary of Jansen Haines

from $7,500 to $10,000, but it does include for the year ending February 28th, 1909, the increase in taxes because that would exist for that year. Even, if in all other respects, the expenses would and should be the same for the year ending December 31, 1910, the increase per M. C. F. would be inevitable, and for comparison should be reckoned at the 1910 rate. Of course, no one can foretell what the assessment of the Complainant's property will be in the future, but if it is assessed at its fair market value, as determined in this action, then it is manifest that the assessment will be increased at least $1,000,000, which would increase them something like $22,500, at 2¼ per cent on the actual value. This is inevitable, unless
224 they are decreased by reason of a low assessment on other manufacturing plants. The increase in salary is evidently included in Complainant's Exhibit No. 93.

12. James Hall, Defendants' Exhibit No. 30, page 7, allows $1,000 for the difference on the former ordinance, and the one in question, which would be caused by reason of the failure of the latter to include the provision for discount to induce prompt payment, but in my calculation, it is placed at .20 of one per cent, only $64.00 over Hall's estimate, and adjusts the difference in 2 per cent tax on the year's receipts, and accounts for their omission in the foregoing calculations.

13. No insurance is included in any of the figured calculations, except such as were actually paid, neither accident nor fire insurance. As before stated, to some extent these hazards are included in the rate of return, what has been actually paid, and what insurance the company has carried has been considered and allowed.

14. Oil is a very important ingredient in the manufacture of gas. The cost per M. C. F. has decreased from the two months ending February 6, 1906, 18.11 cents per M. C. F. to 11.49 cents for the year ending December 31, 1910, a difference of 6.62 cents per M. C. F. The Complainant uses a distillate of the crude oil, which according to the purchasing agent, J. A. Pearson, gives better results than the crude. (Record, page 4824, Vol. 4.) The company at present has a three-year contract which began in the year 1909, June 1st, (Defendants' Exhibit No. 20) at 2.80 cents per gallon, but this is much lower than paid prior to this time, which was, 1905, 4.4 cents; 1906, 4.5 cents; 1907, 4.55 cents; 1908, 3.11 cents per gallon. (Record, page 3382, Vol. 3—Hall.) In my judgment an average price during the past five years would be fair, but the reckonings for the year 1910 on the various bases given as well as
225 for 1911 are 2.80 cents per gallon, except that for the year ending February 28th, 1909, and the average for the five years, which are at the average prices for oil. There has been a steady decrease since 1905, in the cost of manufacturing gas, but the other expenses fluctuate very much during the past five years and are likely to do so in the future from their very nature, but the manufacturing cost is not likely to decrease so greatly in the future as in the past, but the cost of oil, coke and coal will have a good deal to do with it.

15. There has been a decided increase in the residuals, and a decided decrease in the leakage, only 1.35 cents for the year 1910,

which shows the appliances for distributing and measuring gas in good condition and performing their work well. Whether the increase in residuals results from increase in sales, or in the manufacture, does not appear from the evidence.

16. It is proper here for me to call attention of the Court to the fact that there are very great variations from year to year in the different classifications under which the accounts are kept, of the cost of manufacturing and distributing gas, but when for the last five years there are no very great differences in the ultimate results for each year.

In studying these various classifications, it has become evident to me that there is no such thing as scientific accuracy with reference to the cost of either producing or distributing it, and that is one reason why the estimate of rates should be made, upon a fair basis, and should consider rather an average result than a scientific one, because they may one year fall below a reasonable return, and the next, exceed it, and hence, a rate that on the average will be just to both parties, for a term of years, should be sought, rather than to undertake to reach one based upon scientific accuracy, and for that reason, the different results and income therefrom are given.

226 Taxation.

17. The Defendants introduced in evidence the statement of the Des Moines Gas Company to the assessor for the City of Des Moines, Iowa, Charles W. Schramm, which bears date March 14th, 1908, and the assessed valuation is $1,002,020. (Defendants' Exhibit No. 1.) The attention of the Court is called to this exhibit, and its contents. It is the first exhibit in the book of Defendants' exhibits. It is manifest that the valuation for the year 1908 is too low, or else the value of the plant as determined in this report is not correct. It has been my observation that valuations for the purpose of taxation are usually of little value in determining the true value of property. Neither its earning power, nor from the standpoint of the investment, can so low an estimate of its value at that time be justified and it is of little, if any, value on the question of the worth of the plant January 1st, 1911. It in no way operates as an estoppel upon the Complainant to show that its value is greater. Property owners are usually anxious to keep the assessed value of their property as low as possible. It is a matter of common knowledge and it is rare to find a tract of real estate assessed at its full market value.

The assessor usually determines the valuation for assessment. Whether it was the intention of the officers who verified it to verify the value itself, will better appear by the statement itself. If so, it is evident to me they were mistaken, and the valuation under the evidence in this case could not be accepted, even as of the date made.

The Complainant has offered in evidence a similar return for the year 1909, which puts the Des Moines plants'

227 value at $2,164,000
And Valley Junction plant at..... 28,400

Making total $2,192,400

(This is Complainant's Exhibit 45.)

Then again, for the year A. D. 1910, the Complainant returned a similar statement to the assessor in which the valuation is put at $2,230,400 for taxation. (This is Complainant's Exhibit No. 46.) James Parker, City Assessor.

Then again, for the year 1911 a similar return was made which fixes the value of the property at $3,380,000, including Valley Junction. (This is Exhibit No. 47.) James Parker, City Assessor.

Now, it is very clear that on the question of the value of the property, that it is not even competent evidence for the Complainant and should have no weight whatever, and has been given none on the question of value, but when it comes to the future taxation of the plant and the amount thereof as applies to the future cost thereof per M. C. F. it is competent. James Parker was assessor and assessed the property for the years 1909, 1910 and 1911, and the returns hereinbefore given were made to him, and for the year 1911 he assessed the property at $1,350,000. (See Record, page 3042; also pages 63 and 66, Vol. 3.)

For the year 1909 it was assessed for the sum of $1,250,000 (Page 3065) and it is my recollection for the same amount for 1910. At least it was not more than $1,300,000, but I cannot find the page of the record on which it appears. This was greatly below the returned value, and should the assessor hereafter conclude to fix the value at what it is claimed is correct value, then the assessment will be greatly increased, and he would be justified in increasing it over $1,000,000, which would increase the taxes to the amount of about $22,500, and the taxes would be increased accordingly. Of course such an
228 increase would only be justified when other property was assessed upon the same plane of value. The law requires it to be assesed at its market value, and it should be assessed as a going concern.

Electric Light Co. v. McCray, 133 Iowa, 626.

The evidence, however, of Mr. Parker on the question of the value of the property is and has not been regarded by me as incompetent, nor is he regarded as an incompetent witness. His qualifications are derived from his experience as an assessor, not from any special knowledge of the value of such a plant.

229 *Future Increase of Capital.*

XXIV.

1. It is necessary to examine the annual increase in the sales of gas, in connection with the increase, in extensions and improvements in order to determine therefrom, as far as possible, what will be the probable increase thereof, as compared with the annual increase of the revenue from the sale of gas.

The statistics here are taken from Schedule 4, Defendants' Exhibit 30, by Hall, and the first column below shows the sales of gas for each year from and including 1895 to and including A. D. 1910. The second column shows annual gain over the preceding year. The third column shows the number of meters installed and

the fourth shows the gas sales per meter each year. The year is given on the left of these statistics.

The gas sales are given per M. C. F. as in the table from which taken.

The calculations in the first table are all from this exhibit, except the gain in C. F. of gas which are my own. The gain is given in cubic feet because the gain per year can be better comprehended therefrom than by the percentage method.

230

Year.	Gas sales.	Gain M. C. F.	Meters.	Gain per cent.	Per meter.
1895....	61,100	....	2,448	[Gain in Meters.]	24.56
1896....	76,435	15,335	2,868	380	26.65
1897....	83,951	7,516	3,479	611	24.13
1898....	93,613	9,662	4,127	648	22.68
1899....	109,821	16,208	5,308	1,181	20.69
1900....	141,931	32,110	6,425	1,117	22.09
1901....	160,990	19,059	7,682	1,257	20.96
1902....	206,765	45,775	8,898	1,216	23.24
1903....	244,245	37,570	10,395	1,497	23.50
1904....	292,407	48,162	11,436	1,041	25.57
1905....	334,405	41,998	12,940	1,504	25.84
1906....	372,102	37,697	14,640	1,700	25.42
1907....	429,519	57,417	16,073	1,433	26.72
1908....	461,178	31,659	17,100	1,027	26.97
1909....	497,245	36,067	18,439	1,339	26.97
1910....	531,991	34,746	19,736	1,297	26.96
Total.....		470,891			

Total last five years, 197,586.

This shows the gain per M. C. F. each year and the sales per M. C. F. per meter each year, and shows the increase per meter of gas during the latter part of period over what it was in the early period. It is surprisingly regular during the last three years.

The balance of this table is not given for the reason that it is not pertinent to the matter that I am endeavoring to ascertain, which is the increase of the investment according to the gain in sales. However, I refer to it, and regard it as important and interesting.

3. The next table is taken from Schedule 5 of Defendants' Exhibit 30, and is as follows:

Year.	Mains.	Services.	Meters.	St. lamps.
1895	3,819.39	2,364.04	1,907.67	73.72
1896	23,139.46	6,878.75	3,633.28	2,253.99
1897	20,124.25	6,901.35	5,008.82	1,097.51
1898	12,967.43	7,715.55	5,705.91	757.70
1899	13,917.29	10,897.10	12,762.77	184.45
1900	7,934.00	16,944.01	8,244.95	313.91
1901	38,824.34	23,339.32	9,917.55	1,190.81
1902	24,973.12	17,842.59	8,266.88	702.11
1903	48,563.18	21,923.57	17,205.25	35.91
1904	23,998.35	14,913.00	5,221.91	54.43
1905	65,473.12	19,306.48	20,530.80	1,805.52
To 3-1, 1906	2,817.72	1,770.31	4,136.04	88.71
Totals, Mar. 1, 1906	$286,552.25	$150,796.07	$102,541.83	$8,449.91
Year ending 2-28-'07	87,672.28	14,738.11	24,972.51	1,587.60
Year ending 2-28-'08	52,716.86	12,537.90	12,457.74	144.31
Year ending 2-28-'09	21,273.23	12,636.45	5,878.42	268.61
10 mo.	30,816.95	14,001.87	12,361.21	39.13
1910	50,206.78	18,578.95	12,715.06	....
Total	$242,686.12	$72,493.28	$68,364.93	$2,039.65
Add to Mar. 1, 1906	2,817.72	1,770.31	4,136.04	88.71
	$245,503.84	$74,263.59	$72,500.97	$2,128.36

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Average last 5 yrs.	$1.2425	$ .3754	$ .3664	$ .01
1910	1.502	.5304	.334	...
	1.099	.4603	.35	.021

Total average for whole 15 years	$1.98
Total average for 1910	2.366
Total average last 5 years	1.996
Average for the first ten years	2.116

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4. In determining the future, with reference to the increase of gas, it becomes necessary to examine the past with reference to its increased output each year, over the preceding year, and at the same time examine the increase of capital rendered necessary thereby, to take care of this annual increase of consumption, and for that purpose the foregoing tables were prepared. The last table shows the investment in mains, meters, house and street lamp services. The first table shows the gain each year over the previous year per M. C. F.

Now, when the total of mains, meters, house and lamp services for each year is divided by the gain for that year, it gives the additional investment for that year for each M. C. F. of gas, of said gain over the preceding year. For the first ten years, beginning with 1896, the additions per M. C. F. are as follows:

1896, $2.34; 1897, $4.32; 1898, $2.82; 1899, $2.33; 1900, $1.04; 1901, $3.83; 1902, $1.13; 1903, $2.33; 1904, $0.91; 1905, $2.52. The average for the ten years is $2.11 per M. C. F.

The gain in gas is given by the calendar year for the next five years, but the additions in investment are not, and hence simply the average for the same is given which is $1.996, and the average for the 15 years is $1.92. The year 1910 gives the gain over the preceding year and additions for that year also, and it is $2.366.

When the investment is light for any year during the ten-
233 year period, it is almost invariably followed by an increase during the next year. It shows that in the past while the gains each year over the preceding year were rapid, at the same time the rapid increase carried with it a corresponding necessity to increase the additions, in order to accommodate it. During the first period it averaged $2.11 per M. C. F. and about $1.996 for the last five years. It is evident to me that we may expect at least $2.00 additional capital each year for each M. C. F. of gas gained over the preceding year, and the interest at 8 per cent thereon would be 16 cents. The evidence of the engineers indicates that it will be increased rather than diminished. Professor Marks testified (Pages 2349 and '50, Vol. 2, Record) that when the annual output reached 600,000 M. C. F., that a new holder would become a necessity. (See also Record, pages 2708 to 2716, Vol. 2.) Henry I. Lea (Record, pages 1034 to 1046.) W. A. Baehr (Record, pages 1581 and 6, Vol. 2.) W. W. Randolph (Record, page —, Vol. 2).

5. According to my recollection, the maximum for any day during the year was 2,228,000 C. F. (See Record, page 1581, Vol. 2) and the capacity of all the holders is only 1,607,000 C. F. and, comparing the highest daily output therewith, it will be seen at their utmost capacity they cannot keep in the holders more than two-thirds of such a day's supply for distribution. The highest daily output must be considered in determining the holder capacity necessary, and the increase in their annual sales will soon render it imperative that greater holder capacity must be provided. Any accident occurring that would stop its manufacture would put the city in darkness and render it necessary before they could turn on the

gas, to see that every burner in the city was closed, otherwise very disastrous results might follow.

6. But, to return to the tables again. It will be seen by reference to Defendants' Exhibit 30 that Schedule 5 only gives the additions in mains, meters, services, lamp and house, and
234 does not include the holder which The U. G. I. Co. erected in the year 1904, at the cost of $103,958, which the Des Moines Gas Company paid with $120,000 bonds March 1st, 1906. The total annual increase for the past fifteen years has been 470,891, and the average for the fifteen years for the above holder would be 25.5 cents per M. C. F. and would add that much to the general average of additions during the fifteen-year period over which it runs. It added to the five-year annual increase would make $2.25 per M. C. F. of gas manufactured and sold of additions including the holder and 8 per cent interest thereon would be 18.00 cents of interest upon the increase of capital invested, caused by the increase in the annual output over the preceding year, when the cost of the holder is included.

7. What this new holder would cost, rendered necessary when the annual sales reach 600,000 M. C. F., Professor Marks did not state, but it should be at least a 2,000,000 C. F. holder, and judging from the cost of the other holders, would probably cost $175,000. In all probability, as much on the average increase for the next fifteen years as for the past, Baehr puts its cost at $175,000. (Record, page 1852.) That the mains, meters and house services would be as great is more than likely, in view of the past, because the later years indicate a greater increase per M. C. F. thereof, than the average. There will be necessary, also, other additions in the manufacturing plant. The enlargement of the purifiers and also additional generators. (See former references.) These are matters that must be considered in determining results in the future upon the increase of sales. This is,—Should there be any year an increase of 50,000 M. C. F., we must calculate that it will add at least to the capital $2.00 per M. C. F. for mains, services and meters alone, which would increase the value of the plant accordingly.

8. The difficult question to determine is the effect which
235 the reduction of ten cents per M. C. F. will have upon its present consumers. Will it result in an increase of consumption sufficient to increase the net increase, so that it will be a reasonable return upon the value of the Complainant's plant, and capital invested in the manufacture of gas? Increase of consumption, either per meter or per service, which are already installed, renders no additional investment necessary and hence does not add to the capital invested in the plant. The only thing in the past history of the plant that throws any light on the question is the table on Schedule 4 of Defendants' Exhibit 30, a part of which has already been given. Third column from the right shows the percentage of increase of sales per M. C. F. over each preceding year, but I have not used it because the basis of percentage changes each year, and instead of following the percentage my calculations are based on the actual figures. We now give below from the same

table, Schedule 4, the year, population, meters, gas sales per M. C. F., as follows:

Year.	Population.	Meters used.	Sold per meter.	Per inhabitant. M. C. F.
1895.....	56,500	2,488	24.56	1.08
1896.....	57,000	2,868	26.65	1.34
1897.....	57,800	3,479	24.13	1.45
1898.....	59,000	4,127	22.68	1.59
1899.....	60,500	5,308	20.69	1.82
1900.....	62,100	6,425	22.09	2.29
1901.....	64,500	7,682	20.96	2.50
1902.....	67,200	8,898	23.24	3.08
1903.....	70,000	10,395	23.50	3.49
1904.....	72,900	11,436	25.57	4.01
1905.....	75,600	12,940	25.84	4.42
1906.....	78,000	14,640	25.42	4.77
1907.....	80,200	16,073	26.72	5.36
1908.....	82,300	17,100	26.97	5.60
1909.....	84,400	18,439	26.97	5.89
1910.....	88,900	19,736	26.96	5.98

236 It will be remembered that during the fifteen years covered by this table that the price of gas was reduced from $1.40 to $1.00 per M. C. F. During 1896 and 1897, it was $1.40; 1898 and '9 it was $1.35; 1900 and 1901, $1.30; 1902, '3 and '4, $1.25; 1905, $1.20; 1906 to 1910, inclusive, $1.10; but during all this time reduced ten cents per M. C. F. when paid promptly on or before the middle of the month following its consumption.

9. There is a very slight increase after it reaches one dollar per M. C. F., but the preceding years does not indicate whether from decrease in price, judging from the preceding years, it is difficult to say. They vary so greatly up and down during that time that I am at a loss to determine why, but if from cheapness not much over 1,000 feet per meter. While a slight increase in consumption may result from a reduction of ten cents per M. C. F. in price, in my judgment, it is much more apt to result in an increase of customers, and the table in Schedule 4 very clearly shows it, in the increase thereof, in proportion to the inhabitants of the city, as shown by the first column on the right of the table.

10. There is another interesting matter shown by this table in Schedule 4, that in my judgment, bears on the future increase on the sales of gas, to which attention should be called.

In the following table, we give the year, then the gain in sales for the year, population and number of inhabitants per meter.

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Year.	Annual gain.	Population.	Per meter.
1895	....	56,500	22.71
1896	15,335 M. C. F.	57,000	19.88
1897	7,816	57,800	16.61
1898	9,662	59,000	14.30
1899	16,208	60,500	11.40
1900	32,110	62,100	9.67
1901	19,059	64,500	8.40
1902	45,685	67,200	7.55
1903	37,570	70,000	6.73
1904	48,162	72,900	6.37
1905	41,998	75,600	5.84
1906	37,697	78,000	5.33
1907	57,417	80,200	4.99
1908	31,659	82,300	4.81
1909	36,067	84,400	4.58
1910	34,746	88,900	4.50

Now, if you will notice there was only one out of 22.71 of the people of Des Moines in 1895 who were using gas, and if you will follow the column down year after year, you will see that each year more and more of the people were using gas each year, until the close of the year 1910, there was a meter to every 4.50 of its people, and that during the last five years there was a marked decrease in the gain, except for the year 1907, which shows the greater annual gain of any year during the fifteen-year period, but the three years following the annual gain, dropped considerably over 20,000 M. C. F., indicating that in a large degree *that* it came from the increase in population, and from new houses rather than from supplying gas, to former residents, who had not been induced heretofore to use it. From 1906 to 1910 inclusive, there is only a difference of .83 of a person to the meter. It is clear to me that in the future the annual gain will largely depend upon the increase in population, and the erection of new residences, for their accommodation and consequently the extension of mains, to accommodate them.

238 The tendency in the erection of new residences is rather to the outlying districts than to the use of vacant lots within the residence districts, very likely from the efforts of the real estate dealers to bring their property into market. This is indicated by the various contracts, and advancing of money to secure the laying of mains within the new territory which they were putting on the market for sale.

239 *The Year* 1911 *and Its Results.*

XXV.

The following table is a comparison of the sales per month for the year 1910, with the sales for the first ten months of the year 1911, as shown by Complainant's Exhibit 91, as follows:

Months.	Sales 1910.	Sales 1911.	Loss and gain.
January	48,485,753	55,897,877	7,412,124
February	44,189,507	48,729,565	4,540,058
March	45,005,147	45,299,650	294,503
April	40,333,915	44,273,224	3,939,309
May	41,014,962	43,022,181	2,007,219
June	41,909,816	39,588,566	Loss 2,321,250 Loss
July	34,257,787	36,527,004	2,269,217
August	34,572,531	37,570,286	2,997,755
September	49,249,780	50,684,620	1,434,840
October	50,179,948	48,418,516	Loss 1,761,432 Loss
November	50,214,035		
December	52,577,873		
	531,991,054	450,011,489	20,812,343

The percentage of gain over the previous year is 4.84 per cent and applied to the total of the last two months gives us for them a gain of 4,975,128
Making for the year..... 25,787,571

This tends to show that the future percentage of gain is not likely to be so great as in the past fifteen years. The actual figures on an average of $2.00 per M. C. F. of additional investment, for mains, house and lamp services and meters of $41,624.65 for the ten months and on the estimate for the year $51,575.10, while for the ten months the actual amount is $47,654.48 as per Defendants' Exhibit 68.

240 It is claimed in argument that the gain over the year 1910 is decreased by reason of the litigation in regard to the rates, but there is nothing to indicate it, and from the data heretofore given, about what might reasonably be expected, and satisfies me that the output for the City of Des Moines will not reach 600,000 M. C. F. much before the close of the year 1913, even if it does then. This will take nearly 80,000 M. C. F., a little over 25,000 M. C. F. per year. It depends upon the growth of the city very largely. Eighty thousand M. C. F. of gain indicates an increase of capital to the amount of $176,800. This, in my judgment, is less than the evidence of the engineers, testimony will justify according to the references heretofore given. It makes the physical value at that time $2,276,800 and including going value $2,576,800, on which the Complainant is entitled to a reasonable return, after deducting depreciation.

In this connection permit me to call the attention of the Court to what is said on this subject by the Supreme Court of the United States in the case of Knoxville vs. Knoxville Water Co., 212 U. S., pages 14 and 15, as follows:

"But the decision in the court below was based solely on the operations of the fiscal year ending March 31, 1901, and the amount of the net income ascertained, namely, $36,000, was obtained by applying the reductions made by the ordinance to the operations of

that fiscal year. We think it was error to confine the investigation to, and base the judgment upon, that year alone. The precise subject of inquiry was, what would be the effect of the ordinance in the future operations of the preceding fiscal year, or of any other past fiscal year, were valueless, if the year was abnormal, and were only of significance so far as they foretold the future. If, as in this case, sufficient time has passed, so that certainty, instead of prophecy can be obtained, the certainty would be preferable to prophecy. In this case there would be no absolute certainty, because the operations of the years succeeding to the ordinance is relevant, and of great importance, and by a consideration of such evidence a greater degree of certainty could be obtained."

241 The principal is here fully stated, and it is not necessary to quote the entire paragraph in this connection because the thought is clearly expressed to the effect that the future tells its own story best when it arrives. It is well read all that is said upon the subject. While we have only ten months' actual experience in this case, it nevertheless speaks for itself and the cost of manufacturing and distributing gas, when the eliminations are made, as shown and it is found so near normal, when compared with the past, it gives great weight for the future, and it is very near an average result, and hence, it is regarded by me as the safest guide for the future. It includes the increase in salary for Jansen Haines and excludes rate litigation, salaries general, and has only .30, after eliminating .25 of a cent for "Expense Extra." There is no increase of taxes included beyond the year 1910. It is below the year 1910, one cent per M. C. F., and the average for the five years reduced by the elimination, .85 of a cent, and above the year ending February 28, 1909, 1.30 cents. It is as near a certainty as we can get.

As reduced by me, it can hardly be claimed it was made for the case during its pendency, because it shows a decrease from 1910.

(See further on this subject hereafter.)

242 *Depreciation on Future Value.*

XXVI.

There is, however, one other question that it is necessary to determine with reference to the future increase in the value of the plant, for the purpose of calculating the rate of return to which the Complainant is entitled. It must be borne in mind that when it comes to the end of the year 1912, the Complainant is paid at the rate of 6.67 cents per M. C. F. for the depreciation of the value of the plant for the year 1911, out of the profits from the manufacture and distribution of gas. At the estimated amount of gas as hereinbefore calculated for the year ending December 31, 1911, which is 557,778,625 C. F. and makes $37,303.80. This pays him for depreciation for the year, but the value of the plant is reduced to that extent on which he is entitled to have reckoned his rate of return for the next year. The same is true for the year 1912, and when we calculate the increase in the capital by reason of additions and improvements and

add it to the original value, in order to get the true capital on which to reckon the net income for the future, we must not forget that the depreciation must be deducted, otherwise the Complainant would be obtaining a return on what has been paid him.

In this connection attention is called to what has been said upon the subject of depreciation in Knoxville vs. Knoxville Water Co., Supra., on pages 13 and 14, as follows:

"A water plant, with all its additions, begins to depreciate in value from the moment of its use. Before coming to the question of profit at all, the company is entitled to earn a sufficient sum annually to provide not only for current repairs, but for making good
243 depreciation and replacing the parts of the property when they come to the end of their life. The company is not bound to see its property gradually waste, without making provision out of its earnings for its replacement. It is entitled to see that from the earnings the value of the property invested is kept unimpaired so that at the end of any given term of years, the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and in the case of a public service corporation, at least, its plain duty to the public."

While much more is said on this subject in the opinion, this is all that is necessary to quote, in order to show that in providing for depreciation, it is fully sanctioned by the Supreme Court of the United States as voiced in this opinion, and that it has not only the sanction of the court, but is based upon sound reason. It applies both to the future in estimating the cost of manufacturing and distributing gas, and determining the future value of extensions and improvements, as well as to the past in determining the value of the plant. It must be taken into account in all reckonings both in the past as well as in the future.

The reckonings therein for the future are made hereafter under the next division of this report, not only upon the future cost of gas, but also on the future investment and depreciation thereon.

The following extract from the case of The Railroad Commissioners of Louisiana vs. The Cumberland Telephone & Telegraph Co., 212 U. S. 414, has been cited by Counsel for Defendants in this case—to wit:

"If the onus rested upon the commission to show these facts, it is evident that the obligation has not been fulfilled; but it is just here that the difficulty lies. It was obligatory upon the Complainant to show that no part of the money raised to pay for depreciation was added to capital, upon which a return was to be made to stockholders in the way of dividends for the future. It cannot be left to
244 conjecture, but the burden rests with the Complainant to show it. It certainly was not proper for the Complainant to take the money or any portion of it, which it received as a result of the rates under which it was operating, and so to use it, or any part of it, as to permit the company to add it to its capital account, upon which it was paying dividends to shareholders."

Justice Peckham proceeds:

"If that were allowed, it would be collecting money to pay for depreciation of the property, and, having collected it, to use it another way, upon which the Complainant would obtain a return and distribute it to its stockholders. That it was right to raise more money to pay for depreciation than was actually disbursed for the particular year there can be no doubt, for a reserve is necessary in any business of this kind, and so it might accumulate; but to raise more than money enough for the purpose and place the balance to the credit of capital upon which to pay dividends, cannot be proper treatment. The court below said it was impossible to find out from the books how much of this had been done, and it treated the fact as one to be explained by the commission, and not by the Complainant. In other words, while this fact was a material one, the onus was placed upon the commission, and not the complainant, to show it. We think, on the contrary, that the obligation was upon the complainant. Now, although the books, it is said, does not show how much money collected for depreciation has been, in fact, used to increase the capital of the complainant, upon which dividends were paid to stockholders, yet still, even if the books do not show accurately, or even at all, what disposition was made of these moneys, at any rate the officers of the complainant must be able to make up some reasonable approximation of the amount, even if it be impossible to state it with entire accuracy; and this duty rests with the complainant, in order that it may discharge the duty devolving upon it to prove that the rates were not unreasonably high under order No. 488, or in other words, that they were unreasonably low under order No. 552. It may be that the sum, if any, thus used, was not enough to affect the claim that the rates under discussion were un-
245 reasonably low. The evidence is sufficient to show clearly that which complainant is under obligation to show."

There is nothing in this case to which this extract applies, unless it is the Wisconsin Plan. Depreciation is only used for three purposes in this case.

1. To reduce the Base Value of the present value of the plant.
2. To determine the future cost of gas.
3. To determine the future value of the plant after the year 1911.

246 *Citations and Legal Deductions.*

XXVII.

In presenting my views with reference to what the final decree in this case should be, it will serve no good purpose to review the numerous authorities, which counsel for both Complainant and Defendants have cited, in the extensive briefs submitted. But it is necessary for me to state the principles of the law which I regard as applicable thereto, in the language which the court have used in enunciating them.

In the case of Wilcox vs. Consolidated Gas Co., 212 U. S., page 41, the Court uses the following language:

"The question arising is as to the validity of the acts limiting the rates for gas to the prices therein stated. The rule by which to determine the question is pretty well established in this court. The rates must be plainly unreasonable to the extent that their enforcement would be equivalent to the taking of property for public use without such compensation as, under the circumstances is just both to the owner and the public. There must be a fair return upon the reasonable value of the property at the time it is being used for the public. San Diego Land & Town Co. vs. National City, 174 U. S., 739; San Diego Land & Town Co., vs. Jasper, 189 U. S., 439.

"Many of the cases are cited in Knoxville vs. Knoxville Water Co., just decided. The case must be a clear one before the courts ought to be asked to interfere with State legislation upon the subject of rates, especially before there has been any actual experience of the practical result of such rates. In this case the rates have not been enforced as yet, because the bill herein was filed and an injunction obtained restraining their enforcement, before they came into active operation."

247 This is true of the case at bar. The rates have not been put in force, because an injunction was issued restraining the enforcement, before they came into actual operation. The only difference in this respect, is that in this case, it is a city ordinance instead of a legislative act, but that makes no difference. In Knoxville vs. Knoxville Water Co., Supra., page 8, the Court says:

"It happens that in this particular case it is not an act of the legislature that is attacked, but an ordinance of municipality. Nevertheless the function of rate making is purely legislative in its character, and this is true, whether it is exercised directly by the legislature itself, or by some subordinate or administrative body to whom the power of fixing rates has been delegated. The completed act derives its authority from the legislature, and must be regarded as an exercise of legislative power."

The ordinance in question being a legislative act, the same presumption exists in its favor, as though it was the act of the legislature itself, although the strength of the presumption may not be so great as it would be had the council given the Complainant a hearing on the question of fact, necessarily involved, in determining what would be a reasonable rate of return, while the Complainant's plant was being used for the public. Nevertheless, the rule as stated by Judge Sanborne in Shepard vs. Northern Pacific Ry. Co., 184 Federal Report, page 807, is still applicable, which is as follows:

"When a rate is made under legislative authority, the legal presumption is that it is fair and reasonable, and the proof to the contrary must be clear, especially in cases in which the rates challenged have never been in operation, and the injunction sought while they are yet speculative."

The principles enunciated have been heretofore stated in this report, but because they are especially applicable to the future
248 results, that may reasonably be expected, from the operation of the plant under the provisions of the ordinance in question

in this case, and it is well to have them clearly in view while considering the questions that are yet to be determined.

There is no question of the value of the franchise in this case. The Complainant is required to pay 2 per cent upon its gross receipts for the privilege of using the streets for its mains in which to convey gas to its consumers. The franchise in this case is a liability instead of an asset and cuts no figure in the value of the plant. The only part of the plant that may be regarded intangible is what is termed the "Going Value," and it is what enables the plant to earn such an income, as will in any sense of the word, justify the exercise of the power to fix rates by the council. With its business yet to develop, a very different question would be involved.

Then again, in fixing the rate of return, it is well enough to call attention to what has been said in the case of Wilcox vs. Consolidated Gas Co., Supra., page 48, which has been more fully quoted heretofore, under the head of "Rate of Return," as follows:

"One who invests his money in a business of a somewhat hazardous character is very properly held to have the right to a larger return, without legislative interference, than can be obtained from government bonds or other perfectly safe security."

There are many hazards in every manufacturing plant which insurance will not cover, and will not compensate, and hence, in fixing the Rate of Return at 8 per cent, it was intended thereby to cover all hazards, over and above such insurance, as the details of the cost of manufacturing and distributing gas show has been carried by the company and hence, in reckoning such cost, nothing additional has been included. Whether the rate will afford a sufficient compensation therefor the future alone can reveal.

249 Then again, it is clear that the Complainant is entitled to the benefit of the legitimate increase in value of its property. In the Consolidated Gas Case on page 52, the Supreme Court very clearly enunciates the rule as follows:

"And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property which legally enters into the consideration of the question of rates has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is at any rate, the general rule. We do not say there may not possibly be an exception to it when the property may have increased so enormously in value as to render a rule permitting a reasonable return upon such increased value unjust to the public."

In Knoxville vs. Knoxville Water Co., Supra, page 17, it is said that:

"It cannot be doubted that in a clear case of confiscation it is the right and duty of the court to annul the law. Thus in Reagan vs. Farmers Loan & Trust Co., 154 U. S., 362, where the property was worth more than its capitalization and upon the admitted facts the rates prescribed would not pay one-half the interest on the bonded debt. In Covington & Turnpike vs. Sameford, 164 U. S. 578, where the rates prescribed would not even pay operating expenses; in Smyth vs. Ames, 169 U. S. 466, where the rates prescribed left sub-

stantially nothing over operating expenses and cost of service; and in Ex Parte Young Supra, where on the aspect of the case which was before the court, it was not disputed that the rates prescribed were in fact confiscatory, injunctions were severally sustained. But *in* the case before us is not a case of this kind. Upon any aspect of the evidence the company is certain to obtain a substantial net revenue under the operation of the ordinance. The net income in argument would be substantially 6 per cent or 4 per cent for depreciation. We cannot know clearly that the revenue would not much exceed that return.

"We do not feel called upon to determine whether a dem-
250 onstrated reduction of income to that point would or would not amount to confiscation. Where a case rests as it does here, not upon observation of the actual operation under the ordinance, but upon speculations as to its effect, based upon the operations of a prior fiscal year, we will not guess whether the substantial return certain to be earned would lack something of the return which would save the effect- of the ordinance from confiscation. It is enough that the whole case leaves us in doubt. The valuation of the property was an estimate and is greatly disputed. The expense account was not agreed upon. The ordinance had not actually been put into operation, the inferences were based upon the preceding year, and conclusion of the court below rested upon that most unsatisfactory evidence, the testimony of expert witnesses employed by the parties. The city authorities acted in good faith and they tried, without success, to obtain from the company a statement of its property, capitalization and earnings."

From the foregoing authorities and others cited by counsel for the parties to this action, may be deduced the following principles of law applicable to the case at bar in its final determination:

1. That private property cannot be taken for public use without just compensation being made therefor.

2. That this rule of law applies with equal force to the right of the owner to use and enjoy his property, as to the property itself and that it cannot be taken for public use either in whole or in part without just compensation.

3. That when either an individual or a corporation invest- money in a public utility; that the legislature of a state where it is situated have the power and right to prescribe the rates which it shall charge its customers for the services rendered or the commodity furnished them.

4. That the legislature may delegate this power to such subordinate bodies as it may deem proper and right, should be invested with the exercise of such power.

5. That the only limitation upon the exercise of this power
251 is, that the rates which may be prescribed, shall be such as will afford to the owners of such public utility a reasonable return on the value of the property while it is being used for the public.

6. That the Rate of Return to which such public utility may be entitled, is not a question of law, but of fact, and that the rate to

which it is entitled shall be determined with reference to the locality where it is situated, and the return usually expected and received therein upon similar investments, and the hazards of such business.

7. The rates prescribed by the ordinance in question in this case are presumed to be adequate, but this presumption is not conclusive, but may be rebutted by evidence which clearly and satisfactorily proves that such rates will not afford a reasonable return on the value of the plant while it is being used for the public.

8. The failure of the Council to give the Complainant an opportunity to be heard and a hearing upon the facts necessarily involved in prescribing the rates to be charged for gas, before the enactment of the ordinance, tends to weaken the force of the presumption in favor of their correctness, but does not relieve the Complainant of the necessity of clearly and satisfactorily showing that the rates prescribed by the ordinance in question are so low that they will not afford a reasonable return on the value of the property, and are therefore confiscatory. The Railroad Commission of Louisiana vs. The Cumberland Telephone & Telegraph Co., 212 U. S. 414.

10. That this action having been brought and a temporary injunction granted restraining the enforcement of the ordinance, without having first tried the effect of the rates therein prescribed, the Complainant must establish by clear and satisfactory evidence that such rates are inadequate and confiscatory, and if upon the whole evidence there remains a reasonable doubt of the correctness
252 of Complainant's contention, then the bill should be dismissed without prejudice to a future action, and Complainant required to try the same before instituting another action.

11. If, however, upon the whole case, there remains no reasonable doubt of the correctness of Complainant's contention that the rates prescribed by the ordinance, will not afford an adequate rate of return, either in whole or in part, then it is entitled to have the injunction made perpetual, and the ordinance annulled as confiscatory.

253 *Probable Future Net Revenue.*

XXVIII.

1910.

1. Total Gross Revenue for the year ending December 31, 1910. (Complainant's Exhibit 23, page 15) (Defendants' Exhibit 30, Exhibit "A" thereto)	$538,493.00
Operating expenses reduced by this report (See No. — of this report Sub. Division No. —) Hagenah	335,082.00
Balance	$203,811.00
Depreciation at 6.67 cents per M. C. F. upon 531,991,000 C. F.	35,483.80
Net revenue for 1910	$168,327.20

This includes Valley Junction and.....	2,400,000	
At 8 per cent is.....	192,000	
45,000 at 8 per cent is.....	3,600	$195,600.00
Deficit		$27,272.80

The Deficit as above figured is upon the idea that the property was worth as much January 1, 1910, as at the close of the year, but that was not the case, because there was added to it during that year in mains, services and meters, the sum of..... $81,500.28 (Schedule 5, Exhibit 30) which would reduce the above deficit at least 6,520.02
And $26,715.13 for other as per Schedule 3 of said Exhibit, which reduces the deficit..... 2,137.20

more. There may be other matters besides this which would reduce the deficit still more, but the Exhibits do not disclose it so that I can be sure of it for that year.

254 **1911.**

The total amount of gas sold during the ten months of the year ending October 31, 1911, as per Complainant's Exhibit 91, is shown to be		450,011,489
Total gas as per Schedule 2, Defendants' Exhibit 30 for November, 1910.....	50,214,035	
Also for December, 1910.....	52,577,873	
Estimated increase 4.84 per cent of above.	4,975,132	
		107,767,040
Total		557,778,529
Page 7, Defendants' Exhibit, shows that the amount of gas sold Valley Junction in 1910 was 6,889,100 C. F., and for this year it is estimated at.....		7,000,000
Des Moines gas.....		550,778,529
After eliminating the charges to operating expenses the cost is shown to have been at the rate of	61.73	
Add depreciation	6.67	
Total cost	68.40	
Net revenue per M. C. F. for 90 cent gas.....	21.60	$118,968.16
Eight per cent of $2,400,000.....		192,000.00
Deficit		$73,031.84

Valley Junction.

Total receipts at $1.50 on 7,000,000 is		$10,500.00
Eight per cent on $45,000	$3,600.00	
Cost of gas, including depreciation, 68.40	4,788.00	
		8,388.00
Net revenue		$2,112.00

This amount would be the profit over and above cost, including depreciation, and, if it should be considered in favor of De-
255 fendants, it would reduce the deficit for 1911 to that extent, but it does not appear whether or not any additional expense was incurred in Valley Junction which should reduce it or not. At least, the taxes would, but what they are is not shown.

The additional investments for the estimated gains in the output of gas over 1910 for mains, house and lamp services at $2 per

M. C. F. is	$51,572.00
Depreciation on 557,778,529 is	37,203.20
Balance	14,368.80
To which add	2,400,000.00
Value of plant for 1912	$2,414,368.80

1912.

Total sale of gas as estimated for the year 1911 as last shown	557,778,524
Estimated gain over 1911	29,221,476
Total for the year	587,000,000
Deduct Valley Junction	7,000,000
Balance	580,000,000
At the same net profit for this year as for the year 1911, which is 21.60 per M. C. F.	$125,280.00
8 per cent of $2,414,368.80, value of the plant January 1, 1912	193,149.50
Deficit	$67,869.50
Same profit this year as last shown for Valley Junction	2,112.00
At the average rate, 62.58 per M. C. F. and 6.67 depreciation, gives us 69.75, and net profit per M. C. F. of 20.75 on 90 cent gas	120,350.00
Deficit	$72,799.00

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At the lowest for the year ending February 28, 1909	59.73	
Adding .70 for increased taxes	.70	
Total	60.43	
Depreciation	6.67	
Total cost of gas	67.10	
Net revenue per M. C. F on 90 cent gas	22.90	
And total net revenue		$132,820.00
Deficit		60,329.50
At the highest for the year 1910	62.98	
Adding depreciation, makes	69.65	
And net revenue of 20.35 per M. C. F. and total		118,230.00
Deficit		$75,119.50

If the Court regards the profit in Valley Junction should be considered, then the same would reduce it to the amount of its net profits as aforesaid, which is as near as I can reach them.

New Valuation.

At the rate of increase for mains, services and meters for the year 1913	$58,443.00
Depreciation on $580,000 M. C. F. at 6.67 per M. C. F.	38,686.00
Balance	$19,757.00
At this rate of increase the company would be compelled to expend for the new holder at least	100,000.00
Total	$119,757.00
Add capital for 1912	2,414,368.80
Value of plant for 1913	2,534,125.80
8 per cent upon this amount	202,730.06

257 1913.

Total gas sold for the year 1912 as estimated	580,000,000
Estimated increase for new customers	32,000,000
Total	612,000,000
Deduct Valley Junction	7,000,000
Des Moines gas	605,000,000

Net revenue for the year at same rate as for 1911—21.60 per M. C. F.	$130,680.00
8 per cent on value for this year	202,730.06
Deficit	72,050.00
Net revenue at average, 20.75	125,537.50
Deficit	77,192.56
Net revenue at highest price, 20.35	123,117.50
Deficit	79,612.56
Net revenue at the lowest as aforesaid, 22.90	138,545.00
Deficit	64,185.06
During this year, early in the year they would be compelled to have the new holder ready and it would add with other improvements necessary, to the value of the plant	$150,000.00
For mains and services for this year on the estimate of 2.00 per M. C. F. of gain over preceding year	64,000.00
Depreciation at 6.67 on 605,000 M. C. F.	$214,000.00
Deducted	40,335.00
Balance addition to value of plant	173,665.00
Add capital for 1913	2,534,125.80
Total	$2,707,790.80
8 per cent thereon would give	$216,623.26

258 1914.

Total gas for the year 1913 as hereinbefore shown	612,000,000
Gain for the year 1914	33,000,000
Total amount	645,000,000
Deduct Valley Junction	7,000,000
Total Des Moines gas	638,000,000
Net revenue at 1911, costs 21.60	$137,808.00
8 per cent on value for this year, $2,707,790.80	216,623.20
Deficit	$78,815.20
At highest cost of gas for year 1910, 20.35, total net revenue	129,833.00
Deficit	86,790.20

At the lowest cost of gas for the year ending February 28, 1909, net 22.90 per M. C. F.	146,102.00
Deficit	70,521.20
At the average for the five years net revenue, 20.75 per M. C. F.	132,385.00
Deficit	84,238.00

It is not necessary to pursue these estimates further. They speak for themselves, and the price for gas at the lowest, highest and average for the year 1911 are each calculated, and they all show a deficit. The calculations for future improvements are based upon the evidence of all the engineers, to which reference has already been made, and they are imperative. It seems that this struck the company at a period when larger extensions were a necessity to meet the demands of the increasing business.

The foregoing calculations, after the year 1911, are made upon the lowest cost of gas for any year prior to the year 1911, which year ended February 28, 1909, which was 59.73c per M. C. F., with the increase in taxes .70 added, making 60.43c per M. C. F., and adding depreciation, 6.67c per M. C. F., makes 67.10c total,
259 leaving a net profit of 22.90c, but if the Court holds that the Complainant is entitled to the $10,000 for the salaries of the officers of the company, it would increase the amount 1.88c per M. C. F., making 68.98c with a net revenue per M. C. F. of 21.02c and the deficit accordingly. If rate regulation is added, in my judgment, 2c per M. C. F. for five or six years would meet that amount, and this would reduce the net revenue to 19.02c per M. C. F. and increase the deficit.

2. The average for the five years prior to 1911 is 63.34, from which .50 of a cent was deducted for salaries general, and .26 on account of expense extra, making 62.58c, and this does not include rate regulation, but if this is allowed, the average would be increased to 65.34c per M. C. F., and to add depreciation, 6.67c, it would be 72.01c per M. C. F., which taken from 90 cents would leave only 17.99c per M. C. F. and increase net deficit.

3. The year 1910 at 62.98 of salaries general should be allowed it would increase this amount 1.88c per M. C. F. total $10,000 increase the deficit to that extent and rate regulation at 2 cents per M. C. F. would increase the deficit about $10,000.

4. For the year 1911 we have used the cost per M. C. F., which as eliminated makes 61.73, but add salaries general it would increase this amount about 1.62 per M. C. F. (On this account $1,250.00 should be deducted from $10,000, because the manager, Jansen Haines, became president without increase of salary, and hence half the year this amount would not be paid.) To add rate regulation would make 2 cents per M. C. F. more, and contribution to Greater Des Moines Committee .25 of a cent. The balance of the charity allowance is included in the 61.73. This would increase the deficit for 1911 accordingly. This totals the cost of gas to 65.60 cents and

depreciation added, makes 72.27 cents, and net revenue 17.73 cents per M. C. F.

260 The foregoing calculations are made to aid the Court should it be determined that any or all of them should be included in future calculations with reference to the cost of gas, all of which, in my judgment, can be determined from this report.

5. The rate of insurance against loss by accidents is about 1.42 per M. C. F., and the operating expenses show about .38c for past damage claims, which in round numbers 1.04 cents per M. C. F., and this included as part of hazards in fixing the rate of return, but should the rate of return be reduced, then this ought to be included in the cost of gas.

6. In relation to the contribution to the Greater Des Moines Committee, upon examination of Defendants' Exhibit 27, page 181, I find there was a contract of subscription to that committee to pay $2,000 per year for three years, approved by the Board of Directors, September 13, 1909, and hence it runs into 1911, and perhaps included, but there is no obligation beyond that three years' approval, and no obligation to pay it and thereafter at least, it should not be allowed in the future cost of gas.

Stockholders' and Directors' Record.

261 In this connection, it may aid the Court to give the pages of Defendants' Exhibit No. 27, which shows the increase in wages of the President and other employés of the Complainant. This Exhibit, together with Exhibit No. 28, of Defendants, contains the records of the Stockholders and Directors' meetings of the Complainant Company from and including July 24, 1911, and shows the election of Jansen Haines, President, July 10, 1911. Defendants' Exhibit 28 contains the minutes of meetings not yet entered in the book from April 24, 1911, to July 24, 1911.

The various meetings of the Board of Directors showing increase in wages may be found on page 236 of date February 11, 1911; page 208, April 5, 1910, page 200, February 28, 1910; page 195, December 27, 1909; page 155, January 20, 1909; (Scale of wages for classified labor, page 140, June 17, 1908); increase, January 1, 1908, page 135; page 84, February 20, 1907; the fixing of "salaries general" will be found on page 185, October 20, 1909. No salaries to these officers totaling $10,000 per year until this date, and are the salaries rejected under that head in estimating cost of gas. This exhibit shows the approval of extensions, improvements and betterments, and the estimated cost thereof since the organization of Complainant Company. It also shows the approval of the items or many of them under the head "Expense Extra," of which the amount paid the Greater Des Moines Committee of $2,225 was disallowed. This was authorized September 13, 1909, for three years at $2,000 per year (Page 181). This exhibit also shows issuance of bonds on the extensions and improvements from March 1, 1906, to December 31, 1910, of $472,993.63, or the amount of $60,000 in addition to those reported by experts. This was done January 23, 1911.

262 *Final Hearing.*

Copies of the foregoing report were furnished Counsel for Complainant and Defendants on the 10th day of March, and thereafter pursuant to notice, on the 1st day of April, 1912, at the United States Court Room, in Des Moines, Iowa, the Special Master's Court again convened and said *court* came on for hearing upon the preliminary report, Complainant appearing by its solicitors, N. T. Guernsey and W. L. Read, and Defendants by H. W. Byers and R. O. Brennan, and the first and second days of April aforesaid were occupied in the final argument of the case, and after close of the argument duly submitted for final decision.

During the session aforesaid, Counsel for Defendants submitted requests for additional findings, which it was agreed in open session by Counsel for both parties, should be submitted and the answers thereto filed as of date of the filing of this report, should it be necessary for any reason to defer the answers thereto, to a later date.

During the final argument the decision and opinion in the case of the Cedar Rapids Gas Company vs. Cedar Rapids et al., by the Supreme Court of the United States on the question of "Going Value" was fully argued by Counsel for Complainant and Defendants, as well as other matters in connection with the preliminary report.

263 *Conclusion.*

The foregoing results were worked out from the evidence in the order in which they appear in the report, and without any thought that in the end that the final conclusion would be so close to the border line between Complainant and the Defendants under the decisions of the Supreme Court of the United States, but the facts found and determined therein, in my judgment, are fully sustained by the evidence. There is so much doubt in one item, in the Base Values, that is included in the item No. 18 for $21,057, that the same is reduced to $20,657, and the value of the physical property is made in round numbers $2,100,000, and Going Value at $300,000, making $2,400,000, January 1, 1911, upon which the Rate of Return is reckoned. The deduction of $140,000 on account of taking up and replacing mains where none existed when the mains were laid is fully stated under that head.

Counsel for Defendants, in argument, claim that the Rate of Return allowed in the Des Moines Case could not be considered as evidence, because the evidence in that case was not before me, but that would be just as true with reference to the other rates that are lower, urged on my consideration and, strictly, none of them can be considered as evidence, but only comparison in connection with the evidence in the case, and what the courts have to say with reference to them. The future increase in the value of the property by reason of extensions and improvements is fully stated in the report already.

The operating expenses are left as found, except upon the matters

of the salaries of the General Officers, $10,000 per year, the
264 Regulation of Rates, and subscription to the Greater Des Moines Committee. Should these be included it would add about 4.25 cents per M. C. F. to the cost of gas. And should the Court conclude that all of the casualty insurance should be added it would make 1.04 cents more.

There is an error on page 73 of this report for the year 1897 in which the gain should be 7,817 C. F. instead of 17,817, which should reduce the total gains for the fifteen years to 470,891, and increase the general average for the fifteen years and ten years, but as only the average for the five years was used in calculations for the increase in mains, services and meters, it makes no difference in relation to them.

It is easy enough to determine from the books what has been the average cost of gas during the five years preceding 1911, and what it cost during the year ending February 28, 1909, and for the year ending December 31, 1910, as well as for the first ten months of the year 1911, but, to derive therefrom the future cost of gas is a very perplexing problem, and the more I have studied it, the more difficult it becomes. These years do not furnish the same results at any time, and which, if any, should be accepted. Now, taking the year 1910, it is worthy of note that while during the four years preceding it, there was a steady decrease in the manufacturing cost, on the other hand, there was quite an increase in the cost of distribution per M. C. F., when in view of the increased output, the reverse should have been the case. It is true that the repairs account for a part of it, because they were above the average. Repairs for that year, 1910, were 7.42 cents, and substitute the average in 1910, and we have reduced the cost to 61.05 per M. C. F., but for the first ten months of the year 1911 we have 61.73 cents per M. C. F. and the repairs only slightly above the five-year average, and yet the cost of
265 gas increased, when the manufacturing cost was reduced from 29.60 to 29.33. Why should the increase in sales cause such a difference? A part can be accounted for in the increase of wages. These conditions lead me to believe that with economy and care, the cost may be reduced below 60 cents, as it was in the year ending February 28, 1909, without detriment to the service. At least, the future cost of gas is not clear and satisfactory to me. It is true that in this matter we are entering the realm of prophecy, and none of us have that gift. What a trial under the present rates would produce is not before us, and cannot be determined until it is so tried. Only the past throws any light upon it.

On the question of the effect of reduction upon the increased sales of gas to existing customers, the Supreme Court of the United States in the Consolidated Gas Co. case, lay a good deal of stress. In the case of the R. R. Commissioners of Louisiana vs. The Cumberland Telegraph & Telephone Co., 212 U. S., page 427, in commenting upon an increase of business, Justice Peckham says:

"So, also, in furnishing gas at reduced rates the reduction in the rate would very probably result in an increased consumption, not only in increased demand for more consumers, but also increased

consumption by consumers already existing, and the increased cost in furnishing gas would be nothing like in proportion to the increased consumption. In these cases increased profits might be the result of the decreased rates."

This question was not before the court in that case, but it was in the Consolidated Gas Case and in it the same Justice says:

"And again, increased consumption at the lower rate might result in increased earnings, as the cost of furnishing the gas would not increase in proportion to the increased amount of gas furnished."

266 That an increase of sales to existing customers would result in greater profits is perfectly true. It would practically double the profits per M. C. F. on the increase. On new customers it ought to do the same, only it would at the same time, cause additional value to be added to the plant, however, it would increase the profits materially in the final result, and the extracts show the emphasis placed by the Court upon increased sales. It was one of the matters that caused that case to be dismissed without prejudice with the admonition to give the rates a trial.

On the other hand, should a like order be made in this case, it might result in a loss to the Complainant of from two to three hundred thousand dollars in the next five years, which does not look like a "square deal" nor comport with my ideas of justice, but that was also true in the Consolidated Gas Co. case, and in that case a loss of from half a million to a million dollars might result therefrom annually. It is one of the hardships that may result from rate making by a tribunal charged with that power and duty. It is very likely to result under the chaotic conditions of our present laws on this subject. There is no method prescribed for its exercise, and an ex parte investigation rarely ever results fairly to the parties, but no matter how it may be exercised nevertheless, the burden of proving by clear and satisfactory evidence rests upon the Complainant, and it must be shown beyond a reasonable doubt upon the whole case that the rates are confiscatory, before the courts will interfere and so declare them. It may be that in the conclusion of law that this is stated too strongly, but the rule is stated in the Consolidated Gas Company case, in the following language on page 54:

"Upon a careful consideration of the case before us, we are of the opinion that the Complainant has failed to sustain the burden cast upon it of showing beyond any just and fair doubt that the

267 act of the legislature of the State of New York are in fact confiscatory."

To my mind there is no difference between a "just and fair doubt" and a reasonable doubt. The latter expression was used by me because it is the qualification usually applied in designating it, but had the quotation been before me when the legal conclusions were drafted it would have been used.

In my judgment the words "in whole or part" therein are correctly employed. There can be no middle ground in taking the use of private property for public use.

If that were not true then the private owner would not receive a just compensation therefor.

While reckoning under the valuations at the past rates will show a deficit, it must not be forgotten that there are certain elements therein that have not been demonstrated. It is not necessary to enter upon these calculations to explain them. They speak for themselves. It is true that only an ex parte investigation was had by the council, notwithstanding the Complainant requested a hearing and, hence the weight of presumption in favor of the rates are weakened. What I mean by a hearing is that both sides should be heard and when such a hearing is had, even if it did not operate as an estoppel, it would give great weight to the result unless arbitrarily disregarded by the council. But in its absence the burden remains on the Complainant and the evidence must be clear and satisfactory.

It is evident, also, that the Company had reached a point where large extensions and improvements must be made, which will at least, in the next five years, total $500,000, and add that amount, less depreciation, to its value, increasing it something like $300,000. Should the Court hold that the $140,000 for taking up and replacing

mains [paving] where none existed at the time the mains
268 were laid, then a decree for the complainant would be imperative, should "Going Value" be included in the basis for a return.

Should the Court hold that "Salaries General" and the contribution to the Greater Des Moines Committee be included in the future cost of gas, then a like result should follow. So, also, would rate regulation require a like result, should it be held a proper matter to be considered, and 2 cents per M. C. F. be allowed therefor.

It is not the intention to change what has been said heretofore of the indication from Schedule 4, Defendants' Exhibit 30, in relation to the increase of the use of gas by existing consumers. The past is of little value either way on this subject. What the Supreme Court have to say on this subject is already given. So far as new customers are concerned, the estimates made are reasonably certain, and these estimates are made with reference to them. None are made with reference to the increase from existing customers.

The future cost of gas has occupied my attention for some time without being able to reach any satisfactory conclusion thereon.

Judicial prophecy is a new role for me. The future tells its own story best when it arrives. I begin to realize in its full force the reason why the Supreme Court of the United States has been so insistent in requiring a trial of the rates, and its wisdom and necessity, because of the perplexing questions that inevitably arise in a close case. The rule of evidence applied thereto has a distinction of its own when applied to the future results where there has been no test of the rates made by actual trial. It must clearly appear that the rates are confiscatory, and there must be no just and fair doubt thereof when applied to the whole case, otherwise there must be a trial of the rates before the Court will interfere and annul the ordinance.

269 The opinion in the recent case of the Cedar Rapids Gas Co. vs. Cedar Rapids, adds additional emphasis thereto. Not only so, but it also renders it extremely doubtful that "Going Value" will be included in the valuation of such a plant as the basis of return, beyond the fact that it is in "successful operation." That would exclude the sum of $300,000 estimated in this case, on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.

In my judgment, after considering the able and thorough arguments of Counsel, that it is decisive of the question, and holds that "Going Value" should not be considered in determining the basis upon which the Complainant is entitled to have its return reckoned, and feel that it is my duty to so state.

The physical value as hereinbefore determined, is reckoned upon the fact that the plant was in "successful operation" when the ordinance was enacted, otherwise its value would be much less. The "Going Value" is that enhancement which results from a well developed and paying business. This would result in reducing the estimated deficit for each year $24,000, and yield a return to the Complainant of, at least, 6 per cent on $2,100,000.

While this case is close to the border line, I cannot say on the whole case that the evidence beyond any just and fair doubt, satisfies me that the rates will prove confiscatory, should the ordinance be put into effect and an actual test thereof be made.

It is my judgment that the Complainant's bill be dismissed without prejudice, at its cost, as in the case of Wilcox vs. Consolidated Gas Co. Supra.

A supplemental report will be made, setting out the costs. The parties have not furnished me with a statement of the time attendance and mileage of their witnesses.

270 The evidence has been duly certified as hereinbefore set forth, and a list of the Exhibits will hereafter be furnished as soon as possible.

Witness my hand this 4th day of April, 1912.

ROBT. SLOAN,
Special Master in Chancery.

271 *Articles of Incorporation.*

Exhibit "A" to Master's Report.

Know All Men by These Presents, That we, the undersigned, for ourselves, our successors and associates, do hereby form and organize a body corporate for the purpose of pecuniary profit, and for the purpose hereinafter expressed, under and by virtue of the laws of the State of Iowa, and under the provisions of Chapter 1, Title IX, of the Code of Iowa, and for that purpose do hereby adopt, execute and acknowledge the following Articles of Incorporation.

Article I.

The name of this corporation shall be Des Moines Gas Company.

The principal place for the transaction of its business shall be at Des Moines, Polk County, Iowa, with the right to establish and maintain branch offices at such other points as the Board of Directors of said corporation may from time to time determine.

Article II.

The general nature of the business to be transacted by said corporation shall be to own, operate and maintain gas plants in the city of Des Moines, Iowa, and in any other place or places in the State of Iowa, and to construct and erect all buildings and improvements of every kind and nature necessary to conduct and carry on the gas business, and to lay and maintain gas pipes and mains, and to erect and maintain gas posts and fixtures, and to manufacture gas and to furnish the same with heat, light and power or any
272 of them from said plant or plants, and to make all necessary and adequate connections with the said pipes and mains for the purpose of distributing said gas to consumers of the same.

And the said corporation shall have the power to buy, own, hold or lease any real estate that may be deemed necessary to the transaction and conduct of its business, and sell or lease any portion of the same from time to time as may be deemed necessary, and shall have power to buy, own, purchase and deal in all kinds of tools, appliances, goods, wares and merchandise, and any and all other material that it may require or deem necessary in the transaction of its business, with the right to sell and dispose of any portion of the same, to make and execute any and all necessary contract or contracts with any municipality or municipalities, individuals, firms or corporations with relation to the furnishing of gas for any purpose whatever.

The said corporation shall also have power to buy, purchase and own any franchise or franchises from any other person, firm or corporation, granted to such person, firm or corporation for the purpose of operating gas plants or lay- down and locating gas pipes and mains.

And the said corporation especially shall have the power to buy, purchase and own all the property, real, personal or mixed, and all the rights, franchises, licenses and privileges heretofore granted or held by the Capital City Gas Light Company and to carry out and execute, all contracts heretofore made by said company.

The said corporation shall have power to do every act necessary to operate and maintain gas plants for the purpose of furnishing light, heat, power or fuel in the city of Des Moines, Iowa, and any other place or places as the Board of Directors may from time to time determine.

273 The said corporation shall also have power to issue its notes, bonds, or other evidence of debt, and to secure the same, or any part thereof, by a mortgage or deed of trust upon any

or all of its real or personal property, and upon all of its franchises, rights, licences and privileges, and upon all or any portion of its gas pipes or mains, and all machinery, appliances, material and every article of property that may be owned by it, together with all franchises obtained by it from any municipality or municipalities.

And the said corporation shall also have power to buy, own, purchase and sell any stock of any other corporation that its Board of Directors may determine, and shall have all powers given by law to corporations for pecuniary profit necessary for the proper and legitimate conduct of its business.

Article III.

The amount of the authorized capital stock of said corporation shall be two million two hundred and fifty thousand dollars ($2,250,000), divided into twenty-two thousand five hundred (22,500) shares, of the par value of one hundred dollars ($100) each.

Whatever of said stock shall be subscribed, the same shall be paid for at such times and in such manner as the Board of Directors may order and determine.

Article IV.

The time of commencement of said corporation shall be on the first day of March, 1906, and shall continue for a period of twenty (20) years thereafter, with the right of renewal or dissolution thereof, as provided by the statutes of the State of Iowa.

Article V.

The affairs of said corporation shall be conducted by a board of five (5) directors, who shall be elected by the stockholders
274 at each annual meeting thereof, to be held in each year on the first Tuesday in April, and the first annual election of said corporation shall be held on the first Tuesday in April, A. D. 1907, and until the first annual election, or until their successors are chosen, the following named persons shall constitute and be a provisional board of directors, to wit:

Geo. H. Carr, James P. Hewett, Craig T. Wright, F. Corlies Morgan, Rollin Norris.

The board of directors shall elect as the officers of said corporation a president, one or more vice presidents, a secretary, an associated secretary, a treasurer, and an assistant treasurer.

The board shall also have authority to appoint such other managing officers or agents as they may from time to time determine.

At all meetings of the stockholders of said corporation each share of stock shall be entitled to one (1) vote, either in person or by proxy, duly authorized in writing.

Until the first annual election, or until their successors are chosen, the provisional board as herein nominated shall have all the powers

of the regularly elected board of directors of the corporation, and shall, after these articles are recorded and Certificate of Incorporation issued, meet and elect the officers herein defined.

Special meetings of the stockholders of the corporation may be called at any time by the president (or by any one of the vice presidents in case of absence or disability of the president), or upon the written request of the holders of one-third of the capital stock outstanding at the time, on five days' notice to each stockholder, by mail, at his last known post office address, specifying the time, place and object of said special meeting.

275 All vacancies in the membership of the board of directors and all vacancies in the offices of said corporation shall be filled by the board of directors.

Article VI.

The highest amount of indebtedness to which the said corporation shall at any time subject itself shall not exceed one-third of its capital stock.

Article VII.

The private property of the shareholders and members of the corporation shall be exempt from all corporate debts.

Article VIII.

These articles may be amended, repealed, changed or modified at any actual meeting of the stockholders of said corporation or at any special meeting called for that purpose, upon compliance with the statutes of the State of Iowa, in such cases made and provided.

Article IX.

Subject always to the by-laws made by the stockholders, the board of directors may make by-laws, and from time to time may alter, amend or repeal any by-laws; but any by-laws made by the board of directors may be altered or repealed by the stockholders at any annual meeting, or at any special meeting, provided notice of such proposed alteration or repeal be included in the notice of the meeting. In witness whereof the incorporators of the said incorporation have hereunto affixed their respective names this 28th day of February, A. D. 1906.

GEORGE H. CARR.
JAMES P. HEWETT.
CRAIG T. WRIGHT.
F. CORLIES MORGAN.
ROLLIN NORRIS.

276 STATE OF IOWA,
County of Polk, ss:

On this 28th day of February, A. D. 1906, before me, George E. Cromley, a Notary Public in and for said county, personally came Geo. H. Carr, James P. Hewett, Craig T. Wright, F. Corlies Mor-

gan and Rollin Norris, personally to me known to be the identical persons named in and who executed the foregoing Articles of Incorporation, and they severally acknowledge the execution of the same to be their voluntary act and deed for the purposes therein expressed.

In witness whereof, I have hereunto set my hand and affixed my official seal at Des Moines, in the State of Iowa, on the day and year above written.

[SEAL.]

GEO. E. CROMLEY,
Notary Public in and for the County of Polk, State of Iowa.

POLK COUNTY, *Iowa:*

Filed for record February 28, 1906, at 12:05 o'clock P. M., and recorded in book 18, page —.

MRS. FRANK W. DODSON, *Recorder.*

(STATE OF IOWA), *ss:*

Filed for record in the office of the Secretary of State February 28th, A. D. 1906, and recorded in book 1-4, page 95.

W. B. MARTIN,
Secretary of State.
D. A. HITES, *Deputy.*

Proof of publication filed May 12, 1906.

277 EXHIBIT "B" TO MASTER'S REPORT.

Ordinance No. 1767.

An Ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the city in supplying or distributing such gas, and prescribing penalties for a violation thereof.

Be It Ordained by the City Council of Des Moines:

SECTION 1. From and after the first day of January, A. D. 1911, the rate to be charged and collected for gas by any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, is hereby fixed as follows, to wit: Ninety (90) cents for each thousand cubic feet.

SEC. 2. If any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, shall reduce the price of gas to its patrons below the price*d* fixed in this ordinance, then any such person, firm or corporation shall not charge any person or persons for gas a price in excess of that which said person, firm or corporation has charged any other person. The pro-

visions of this section shall not be construed to prohibit special contracts for lower rates to large consumers.

SEC. 3. Any person, firm or corporation using the streets, highways, avenues, alleys or public places of said city in supplying or distributing gas shall pay to the City Treasurer for the use of said City of Des Moines, as a license or occupation fee, for each year that the streets, highways, avenues, alleys or public places of
278 said city are used in supplying or distributing gas, beginning January, A. D. 1911, two (2) per cent of the gross receipts for gas sold during such year; the same to be paid semi-annually and within thirty (30) days after the expiration of the preceding six (6) months.

SEC. 4. Any person, firm or corporation supplying or distributing gas to said City of Des Moines or its inhabitants, shall furnish gas of not less than twenty-two (22) candle power.

SEC. 5. Nothing in this ordinance contained shall ever be construed to in any manner recognize any franchise or other rights claimed by any person, firm or corporation to use the streets, highways, alleys, avenues or public places of said city for the purpose of laying or maintaining mains and pipes in supplying or distributing gas to said City or its inhabitants.

SEC. 6. Any person, firm or corporation supplying or distributing gas to said City of Des Moines, or its inhabitants, or any officer, agent, collector or employé of such person, firm or corporation, who shall charge, demand, collect or receive any rate or compensation for gas supplied or distributed to said City of Des Moines, or to any inhabitant thereof, in excess of the rate fixed by this ordinance, or any such person, firm or corporation or officer thereof failing to pay the license fee provided for herein, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine in a sum not exceeding one hundred dollars ($100.00), or by imprisonment in the city jail for a period not exceeding thirty (30) days.

SEC. 7. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SEC. 8. This ordinance being deemed urgent for the immediate preservation of the public peace, health and safety, shall be in
279 full force and effect from and after the first day of January, A. D. 1911, and after its passage and publication as provided by law.

Passed December 27, 1910.

Signed December 27, 1910.

JAMES R. HANNA, *Mayor.*

Attest:

NEAL JONES, *City Clerk.*

I, Neal Jones, City Clerk of the City of Des Moines, hereby certify that the above and foregoing is a true copy of an ordinance passed by the City Council of said City at a meeting held December 27, 1910, signed by the Mayor December 27, 1910, duly recorded and published as provided by law, February 4, 1911.

NEAL JONES, *City Clerk.*

280 EXHIBIT "C" TO MASTER'S REPORT.

An Ordinance to fix the price of illuminating gas, and to prescribe the conditions under which persons and corporations dealing in illuminating gas can occupy and use the streets and alleys of the City of Des Moines.

No. 724, passed May 16, 1895.

Be it Ordained by the City Council of the City of Des Moines:

SECTION 1230. Rates. Section 1. That every person, firm or corporation furnishing to the inhabitants of the City of Des Moines illuminating gas shall be entitled to charge and receive therefor, the following prices and no more, to wit: For illuminating purposes, $1.40; for fuel purposes, $1.10 per thousand cubic feet; with a discount of ten cents per thousand feet if paid on or before the fifteenth day of the month following that in which the gas is furnished. The above prices are for illuminating gas having an illuminating power of not less than twenty-four candle power; gas having less power shall be furnished at a proportionate less rate per candle power.

SEC. 1232. Report to City, Sec. 3. Any person, firm or corporation which is now in possession of the streets or alleys of the City, for the purposes provided in this ordinance, shall be and is hereby required to file a report with the City Clerk on the fifteenth day of January and July of each year, giving the number of thousand feet of gas manufactured and furnished the City or its inhabitants during the previous six months, and the amount per thousand feet received therefor.

In case any such person, firm or corporation shall fail or
281 refuse to file said report as aforesaid then each and every such person, firm or corporation shall be required to pay to the City the sum of $25 per day for each and every day said report is delayed. Any such person, firm or corporation shall be required to furnish all necessary meters free, and shall furnish and lay service pipe to the lot line free, and from the lot line to the meter for not to exceed fifteen cents per foot.

An Ordinance to amend an ordinance heretofore passed 1895, and again passed on the 16th day of May, A. D. 1895, and designated as Ordinance No. 724, and entitled as follows: An ordinance to fix the price of illuminating gas, and to prescribe the conditions under which persons and corporations dealing in illuminating gas can occupy and use the streets and alleys of the City of Des Moines and prescribing the terms of a proposed contract with the Capital City Gas Light Company as to rates for gas and conditions of purchase of said gas plant.

No. 751, passed February 7, 1896.

Be It Ordained by the City Council of the City of Des Moines:

SEC. 1237. Capital City Gas Light Company. Section 1. That said Ordinance No. 724, passed on the 29th day of April, A. D. 1895,

and again passed on the 16th day of May, A. D. 1895, (and more fully described in the caption thereof), be and the same is hereby amended and modified as respects the Capital City Gas Light Company, to the extent hereinafter specified and no further; provided, that this amendment shall be accepted by said Capital City Gas Light Company as hereinafter specified. Unless so accepted, said Ordinance No. 724 shall continue in full force as originally passed.

SEC. 1238. Rates. Sec. 2. From and after January 1, A. D. 1896, the said Capital City Gas Light Company shall be entitled to
282 charge and receive for gas for illuminating, fuel or other purposes, furnished by it to the City of Des Moines or its inhabitants, for the period of fifteen years from and after the 1st day of January, A. D. 1896, prices or rates not to exceed the following: For two years thereafter, to wit: the years 1896 and 1897, $1.30 net per thousand cubic feet; for the next two years, to wit: The years 1898 and 1899, $1.25 net per thousand cubic feet; for the next two years, to wit: 1900 and 1901, $1.20 net per thousand cubic feet; for the next three years, to wit: 1902 and 1904, $1.15 net per thousand cubic feet; for the next year, to wit: 1905, $1.10 net per thousand cubic feet; for the next five years, to wit: The years 1906, 1907, 1908, 1909, and 1910, $1 net per thousand cubic feet. The said Capital City Gas Light Company may add 10c. per thousand cubic feet to each of these prices, but shall be required to discount that sum for payment by or before the fifteenth day of the month following that in which the gas was consumed.

SEC. 1230. Street Lamps. Sec. 3. The City of Des Moines shall pay to the Capital City Gas Light Company, for said term of fifteen years, for such street lamps as said City may use, and that may be furnished by and gas supplied from the Capital City Gas Light Company, as follows: For each lamp until the number shall reach the total of five hundred, $18 per year; after the number of five hundred has been reached, $17 per lamp per year for the total number of lamps so used. The gas so used to be paid for by the City monthly. Five foot burners or their equivalent in illuminating power shall be used in street lamps.

SEC. 1240. Quality. Sec. 4. The Capital City Gas Light Company shall furnish under this ordinance, gas of not less than twenty-two candle power.

SEC. 1241. Purchase. Sec. 5. The said City of Des Moines shall have the right to purchase at the price as hereinafter deter-
283 mined at any time after five years and within fifteen years from January 1, 1896, by giving not less than one year's notice in advance, the Capital City Gas Light Company's property; this right to exist in the City in its corporate capacity, or in the City's trustees or in the City in any other manner by which the privilege of purchasing may, on behalf of the City, be exercised in good faith. To that end, the present value of the Capital City Gas Light Company's plant shall be determined by three appraisers, one of whom shall be chosen by the Capital City Gas Light Company, one shall be nominated jointly by the committee on gas light and lamps of the City Council, and the citizens' special committee, and be confirmed

by the City Council, and the third shall be chosen by the two thus selected. These appraisers shall file a complete inventory of all the property of the gas company, with their findings. The Capital City Gas Light Company shall furnish the City an annual statement in complete detail of expenditures for betterments and repairs, verified by the oaths of its manager and secretary. The City to have the full facilities for verification of the same by experts of its own selection. Replacements and ordinary repairs not to be counted as betterments. The statement to be furnished on or before the 30th day of January in each year, for the year preceding. In the event of purchase by the City, the actual cost of such betterments is to be added to the first appraisement, and no more.

SEC. 1242. Time Limit. Sec. 6.—The provisions of this amendment shall not be taken or construed to in any manner either affirm, recognize or deny any franchise or other rights now claimed by said Capital City Gas Light Company under ordinances heretofore passed, or contract made with said City of Des Moines; and the privileges granted by this ordinance shall absolutely cease at the end of the term of fifteen years for which it specifies rates for gas. This amendment shall not be construed as conferring upon the
284 Capital City Gas Light Company an exclusive right for any period of time, to furnish gas to said City or to private consumers, nor to limit or restrain the city or such private consumers from purchasing gas from any other gas company upon such terms as may be agreed upon or may be fixed by legal authority, nor to limit the City of Des Moines from purchasing from any other company, person or persons, or from at any time constructing gas, electric light or other works that may be adapted to the purpose, either in its own name or through the instrumentality of trustees or in any other manner, for the purpose of lighting its streets, and of supplying the City and its citizens with light, fuel or power.

SEC. 1243. Suits. Sec. 7.—The Capital City Gas Light Company shall dismiss its suit now pending against the City of Des Moines, now pending in the United States Circuit Court for the Southern Division of Iowa, Central Division and shall pay the court costs.

SEC. 1244. Payment to City. Sec. 8.—The Capital City Gas Light Company, as a license fee for each year that it may continue to use the streets of said City in distributing gas beginning January 1, A. D. 1896, shall pay to the City Treasurer, for the use of said City of Des Moines, two per cent of its gross receipts for gas sold during such year; the same to be paid semi-annually and within thirty days after the expiration of the preceding six months.

SEC. 1245. Acceptance. Sec. 9.—This amendment shall not become operative or go into effect unless and until the same shall be accepted in writing by said Capital City Gas Light Company, and such written acceptance shall be filed with the City Clerk of said City within fifteen days after the passage of this ordinance and not afterward; and when so accepted this amendment shall be deemed a contract between said City of Des Moines and said Capital City Gas Light company.

285 SEC. 1246. Large Consumers. Sec. 10.—That if the said Capital City Gas Light Company shall at any time reduce the price of gas to its patrons below the price fixed in the ordinance, then said Capital City Gas Light Company shall be prohibited during the entire term covered by this ordinance from charging any person or persons or patrons of said company for gas, a price in excess of that which said company has charged any other person. This shall not be construed to prohibit special contracts for lower rates to large consumers.

SEC. 1247. Taxes. Sec. 11.—All the provisions, terms and conditions of this ordinance shall apply and be binding upon said Capital City Gas Light Company, its successors or assigns.

Buildings.

					Exhibit No.	Page.
1	A & B	Purifying House	$8,750	R	22	2
1	C	Fire Brick Shed	91	B	21	76
3		Meter and Governor House	7,739	B	21	76
4		Retort and Generator House	5,042	B	21	76
5		Coal Shed and Condenser Room	2,073	B	21	76
6	A & B	Boiler and Engine Room	6,561	B	21	76
6	C	Boiler House Extension	1,114	B	21	76
7		Generator House	13,640	R	22	3
8	A	Coal and Coke Shed	6,862	B	21	76
8	B	Runway	325	B	21	76
10		Shops and Store Room	8,031	B	21	76
11		Barrel Oil Store Room	210	L	20	45
12		Pump House	777	B	21	76
13		Oil Pump House	210	B	21	76
14		Meter House	1,512	B	21	76
15		Stable	1,934	B	21	76
16		Boiler House	764	B	21	76
17		Fire Brick Storage	107	B	21	76
35		Fire Hose House	34	L	20	59
53		Coke Shed	584	L	20	61
54		Coke Rack	74	L	20	63
55		Oil Barrel Storage House	94	L	20	64
		Total	$66,528			

The letter "R" following figures shows Randolph; "B." Baehr; "L," Lea; and following this on the same line is the No. of Complainant's Exhibit and page of the exhibit where the same are found. To get the Base cost new, of Randolph's report, it is necessary to divide the figures given by 120 per cent, as he added to his base figures 20 per cent as his total "Overhead Charges." This is true of the entire report of Randolph, which is Complainant's Exhibit 22. The Base figures, or as Lea calls it—"Net construction cost new."

Buildings.

				Baehr.	Page.	Lea.	Page.	Randolph.	Page.
1	A & B	43	Purifying House	$9,501	76	$9,507	19	$8,750	2
1	C	43	Fire Brick Shed	91	76	124	21	100	2
3		44	Meter and Governor House	7,739	76	7,793	25	7,960	2
4		45	Retort and Generator House	5,042	76	5,050	28	5,400	2
5		46	Coal Shed and Condenser Room	2,073	76	3,009	30	2,350	2
6	A & B	47	Boiler and Engine Room	6,561	76	6,853	32	7,190	3
6		48	Boiler House Extension	1,114	76	1,354	34	1,300	3
7		49	Generator House	13,921	76	15,336	37	13,640	3
8	A	50	Coal and Coke Shed	6,892	76	6,974	39	8,380	3
8	B	51	Runway	325	76	440	40	350	3
10		52	Shops and Store Room	8,031	76	8,221	43	10,620	3
11		53	Barrel Oil Store House	240	76	210	45	550	4
12		54	Pump House	777	76	880	47	850	4
13		55	Oil Pump House	210	76	229	49	250	4
14		56	Meter House	1,512	76	1,576	51	1,720	4
15		57	Stable	1,934	76	2,266	53	2,370	4
16		58	Boiler House	764	76	983	55	1,290	4
17		59	Fire Brick Storage	107	76	132	57	110	5
35		60	Fire Hose House	37	76	34	59	50	5
53		61	Coke Shed	589	76	584	61	1,000	5
54		62	Coke Rack	82	76	74	63	160	5
55		63	Oil Barrel Store House	95	76	94	64	130	5
				$67,607		$71,723		$74,520	

THIS PAGE I
VERTICAL I

Exhibit "E" to Master's Report.

Yard Structures.

	No.		Baehr.	Page.	Lea.	Page.	Randolph.	Page.
18	32	Holder (175 M.)	$30,000	91	$29,870	85	$33,000	8
19	33	Holder (309 M.)	45,800	91	45,699	85	46,000	8
20	34	Holder (1,132 M.)	105,320	91	113,717	86	113,000	8
21	35	Oil Tank (100 M.)	5,824	92	5,944	86	6,700	10
23	36	Oil Tank (16 M.)	1,469	92	1,424	87	1,600	10
22	27	Oil Tank (64 M.)	3,274	92	2,852	86	3,900	10
24 & 5	38	Oil Tank (321 M.)	15,174	92	16,894	87	19,000	11
36	39	Holder Oil Tank	150	92	99	87	140	11
58	40	Holder Oil Tank	488	92	408	87	600	11
60	41	Pipe Coating Rack	61	92	59	87	100	11
			$207,560		$216,966		$224,040	

Randolph'- figures are difficult to verify and I had to compare them and approximate by the items of the other two.

Contents of Buildings.

				Baehr.	Page.	Lea.	Page.	Randolph.	Page.
1	A & B	17	Purifying House	$21,024	78	$22,537	67	$20,100	..
3		18	Meter and Governor House	25,263	79	25,179	67	21,657	6–10
4		19	Retorts, Coal Gas and Benches	9,000	80	10,800	70	17,200	6
4		20	Generator House, Water Gas	14,454	80	13,908	69	16,275	8–12
5		21	Coal Shed and Condenser Room	1,088	81	1,248	70	650	6
6	A & B	22	Boiler and Engine Room	15,147	82	15,551	70	15,510	..
6	C	23	Boiler House and Extension	2,142	83	1,975	71	2,250	6
7		24	Generator House	45,651	84	42,295	71	45,380	6
8	A	25	Coal and Coke Shed	175	85	150	72	194	10
8	B	26	Runway	1,500	85	1,600	72	1,000	7
10		27	Shops and Store Room	1,002	86	1,036	72	1,103	7
12		28	Pump House	1,230	87	1,395	72–3	1,255	7
13		29	Pump House (Oil)	290	88	500	73	286	7
14		30	Meter House	8,996	89	9,455	73	8,240	10
16		31	Boiler House	1,499	90	1,248	73	1,250	..
				$148,461		$148,877		$151,972	

THIS PAGE

EXHIBIT "G" TO MASTER'S REPORT.

Contents of Buildings.

					Exhibit No.	Pages
1	A & B	Pur-fying House	$20,100	R	22	6, 7 & 10
3		Meter House and Governor House	21,657	R	22	(See below)
4		Retort and Coal Gas Benches	9,000	B	21	80
4		Generator House and Water Gas	13,908	L	20	69 & 70
5		Coal Shed and Condenser Room	650	R	22	6
6	A & B	Boiler and Engine Room	15,147	B	21	82
6	C	Boiler House Extension	1,975	L	20	71
7		Generator House	42,295	L	20	71
8	A	Coal and Coke Shed	150	L	20	72
8	B	Runway	1,000	R	22	7
10		Shops and Store Room	1,002	B	21	86
12		Pump House	1,230	B	21	87
13		Oil Pump House	290	B	21	88
14		Meter House	8,240	R	21	89
16		Boiler House	1,248	L	20	73
			$137,892			

The Complainant in a comparative sheet during argument, gives the first item at $20,100, but in verifying the same I find $100 omitted, and the next item at $18,118, but comparing Exhibits 21 and 20, I am satisfied omits several items, and I have supplied by estimate and through Exhibit 21, and make it $21,657, which I regard as nearly right as can be reached; being satisfied he is the lowest. Also examining the items, "Shops and Store Room," this exhibit gives it at "175," which on examination, I find clearly wrong and that the lowest is what I have given. Randolph does not follow the order of the inventory and this has complicated the examination of his exhibit for comparison greatly.

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Exhibit "H" to Master's Report.

Yard Structures.

				Exhibit No.	Page.
18	Holder (175 M)	$29,870	L	20	85
19	Holder (309 M)	45,699	L	20	86
20	Holder (1,132 M)	105,320	B	21	91
21	Oil Tank (100 M)	5,824	B	21	92
22	Oil Tank (64 M)	2,852	L	20	86
23	Oil Tank (16 M)	1,424	L	20	87
24 & 25	Oil Tank (321 M each)	15,174	B	21	92
36	Holder Oil Tank	99	L	20	87
58	Holder Oil Tank	408	L	20	87
60	Pipe Coating Rack	59	L	20	88
	Total	$206,728			

THIS PAGE I

EXHIBIT "I" TO MASTER'S REPORT.

Miscellaneous.

A	Piping, Steam Exhaust, Circulation, Oil, Water and Gas	$5,000	R	22	9
B	Sewer Drain and Yard Mains	18,051	B	22	104 to 107
	Electric Wiring	165	B	21	108
	Outside Apparatus	1,534	B	21	93
	Fire Protection	175	R	22	8
	Wells, Boxes, etc.	2,500	B	22	93 & 94
	Works' Tools	2,120	L	20	74
	Paving	2,140	R	22	5
	Fencing	1,640	R	22	5
	Lumber	67	R	22	84
	Meter Shops' Furniture	401	B	21	111
	Rubbish Kiln	10	L	20	84
	Works' Office Furniture and Main Office Furniture	12,500	R	22	8
	Stable Equipments	11,359	B	21	124
	Guages	250	R	22	..
		$57,912			

Miscellaneous.

			Baehr.	Page.	Lea.	Page.	Randolph.	Page.
A	1	Piping, Steam, Exhaust, Circulation, Oil, Water and Gas	$10,150	96 to 103	$15,840	75 to 80	$5,000	9
B	2	Sewer, Drain, Tar and Yard Mains	18,051	104 to 107	25,354	80 to 83	25,000	9
	3	Electric Wiring	165	108	189	80	350	7
	4	Outside Apparatus	1,534	93	1,774	74 to 84	....	6
	5	Fire Protection	316	110	427	74	175	8
	6	Wells, Boxes, etc	2,915	93–4	3,486	75	2,500	..
	7	Works' Tools	2,500	109	600	74	2,120	11
	8	Paving	2,850	95	2,586	83	2,140	5
	9	Fencing	2,365	94	2,869	84	1,640	5
	10	Lumber	70	94	67	84	....	..
	11	Meter Shop Furniture	401	111	520	84	325	9
	12	Meter Shop Fixtures	3,920	111	....	..	....	..
	13	Rubbish Kiln	21	111	10	84	30	10
	14	Works' Office Furniture and Main Office Furniture	14,015	124	14,000	60	12,500	8
	15	Stable Equipment	11,359	124	....	84	11,358	12
	16	Guages	631	112	863	74	250	..
	16½	Book Records	10,000	....	....	..	....	..
			$81,263		$68,585		$63,388	

Exhibit "K" to Master's Report.

Mains, Services, and Meters—Base Value.

	Baehr Ex. 21.		Lea Ex. 20		Randolph Ex. 22.	
Street Mains	$723,914	113	$752,762	90	....	..
River Pipes	38,500	113	....	..	....	..
Paving Over Mains	272,953	113	277,574	90	....	..
Valves and Drips	5,120	113	5,919	92	....	..
Steam and St. *and* R. R. C.	7,043	113	9,405	92	....	..
	$1,047,530		$1,045,660		$1,023,010	13
House Services	241,410	113	239,350	91	328,039	13
Lamp Services	17,693	113	20,235	91	19,380	13
Paving Over Services	32,917	113	52,984	91	....	..
	$292,020		$312,569		$347,419	
Meters in Use	199,024	113	179,333	93	200,047	13
Meters in Stock	7,448	113	7,309	93	6,603	13
Distribution Tools	5,180	113	5,000	92	5,180	11
	$211,652		$191,642		$211,830	

Randolph necessarily includes in his computation on the mains, the steam and street railroad crossings, valves and drip pots and hence, in comparing them, they should also be included in Lea's and Baehr's calculations, which we have done, in the above figures. The Complainant in argument did not do so.

Distribution System.

			Exhibit No.	
Street Mains, including Paving, Valves, Drips and Steam and Street Railroad Crossings	$1,023,010	R	22	13
House Services	241,410	B	21	113
Lamp Services	17,693	B	21	113
Paving Over Services	32,917	B	21	113 & 93
Meters in Use	179,333	L	20	..
Meters in Stock	6,603	R	22	13
Distribution Tools	5,000	L	20	92
	$1,505,966			

The estimate of Baehr on the services, as a whole, including paving, because only as a whole can it be compared with Randolph's estimate, and it is $20,000 lower than Lea.

THIS PAGE VERTICAL

296 And thereafter to-wit: On the 5th day of April A. D. 1912 there was filed in said Court a Request by the Respondents for Additional Findings which said request is in words and figures as follows, to-wit:

297 In the District Court of the United States, Southern District of Iowa, Central Division.

No. 71-M (C. C.). In Equity.

DES MOINES GAS COMPANY, Complainant,
v.
CITY OF DES MOINES et al., Respondent-.

Request for Additional Findings.

The respondent, the City of Des Moines, respectfully requests the Special Master herein, the Honorable Robert Sloan, to add to the preliminary draft of his report findings upon the following propositions:

First. How much, if any, of the revenue from the sale of gas in the city of Des Moines during the years 1906, 7, 8, 9, and 10, giving the amount for each year, was used by the complainant in payment for replacements and additions to plant and charged to the construction or capital account?

Second. How much, if any, of the revenue from the sale of gas in the city of Des Moines during the years 1906-7-8-9 and 10, giving the amount for each year, was used by the complainant in payment for replacements and additions to plant and charged in and against operating expenses?

Third. What, under the evidence, would have been the probable total increase in sales of gas for the year 1911 with sales being made at the 90¢ rate?

Fourth. What, under the evidence, would be the probable increase in the sales of gas for 1912, sales being made under the 90¢ rate as provided in the ordinance in question in this case?

Fifth. What, under the evidence, would have been the probable
298 increase in the sales of gas to the existing consumers of the complainant company for 1911 if the 90¢ rate ordinance had been put into operation?

Sixth. What, under the evidence, would be the probable increase in the sales of gas to the present consumers of the complainant company for 1912 if the 90¢ rate ordinance had been put into operation?

Seventh. What, under the evidence, would have been the probable increase in the sales of gas through new customers or consumers for the year 1911 if the 90¢ rate had been put into operation?

Eighth. What, under the evidence, would be the probable increase in the sales of gas through new customers or consumers for the year 1912 if the 90¢ rate had been put into operation?

Ninth. How much of the present value of the complainant's plant

is represented by money expended for replacements and additions to plant charged in and against operating expenses and not appearing in the construction or capital account?

(Signed) H. W. BYERS,
R. O. BRENNAN,
Solicitors for Respondent.

Filed April 5, 1912, Wm. C. McArthur by Louis J. Adelman, Deputy.

299 And thereafter to-wit: On the same day April 5th A. D. 1912 there was filed in said cause a Supplemental Report by Robert Slaon, Special Master in response to the Request of the Respondents for Additional Findings which said Supplemental Report is in the words and figures as follows to wit:

300 Filed Apr. 5, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

In the District Court of the United States, Southern District of Iowa, Central Division.

71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Supplemental Report in Response to Request of Defendants.

Robert Sloan, Special Master.

At the final argument upon the preliminary report of the Special Master, the Defendants submitted the interrogatories hereto annexed, marked Exhibit "A" and made a part of this report for additional findings, and in response thereto, the following report thereon is herewith submitted.

First. How much, if any, of the revenue from sale of gas in the City of Des Moines, during the years 1906, 7, 8, 9 and 10, 301 giving the amount for each year, was used by the Complainant in payment for replacements and additions to plant and charged to the construction or capital account?

Answer. This question I am unable to answer definitely. It appears that during this period that the Des Moines Gas Company paid the principal on the stock contracts to the amount of $389,000. The interest on stock contracts and upon the bonds was paid as it became due, and bonds were issued by Complainant Company March 1st, 1906. Since that time as stated in Par. 5, Title, Investment, on page 41 of my report [page 48, printed copy], to the amount of $412,000, which is in addition to $285,000 issued March 1st, 1906, and $400,000 January 1st, 1907, to pay the Capital City Gas Light Company bonds existing when Complainant Company

was organized The interest on these bonds has been paid as it accrued. But what particular funds were used, does not appear.

It is evident that liabilities were paid from whatever funds were on hand when they accrued, without regard to the source from which they came. The Profit and Loss account shows that $264,108.78 was taken from Profit and Loss account and charged to Plant and Property, but it is evident that this money went into the treasury, and was used for whatever needed. I presume that whatever was left of the revenue, after paying operating expenses, interest on bonds and stock contracts, the $389,000 principal on stock contracts, was either used in paying for extensions and improvements, or in the working capital. I am unable to give the amount thereof from any data in the reports of the accountants. Profits applicable to interest and dividends could be used by the Complainant Company, in making replacements, extensions and improvements, with the same force and effect, as though borrowed, and its rights in
302 no way affected thereby, as such profits were the legitimate earnings of the company, under the ordinance, under which it was operating until January 1st, 1911, and such has been my judgment throughout the report wherever the question has arisen. However, if I could answer the interrogatory from the evidence more definitely, I would do so.

Second. How much, if any, of the revenue from the sale of gas in the City of Des Moines, during the years 1906, 7, 8, 9 and 10, giving the amount for each year, was used by the Complainant in payment for replacements and additions to plant and charged in and against operating expenses?

Answer. For the year 1908.....	$135.07	
For the year 1909.....	1,957.34	
For the year 1910.....	7,351.92	$9,444.33

(See page 30, Complainant's Exhibit 23, and Schedule 5, page 22, same Exhibit, and pages 1814 and 1843 and 4, Vol. 2 of Record.)

Schedule 5, page 22, Complainant's Exhibit 23, is an adjustment of the revenue of the company, excluding from the operating expenses, these amounts as belonging to plant and property. It reduces the cost of gas for the year ending December 31, 1910, 1.38 cents per M. C. F. and reduces the average for the five years ending December 31, 1910, .41 of a cent as I reckon it, and the deficits reduced accordingly. It is evident, however, that it would reduce the cost of repairs because they must have been charged under that head. In my judgment the adding machine, $623.64, and calculating machine, $225, are chargeable to Plant and Property, rather than to Operating Expenses. (See page 13, Defendants' Exhibit 30.) I am unable to determine whether Complainant's Exhibit 23, includes these under the head of replacements for the year ending December 31, 1910, or not, but they would hardly be included in that term. This adds to the cost of gas about .16 of a cent per M. C. F.

303 Third. In response to Interrogatories Nos. 3 and 4, my report gives my estimate so far as new customers are concerned, but, beyond that, there is no evidence, upon which an estimate can be made, that would be of any greater value than a mere guess, and the same answer is made to Interrogatories 5, 6, 7 and 8.

Fourth. In response to Interrogatory No. 9, my reply is, only the amounts hereinbefore set forth in answers to Nos. 1 and 2.

This Supplemental Report by agreement is hereby made a *a* part of the original report, and to be filed as of the same date it is filed, April 12, 1912.

Respectfully submitted,

[Copy]

ROBERT SLOAN,
Special Master in Chancery.

(Endorsed:) Filed Ap-l 5, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

304 EXHIBIT "A" TO MASTER'S SUPPLEMENTAL REPORT.

In the District Court of the United States, Southern District of Iowa, Central Division.

No. 71–M (C. C.) In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al. Respondent-.

Request for Additional Findings.

The Respondent, the City of Des Moines, respectfully requests the Special Master herein, the Honorable Robert Sloan, to add to the preliminary draft of his report findings upon the following propositions:

First. How much, if any, of the revenue from the sale of gas in the city of Des Moines during the years 1906, 7, 8, 9 and 10, giving the amount for each year, was used by the Complainant in payment for replacements and additions to plant and charged to the construction of capital account?

Second. How much, if any, of the revenue from the sale of gas in the city of Des Moines during the years 1906, 7, 8, 9 and 10, giving the amount for each year, was used by the Complainant in payment for replacements and additions to plant and charged in and against operating expenses?

Third. What, under the evidence, would have been the
305 probable total increase in sales for gas for the year 1911 with sales being made at 90c rate?

Fourth. What, under the evidence, would be the probable increase in the sales of gas for 1912, sales being made under the 90c rate as provided in the ordinance in question in this case?

Fifth. What, under the evidence, would have been the probable increase in the sales of gas to the existing consumers of the Complainant company for 1911 if the 90c rate ordinance had been put into operation?

Sixth. What, under the evidence, would be the probable increase in the sales of gas to the present consumers of the Complainant company for 1912 if the 90c rate ordinance had been put into operation?

Seventh. What, under the evidence, would have been the probable increase in the sales of gas through new customers or consumers for the year 1911 if the 90c rate had been put into operation?

Eighth. What, under the evidence would be the probable increase in the sales of gas through new customers or consumers for the year 1912 if the 90c rate had been put into operation?

Ninth. How much of the present value of the Complainant's plant is represented by money expended for replacements and additions to plant charged in and against operating expenses and not appearing in the construction or capital account?

(Signed) H. W. BYERS,
R. O. BRENNAN,
Solicitors for Respondent.

306 And thereafter to-wit: on the 29th day of April A. D. 1912 there was filed in said Cause a Stipulation as to the Preliminary Draft of the Master's Report which said Stipulation is in the words and figures as follows to-wit:

307 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M (C. C.). In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Respondents.

Stipulation.

In the above entitled cause Hon. Robert Sloan, the Special Master to whom the same was referred has furnished counsel for the respective parties copies of a preliminary draft of his report, which preliminary draft, however, does not include or set out the final conclusion of the said master or his recommendation as to whether the decree in this case, should be for the complainant or for the defendants, but contains nothing as to said matters.

At the suggestion of said master, and upon his recommendation it is hereby stipulated and agreed that the submission of any further draft report to counsel and the presentation to the said master of any objections or exceptions to said preliminary draft report, or to any further draft report, and requests for, further or additional find-

ings of fact or law, pursuant to any rule of practice or otherwise, are hereby waived; and it is further agreed that the master may complete and file his said report without submitting to counsel any further draft thereof, and that after said report is completed and filed each party hereto shall have the right to file exceptions thereto within the time fixed by the rules with the same force and effect in all respects as if the matters embraced in and covered by
308 such exceptions had been embraced in and covered by exceptions previously taken before the master.

Dated April 1, 1912.

(Signed) CARR, CARR & EVANS,
READ & READ,
GUERNSEY, PARKER & MILLER,
Solicitors for Complainants.

(Signed) H. W. BYERS &
R. O. BRENNAN,
Solicitors for Respondents.

(Endorsed:) Filed April 29th, 1912. Wm. C. McArthur, C'lk. By Hattie Blank, Dep'ty.

309 And thereafter to-wit: On the 3rd day of May, A. D. 1912, there was filed in said cause Complainant's Exceptions to the Report of Robert Sloan, Esq., Special Master, which said Exceptions are in words and figures as follows to-wit:

310 Filed May 3rd. 1912. Wm. C. McArthur, Clerk. By Hattie Blank, Deputy.

In the District Court of the United States in and for the Southern District of Iowa, Central Division.

No. 71-M. Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Complainant's Exceptions to Report of Special Master.

Now comes the Des Moines Gas Company, the complainant in the above entitled cause, and excepts to the report of Hon. Robert Sloan, the special master, filed in this cause on the 5th day of April, A. D. 1912, and to the supplemental report of said master herein filed April 12, A. D. 1912, and for cause of exception, shows:

First. That the master in said report stated and certified that the value of the real estate in controversy is the sum of $150,000.00; whereas the master ought to have found that the value of the said real estate is not less than the sum of $242,961.00.

311 Second. That the master has in said report stated and certified that:

"The evidence of expert accountants is only competent in relation to books of account which involve numerous items, when the books themselves are introduced in evidence;"

whereas, the master ought to have found that the testimony of such experts is competent where such books of account have been submitted to the inspection and examination of the experts of the opposing party and have been so examined and where there has been an offer to produce the same for use upon cross-examination, if desired.

Third. That the Master has in said report stated and certified that Prof. William A. [D.] Marks is an engineer of much experience in connection with gas plants; whereas the master ought to have found that the said Marks was an engineer of but insignificant experience in connection with such plants and that said experience was not of a recent date.

Fourth. That the master has in said report stated and certified: "These four gentlemen (including said Marks) are all experts in matters concerning which they have testified in this case, and show themselves conversant therewith and experienced engineers;"

whereas, the said master ought to have found that the said Marks was not expert in the matters concerning which he testified in this case, and had not shown himself conversant therewith and was not an experienced engineer as to said matters.

Fifth. That the said master has in said report stated and certified that the base value sustained by the clear weight of the evidence in this case is as follows:

312 Buildings—Exhibit "C-*a*"	$66,528
Contents of Buildings—Exhibit "G"	137,892
Yard Structures—Exhibit "H"	206,728
Miscellaneous—Exhibit "I"	57,912
Distribution System—Exhibit "L"	1,505,966
Total Base Figures	$1,975,026;

whereas, the said master ought to have found that the said base values were as shown by the clear preponderance of the evidence, not less than:

Buildings	71,283
Contents of Buildings	150,593
Yard Structures	216,189
Miscellaneous	71,671
Distribution system	1,561,111
Total Base Figures	$2,070,848

Sixth. That the master has in said report stated and certified that: "Contingencies are such expenditures as arise from a lack of foresight and care in preparing the plans and specifications;"

whereas, the master ought to have found that contingencies cover many other items and include all matters which it is impossible to definitely anticipate, which involve expense in the construction of the plant, such as delays in the receipt of material and apparatus, injuries caused by storms, delays due to inclement weather, expenses caused by strikes and other labor difficulties, expense due to variations in the prices of labor, material and apparatus during the progress of the work, and, generally, all expenses due to the fact that the work involves varying and uncertain factors.

Seventh. That the master has in said report stated and certified that:

313 "Taxes during the construction.

"The latter is regarded by me as very questionable. It is in a certain sense making taxes an asset rather than a liability, and the amount is so vague and uncertain that it has been given very little consideration and weight in fixing the overhead charges. Either the money or the property should pay taxes;"

whereas, he should have found that taxes during construction are part of the cost of reproducing the property.

Eighth. That the master has in said report stated certified:

"The organization expenses are shown to have been the sum of $6,922, and after careful consideration of the case, it is my conclusion that 15 per cent in addition to the cost of organization is a fair and just allowance therefor;"

whereas, the master ought to have found that not less than 25 per cent should be added to the base figures or cost of labor and material in order to cover and provide for what he has denominated "overhead charges."

Ninth. That the master has in said report refused to allow any overhead charges upon the real estate; whereas, he should have allowed such charges and have added them to the value of the real estate in an amount not less than $40,000.00, including the expense of optioning the real estate and testing it and examining the title and for engineering advice as to its advisability and for interest upon its cost during construction and for taxes upon it during construction.

Tenth. That the master in the said report stated and certified that the per cent condition of the entire physical plant was at the date of the valuation only 85.3, making the depreciation thereon $333,878; whereas, the clear preponderance of the testimony shows that the per cent condition of the said plant was at that time not less

314 than 88.2 per cent, and that the depreciation thereon was much less than charged against it by the master.

Eleventh. That the master has, in said report, stated and certified that the total physical value of the property in question is the sum of $2,240,928; whereas, the master ought to have found that the said total physical value, as shown by the clear preponderance of the evidence, was not less than $2,653,441.

Twelfth. That the master has in said report stated and certified that there should be deducted from what is called the "total physical

value" as found by him, the sum of $140,000, representing the cost of removing and replacing pavements, where pavements existed over the mains at the date as of which the valuation is made, but where no such pavements existed at the dates when the mains were laid; whereas, the master ought to have found that no deduction should be made on this account and that the value of the mains should be determined with reference to existing conditions and not with reference to the conditions which existed at the time the mains were laid.

Thirteenth. That the master has in said report stated and certified as to the said item of $140,000:

"But where pavements are laid after the mains are installed, they have expended no money in taking up and replacing pavements. An allowance, therefore, makes reproduction the ultimate question, and not the reasonable value of the mains, unless it further appear that the value of the mains are enhanced thereby to the extent of the cost of taking up and replacing pavements, which is not shown in this case. When the whole evidence is considered, the contrary is shown;"

whereas, the master ought to have found that the value of the mains in question as of the date of the valuation is determined, not by what may have been expended in installing the said mains,
315 but by what it would cost to reproduce them, less the proper charge on account of depreciation, and ought to have found that changes in conditions since the mains were laid resulting in enhancing the cost of reproducing them, result in corresponding enhancements in the value of the existing mains, and ought to have found that the evidence which shows that because of the placing of pavement over these mains, the cost of reproducing them would be enhanced $140,000, showed that the value of these mains had been enhanced.

Fourteenth. That in the consideration of the said item of $140,000, the master has in his said report adopted as the basis for determining the present value of the mains in question as to the matter of paving, their original cost less depreciation, and as to other items their cost of reproduction less depreciation; whereas, he should, in order to ascertain present value, in view of the difference in the conditions, existing at present and when said mains were laid, have consistently applied the cost of reproduction, less depreciation, as to all of the items going to the value of the mains.

Fifteenth. That the master has in said report stated and certified as to this matter of enhancement in the value of mains on account of paving over them that:

"The authorities on this question are conflicting and the question is not definitely settled;"

whereas, the master ought to have found that the authorities upon this question are without conflict and that it has been definitely settled.

Sixteenth. That the master has in said report in connection with the discussion of the said item of $140,000, assumed that the only

change in conditions which would enhance the value of mains is some change in conditions which would prolong their life: whereas, the master ought to have found that there are other changes in
315 conditions which would result in an enhancement in the value of mains laid under different conditions.

Seventeenth. That the master has in the discussion of the said item of $140,000, stated that:

"Such added value is wholly theoretical, when no benefit is derived therefrom; but rather the reverse thereto by reason of the increased cost of repairing them. To hold otherwise would be permitting them to reap where they have not sown;"

whereas, he ought to have found that such added value is real and not theoretical.

Eighteenth. That the master has, in said report, stated and certified that:

"The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the 'Going Value' of this concern is worth more, but I cannot feel satisfied that such is the case, and regard $300,000 as every dollar it is worth over and above its physical value, and in my judgment, it is worth that much more than a plant would be that had to develop its business;"

whereas, the master ought to have found the said item of going value to be not less than the sum of $530,932, as clearly shown in the preponderance of the evidence.

Nineteenth. That the master has in said report stated and certified:

"The opinion in the recent case of the Cedar Rapids Gas Co. vs. Cedar Rapids, adds additional emphasis thereto. Not only so, but it also renders it extremely doubtful that 'Going Value' will be included in valuation of such a plant as the basis of return, beyond the fact that it is in 'successful operation.' That would exclude the sum of $300,000 estimated in this case, on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.

"In my judgment, after considering the able and thorough arguments of counsel, that it is decisive of the question, and
317 holds that 'Going Value' should not be considered in determining the basis upon which the Complainant is entitled to have its return reckoned, and feel that it is my duty to so state;"

whereas, the master ought to have found that the said opinion of the Supreme Court of the United States does not hold that going value should be excluded in determining the basis upon which the complainant is entitled to have its return reckoned, but on the contrary, recognizes the fact that going value should be considered in determining the said basis.

Twentieth. That the master has in said report stated and certified, in substance, that the fact that the property in question is a going concern, characterized by an established business, with a large number of consumers attached to it, and a developed business, should not

be taken into account; whereas, the master ought to have found that in ascertaining the value of the complainant's property upon which the rate of return afforded by the ordinance in question should be computed, all of the elements affecting that value should be taken into account, including whatever is contributed by the fact of the connection of the items, making a complete and operating plant.

Twenty-first. That the master has in said report stated and certified in effect that the value of the complainant's property as of the date of the injury, upon which its return should be computed, is the mere cost of purchasing the land, constructing the buildings, putting in the machinery and installing the mains, meters and services with the working capital—in other words, the mere cost of reproducing the physical property, less depreciation; whereas, the master ought to have found that in order to ascertain said value there must be taken into account the additional value created by the fact of many connections with buildings, and actual earnings, including whatever
318 is contributed by the fact of the connection of the items making up a complete and operating plant.

Twenty-second. That the master has in said report, in effect, stated and certified that the item designated by him as "going value" is something separate and apart from the physical property; whereas he ought to have found that it is an element contributing to the value of each tangible part of the property and that its existence is solely as a characteristic of the structure and that the structure is a structure whose value is affected by the fact that it is in use.

Twenty-third. That the master has in said report stated and certified:

"The evidence shows that this plant is used by the Wisconsin Rate Commission, when a public utility has, through no fault on its part, met with losses in developing its business, or otherwise, for the purpose of obtaining a basis of value on which to fix rates for the future, which will enable it gradually to recoup its losses. It is not used otherwise;"

whereas, the master ought to have found that the said plan is used by the Wisconsin Rate Commission for the purpose of ascertaining the investment value of the property of a public utility which should be taken as a basis upon which to compute the return to which it finds such utility entitled.

Twenty-fourth. That the master has in said report stated and certified:

"The amount at 2¾ per cent depreciation on Complainant's plant, beginning with the year ending June 30, 1887, is $3,224,783 (Complainant's Exhibit 23, page 43), at 2½ per cent depreciation, is $3,098,848 (Page 42, Complainant's Exhibit 26), at 2 per cent depreciation, $2,915,781 (Complainant's Exhibit 25), at 2¼ per cent depreciation, $2,007,485;"

whereas, the master ought to have found that the amount at 2¾ per cent depreciation was $3,484,586, and not $3,224,783, and at

2½ per cent depreciation $3,343,394, and not $3,098,848,
319 and at 2 per cent depreciation $3,135,241, and not $2,915,-
781, and at 2¼ per cent depreciation, $3,240,000, and not $2,007,485.

Twenty-fifth. That the master has in said report stated and certified:

"While it is fair and just under the circumstances in which the Wisconsin Commission apply it, it is manifest that it is not in any sense of the word, competent evidence to prove the value of Complainant's plant, in a case wherein the sole issue is on the rates established by the ordinance in question, in this case so low that they are confiscatory and the ordinance therefore invalid;"

whereas, the master ought to have found that the method in question is competent if and to the extent that testimony as to cost and actual investment is competent as bearing upon the question of value of complainant's plant.

Twenty-sixth. That the master has in said report stated and certified that the complainant is entitled to a return of only 8 per cent upon the amount of its investment, whereas, the master ought to have found that the evidence shows clearly and beyond a reasonable doubt that the complainant is entitled to a return of not less than 10 per cent upon the amount of its investment.

Twenty-seventh. That the master has in said report stated and certified:

"Complainant claims that in estimating the net profit for manufacturing and distributing gas to its customers, that there should be taken into account and allowance made for the necessary expenses which it has and will incur in connection with the establishment of rates in this action. In other words, its expenses in this action, not covered by the costs of suit. In my judgment, no allowance therefor can be made in determining the future cost of gas for the following reasons;"

whereas, the master ought to have found that the necessary ex-
pense incurred by the complainant in connection with rate
320 regulations and litigation arising therefrom is a part of its
necessary operating expenses and a factor which should be taken into account in determining the operating expenses of the company in the future.

Twenty-eighth. That the master has in said report stated and certified, in substance, that the amount of $10,000 per annum paid by the complainant to certain of its officers, who are also officers of The United Gas Improvement Company, should not be taken into account in estimating the amount of operating expenses of the complainant; whereas, the master ought to have found that the services on account of which such salaries are paid are necessary services and that such salaries were expenses necessarily incident to the operation of the complainant's plant and that the amounts paid on account of such services were necessary factors in determining the operating expenses of the complainant for the future.

Twenty-ninth. That the master has in said report stated and cer-

tified with reference to the services covered by the salaries referred to in the preceding exception:

"There is no evidence that shows that the services so rendered are in fact worth the amount represented by these salaries, and in my judgment, their allowance and payment would not be prima facie evidence thereof;"

whereas, the master ought to have found that the evidence shows that the services in question were in fact worth the amount represented by the salaries referred to and that their allowance and payment was prima facie evidence thereof.

Thirtieth. That the master has in said report stated and certified with reference as to the services and salaries referred to in the two last preceding exceptions:

"There is, therefore, no basis upon which an allowance can be made therefor, in determining the future cost of producing
321 and distributing gas by the Complainant company to its consumers, and, hence, no allowance is made therefor. This amounts to 1.88 cents per M. C. F. of gas;"

whereas, the master ought to have found that under the testimony an allowance should have been made for the salaries in question in determining the future cost of producing and distributing gas by the complainant.

Thirty-first. That the master has in said report stated and certified, in substance, that in determining the future cost of producing and distributing gas, the contributions of the complainant to the Greater Des Moines Committee, Incorporated, should not be considered as a factor; whereas, the master ought to have found that such contributions should be taken into account as a factor in ascertaining the cost to the complainant of manufacturing and distributing gas in the future.

Thirty-second. That the master has in said report stated and certified:

"The ordinary insurance, which the company has been carrying, should and has been, included in the operating expenses. But beyond this none other should be considered. In determining the rate of return, the hazards of the business are all eliminated by casualty insurance, then, the rate of return should be diminished. The Exhibits of Complainant on this claim No. 89, have been given no consideration beyond fixing the rate of return;"

whereas, the master ought to have found that all items of insurance were a part of the operating cost of the complainant, and ought to have found further that no part of said operating costs should be paid out of the return which should be applicable solely to interest and profits.

Thirty-third. That the master has in said reports, in effect, stated and certified that based upon the operating costs of the year 1910, for the purpose of estimating the operating costs of the
322 complainant in the future, 62.98 cents should be taken as the cost of manufacturing and distributing gas, not includ-

ing depreciation; whereas, the master ought to have found that based upon the experience of the said year the actual operating costs of the said year should have been so taken, without deduction, that is, 66.28 cents, for the purpose of estimates as to the future.

Thirty-fourth. That the master has in said report, in effect, stated and certified, that the estimates of the future operations of the complainant's plant, based upon the results of the first ten months of the year 1911 should be based, not including depreciation, upon operating cost of 61.73 cents; whereas, he ought to have found that such estimate should be based upon the actual operating cost for said period, not including depreciation, that is, 77.14 cents.

Thirty-fifth. That the master has in said report stated and certified that the estimates as to the future earnings of the complainant's plant, based upon the operation of the five years, from 1906 to 1910, inclusive, should adopt as the factor for the cost per thousand feet of gas, 62.58 cents; whereas, the said master ought to have found that for such estimates there should have been taken as such factor the actual cost of manufacturing and distributing gas for such period, not including depreciation, which was 65.34 cents.

Thirty-sixth. That the master has in said report, in effect, stated and certified that the lowest cost of manufacturing and distributing gas, not including depreciation, for any year in the five-year period preceding January 1st, 1911, is a proper basis to adopt for the purpose of estimating the results of the operations of the company in the immediate future; whereas, the master ought to have found that such estimates should be based upon an average of such operating costs so as to eliminate the results of abnormal conditions.

323 Thirty-seventh. That the master has in said report stated and certified that 6.67 cents per thousand feet of gas sold is a proper allowance in determining the future results of the operation of complainant's plant for depreciation; whereas, the master ought to have found that on account of such depreciation there should be an allowance of not less than 8 cents per thousand cubic feet of gas sold.

Thirty-eighth. That the master has in said report in the estimates of the future cost to the complainant of producing and distributing gas included nothing whatever representing the expense which will be incurred by the complainant in the immediate future on account of contributions to the Greater Des Moines Committee, or for like purposes; whereas, the master ought to have found that the said items of expense, either in the form of contributions to the Greater Des Moines Committee or in some other form, will in the future be necessary items of the operating expenses of the complainant's plant, and ought to have made a proper allowance therefor.

Thirty-ninth. That the master has in said report, in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever for the expenses which the complainant has incurred and will incur in connection with litigation with reference to rates; whereas, the master ought to have found that the said expenses are a necessary and inevitable part of the operating

costs of the complainant, and ought to have made a proper allowance therefor.

Fortieth. That the master has, in said report, in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever on account of the radical increase in the complainant's taxes, which the master finds is imminent; whereas, the master ought to have found that on account of
324 such increase in taxes this item of the operating costs of the complainant will be larger in the future than it has been in the past, and should have treated the same accordingly.

Forty-first. That the master has, in said report, in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever for the increase in the operating costs of the complainant which the testimony shows will ensue from the fact that the ordinance in controversy provides no penalty for failure on the part of consumers to pay promptly; whereas, the master ought to have found that the failure of the ordinance in question to provide for such a penalty would increase the operating costs of the complainant in the future, and in his estimates of the future results of its business, ought to have taken this factor into account.

Forty-second. That the master has, in said report, in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever for expenses which will be incurred by the complainant on account of contributions to the Greater Des Moines Committee, in litigation with reference to rates, services rendered by the officers of The United Gas Improvment Company to the complainant, increase in the complainant's taxes, or increase in its expenses due to the fact that the ordinance in controversy provides for no penalty for failure to pay promptly; whereas, the master ought to have found that each of the items referred to is a necessary item of operating expense and should have made a proper allowance therefor.

Forty-third. That the master has in said report in his estimates of the future cost to the complainant of producing and distributing gas in each instance adopted as the factor for the operating cost, figures which were lower than the actual normal operating costs of the complainant as shown clearly and satisfactorily by the testimony.

325 Forty-fourth. That the master has in said report stated and certified in substance that the increase in the investment in the complainant's distribution system required on account of the increased sales which are anticipated in the future, will be at the rate of $2.00 per thousand cubic feet of increase in such sales; whereas, the master ought to have found that increased sales would require increased investment at the rate of not less than $4.50 for each thousand feet of such increased sales.

Forty-fifth. That the master has in said report predicated his estimates as to the results of the future operations of the complainant's plant upon estimated operating costs which are lower than the actual operating costs of the complainant at the time that the estimates were made, and are lower than the average of its actual operating costs for the five years preceding the period covered by such estimates;

whereas, the master ought to have used as a factor in making the said estimates the average of the complainant's operating costs for the five years preceding the day when the ordinance in question was to become effective with such adjustments thereof as are required in order to make a proper allowance for the increases in the complainant's operating costs which the testimony shows will be inevitable in the immediate future.

Forty-sixth. That the master has in said report in making his estimates for the future, assumed as to each year that the additions to the plant in that year would be made at the end of the year and consequently has allowed no return on such additions until the succeeding year; whereas, the master ought to have taken into account the fact that such additions will be made, not at the end of the year, but during the year, and the fact that a return should be allowed upon them for not less than one-half of the year in which they are made.

326 Forty-seventh. That the master has in said report in connection with the investigation of the probable increase of sales of gas in the future, certified and found:

"The only thing in the past history of the plant that throws any light on the question is the table on schedule 4 of defendants' exhibit 30, a part of which has already been given;"

whereas, the master ought to have found that the complainant's exhibits showing the history of the complainant's property and of the development of its business for the past twenty-five years, and showing also the development of the city of Des Moines during the same period, all tend to throw light upon this question.

Forty-eighth. That the master has in said report stated and certified:

"While a slight increase in consumption may result from a reduction of ten cents per M. C. F. in price, in my judgment, it is much more apt to result in an increase of customers, and the table in schedule 4 very clearly shows it, in the increase thereof, in proportion to the inhabitants of the city, as shown by the first column on the right of the table;"

whereas, the master ought to have expressly and clearly limited said finding by the statement that such increase in customers could only come through an increase in the population of the city of Des Moines.

Forty-ninth. That the master has in said report stated and certified:

"There are many hazards in every manufacturing plant which insurance will not cover, and will not compensate, and hence, in fixing the rate of return at 8 per cent, it was intended thereby to cover all hazards, over and above such insurance, as the details of the cost of manufacturing and distributing gas show has been carried by the company and hence, in reckoning such cost, nothing additional has been included;"

327 whereas, the master ought to have found that the return to which the complainant is entitled is in excess of the expenses

incident to taking care of the hazards which grow out of the maintenance and operation of the complainant's property.

Fiftieth. That the master has in said report stated and certified as a conclusion of law that:

"This action having been brought and a temporary injunction granted restraining the enforcement of the ordinance without having first tried the effect of the rates therein prescribed, the complainant must establish by clear and satisfactory evidence that such rates are inadequate and confiscatory, and if upon the whole evidence there remains a reasonable doubt of the correctness of complainant's contention, then the bill should be dismissed without prejudice to a future action, and complainant required to try the same before instituting another action;"

whereas, the master ought to have found as a matter of law, that the complainant is only bound to sustain the correctness of the ultimate facts upon which its contention is founded by clear and satisfactory evidence.

Fifty-first. That the master has in said report stated and certified as a conclusion of law that:

"If, however, upon the whole case, there remains no reasonable doubt of the correctness of complainant's contention that the rates prescribed by the ordinance, will not afford an adequate rate of return, either in whole or in part, then it is entitled to have the injunction made perpetual, and the ordinance annulled as confiscatory;"

whereas, the master ought to have found as a conclusion of law that if upon the whole case the correctness of complainant's contention that the rates prescribed by the ordinance will not afford an adequate rate of return, either in whole or in part, appears by clear
328 and satisfactory evidence, then it is entitled to have the injunction made perpetual and the ordinance annulled as confiscatory.

Fifty-second. That the master has in said report carried the figures representing the annual sales in Valley Junction for the years 1912 and thereafter at a constant figure of seven million cubic feet, applying the total increase in said years to the city of Des Moines, and thereby improperly increasing the probable returns from the property in the city of Des Moines.

Fifty-third. That the master has in said report stated and certified:

"The rate of insurance against loss by accidents is about 1.42 per M. C. F. and the operating expenses show about .38c. for past damage claims, which in round numbers 1.04 cents per M. C. F. and this included as part of hazards in fixing the rate of return, but should the rate of return be reduced, then this ought to be included in the cost of gas;"

whereas, the master ought to have found that all of the hazards incident to the transaction of the business should be treated as a

part of the operating costs, and that none of them should be paid out of the return allowed upon the investment.

Fifty-fourth. That the master has in said report stated and certified that:

"In relation to the contribution to the Greater Des Moines Committee, upon examination of defendants' exhibit 27, page 181, I find there was a contract of subscription to that committee to pay $2,000 per year for three years, approved by the Board of Directors, September 13, 1909, and hence it runs into 1911, and perhaps included, but there is no obligation beyond that three years' approval and no obligation to pay it and thereafter at least, it should not be allowed in the future cost of gas;"

whereas, the master ought to have found that items of this character will be included in the future cost of gas, and should
329 therefore have allowed it in estimating such future cost.

Fifty-fifth. That the master has in said report stated and certified that:

"A part can be accounted for in the increase in wages. These conditions lead me to believe that with economy and care, the cost may be reduced below 60 cents, as it was in the year ending February 28, 1909, without detriment to the service;"

whereas, the master ought to have found that the testimony shows clearly and satisfactorily that the cost of manufacturing and distributing gas will in the future much exceed 60 cents per thousand cubic feet.

Fifty-sixth. That the master has in said report stated and certified that:

"These conditions lead me to believe that with economy and care the cost may be reduced below 60 cents, as it was in the year ending February 28, 1909, without detriment to the service. At least the future cost of gas is not clear and satisfactory to me. It is true that in this matter we are entering the realm of prophesy and none of us have that gift. What a trial under the present rates would produce is not before us and cannot be determined until it is so tried, only the past throws any light upon it;"

whereas, the master ought to have found that there is no fact or circumstance shown by the evidence from which a just or reasonable probability can be inferred that the future cost of gas will be less than the average cost for the five-year period considered; and ought to have found that on the contrary, the facts exclude any just or reasonable inference that the complainant's future operating cost will be less than such costs in the past.

Fifty-seventh. That the master has in said report stated and certified that:

330 "On new customers it ought to do the same, only it would at the same time cause additional value to be added to the plant, however, it would increase the profits materially in the final result, and the extracts show the emphasis placed by the court upon increased sales. It was one of the matters that caused that case to

be dismissed without prejudice with the admonition to give the rates a trial;"

whereas, the master ought to have found that the testimony shows without controversy that when the sales reach a maximum of 600,000,000 feet per annum, the minimum cost of production has been reached, and that increased sales will not thereafter tend to decrease the cost of gas; and that therefore it clearly appears in this case that increased sales will not afford to the complainant a fair return.

Fifty-eighth. That the master has in said report stated and certified that:

"Should the court hold that the $140,000 for taking up and replacing mains where none existed at the time the mains were laid, then a decree for the complainant would be imperative, should 'going value' be included in the basis for a return."

whereas, the master ought to have held that both the $140,000 item referred to and going value should be included in the basis for a return, and ought to have found that a decree for the complainant is imperative.

Fifty-ninth. That the master has in said report stated and certified that:

"Should the court hold that 'salaries general' and the contribution to the Greater Des Moines Committee be included in the future cost of gas, then a like result should follow. So, also, would rate regulation require a like result, should it be held a proper matter to be considered and 2 cents per M. C. F. be allowed therefor;"

whereas, the master ought to have found that the said items are necessarily included in the future cost of gas, and therefore
331 he should have found that a decree for the complainant is imperative.

Sixtieth. That the master has in said report stated and certified that:

"The opinion in the recent case of the Cedar Rapids Gas Co. vs Cedar Rapids, adds additional emphasis thereto. Not only so, but it also renders it extremely doubtful that 'Going Value' will be included in valuation of such a plant as the basis of return, beyond the fact that it is in 'successful operation.' That would exclude the sum of $300,000 estimated in this case, on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.

"In my judgment, after considering the able and thorough arguments of counsel, that it is decisive of the question, and holds that 'Going Value' should not be considered in determining the basis upon which the complainant is entitled to have its return reckoned, and feel that it is my duty to so state;"

whereas, the master should have found that going value should be considered in determining the basis upon which the complainant is entitled to have its return reckoned and should have held that said opinion requires it to be so included.

Sixty-first. That the master has in said report as a conclusion stated and certified that:

"The physical value as hereinbefore determined, is reckoned upon the fact that the plant was in 'successful operation' when the ordinance was enacted, otherwise its value would be much less. The 'Going Value' in that enhancement which results from a well developed and paying business;"

whereas, the master has in fact found in the said report, and ought to have stated and certified as his conclusion that what he denominates "physical value" includes only the cost of reproducing the mere physical property in a locality where it would be avail-
332 able for use, and does not include anything whatever either on account of the cost of reproducing the business and income now attached to complainant's property, or on account of the element in the value of said property due to the fact that the complainant's said property has attached to it a well developed business and is earning a large income.

Sixty-second. That the master has in said report stated and certified that:

"It is my judgment that the complainant's bill be dismissed without prejudice, at its cost, as in the case of Wilcox vs. Consolidated Gas Co., supra;"

whereas, the master ought to have found that the testimony shows clearly and satisfactorily that to put the ordinance in force will in whole or in part deprive the complainant of a fair and reasonable return upon the actual value of the property constituting its investment and ought, therefore, to have recommended a decree for the complainant upon the merits as prayed.

Sixty-third. That the master has in said report erred in finding that the testimony does not show clearly and satisfactorily that the rates fixed by the proposed ordinance will not afford to the complainant a fair return upon the present actual value of the property constituting its investment and would not afford such return upon such value at the date when the ordinance in question was to go into effect.

Sixty-fourth. That the master has in said report in effect certified and found that the material question is whether in the remote future the rates fixed by the ordinance in controversy may not afford to the complainant a fair return; whereas the only material question is whether those rates at the time the said ordinance purported to go into effect, and at the present time will afford to the complainant a reasonable and fair return upon the value of its property devoted to the use of the public.

333 Sixty-fifth. That the master has in said report stated and certified that there should be a decree in this case dismissing the complainant's bill without prejudice; whereas, the master ought to have found that there should be a decree annulling the ordinance in controversy.

Sixty-sixth. That the master has in said report stated and certified that:

"While this case is to the border line, I cannot say on the whole case that the evidence, beyond any just and fair doubt, satisfies me that the rates will prove confiscatory should the ordinance be put into effect and an actual test thereof be made;"

whereas, the master ought to have found and certified that there is no evidence which tends to indicate or which could afford the basis for a fair assumption that there will be any material increase in the consumption of gas by existing consumers sufficient to alter or modify the results of operation under the ordinance in question as found; and ought to have found further that beyond any just or fair doubt the ordinance in controversy if enforced will be confiscatory in its effect.

Sixty-seventh. That the master has in said report stated and certified that:

"So far as new customers are concerned, the estimates made are reasonably certain and these estimates (referring to the estimates of future net revenue for the years 1911, 1912, 1913 and 1914 showing deficits each year), are made with reference to them. None are made with reference to the increase from existing customers;"

whereas, the master ought to have found distinctly and in this connection that it is shown by a preponderance of the testimony beyond any just or fair doubt that a reduction of 10 cents in the rate for gas would not produce any increased consumption by existing customers of the complainant.

334 Sixty-eighth. That the master in his supplemental report has stated and certified that:

"Third. In response to Interrogatories Nos. 3 and 4, my report gives my estimate so far as new customers are concerned, but beyond that, there is no evidence, upon which an estimate can be made, that would be of any greater value than a mere guess, and the same answer is made to Interrogatories 5, 6, 7 and 8;"

whereas, the master ought to have found that the evidence shows clearly and satisfactorily that it would be impossible for there to be such an increase in the sales of gas to either old or new customers as to render the 90 cent rate remunerative.

Sixty-ninth. The master has in said report stated and certified that:

"Third. In response to Interrogatories Nos. 3 and 4, my report gives my estimate so far as new customers are concerned, but beyond that, there is no evidence, upon which an estimate can be made, that would be of any greater value than a mere guess, and the same answer is made to Interrogatories 5, 6, 7 and 8;"

whereas, the master ought to have found that the testimony as to the population of the city of Des Moines, and as to the history of the complainant's plant and business, including the effect upon sales to existing consumers of numerous decreases in rates, renders it clear that it would be impossible in view of the population of Des Moines for the sales to so increase as to afford to the complainant a fair return at the 90-cent rate.

The complainant bases a specific and separate exception to the said master's report and supplemental report upon each of
334½ the items of exception and objection thereto hereinbefore set out, and prays that said exceptions and each of them be sustained.

CARR, CARR & EVANS,
READ & READ,
GUERNSEY, PARKER & MILLER,
Solicitors for Complainant.

335 And thereafter to-wit: On the 4th day of May A. D. 1912 there was filed in said cause Defendants' Exceptions to the Report of Robert Sloan Special Master, which said Exceptions are in words and figures as follows to-wit:

336 In the District Court of the United States, in and for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Exceptions to the Master's Report.

Come now the defendants in the above entitled suit and make the following exceptions to the report of Honorable Robert Sloan, special master, filed in said suit on the 5th day of April, A. D. 1912.

First. The defendants except to the finding of fact by said Master in said report that the value of complainant's property is $2,240,928.00 because such finding is contrary to the evidence and is much greater than the value of complainant's property as shown by the evidence.

Second. The defendants except to the finding of fact by said Master in said report fixing the value of that part of complainant's property designated as real estate at $150,000.00 because such finding is contrary to the evidence and is much greater than the value of the said real estate as shown by the evidence.

Third. The defendants except to the finding of fact by said Master in said report fixing the value of that part of complainant's plant designated as the distribution system at $1,505,966.00 because such finding is contrary to the evidence and is much greater than the value of the said distribution system as shown by the evidence.

337 Fourth. The defendants except to the finding of fact by said Master in said report fixing the value of that part of complainant's plant designated as the buildings, contents of buildings, yard structures and miscellaneous at $469,060.00 because such finding is contrary to the evidence and is much greater than the value of said buildings, contents of buildings, yard structures and miscellaneous, as shown by the evidence.

Fifth. The defendants except to the conclusion of law by said Master in said report that the item designated as overhead charges

should be included in reaching the physical value of the complainant's plant.

Sixth. The defendants except to the finding of fact by said Master in said report, that there should be added to the physical value of complainant's plant the sum of 15% thereof in addition to the cost of organization expenses, because if said item designated as overhead charges is to be allowed, such finding as to said amount is contrary to the evidence, and is an excessive amount to allow for said item as shown by the evidence.

Seventh. The defendants except to the failure of the said Master to find, as a matter of fact, that said so-called overhead charges had been returned to the complainant through the operating expenses.

Eighth. Defendants except to the finding of fact by said Master in said report, that 6.67 cents per thousand cubic feet of gas manufactured and sold by complainant is the fair amount to allow in determining what the operating expenses should be in the future, because such finding is contrary to the evidence, and said
338 amount of 6.67 cents per thousand cubic feet is much greater in amount than should be allowed in determining what the operating expenses of the complainant should be in the future as shown by the evidence.

Ninth. The defendants except to the finding of fact by said Master in said report, that the complainant should be allowed the amount of $140,000.00 as working capital because such finding is contrary to the evidence, and is much more than the complainant is entitled to have allowed as working capital as shown by the evidence.

Tenth. The defendants except to the finding of fact by said Master in said report, that there should be deducted from the valuation of the complainant's distribution system the sum of $140,000.00 in round numbers included in the cost of mains laid in the streets when the streets were not paved at the time the mains were laid, because such finding is contrary to the evidence, and is much less than the amount which should have been deducted from the valuation of complainant's plant and property as shown in said report, which included the cost of mains laid in the streets when they were not paved at the time, as shown by the evidence.

Eleventh. The defendants except to the finding of fact by said Master in said report that Prof. W. D. Marks, one of the witnesses for the defendants, omitted one of the buildings forming a part of the complainant's manufacturing plant estimated at $15,000.00 because said finding is contrary to the evidence.

Twelfth. The defendants except to the finding of fact and conclusion of law by said Master in said report, that the complainant is entitled to earn eight (8) per centum per annum on the
339 value of its plant because such finding is contrary to the evidence and is much greater than the amount which the complainant is entitled to earn on the value of its property used in performing the service, as shown by the evidence.

(S'g'd) R. O. BRENNAN &
H. W. BYERS,
Attorneys for defendants.

(Endorsed:) Filed May 4, 1912. Wm. C. McArthur, Clerk, By Louis J. Adelman, Deputy.

340 And thereafter to-wit: On the 10th day of May A. D. 1912 there was filed in said cause a Supplemental Report of Robert Sloan Special Master which said Supplemental Report is in the words and figures as follows to-wit:

341 In the District Court of the United States, Southern District of Iowa, Central Division.

THE DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES et al., Defendants.

Exhibits & Costs.

Supplemental Report of Robert Sloan, Special Master.

The Special Master for Supplemental Report in relation to the Exhibits of the Complainant & Defendants says:

Complainant's Exhibits.

First, That the great body of Complainant's Exhibits are contained in a bound volume entitled:

"The Des Moines Gas Company
vs.
The City of Des Moines et al."

"Complainant's exhibits" and the front pages thereof contain a complete descriptive index thereof which identifies each exhibit from No. 1 to No. 93 inclusive, and shows what are contained in said volume and those that are not, and hence, it is unnecessary to further describe and identify them than by adopting said index.

342 Defendant's Exhibits.

Ex. 1. Assessment Roll for the year 1908 of Des Moines Gas Company.
Ex. 2. Form for Requisition by the Manager of the Manager of the Des Moines Gas Co. on Philadelphia Office.
Ex. 3. Requisition No. 565.
Ex. 4. Authorization of Extension of Mains as per Exhibit 3—dated December 5th, 1910, and read in evidence page 728, Record.
Ex. 5. Sketch Book No. 7, offered, page 731.
Ex. 6. Certified copy of report of H. I. Lea to City.
Ex. 7. Calculations.
Ex. 8. A study of life and age by Baehr.
Ex. 9. History of D. M. G. Co. by development curves.

Ex. 10. Blue Print entitled "Historical Development Curves."
Ex. 11. Same Subject.
Ex. 12. Gas sold in C. F. from Dec. 31, 1904 to Dec. 31, 1910.
Ex. 13. Record of Mains laid.
Ex. 14. History of Price of Gas.
Ex. 15. Statement of Profit & Loss.
Ex. 16. Statement of Profit & Loss.
Ex. 17. Cost of Services.
Ex. 18. Annual Estimate 1911.
Ex. 19. Routing Oil on C. B. & Q.
Ex. 20. Oil Contract & Correspondence.
Ex. 21. Coke Contract, p. 2103.
Ex. 22. Analysis of Real Estate account.
Ex. 23. Report of W. D. Marks (Book form and bound).
Ex. 24. Blue Print copy of Buffalo Chart.
Ex. 25. Stockholders' & Directors' minute book No. 1, of C. C. G. L. Co., p. 2885.
Ex. 26. Same No. 2, p. 2885.
Ex. 27. Stockholders' & Directors' Meeting of Des Moines Gas Co.
Ex. 28. Proceedings not entered in said book.
Ex. 29. Plat prepared by City Assessor Parker, p. 3046.
343 Ex. 30. Report of James Hall, expert accountant for City (Book form).
Ex. 31. Rate Litigation expenses of D. M. G. Co.
Ex. 32. By Hall—Computation of difference between his report and Hanenah. P. 3194.
Ex. 33. Investment value of plant.
Ex. 34. Wisconsin plan illustrations.
Ex. 35. Summary of plant investment.
Ex. 36. Estimated average Investment.
Ex. 37. Main Dep't Contract.
Ex. 38. C. C. G. Co. cash invested in construction and working capital (Transcript).
Ex. 39. Transcript of the Pratt affidavit in U. S. C. Court in case of Capital City Gas Light Co. v. Des Moines.
Ex. 40. Same of Pratt again.
Ex. 41. Same Wm. Henry White.
Ex. 42. In same case of Edward G. Cowdery.
Ex. 43. E. W. Bemis on calculations &c., in Book form.
Ex. 44. Pamphlet entitled "Issue in the foreground" (Gas).
Ex. 45. Price of C. I. Pipe.
Ex. 46. Illustration of Sinking Fund Method.
Ex. 47. Operating expenses of Bemis.
Ex. 48. Amount paid A. B. Cummins for opinion on the C. C. Gas Light Co. Franchise.
Ex. 49. Expenses of F. C. Morgan.
Ex. 50. Expenses of D. D. Reinhart.
Ex. 51. Notary's Services.
Ex. 52. Opinion of A. B. Cummins (Not offered).
Ex. 53. Expenses of J. S. Harrison.
Ex. 54. Expenses of J. S. Harrison.

Ex. 55. Notice of sale of $81,000 bonds and entry for books.
Ex. 56. Lillie's Check Book, P. 4477.
Ex. 57. Payment on Stock contracts.
Ex. 58. Same.
Ex. 59. Analysis of account with U. G. I. Co.
344 Ex. 60. Cash Book of Des Moines Gas Co., P. 4578.
Ex. 61. Moody Manual Service, P. 4591.
Ex. 62. Journal No. 1, D. M. G. Co., P. 4603.
Ex. 63. Journal No. 2, D. M. G. Co., P. 4603.
Ex. 64. Journal No. 3, D. M. G. Co., P. 4603.
Ex. 65. Ledger No. 1, D. M. G. Co., P. 4603.
Ex. 66. Ledger No. 2, D. M. G. Co., P. 4603.
Ex. 67. Comparative statement of Manufacture of Des Moines Gas 8 months August 31, 1911.
Ex. 68. Additions to plant to August 31, 1911.
Ex. 69. Gas Sales to Feb'y 28 to 1912.
Ex. 70. Synopsis of transactions of U. G. I. Co.
Ex. 71. Gas Ordinance of Minneapolis.
Ex. 72. Letter to Haines from Mayor of Minneapolis.
Ex. 73. Letter by Haines to Mayor Hanna.
Ex. 74. Mistakes in Complainant's Exhibit 65.
Ex. 75. Correction figures in Defendants' Ex. 43.
Ex. 76. Margin between price of gas and manufacturing expenses.
Ex. 77. Rate Regulation expenses.
Ex. 78. Officers Com. Trust Co. & U. G. I. Co.
Ex. 79. C. C. G. L. Co. authorization of improvements and repairs.
Ex. 80. Summary of data for tables 91 & 92, Defendants' Ex. 43.
Ex. 81. Wisconsin Theory.
Ex. 82. Blaises & Blaise account for work and transcript of Complainant witnesses.
Ex. 83. Receipt therefor.
Exhibits 84 "A", 84 "B", 84 "C", 84 "D", 84 "E", Transcripts of the books of the Des Moines Gas Co. remitted by it to the Philadelphia office and produced at Defendants' request.
Ex. 84 "F" Contract to build Holder.

345 He further shows that he has paid out of said funds the following amounts for which he is entitled to credit:

August	11, 1911.	Paid J. P. Blaise, stenographer, for services	$150.00	
October	14, 1911.	Paid J. P. Blaise....	500.00	
December	23, 1911.	Paid J. P. Blaise....	587.00	
		Total paid J. P. Blaise.....		$1,237.00
August	11, 1911.	Paid Frank C. Walrath, stenographer, for services.....	150.00	
October	14, 1911.	Paid Frank C. Walrath	500.00	

December 23, 1911. Paid Frank C. Walrath	501.90	
Total paid Frank C. Walrath		$1,151.90
Total paid stenographers		$2,388.90
October 4, 1911. Paid Jas. A. Rice on account for care of Records	10.00	
November 29, 1911. Paid Jas. A. Rice for same	20.00	
Total paid Rice		30.00
Paid room rent & Baggage at Victoria Hotel.	117.75	
Paid for board at Victoria Café & elsewhere during hearing	82.85	
Paid for R. R. fare during the hearing	40.00	
Paid expenses on final hearing, (room, board & carfare, three days)	16.00	
Two suit-cases	6.00	
Express for Records to Keosauqua	1.40	
Express on preliminary report and corrected copies to attorneys	.80	
Express of report & Copies to attorneys	.75	
Express of Exhibit No. 27 from Des Moines.	.20	
Express & drayage on records to clerk	2.06	
		267.81
Master's Compensation		5,000.00
		$7,686.71

He further reports that during the progress of the case he received the following amounts from the Complainant, and Defendant, The City of Des Moines as per order of the Court at the dates hereinafter stated—to-wit:

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Complainant.

May 25, 1911, Paid pursuant to order of the Court of date, May 11, 1911	$300.00	
October, 1911, paid pursuant to order of date October 2d, 1911	500.00	
Paid December 23, 1911, pursuant to order of date December 6, 1911	3,059.95	
		$3,859.95

Defendant.

July 14, 1911, paid pursuant to order of Court May 11, 1911	300.00	

October, 1911, paid pursuant to order of Court of date, October 2d, 1911	500.00	
December 23, 1911, paid pursuant to order of date December 6, 1911	3,059.95	
		$3,859.95
Total from both parties		$7,719.90
Total received		7,686.71
Balance		$33.19

Checks herewith enclosed for above balance.

(Sgd.) ROBT. SLOAN.

347 Vouchers are herewith submitted for the expenses incurred by the Special Master except for board, which was at the Victoria Café. A careful account was kept from day to day by me and the total is certified to be correct. The Café changed hands several times during the period and hence I cannot obtain a voucher therefor. The suit cases cost $6.00 but the voucher was for both $5.65, caused by exchanging one and paying the difference, 35 cts., making it $6.00.

The expressage was incurred as set forth in my account stated.

There is enclosed certified checks for $16.60 each to the Clerk which represents the amount of the expense fund unexpended, one half belonging to Complainant and the other to the City of Des Moines.

348 *Complainant's Witnesses.*

There has been furnished me by N. T. Guernsey of Counsel for Complainant, the following statement of the witnesses for the Complainant, giving the number of days in attendance at the trial and mileage claimed. I have no means at hand to verify the statement but assume that it is correct, but, should the Defendants object thereto will come to Des Moines at such time as will be convenient and determine the objection thereto.

The right to the mileage claimed and the per diem for witnesses is referred to the Court, as I am not familiar with the practice in the Federal Courts with reference to costs.

R. P. Bolton, July 14th, 15th, & 17th	3	Days.
Simon Casady, August 8th	1	"
Wm. C. Harbach, August 10th	1	"
A. E. Hollingsworth, October 6th	1	"
B. F. Kauffman, July 13th, 14, 15, Nov. 15th. "On this date this man was a witness for defendant."	4	"
R. R. McCutchen, July 17th	1	"
J. E. McDonnell, August 10th	1	"
Homer A. Miller, August 8th	1	"
Henry Moul, July 17, 18, 19, 20th, November 15th. "On last date this man was a witness for Defendant	5	"

Mack Olson, July 14, 15, & 17th, November 15th. "On last date this man was a witness for Defendant"				4	"
H. M. Porter, July 15th & 17th				2	"
349 Arthur Reynolds, August 10th				1	Days.
E. S. Root, August 10th				1	"
E. N. Sherman, October 5th, "Witness for Defendant"				1	"
C. S. Walker, August 10th				1	"
Jansen Haines, testified as Complainant's witness July 13th, 14th, August 10th, 11th, October 14th			5		"
Testified as Defendants' witness September 18th, 19th, 20th, October 2nd, 3rd, 4th, 5th, November 14th, 15th			9		"
				— 14	"
Harold Almert, Chicago, Ill., August 9th.	Mileage,	716		1	"
Andrew Cook, Chicago, Ill., August 9th.	"	716		1	"
W. F. Douthirt, Philadelphia, testified as defendants' witness: August 23rd, 24th. Sept. 19th, October 14th, Nov. 14th, 15th	"	2,350		6	"
G. W. Curran, Philadelphia, Testified as Defendants' witness: October 4th	Mileage,	2,350		1	"
J. W. Alvord, Chicago, Ill., witness: November 14th	Mileage,	716		2	"
J. A. Pearson, Philadelphia, Pa. Left Philadelphia, September 28th. Arrived " October 8th. Mileage, 2,350.					
Court attendance			6 days.		
Enroute			4 "		
Total			10 "	10	"
W. A. Baehr, Chicago, Ill. Left Chicago, July 7th. Arrived " Sept. 30th. Mileage, 716.					
Attendance			51 days.		
Enroute			2 "		
Total			53 "		
Total days in Des Moines, including Sundays.				63	"
Henry I. Lea, Chicago, Ill. Left Chicago July 7th. Arrived " Sept. 23rd. Mileage, 716.					
Attendance			47 days.		
Enroute			2 "		
Total			49 "		
Total days in Des Moines, including Sundays			52 "	52	"

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W. W. Randolph, New York, N. Y.
Left New York, July 19th.
Arrived New York, Aug. 6th.
Mileage, 2,530.

Attendance	12 days.		
Enroute	4 "		
Total	16 "	16 days.	

W. J. Hagenah, Chicago, Ill.
Left Chicago, — 11th.
Arrived " —— —.
Mileage, 716.

Attendance	50 days.		
Total days in Des Moines	61 days.	61	"

E. L. Heyser, Philadelphia, Pa.
Left Philadelphia, July 18th.
Arrived " July 27th.
Mileage, 2,350.

Attendance	4 days.		
Enroute	"		
	8 "	8	"
Total days in Des Moines	6 days.		

E. P. Walter, Philadelphia, Pa.
Left Philadelphia, July 10th.
Arrived " Aug. 13th.
Mileage, 2,350.

Attendance	26 days.		
Enroute	4 "		
Total	30 "		
Total days in Des Moines		31	"

W. F. Brodnax, San Francisco, Cal.
Left San Francisco, July 3rd.
Arrived " July 25th.
Mileage, 3,863.

Attendance	8 days.		
Enroute	10 "		
Total	18 "	18	"

With reference to the non-resident witnesses, the miles traveled appears also.

With reference to Baehr, Lea & Hagenah, the large number of days is due to the fact that they were detained here for a long while

because the City refused to release them but said that they must remain in attendance to answer further questions. As stated by Mr. Guernsey.

351 It will be seen by this statement that the Defendants' names are included in Defendants' list of witnesses.

What the practice in this Court is with reference to allowing Defendants witness fees is unknown to me. They are really only nominal defendants, however.

Should any objections be made to the claim of any of these witnesses, it will be heard by me, at such time as may be convenient to Counsel at Des Moines.

The records have all been sent to Des Moines and I have no means of verifying the claims here.

352 *Defendants' Witnesses.*

A statement of the witnesses and the number of days in attendance for the defendant has been furnished by Eskil C. Carlson, assistant City Solicitor, of Counsel for Defendants as follows:

Wm. D. Marks, Mileage not stated, Residence New York	36	Days.
Edward W. Bemis, Mileage not stated, Residence Chicago	52	"
James Hall, Mileage not stated, Residence Chicago	16	"
Andrew Sangster, Mileage not stated, Residence Chicago	49	"
George D. Dobson, Residence Des Moines	37	"
A. O. Hauge	1	"
B. S. Walker	1	"
W. H. Arnold	1	"
A. S. Wilcoxen	3	"
Frank Mathis	1	"
E. C. Pease	2	"
John McVicar	2	"
Jas. R. Hanna	1	"
James Parker	7	"

(Endorsed:) Filed May 10, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

353 The foregoing statement shows that of the costs incurred as shown by this report except the witnesses, one half has been paid by the City of Des Moines and one half by the Complainant, The Des Moines Gas Company.

I herewith return the duplicate orders of the Court, and the orders made by the Special Master, except such as appear in the record of the evidence, and the statements of counsel of the names of the witnesses and time and mileage and unless it is *be* necessary to hear objections in relation to the claims for witnesses this closes my work in the case.

The delay in completing this report has resulted from the inability of counsel to obtain sooner the information concerning the time and service of the witnesses.

Witness my hand this 9th day of May, A. D. 1912.

ROBT. SLOAN,
Special Master in Chancery.

The duplicate orders are retained by me as I may need them.

ROBT. SLOAN,
Special Master.

354 And thereafter to-wit: On the 9th day of July, A. D. 1912, the following proceedings were had in said cause:

No. 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Respondents.

On this day this cause came on for hearing on the exceptions to the master's report herein, the complainant, Des Moines Gas Company, appearing by Guernsey, Parker & Miller; Carr, Carr & Evans, and Read & Read, its attorneys, and the Respondents, City of Des Moines, Iowa, et al., appearing by Robert O. Brennan and H. W. Byers, its attorneys, the arguments of counsel are proceeded with, and not having been concluded when the hour for adjournment arrived, it is ordered that Court do now adjourn until tomorrow morning at ten o'clock.

(S'g'd) SMITH McPHERSON, *Judge.*

And thereafter to-wit: On the 10th day of July, A. D. 1912, the following proceedings were had in said cause:

No. 71-M. Eq.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Respondents.

It is hereby ordered that this cause be and the same is hereby continued until tomorrow morning at nine o'clock.
it is order that Court do now adjourn until tomorrow morning at nine o'clock.

(S'g'd) SMITH McPHERSON, *Judge.*

355 And thereafter to-wit: On the 11th day of July, A. D. 1912, following proceedings were had in said cause:

No. 71-M. Eq.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES, IOWA, et al., Respondents.

On this day this cause came on for further hearing, parties appearing as heretofore, the arguments of counsel are proceeded with and not being concluded when the hour for adjournment arrived,

it is ordered that Court do now adjourn until tomorrow morning at nine o'clock.

(S'g'd) SMITH McPHERSON, *Judge.*

And thereafter to-wit: On the 12th day of July, A. D. 1912, the following proceedings were had in said cause:

No. 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES, IOWA, et al., Respondents.

On this day this cause came on for further hearing, parties appearing as heretofore, the arguments of counsel are proceeded with and the same having been concluded, the matter is taken under advisement by the Court.

356 And thereafter to-wit: On the 21st day of August, A. D. 1912, there was filed in said cause the Opinion of Honorable Smith McPherson, Judge, which said opinion is in the words and figures as follows to-wit:

357 In the District Court of the United States, Southern District of Iowa, Central Division.

No. 71-M.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES and others, Defendants.

Mr. Geo. H. Carr, Mr. W. L. Read, Mr. N. T. Guernsey, for complainant.

Mr. Robert Brennan, Mr. H. W. Byers, Mr. E. C. Carlson, for defendants.

Opinion.

SMITH McPHERSON, *Judge*:

A gas plant for lighting purposes was established in Des Moines a number of years ago, and now and for several years has been owned by complainant. At one time the rates were $1.30 per thousand; then $1.25; then $1.20; $1.15; $1.10, and finally $1.00. The City Council, by ordinance of December 27, 1910, fixed the rate at 90 cents. Then this action was brought to enjoin the enforcement of the ordinance for the reason, as is alleged, that a 90 cent rate will not be remunerative.

The case was referred to Robert E. Sloan as Special Master, to take the evidence, reduce it to writing, and report the same to the Court, together with his findings of fact and conclusions of law.

It is most gratifying to the Court to learn that council on both sides agree that learning, patience, fairness and all those qual-
358 ifications a Master in Chancery should possess, are evidenced by nearly one year of work by Judge Sloan in this case. And the Report of the Master now pending on exceptions fully warrants the correctness of the compliments of counsel as respects the work and Report of the Master. The Court deems it appropriate to make of record the statement that the administration of justice has been furthered by the untiring industry of the Master, whose record in this case is in keeping with his long time service as an Iowa Judge.

While counsel on both sides, and the Court unite on the foregoing, no one means to say that the Report of the Master is not subject to criticism and exceptions. Neither party is satisfied with all of his findings. But the real test of judicial action is not in the fact that a litigant is not satisfied, nor in the fact that a tribunal in proceedings to review may otherwise conclude.

I deem it appropriate to call attention to another phase of this litigation. The ordinance was adopted within a few minutes from its introduction. Quite likely it had been considered by the members in their individual capacities. But in open session it received but little consideration, and without the presence of anyone for the Gas Company. And every member voting to reduce the earnings had a direct personal and moneyed interest in thus reducing the rates. If a judge were to so act, his acts would be absolutely void, because of the long time maxim "No man can be judge in his own cause." And this ought to apply to those who act in an administrative or legislative capacity. This litigation has cost both the gas company and the city extravagantly large sums, most of which cannot be taxed as costs, nor recovered back by the party successful in the end. Much of this kind of litigation, and practically
359 all of the expense would be avoided if Iowa, like so many of the other, including some neighboring states, had an impartial and city non-resident commission or tribunal with power to fix these rates at a public hearing, all interested parties present, with the tribunal selecting its own engineers, auditors and accountants. Too often we have selfish, partisan, prejudiced and unreliable experts engaged for weeks at a time, at $100.00 or more and expenses per day, exaggerating their importance and making the successful party in fact a loser. With all of our boasted advancements, Iowa is a laggard in this matter, and will continue as such until these rate makings are taken from the power of city councils. Appeals to the courts will seldom be taken from the findings of such a tribunal.

But at present, the city councils have the duty and power to fix rates. And when rates are thus fixed by them, there is a presumption, greater or less according to the character and methods of their work, that such rates are remunerative. And in any event the corporation whose rates are reduced has the burden to show that the rates thus fixed are not remunerative, failing in which the rates must be observed and enforced.

And this was the matter referred to the Master. He reports that a 90 cent rate is sufficiently high for a sufficient return to the gas company. The order appointing Judge Sloan required him to take all the testimony, including exhibits, return the same to the Court, and make findings of fact with his conclusions of law. All these he has done. Both the city and the gas company have filed exceptions to the Report.

In many cases Courts themselves have heard the rate cases under 67 of General Equity Rules as amended. But in Districts like this, with but a single judge, the time would all be devoted to such 560 cases, with other litigation at a standstill. And the Supreme Court has said that it is a seemly and orderly and commendable course to refer such cases to a Master. R. R. vs. Tompkins, 176 U. S. 167; Lincoln Gas Co. vs. Lincoln, 223 U. S. 349.

And in case of such a reference the report of the Master stands for something substantial, and something besides recommendations. His conclusions have every reasonable presumption in their favor, and are not to be set aside or modified unless there clearly appears to have been error or mistake on his part. Camden vs. Stuart, 144 U. S. 104, 119, and cases therein cited.

So that it is incumbent on such party to make it clearly appear that the report of the Master is erroneous as respects the matters covered by exceptions. The city has filed several exceptions to the report; largely on questions of fact. But they were not argued orally, nor by brief, and the alleged errors are not made clearly to appear. Every of said exceptions of the city is denied.

There are some propositions now so firmly established by the courts as not to be longer within the limits of debate.

The net earnings according to the duration of the franchise the earning power of money in that vicinity, the hazards, moral and physical and otherwise, should vary from four to eight per cent besides that set aside for depreciation and maintenance. But there is and can be no rigid or inflexible rule as to the per cent to be thus earned. Stanislaus County vs. San Joaquin Company, 192 U. S. 201, 216; Knoxville vs. Knoxville Water Company, 212 U. S. 1; Wilcox vs. Consolidated Gas Co., 212 U. S. 19; Railway Commission vs. Cumberland Telephone Company, 212 U. S. 414; San Diego Land Company vs. National City, 174 U. S. 739; Lincoln Gas Co. vs. City of Lincoln, 223 U. S. 349; Cedar Rapids Gas Co. vs. Cedar Rapids, 223 U. S. 655.

The "good will" and that which the corporation enjoys as 61 being from the only source from which gas can be obtained is not an element of value on which profits should be earned in estimating whether the rates are remunerative or confiscatory. Willcox vs. Consolidated Gas Co., 212 U. S. 19, 52. All concede that the present value is the basis on which returns are to be estimated. And with the findings of the Master on that matter there are but two matters which merit consideration. And on these two questions the great weight of the argument by counsel has been made.

One of these is what is called the "reproduction theory" as deter-

mining the present value. When the gas mains were laid many of the streets were unpaved, but which are now paved streets (21 per cent). To reproduce the system at this time it would be necessary to take up something like a yard in width and for the length of 21 per cent of the streets, place the mains the proper depth, fill in with earth and replace the paving. The extra cost on account of the paving would amount to $140,000.00. The Master declined to allow this sum as forming part of the value of the plant.

It is claimed the true value of any building, structure or plant is that sum which it takes to reproduce it, less the depreciation of the one to be replaced. But little assistance is obtained from the authorities, although it is claimed the case of Wilcox vs. Consolidated Gas Company, 212 U. S. 19, is in point. The opinion does not show this to be so. Something of a showing is made in favor of that contention, by going to the original record, and the assignments of error. But it is not easily understood how the Supreme Court in that great case, so ably argued, with so much involved, meant to be so understood without expressly so declaring in the opinion.

No one doubts but that the cost of reproduction may in many cases be considered, and in some cases is a solution of the controversy.

362 What makes value, and what is the evidence thereof?

Metaphysical distinctions as to terms as used with reference to value by political economists aid but little. Exchange value, selling value, cost value, value for use as an utility, value as to incomes and so on are too often used loosely.

But the question is as to its value today with reference to income. What it may have cost is pertinent. What it will sell for is to be considered. And if destroyed by any agency, such as rust, crystalization, or other forces, what must be paid to reproduce it is a subject of inquiry. All of these may be considered. In my opinion those who maintain that what it will cost to reproduce the plant, less depreciation, is the true value, in many instances confound the real question with one of many evidences of the real value. Reproducing cost is an evidence of what the real value is after subtracting the depreciation. But what is to be done with the value of stocks and bonds on the reproductive theory? And what becomes of the original cost on the reproduction theory? And what becomes of the question of the increase or falling off in numbers of consumers? And the same as to increased or diminished expenses?

The theory at first thought in all cases is plausible and attractive, but in the end oftentimes utterly illogical and unreliable, originally adopted as a mere time-saver by mere theorists, and sought to be enforced as against substantial and unbending facts. If the plant is to be reproduced, when is it to be done? If when reproduced, will the streets then be paved, and if paved, paved with what? Must it all be reproduced at once, or the same covered by a number of years? If but gradually reproduced, why should not such cost go into either the operating or maintenance accounts? No one can state when it must be reproduced, and a material question arises; what then, as compared with the present, will be the price of labor, material and

freight? But finally and to my mind the conclusive reason
363 against the soundness of the reproduction under paved streets is, that to allow that theory to prevail, and to increase the capitalization now to the extent of $140,000.00, is to allow such gas rates as will pay a dividend on such sum from and after this date. But the sum of $140,000.00 is not put in the capital or value account until the plant is reproduced.

As of course, streets paved or unpaved make no difference in the earning power of the gas plant, and but little if anything goes more directly and accurately to the question of value of any structure or plant than its rental, earnings, or as a dividend producer.

There are many instances in which the reproduction theory is the best of all methods for getting at the present value, and in other instances the most misleading. And it is deceptive, in my opinion, to now add the cost of taking up and replacing pipe under paved streets at an estimated cost of $140,000.00 extra, and does not warrant an increased dividend of $8,400.00 or some greater sum. Such a dividend is a mere paper dividend, and is arrived at, not because of increased earnings, not because of increased capital or investments, not because of increased operating or maintenance expenses, but solely by reason of a supposed necessity of at some time, in some manner, under a then some kind of street, on a mere guess of what labor and material would then cost. Many of the principals with relation to railway rates are applicable to gas rates. And perhaps the latest analysis of the reproduction theory is found in the recent case of Louisville R. R. vs. Railway Commission, 196 Fed. Rep. 800, in an opinion of Judge Jones of the Alabama District. He shows the value of this theory, but likewise shows that it is not a hard and fast rule covering all phases. Finally, pipes under a paved street are of very long life; many times longer than if the streets were not paved.

The theory applied to paved streets is but a theory, is illogical and against facts, and was properly denied by the Master.

The Master finds that the "going concern" value of the
364 plant is $300,000.00, but the Gas Company by its exceptions, contends that this sum is not in the total of items making $2,240,928.00, the value placed on the entire plant. A "good will" value, and a "going concern" value, are often confused and used interchangeably, and I am inclined to believe that in some instances the Master's report is subject to this criticism. But whether this is so or not, is not of much importance, and it is more of a verbal criticism than a practical one. Under the authorities cited, as well as others easily found, from those cited, a "good will" value, by reason of being a monopoly, such as a Gas Company has under an ordinance, is not to be reckoned. The item of $300,000.00 for "going value" is quite important in this case. It is contended that if this $300,000.00 must be added and the consumption of gas remains the same, and the percentage of dividends allowed by the Master should stand, there will then be a shortage. The authorities already cited, and which in my opinion are in accordance with good sense, favor the allowance of a "going value." Every kind of

business, with no exception, has a value known as "going value," and such "going value" is in no way connected with the monopoly or "good will" value. The Gas Company contends that this "going value" of $300,000.00 was erroneously omitted by the Master in his totals, while the city contends that the sum of $300,000.00 has already been considered in making up the grand total of $2,240,928.00. I am of the opinion that the contention of the city is a correct one. This matter has received from me most earnest attention and consideration, and I will briefly present the reasons for my conclusion.

The Master fixes the physical value at $2,240,928.00. He means thereby and to my mind clearly states that as the value of the gas plant. There are but five items making this grand total. Counsel on both sides and I agree that "going value" is a part of the present value. The Master so held. It would be strange that the Master would hold that the "going value" of $300,000.00 en-
365 tered into the actual value, and then by inadvertence omit it. And it would be the more strange, after considering the items set forth in the report.

By the report he lists the following:

1. Working capital	$140,000.00
2. Real estate	150,000.00
3. Organization expenses	6,923.00
4. Meters in stock	6,603.00
5. Present value of physical property, aside from above items	1,937,402.00

Evidently because the Master used the word physical counsel seem to conclude that he did not include "going value." If he had omitted the word "physical" as an identification, then no one would doubt but that he did include "going value." But why would the Master include five items, and omit one that he meant to include? But the criticism is too refined and technical to stand as against his entire report. After enumerating the four items he adds "present value of physical property aside from above items, $1,937,402.00." This is as though he had said "all other items of value to be considered."

How can it be said that he meant "junk value"? Or "bare bones" value, as used in some of the cases? It is not fair to say that he meant junk value or bare bones value. He meant that was the value coupled with the preceding items of the gas plant; a plant making and selling gas. He meant that, and neither more nor less than that.

If the question were now for decision, I would have much doubt as to the item of working capital, $140,000.00. The Master was liberal with the Gas Company by allowing that item. I fail to find satisfactory evidence in this tremendous record, as to that item, although there is evidence bearing thereon. But every business man knows that the Gas Company daily makes deposits, and daily checks out for expenses, and at stated periods for interest on its bonds, and for divi-

dends. Whether it receives interest on its daily balances,
366 does not appear, nor does it appear whether it *it* must pay interest on its overdrafts if it has such. And if it has on hand $140,000.00 as working capital, why such sum would not earn interest is not make to appear. I only mention this to show that the Master has not borne down on the Gas Company.

When the restraining order was issued herein to be in force pending litigation, it was done with full consideration. An actual test is the highest degree of proof as to some phases, and some phases only of litigation like this. But it was made to appear that a very large number of gas consumers paid cash without waiting for the presentation of bills. This was made easy to do by the meters having annexed thereto a mechanism so adjusted that by dropping any sum of metal money through a slot, the requisite amount of gas could be used on the basis of $1.00 per thousand. And the mechanism would correctly measure the gas on that basis. As of course, to allow the consumer to have 1,000 cubic feet of gas at 90 cents, the wheels and appliances must be changed. To do this persons familiar with such mechanism must be employed. And it was made to appear that it would take more than a month of time to do this, and at much expense.

Every of the exceptions of the Gas Company is overruled.

The bill of complaint is dismissed with prejudice, and the interlocutory writ of injunction and restraining order vacated.

But the vacation of such writs will not be effective for sixty (60) days from the decree this day entered, to the end that such mechanisms may be adjusted to the ninety cent rate.

And to the further end that if said decree by actual test may prove that a ninety cent rate is not remunerative, the decree will provide that after three years of such actual test, this case may be reinstated, and the pleadings and evidence now on file, used as of full probative force, supplemented by such additional pleadings and evidence as may be deemed by either party advisable.

This will so materially reduce the expense as to make it almost nominal.

In the event of an appeal, a supersedeas bond in the pen-
367 alty of Five Thousand ($5,000.00) Dollars will be approved. But such a bond will only supersede the payment of the costs. Any other supersedeas must be applied for to the Appellate Court.

Such will be the decree.

Des Moines, Iowa, August 21, 1912.

(Endorsed:) Filed August 21, 1912. Wm. C. McArthur, Clerk, By Louis J. Adelman, Deputy.

368 And thereafter to-wit: On the same day August 21st, A. D. 1912 there was filed in said cause a Decree which said Decree is in the words and figures as follows to-wit:

369 In the District Court of the United States, Southern District of Iowa, Central Division.

No. 71-M.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES and Others, Defendants.

Decree.

Now on this August 21, 1912. the Court being fully advised, files an opinion herein finding the equities of the case to be with the defendants.

It is therefore considered, ordered, adjudged and decreed as follows:

1. The bill of complaint herein is dismissed with prejudice.

2. The complainant will pay the costs herein made to be taxed by the clerk, which will include monies paid by defendants on account of stenographers and typewriters, and monies paid by defendants on account of Master's compensation and expenses, for which, after forty (40) days, a writ of execution will issue.

3. The restraining order and temporary injunction heretofore issued herein are both vacated, such vacation to be effected sixty (60) days from this date.

4. At any time on and after three years from this date, complainant, its successor or assigns, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such additional pleadings and take and
370 file such additional evidence as to each party may be deemed advisable.

5. If complainant elects to appeal from this decree or any part thereof, a supersedeas bond properly conditioned, in the penalty of Five Thousand ($5,000.00), with ample surety, will be approved. But the approval and filing of such bond will only stay said writ of execution for said costs. Any other supersedas than as aforesaid is by this Court denied.

To each, all and every of the foregoing, in so far as adverse, complainant excepts.

Done this August 21, 1912.

(Signed) SMITH McPHERSON, *Judge.*

Filed Aug. 21, 1912. Wm. C. McArthur, —, by Louis J. Adelman, Deputy.

371 And thereafter to-wit: On the 8th day of October A. D. 1912 there was filed in said cause a Notice of Hearing of Application for Modification of the Decree which said Notice is in the words and figures as follows to-wit:

372 In the District Court of the United States for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Notice.

To Defendants in the above entitled action, or to their Solicitors, H. W. Byers and R. O. Brennan:

You are hereby notified that complainant will, on the 8th day of October, 1912, at the hour of 9 o'clock A. M. at the Federal Court room in Council Bluffs, Iowa, submit to the Honorable Smith McPherson, Judge of the said court, an application for the modification of the decree in the above entitled cause, signed on the 21st day of August, 1912, in the following particulars.

1. To so modify the fifth clause of said decree as to permit complainant to supersede and stay the enforcement of the obligation imposed upon it by the said decree to refund on demand of the persons by whom payment was made, all sums of money collected by complainant for gas sold and delivered after the 1st day of January, 1911, in excess of the rate specified in the ordinance of December 27, 1910, until the determination of the appeal from the said decree.

2. To change the third clause of said decree by striking out the words "sixty days" and submitting therefor the words "ninety days."

373 Please take notice and govern yourselves accordingly.

(Signed) W. L. READ,
N. T. GUERNSEY AND
GEO. H. CARR,
Solicitors for Complainant.

(Endorsed:) Filed Oct. 8, 1912. Wm. C. McArthur, Clerk. By Louis J. Adelman, Deputy.

Service of the foregoing notice and receipt of copy acknowledged this 4th day of October, 1912.

(Signed) R. O. BRENNAN &
H. W. BYERS,
Solicitors for Defendants.

374 And thereafter to-wit: On the same day, October 8, 1912, there was filed in said cause an Application for Modification of the Decree, which said Application is in the words and figures as follows to-wit:

375 In the District Court of the United States for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Application for Modification of Decree Rendered Herein on the 21st Day of August, 1912.

To the Honorable Judges of the District Court of the United States for the Southern District of Iowa:

Complainant shows to this honorable court that on the 6th day of January, 1911, there was signed and entered of record in this case an order temporarily restraining defendants from putting in force the ordinance of December 27, 1910, and until the further order of the court, permitting complainant to charge for gas sold and delivered, at the rate of $1.10 per thousand cubic feet, provided that upon all bills paid on or before the 15th day of the month following the month in which the gas was used, a discount of 10¢ per thousand cubic feet should be allowed. Said order of January 6, 1911, contained the following recitals:

"Provided, however, that in the event that it shall be determined by the final decree in this cause that said ordinance of December 27, 1910, is valid, that complainant shall refund on demand by the persons by whom payment was made all sums of money collected by it for gas sold and delivered from and after the first day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910."

Complainant shows to this honorable court that it has, since the entry of said order on the 6th day of January, 1911, charged
376 and received for gas sold and distributed in accordance with the provisions thereof. The several sums paid to complainant by individual consumers in excess of the rates fixed in the ordinance of December 27, 1910, are small, but the aggregate of said sums so collected constitutes a very large amount of money.

In the decree filed herein on the 21st day of August, 1912, is the following provision:

"If complainant elects to appeal from this decree or any part thereof a supersedeas bond properly conditioned in the penalty of Five Thousand Dollars with ample surety, will be approved. But the approval and filing of such bond will only stay said writ of execution for said costs. Any other supersedeas than as aforesaid is by this Court denied."

Complainant intends as soon as possible, to perfect an appeal from said decree, and unless the requirement of said order and decree that it shall refund on demand to the persons by whom payment was made all sums of money collected for gas sold and delivered from and after the first day of January, 1911, in excess of

the rate specified in the said ordinance of December 27th, 1910, be superseded, complainant will be compelled, before the determination of said appeal, to refund on the demand of the persons by whom payment was made, all sums of money collected in excess of the rate specified in said ordinance of December 27th, 1910. In the event that complainant obtains a decree in its favor upon the trial of this case on appeal, and in the event said ordinance of December 27th, 1910, shall be declared invalid, complainant will be unable to recover all or the greater portion of the money so refunded. No obligation ought to rest upon complainant to refund said sum of money until the determination of this case upon appeal, and until it has been adjudicated upon the trial of this case on appeal that the ordinance of December 27th, 1910, is a valid ordinance.

In the Third paragraph of said decree it is provided as follows:

377 "The restraining order and temporary injunction heretofore issued herein are both vacated, such vacation to be effective sixty days from this date."

The vacation of the said order and temporary injunction become effective on the 20th day of October, 1912.

Wherefore, complainant prays that the decree of August 27th, 1912, be so modified that the requirement of said order and decree that it refund on demand the sums of money collected for gas sold and delivered from and after the first day of January, 1911, in excess of the rate specified in said ordinance of December 27th, 1910, may be superseded on such terms and conditions as to bond as may to the court appear just and equitable, and that the provisions of said decree fixing the time when the vacation of the restraining order and temporary injunction heretofore issued herein become effective shall be extended thirty days.

(Signed) W. L. READ,
N. T. GUERNSEY AND
GEO. H. CARR,
Solicitors for Complainant.

(Endorsed:) Filed Oct. 8, 1912. Wm. C. McArthur, Clerk. By Louis J. Adelman, Deputy.

378 And thereafter to-wit: On the same day, October 8th, A. D. 1912, there was filed in said cause a Resistance to the Application for Modification of the Decree, which said Resistance is in the words and figures as follows to-wit:

379 In the District Court of the United States, for the Southern District of Iowa, Central Division.

No. 71-M. Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Resistance to Application for Modification of Decree.

Now come the defendants in the above entitled cause and resist the application of the complainant for a modification of the decree rendered herein on the 21st day of August, 1912, and as grounds for such resistance show to the court:

First. Because the decree in all its provisions is just and proper and fully warranted by the record.

Second. The decree if allowed to stand just as it is will be an end to this litigation.

Third. The record shows that the 90¢ rate for gas will afford the Gas Company more than a fair compensation for its service.

Fourth. There is nothing in the decree that deprives the complainant Gas Company of any right it has under the law to apply to this court for relief whenever conditions justify such application.

Fifth. Under the findings and conclusions of the Master and of your Honor the defendant City is entitled to just such a decree as your Honor has rendered.

Sixth. This cause has been pending now for nearly two years and is the culmination of a contest that has been going on with the Gas Company for nearly twenty years. Both sides were given opportunity to present the case from every angle by both the
380 Master and your Honor, and now to change or modify the decree in such a way as to weaken its force as the final word of this court, or to encourage a continuation of the controversy would be intolerable.

(Signed) R. O. BRENNAN,
H. W. BYERS,
E. C. CARLSON,
Attorneys for Defendants.

(Endorsed:) Filed Oct. 8, 1912. Wm. C. McArthur, Clerk. By Louis J. Adelman, Deputy.

381 And thereafter to-wit: On October 10th A. D. 1912 there was filed in said cause a Decree vacating the Decree of August 21st, 1912, and filed in lieu thereof, which said Decree is in the words and figures as follows to-wit:

382 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M.

DES MOINES GAS COMPANY, Complainant,
against
CITY OF DES MOINES AND OTHERS, Defendants.

Decree.

Now on this October 10th, 1912, the court being fully advised orders and decrees:

The decree herein filed August 21st, 1912, be and the same is hereby vacated and in lieu thereof the following is ordered, adjudged and decreed.

1. The bill of complaint herein is dismissed with prejudice.

2. The complainant will pay the costs herein made to be taxed by the clerk, which will include monies paid by defendants on account of stenographers and typewriters, and monies paid by defendants on account of Master's compensation and expenses, for which, after forty (40) days, a writ of execution will issue.

3. The restraining order and temporary injunction heretofore issued herein are both vacated; such vacation to be effective on and after November 15th, 1912.

4. At any time on and after three years from this date, complainant, its successors or assigns, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable.

383 5. If complainant elects to appeal from this decree or any part thereof, a supersedeas bond properly conditioned in the penal sum of Five Thousand ($5,000) Dollars, with ample surety, will be approved; said approval to be by the judge of this court; said bond when thus approved will stay the said writ of execution as to said costs as covered by Paragraph 2 of this decree.

6. It is further decreed that the orders heretofore made as to refund of Ten (10) cents per thousand feet of gas in excess of the rate fixed by the ordinance herein in controversy be superseded, provided the complainant file a bond for that purpose in the penal sum of One Hundred and Fifty Thousand ($150,000) Dollars, properly conditioned with ample surety, to be approved by this court or a judge thereof.

7. Any other supersedeas than those provided for in Paragraphs 5 and 6 of this decree is denied and shall only be allowed by the Supreme Court of the United States or a justice thereof.

8. In the event an appeal is not taken perfected and filed within sixty (60) days of the date hereof, or if said appeal is taken and this decree should be affirmed as to said refund as set forth in Para-

graph 6 of this decree, then the city and all parties claiming such refunds shall present such claims to this court within such time as will be hereafter fixed for allowance. And said city and all defendants and the officers and agents of such city and all persons are prohibited from presenting or urging the same in any other court than this court. And for such hearings this court retains jurisdiction over the parties and the subject matters. Each party excepts to all the foregoing insofar as adverse.

Done this October 10th, 1912.

(Signed) SMITH McPHERSON, *Judge.*

(Endorsed:) Filed Oct. 10, 1912. Wm. C. McArthur, Clerk.

384 And thereafter to-wit: On the 11th day of November A. D. 1912 there was filed in said cause a Petition for appeal and thereafter to-wit: on the 18th day of November A. D. 1912 there was an order made allowing said appeal, which said Petition for Appeal and order allowing same is in the words and figures as follows to-wit:

385 Filed November 11th, 1912. Wm. C. McArthur, Clerk.

In the District Court of the United States in and for the Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,

vs.

CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, CHARLES W. Schramm, John Wesley Ash, Zell G. Roe, and Robert O. Brennan, Respondents.

Prayer for Allowance of Appeal.

Comes now the above named complainant, the Des Moines Gas Company, and conceiving itself to be aggrieved by the final decree heretofore and on or about the 10th day of October, A. D. 1912 made, entered and filed by the said court against it in the above entitled cause, and having filed with the clerk its assignment of errors, does hereby appeal from the said final decree to the Supreme Court of the United States; and it prays that this, its appeal, may be allowed, and that a transcript of the record and proceedings and papers upon which said final decree was made may be transmitted to the Supreme Court of the United States.

DES MOINES GAS COMPANY,

(S'g'd) By GEORGE H. CARR,
WM. L. READ,
N. T. GUERNSEY,
Its Solicitors.

And now, to-wit, on this 18 day of November, A. D. 1912, it is ordered that the appeal be allowed as prayed for.

(S'g'd) WILLIS VAN DEVANTER.

Filed November 20, 1912. Wm. C. McArthur, Clerk.

386 And thereafter to-wit: On the 11th day of November A. D. 1912 there was filed in said cause an Assignment of Errors which said Assignment of Errors is in the words and figures as follows to-wit:

387 In the District Court of the United States in and for the Southern District of Iowa, Central Division.

No. 71-M.

DES MOINES GAS COMPANY, Complainant,

vs.

CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, Respondents.

Assignment of Errors.

And now comes the Des Moines Gas Company and says that in the record and proceedings in the above entitled cause there is manifest error in each and every one of the following particulars:

First. That the court erred in adjudging and decreeing that the bill of complaint in the said cause be dismissed with prejudice.

Second. That the court erred in adjudging and decreeing that the complainant pay the costs of the said suit and in awarding execution therefor.

Third. That the court erred in adjudging and decreeing that the bill of complaint in the said cause be dismissed.

Fourth. That the court erred in adjudging and decreeing that complainant be denied the relief prayed for in its bill of complaint.

Fifth. That the court erred in refusing to adjudge and decree that the ordinance of the City of Des Moines of the 27th of December, 1910, complained of in complainant's bill of complaint, is and was invalid, and void, and erred in refusing to permanently enjoin its enforcement.

Sixth. That the court erred in not adjudging and decreeing that the rates fixed in said ordinance of the City of Des Moines, of December 27, 1910, were and are confiscatory of complainant's property.

388 Seventh. That the court erred in adjudging and decreeing that the Master's report should be approved.

Eighth. That the court erred in adjudging and decreeing that each of the exceptions of complainant, to the master's report, be overruled.

Ninth. That the court erred in adjudging and decreeing that there is a presumption in this case that the rate fixed in the said ordinance of December 27, 1910, is remunerative.

Tenth. That the court erred in adjudging and decreeing that in this case the burden was upon complainant to show that the rate fixed in the said ordinance was not remunerative.

Eleventh. That the court erred in adjudging and decreeing that the restraining order and temporary injunction issued in the said cause prior to the rendition of said final decree be vacated.

Twelfth. That the court erred in adjudging and decreeing that any supersedeas other than what is provided for in paragraphs five and six of the said decree is denied and shall only be allowed by the Supreme Court of the United States, or a justice thereof.

Thirteenth. That the court erred in adjudging and decreeing in the fourth paragraph of the said decree:

"At any time on and after three years from this date, complainant, its successors or assigns, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such addition- pleadings and take and file such additional evidence as to each party may be deemed advisable."

Relating to the Enhanced Value Due to the Enhanced Cost of Reproducing Mains Located in Paved Streets.

Fourteenth. That the court erred in adjudging and decreeing that the estimated cost of reproduction, less depreciation, when taken as a measure of value, is not such estimated cost as of the date of the valuation and subject to the conditions which then existed.

389 Fifteenth. That the court erred in adjudging and decreeing that from the amount of $2,240,928 (which the master found to be the cost of reproducing the physical property, less depreciation, without taking into account the element of value usually known as going value), there should be deducted the sum of $140,000, because this did not represent an expense incurred in the original construction of the property; said $140,000 being the estimated additional cost, less depreciation, which would be incurred on account of removing and replacing paving in the reproduction of mains in streets which were paved at the date of the valuation, but were not paved when the mains in them were originally laid.

Sixteenth. That the court erred in adjudging and decreeing that complainant is not entitled to earn a fair and reasonable return upon the present value of that portion of its investment and property which consists of mains under paved streets, where the pavement was put down after the mains were laid.

Seventeenth. That the court erred in adjudging and decreeing that the twelfth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twelfth. That the master has in said report stated and certified that there should be deducted from what is called the 'total physical value' as found by him, the sum of $140,000, representing the cost of removing and replacing pavements, where pavements existed over the mains at the date as of which the valuation is made, but where no such pavements existed at the dates when the mains were laid;

390 whereas, the master ought to have found that no deduction should be made on this account and that the value of the mains should be determined with reference to existing condi-

tions and not with reference to the conditions which existed at the time the mains were laid."

Eighteenth. That the court erred in adjudging and decreeing that the thirteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirteenth. That the master has in said report stated and certified as to the said item of $140,000:

'But where pavements are laid after the mains are installed, they have expended no money in taking up and replacing pavements. An allowance, therefore, makes reproduction the ultimate question, and not the reasonable value of the mains, unless it further appear that the value of the mains are enhanced thereby to the extent of the cost of taking up and replacing pavements, which is not shown in this case. When the whole evidence is considered, the contrary is shown;'

whereas, the master ought to have found that the value of the mains in question as of the date of the valuation is determined, not by what may have been expended in installing the said mains, but by what it would cost to reproduce them, less the proper charge on account of depreciation, and ought to have found that changes in conditions since the mains were laid resulting in enhancing the cost of reproducing them, result in corresponding enhancements in the value of the existing mains, and ought to have found that the evidence which shows that because of the placing of pavement over these mains, the cost of reproducing them would be enhanced $140,000, showed that the value of these mains had been enhanced."

Nineteenth. That the court erred in adjudging and decreeing that the fourteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fourteenth. That in the consideration of the said item of $140,000, the master has in his said report adopted as the basis for determining the present value of the mains in question as to the matter of paving, their original cost less depreciation, and as to other items their cost of reproduction, less depreciation; whereas, he should, in order to ascertain present value, in view of the difference in the conditions, existing at present and when said mains were laid, have consistently applied the cost of reproduction, less depreciation, as to all of the items going to the value of the mains."

391 Relating to Going Value.

Twentieth. That the court erred in adjudging and decreeing that the master found that the value of the complainant's property is $2,240,928, and should have determined that the master found that the said amount represented the value of the property in question exclusive of the item of going value found by the master to be $300,000, and that the master found that the total value of the property in question was the sum of $2,540,000.

Twenty-first. That the court erred in adjudging and decreeing that the eighteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Eighteenth. That the master has, in said report, stated and certified that:

'The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the 'Going Value' of this concern is worth more, but I cannot feel satisfied that such is the case and regard $300,000 as every dollar it is worth over and above its physical value, and in my judgment, it is worth that much more than a plant would be that had to develop its business;'

whereas, the master ought to have found the said item of going value to be not less than the sum of $530,932, as clearly shown by the preponderance of the evidence."

Twenty-second. That the court erred in adjudging and decreeing that the nineteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Nineteenth. That the master has in said report stated and certified:

'The opinion in the recent case of the Cedar Rapids Gas Co. vs. Cedar Rapids, adds additional emphasis thereto. Not only so, but it also renders it extremely doubtful that 'Going Value' will be included in valuation of such a plant as the basis of return, beyond the fact that it is in 'successful operation.' That would exclude the sum of $300,000 estimated in this case, on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.

In my judgment, after considering the able and thorough arguments of counsel, that it is decisive of the question, and holds that 'Going Value' should not be considered in determining the
392 basis upon which the complainant is entitled to have its return reckoned, and feel that it is my duty to so state;'

whereas, the master ought to have found that the said opinion of the Supreme Court of the United States does not hold that going value should be excluded in determining the basis upon which the complainant is entitled to have its return reckoned, but on the contrary, recognizes the fact that going value should be considered in determining the said basis."

Twenty-third. That the court erred in adjudging and decreeing that the twentieth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twentieth. That the master has in said report stated and certified, in substance, that the fact that the property in question is a going concern, characterized by an established business, with a large number of consumers attached to it, and a developed business, should not be taken into account; whereas, the master ought to have found that in ascertaining the value of the complainant's

property upon which the rate of return afforded by the ordinance in question should be computed, all of the elements affecting that value should be taken into account, including whatever is contributed by the fact of the connection of the items, making a complete and operating plant."

Twenty-fourth. That the court erred in adjudging and decreeing that the twenty-first exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-first. That the master has in said report stated and certified in effect that the value of the complainant's property as of the date of the inquiry, upon which its return should be computed, is the mere cost of purchasing the land, constructing the buildings, putting in the machinery and installing the mains, meters and services with the working capital—in other words, the mere cost of reproducing the physical property, less depreciation; whereas, the master ought to have found that in order to ascertain said value there must be taken into account the additional value created by the fact of many connections with buildings, and actual earnings, including whatever is contributed by the fact of the connection of the items making up a complete and operating plant."

Twenty-fourth. That the court erred in adjudging and decreeing that the twenty-second exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-second. That the master has in said report in
393 effect, stated and certified that the item designated by him as 'going value' is something separate and apart from the physical property; whereas, he ought to have found that it is an element contributing to the value of each tangible part of the property and that its existence is solely as a characteristic of the structure and that the structure is a structure whose value is affected by the fact that it is in use.

Relating to Specific Items in Valuation.

Twenty-sixth. That the court erred in adjudging and decreeing that the first exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"First. That the master in said report stated and certified that the value of the real estate in controversy is the sum of $150,000.00; whereas, the master ought to have found that the value of the said real estate is not less than the sum of $242,961.00."

Twenty-seventh. That the court erred in adjudging and decreeing that the fifth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fifth. That the said master has in said report stated and certified that the base value sustained by the clear weight of the evidence in this case is as follows:

Buildings, Exhibit "C-*a*"	$66,528
Contents of Buildings, Exhibit "G"	137,892
Yard Structures, Exhibit "H"	206,728
Miscellaneous, Exhibit "I"	57,912
Distribution System, Exhibit "L"	1,505,966
Total Base Figures	1,975,026

whereas, the said master ought to have found that the said base values were as shown by the clear preponderance of the evidence, not less than:

Buildings	$71,283
Contents of Buildings	150,593
Yard Structures	216,189
Miscellaneous	71,671
Distribution System	1,561,111
Total Base Figures	$2,070,848"

Twenty-eighth. That the court erred in adjudging and decreeing that the eighth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Eighth. That the master has in said report stated and certified: 'The organization expenses are shown to have been the sum of $6,922, and after careful consideration of the case, it is my conclusion that 15 per cent in addition to the cost of organization is a fair and just allowance therefor';

whereas, the master ought to have found that not less than
394 25 per cent should be added to the base figures or cost of labor and material in order to cover and provide for what he has denominated 'overhead charges.'"

Twenty-ninth. That the court erred in adjudging and decreeing that the ninth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Ninth. That the master has in said report refused to allow any overhead charges upon the real estate; whereas, he should have allowed such charges and have added them to the value of the real estate in an amount not less than $40,000.00; including the expense of optioning the real estate and testing it and examining the title and for engineering advice as to its availability and for interest upon its cost during construction and for taxes upon it during construction."

Thirtieth. That the court erred in adjudging and decreeing that the tenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Tenth. That the master in the said report stated and certified that the per cent condition of the entire physical plant was at the

date of the valuation only 85.3, making the depreciation thereon $333,878; whereas, the clear preponderance of the testimony shows that the per cent condition of the said plant was at that time not less than 88.2 per cent, and that the depreciation thereon was much less than charged against it by the master."

Thirty-first. That the court erred in adjudging and decreeing that the eleventh exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Eleventh. That the master has, in said report, stated and certified that the total physical value of the property in question is the sum of $2,240,928; whereas, the master ought to have found that the said total physical value, as shown by the clear preponderance of the evidence, was not less than $2,653,441."

Relating to a Fair Return.

Thirty-second. That the court erred in adjudging and decreeing that the rate of return to which the complainant is entitled is not a matter of fact which may be shown by testimony with the same definiteness and certainty as other controverted matters of fact.

395 Thirty-third. That the court erred in adjudging and decreeing that the twenty-sixth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-sixth. That the master has in said report stated and certified that the complainant is entitled to a return of only 8 per cent upon the amount of its investment; whereas, the master ought to have found that the evidence shows clearly and beyond a reasonable doubt that the complainant is entitled to a return of not less than ten per cent upon the amount of its investment."

Relating to the Future Cost of Manufacturing and Distributing Gas.

Thirty-fourth. That the court erred in adjudging and decreeing that the twenty-seventh exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-seventh. That the master has in said report stated and certified:

'Complainant claims that in estimating the net profit for manufacturing and distributing gas to its customers, that there should be taken into account and allowance made for the necessary expenses which it has and will incur in connection with the establishment of rates in this action. In other words, its expenses in this action, not covered by the costs of suit. In my judgment, no allowance therefor can be made in determining the future cost of gas for the following reasons;'

whereas, the master ought to have found that the necessary expense incurred by the complainant in connection with rate regulations and

litigation arising therefrom is a part of its necessary operating expenses and a factor which should be taken into account in determining the operating expenses of the company in the future."

Thirty-fifth. That the court erred in adjudging and decreeing that the thirty-ninth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Thirty-ninth. That the master has in said report in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever for the expenses which the complainant has incurred and will incur in connection with litigation with reference to rates; whereas, the master ought to have found that the said expenses are a necessary and inevitable part of the operating costs of the complainant, and ought to have made a proper allowance therefor."

396 Thirty-sixth. That the court erred in adjudging and decreeing that the twenty-eighth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-eighth. That the master has in said report stated and certified in substance, that the amount of $10,000 per annum paid by the complainant to certain of its officers, who are also officers of The United Gas Improvement Company, should not be taken into account in estimating the amount of operating expenses of the complainant; whereas, the master ought to have found that the services on account of which such salaries are paid are necessary services and that such salaries were expenses necessarily incident to the operation of the complainant's plant and that the amounts paid on account of such services were necessary factors in determining the operating expenses of the complainant for the future."

Thirty-seventh. That the court erred in adjudging and decreeing that the twenty-ninth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-ninth. That the master has in said report stated and certified with reference to the services covered by the salaries referred to in the preceding exception:

'There is no evidence that shows that the services so rendered are in fact worth the amount represented by these salaries, and in my judgment, their allowance and payment would not be prima facie evidence thereof;'

whereas, the master ought to have found that the evidence shows that the services in question were in fact worth the amount represented by the salaries referred to and that their allowance and payment was prima facie evidence thereof."

Thirty-eighth. That the court erred in adjudging and decreeing that the thirtieth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirtieth. That the Master has in said report stated and certified

with reference as to the services and salaries referred to in the two last preceding exceptions:

'There is, therefore, no basis upon which an allowance can be made therefor, in determining the future cost of producing and distributing gas by the complainant company to its consumers, and, hence, no allowance is made therefor. This amounts to 1.88 cents per M. C. F. of gas;'

whereas, the master ought to have found that under the testimony an allowance should have been made for the salaries in question
397 in determining the future cost of producing and distributing gas by the complainant."

Thirty-ninth. That the court erred in adjudging and decreeing that the thirty-eighth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirty-eighth. That the master has in said report in the estimates of the future cost to the complainant of producing and distributing gas included nothing whatever representing the expense which will be incurred by the complainant in the immediate future on account of contributions to the Greater Des Moines Committee, or for like purposes; whereas, the master ought to have found that the said items of expense, either in the form of contributions to the Greater Des Moines Committee or in some other form, will in the future be necessary items of the operating expenses of the complainant's plant, and ought to have made a proper allowance therefor."

Fortieth. That the court erred in adjudging and decreeing that the thirty-second exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirty-second. That the master has in said report stated and certified:

'The ordinary insurance, which the company has been carrying, should and has been, included in the operating expenses. But beyond this none other should be considered. In determining the rate of return, the hazards of the business are all eliminated by casualty insurance, then, the rate of return should be diminished. The exhibits of complainant on this claim No. 89, have been given no consideration beyond fixing the rate of return;'

whereas, the master ought to have found that all items of insurance were a part of the operating cost of the complainant, and ought to have found further that no part of said operating costs should be paid out of the return which should be applicable solely to interest and profits."

Forty-first. That the court erred in adjudging and decreeing that the fifty-third exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fifty-third. That the master has in said report stated and certified:

'The rate of insurance against loss by accidents is about 1.42 per M. C. F. and the operating expenses show about .38c for past dam-

age claims, which in round numbers 1.04 cents per M. C. F.,
398 and this included as part of hazards in fixing the rate of return, but should the rate of return be reduced, then, this ought to be included in the cost of gas;'

whereas, the master ought to have found that all of the hazards incident to the transaction of the business should be treated as a part of the operating costs, and that none of them should be paid out of the return allowed upon the investment."

Forty-second. That the court erred in adjudging and decreeing that the forty-first exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Forty-first. That the master has, in said report in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever for the increase in the operating costs of the complainant which the testimony shows will ensue from the fact that the ordinance in controversy provides no penalty for failure on the part of consumers to pay promptly; whereas, the master ought to have found that the failure of the ordinance in question to provide for such a penalty would increase the operating costs of the complainant in the future, and in his estimates of the future results of its business, ought to have taken this factor into account."

Forty-third. That the court erred in adjudging and decreeing that the thirty-seventh exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirty-seventh. That the master has in said report stated and certified that 6.67 cents per thousand feet of gas sold is a proper allowance in determining the future results of the operation of complainant's plant for depreciation; whereas, the master ought to have found that on account of such depreciation there should be an allowance of not less than 8 cents per thousand cubic feet of gas sold."

Forty-fourth. That the court erred in adjudging and decreeing that the fortieth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fortieth. That the master has, in said report, in the estimates of the future cost to the complainant of producing and distributing gas, included nothing whatever on account of the radical increase in the complainant's taxes, which the master finds is imminent; whereas, the master ought to have found that on account of such increase in taxes this item of the operating costs of the complainant will be larger in the future than it has been in the past, and should have treated the same accordingly."

399 Forty-fifth. That the court erred in adjudging and decreeing that the thirty-third exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirty-third. That the master has in said reports, in effect,

stated and certified that based upon the operating costs of the year 1910, for the purpose of estimating the operating costs of the complainant in the future, 62.98 cents should be taken as the cost of manufacturing and distributing gas, not including depreciation; whereas, the master ought to have found that based upon the experience of the said year the actual operating costs of the said year should have been so taken, without deduction, that is, 66.28 cents, for the purpose of estimates as to the future."

Forty-sixth. That the court erred in adjudging and decreeing that the thirty-fourth exception of the complainant to the report of the Special Master in the said cause be overruled, which exception was as follows:

"Thirty-fourth. That the master has in said report in effect, stated and certified, that the estimates of the future operations of the complainant's plant, based upon the results of the first ten months of the year 1911 should be based, not including depreciation, upon operating cost of 61.73 cents; whereas, he ought to have found that such estimate should be based upon the actual operating costs for said period, not including depreciation, that is, 77.14 cents."

Forty-seventh. That the court erred in adjudging and decreeing that the thirty-fifth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Thirty-fifth. That the master has in said report stated and certified that the estimates as to the future earnings of the complainant's plant, based upon the operation of the five years, from 1906 to 1910, inclusive, should adopt as the factor for the cost per thousand feet of gas, 62.58 cents; whereas, the said master ought to have found that for such estimates there should have been taken as such factor the actual cost of manufacturing and distributing gas for such period, not including depreciation, which was 65.34 cents."

Forty-eighth. That the court erred in adjudging and decreeing that the thirty-sixth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

400 "Thirty-sixth. That the master has in said report, in effect, stated and certified that the lowest cost of manufacturing and distributing gas, not including depreciation, for any year in the five-year period preceding January 1st, 1911, is a proper basis to adopt for the purpose of estimating the results of the operations of the company in the immediate future; whereas, the master ought to have found that such estimates should be based upon an average of such operating costs so as to eliminate the results of abnormal conditions."

Forty-ninth. That the court erred in adjudging and decreeing that the forty-fifth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Forty-fifth. That the master has in said report predicated his estimates as to the results of the future operations of the complainant's plant upon estimated operating costs which are lower than the actual operating cost of the complainant at the time that the

estimates were made, and are lower than the average of its actual operating costs for the five years preceding the period covered by such estimates; whereas, the master ought to have used as a factor in making the said estimates the average of the complainant's operating costs for the five years preceding the day when the ordinance in question was to become effective with such adjustments thereof as are required in order to make a proper allowance for the increases in the complainant's operating costs which the testimony shows will be inevitable in the immediate future."

Fiftieth. That the court erred in adjudging and decreeing that the fifty-sixth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fifty-sixth. That the master has in said report stated and certified that:

'These conditions lead me to believe that with economy and care the cost may be reduced below 60 cents, as it was in the year ending February 28, 1909, without detriment to the service. At least the future cost of gas is not clear and satisfactory to me. It is true that in this matter we are entering the realm of prophesy and none of us have that gift. What a trial under the present rates would produce is not before us and cannot be determined until it is so tried, only the past throws any light upon it;'

whereas, the master ought to have found that there is no fact or circumstance shown by the evidence from which a just or reasonable probability can be inferred that the future cost of gas will be less than the average cost for the five-year period considered; and ought to have found that on the contrary, the facts exclude any
401 just or reasonable inference that the complainant's future operating cost will be less than such costs in the past."

Fifty-first. That the court erred in adjudging and decreeing that the forty-seventh exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Forty-seventh. That the master has in said report in connection with the investigation of the probable increase of sales of gas in the future, certified and found:

'The only thing in the past history of the plant that throws any light on the question is the table on schedule 4 of defendants' exhibit 30, a part of which has already been given;' whereas, the master ought to have found that the complainant's exhibits showing the history of the complainant's property and of the development of its business for the past twenty-five years, and showing also the development of the city of Des Moines during the same period, all tend to throw light upon this question."

Fifty-second. That the court erred in adjudging and decreeing that the forty-eighth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Forty-eighth. That the master has in said report stated and certified:

'While a slight increase in consumption may result from a reduction of ten cents per M. C. F. in price, in my judgment, it is much more apt to result in an increase of customers, and the table in schedule 4 very clearly shows it, in the increase thereof, in proportion to the inhabitants of the city, as shown by the first column on the right of the table;'

whereas, the master ought to have expressly and clearly limited said finding by the statement that such increase in customers could only come through an increase in the population of the city of Des Moines."

Fifty-third. That the court erred in adjudging and decreeing that the sixty-seventh exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Sixty-seventh. That the master has in said report stated and certified that:

'So far as new customers are concerned, the estimates made are reasonably certain and these estimates (referring to the esti-
402 mates of future net revenue for the years 1911, 1912, 1913 and 1914 showing deficits each year), are made with reference to them. None are made with reference to the increase from existing customers;'

whereas, the master ought to have found distinctly and in this connection that it is shown by a preponderance of the testimony beyond any just or fair doubt that a reduction of 10 cents in the rate for gas would not produce any increased consumption by existing customers of the complainant."

Fifty-fourth. That the court erred in adjudging and decreeing that the sixty-eighth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Sixty-eighth. That the master in his supplemental report has stated and certified that:

'Third. In response to Interrogatories Nos. 3 and 4, my report gives my estimate so far as new customers are concerned, but beyond that, there is no evidence, upon which an estimate can be made, that would be of any greater value than a mere guess and the same answer is made to Interrogatories 5, 6, 7 and 8;'

whereas, the master ought to have found that the evidence shows clearly and satisfactorily that it would be impossible for there to be such an increase in the sales of gas to either old or new customers as to render the 90 cent rate remunerative."

Fifty-fifth. That the court erred in adjudging and decreeing that the sixty-ninth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Sixty-ninth. The master has in said report stated and certified that:

'Third. In response to Interrogatories Nos. 3 and 4, my report gives my estimate so far as new customers are concerned, but be-

yond that, there is no evidence, upon which an estimate can be made, that would be of any greater value than a mere guess, and the same answer is made to Interrogatories 5, 6, 7 and 8;'

whereas, the master ought to have found that the testimony as to the population of the city of Des Moines, and as to the history of the complainant's plant and business, including the effect upon sales to existing consumers of numerous decreases in rates, renders it clear that it would be impossible in view of the population of Des Moines for the sales to so increase as to afford to the complainant, a fair return at the 90-cent rate."

Relating to Additional Investment to Provide for Increased Sales.

403 Fifty-sixth. That the court erred in adjudging and decreeing that the forty-fourth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Forty-fourth. That the master has in said report stated and certified in substance that the increase in the investment in the complainant's distribution system required on account of the increased sales which are anticipated in the future, will be at the rate of $2.00 per thousand cubic feet of increase in such sales; whereas, the master ought to have found that increased sales would require increased investment at the rate of not less than $4.50 for each thousand feet of such increased sales."

Relating to the Master's Conclusions.

Fifty-seventh. That the court erred in adjudging and decreeing that the fifty-eighth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Fifty-eighth. That the master has in said report stated and certified that:

'Should the court hold that the $140,000 for taking up and replacing mains where none existed at the time the mains were laid, then a decree for the complainant would be imperative, should 'going value' be included in the basis for a return;'

whereas the master ought to have held that both the $140,000 item referred to and going value should be included in the basis for a return, and ought to have found that a decree for the complainant is imperative."

Fifty-eighth. That the court erred in adjudging and decreeing that the fifty-ninth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Fifty-ninth. That the master has in said report stated and certified that:

'Should the court hold that 'salaries general' and the contribution to the Greater Des Moines Committee be included in the future cost

of gas, then a like result should follow. So, also, would rate regulation require a like result, should it be held a proper matter to be considered and 2 cents per M. C. F. be allowed therefor;'

whereas, the master ought to have found that the said items are necessarily included in the future cost of gas, and therefore he should have found that a decree for the complainant is imperative."

404 Fifty-ninth. That the court erred in adjudging and decreeing that the fiftieth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Fiftieth. That the master has in said report stated and certified as a conclusion of law that:

'This action having been brought and a temporary injunction granted restraining the enforcement of the ordinance without having first tried the effect of the rates therein prescribed, the complainant must establish by clear and satisfactory evidence that such rates are inadequate and confiscatory, and if upon the whole evidence there remains a reasonable doubt of the correctness of complainant's contention, then the bill should be dismissed without prejudice to a future action, and complainant required to try the same before instituting another action;'

whereas, the master ought to have found as a matter of law, that the complainant is only bound to sustain the correctness of the ultimate facts upon which its contention is founded by clear and satisfactory evidence."

Sixtieth. That the court erred in adjudging and decreeing that the fifty-first exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fifty-first. That the master has in said report stated and certified as a conclusion of law that:

'If, however, upon the whole case, there remains no reasonable doubt of the correctness of complainant's contention that the rates prescribed by the ordinance, will not afford an adequate rate of return, either in whole or in part, then it is entitled to have the injunction made perpetual, and the ordinance annulled as confiscatory;'

whereas, the master ought to have found as a conclusion of law that if upon the whole case the correctness of complainant's contention that the rates prescribed by the ordinance will not afford an adequate rate of return, either in whole or in part.

appears by clear and satisfactory evidence, then it is entitled to have the injunction made perpetual and the ordinance annulled as confiscatory."

Sixty-first. That the court erred in adjudging and decree-
405 ing that the sixty-sixth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Sixty-sixth. That the master has in said report stated and certified that:

'While this case is to the border line, I cannot say on the whole case that the evidence, beyond any just and fair doubt, satisfies me that the rates will prove confiscatory should the ordinance be put into effect and an actual test thereof be made;'

whereas, the master ought to have found and certified that there is no evidence which tends to indicate or which could afford the basis for a fair assumption that there will be any material increase in the consumption of gas, by existing consumers sufficient to alter or modify the results of operation under the ordinance in question as found; and ought to have found further that beyond any just or fair doubt the ordinance in controversy if enforced will be confiscatory in its effect."

Sixty-second. That the court erred in adjudging and decreeing that the sixty-third exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Sixty-third. That the master has in said report erred in finding that the testimony does not show clearly and satisfactorily that the rates fixed by the proposed ordinance will not afford to the complainant a fair return upon the present actual value of the property constituting its investment and would not afford such return upon such value at the date when the ordinance in question was to go into effect."

Sixty-third. That the court erred in adjudging and decreeing that the sixty-fourth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Sixty-fourth. That the master has in said report in effect certified and found that the material question is whether in the remote future the rates fixed by the ordinance in controversy may not afford to the complainant a fair return; whereas the only material question is whether those rates at the time the said ordinance purported to go into effect, and at the present time will afford to the complainant a reasonable and fair return upon the value of its property devoted to the use of the public."

Sixty-fourth. That the court erred in adjudging and decreeing that the sixty-fifth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

406 "Sixty-fifth. That the master has in said report stated and certified that there should be a decree in this case dismissing the complainant's bill without prejudice; whereas, the master ought to have found that there should be a decree annulling the ordinance in controversy."

Sixty-fifth. That the court erred in adjudging and decreeing that the master found that a 90¢ rate is sufficiently high for a sufficient return to the gas company, and should have found that the master determined that the testimony was not sufficient to enable him to

find whether said rate would be confiscatory or not; and that therefore the master recommended the bill should be dismissed without prejudice to permit a trial of the rates.

Sixty-sixth. That the court erred in adjudging and decreeing that the bill of complaint in the said cause be dismissed with prejudice upon the merits. If it should be finally held that the complainant is not entitled to a decree as prayed, still the bill should not be dismissed upon the merits, but should be dismissed without prejudice to the right of the complainant to institute another suit if a trial of the rates in question should warrant it.

Wherefore the appellant and complainant prays that said final decree of said United States District Court for the Southern District of Iowa Central Division be reversed, and that the appellant and complainant have the relief prayed for in its bill of complaint in said cause.

DES MOINES GAS COMPANY,
(S'g'd) By GEORGE H. CARR,
WM. L. READ,
N. T. GUERNSEY,
Its Solicitors.

(S'g'd) GEORGE H. READ,
(S'g'd) WM. L. READ,
(S'g'd) N. T. GUERNSEY,
Solicitors for Appellant.

(Endorsed:) Filed November 11th, 1912. Wm. C. McArthur, Clerk.

407 And thereafter to-wit: On the same day November 11th A. D. 1912 there was filed in said cause a Prayer for Reversal which said prayer for reversal is in the words and figures as follows to-wit:

408

#71-M.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, CHARLES W. Schramm, John Wesley Ash, Zell G. Roe, and Robert O. Brennan, Respondents.

Prayer for Reversal.

To the Honorable Supreme Court of the United States:

Now comes the Des Moines Gas Company and prays for a reversal of the final decree of the District Court of the United States for the southern district of Iowa, made and entered in the above entitled

cause in the said court on or about the 10th day of October, A. D. 1912.

DES MOINES GAS COMPANY,
(S'g'd) By GEORGE H. CARR,
WM. L. READ,
N. T. GUERNSEY,
Its Solicitors.

(Endorsed:) Filed November 11, 1912. Wm. C. McArthur, Clerk.

409 And thereafter to-wit: On the 20th day of November A. D. 1912, there was filed in said cause a Bond on Appeal which said Bond is in words and figures as follows to-wit:

Know all men by these presents: That we, Des Moines Gas Company, a corporation organized under the laws of the state of Iowa, with its principal place of business in the city of Des Moines in the said state, as principal, and United States Fidelity & Guaranty Company of Baltimore, Md., as surety, are held and firmly bound unto the City of Des Moines, James R. Hanna, John McVicar, Charles W. Schramm, John Wesley Ash, Zell G. Roe and Robert O. Brennan in the sum of five thousand dollars ($5000) for payment of which well and truly to be made, we bind ourselves, and each of us, and the successors of each of us, jointly and severally firmly by these presents.

Sealed with our seals, and dated the fourth day of November, A. D. 1912.

The foregoing obligation is, however, upon the following express condition:

Whereas, the above named Des Moines Gas Company has prosecuted an appeal to the Supreme Court of the United States to reverse the final decree rendered in the above entitled suit by the District Court of the United States for the Southern district of Iowa, central division, on or about the 10th day of October, A. D. 1912.

Now, therefore, the condition of this obligation is such that if the above named Des Moines Gas Company shall prosecute said appeal to effect and promptly pay all costs which may be adjudged against it upon the final determination of this suit, if it shall fail to make said appeal good, then this obligation shall be void; otherwise the same shall be and remain in full force and effect.

[Des Moines Gas Co. Seal.]

DES MOINES GAS COMPANY,
(S'g'd) By JANSEN HAINES, *President.*

Attest:
W. B. KEFFER,
Assistant Secretary.

[Surety Company Seal.]

THE UNITED STATES GUARANTY AND FIDELITY CO.,
(S'g'd) By C. BIRD GOULD,
Attorney in Fact.

410 Approved Nov. 18, 1912.
(S'g'd) WILLIS VAN DEVANTER,
Associate Justice.

(Endorsed:) Filed November 20th, 1912. Wm. C. McArthur, Clerk.

411 *Power of Attorney.*

15279.

Know all Men by these Presents: That the United States Fidelity and Guaranty Company, a corporation organized and existing under the laws of the State of Maryland, and having its principal office at the City of Baltimore, in the State of Maryland, does hereby constitute and appoint C. Bird Gould and George H. Schaeffer of the City of Des Moines, State of Iowa, its true and lawful attorneys in and for the States of Iowa and Nebraska for the following purposes, to wit:

To sign its name as surety to, and to execute, seal and acknowledge any and all bonds, and to respectively do and perform any and all acts and things set forth in the resolution of the Board of Directors of the said United States Fidelity and Guaranty Company, a certified copy of which is hereto annexed and made a part of this Power of Attorney; and the said United States Fidelity and Guaranty Company, through us, its Board of Directors, hereby ratifies and confirms all and whatsoever either the said C. Bird Gould or the said George H. Schaeffer may lawfully do in the premises by virtue of these presents.

In Witness Whereof, the said United States Fidelity and Guaranty Company has caused this instrument to be sealed with its corporate seal, duly attested by the signatures of its Vice-President and Assistant Secretary, this 1st day of September, A. D. 1912.

[SEAL.] UNITED STATES FIDELITY AND GUARANTY COMPANY,
(Sig.) By W. W. SYMINGTON,
Vice-President.
(Sig.) WM. T. MORGAN,
Assistant Secretary.

STATE OF MARYLAND,
Baltimore City, ss:

On this 1st day of September, A. D. 1912, before me personally came W. W. Symington, Vice-President of the United States Fidelity and Guaranty Company, and Wm. T. Morgan, Assistant Secretary of said Company, with both of whom I am personally acquainted, who being by me severally duly sworn, said that they resided in the City of Baltimore, Maryland, that they, the said W. W. Symington and Wm. T. Morgan were respectively the Vice-President and Assistant Secretary of the said United States Fidelity and Guaranty Company, the corporation described in and which executed

the foregoing Power of Attorney; that they each knew the seal of said corporation; that the seal affixed to said Power of Attorney was such corporate seal; that it was so affixed by order of the Board of Directors of said corporation, and that they signed their names thereto by like order as Vice-President and Assistant Secretary, respectively of said Company.

My commission expires the first Monday in May, A. D. 1914.

[SEAL.] (Sig.) WM. J. McFEELY, JR.,
Notary Public.

STATE OF MARYLAND,
Baltimore City, set:

I, Stephen C. Little, Clerk of Superior Court of Baltimore City, which Court is a Court of Record, and has a seal, do hereby certify that Wm. J. McFeely, Jr., Esquire, before whom the annexed affidavits were made, and who has thereto subscribed his name, was, at the time of so doing, a Notary Public of the State of Maryland, in and for the City of Baltimore, duly commissioned and sworn and authorized by law to administer oaths and take acknowledgments, or proof of deeds to be recorded therein. I further certify that I am acquainted with the handwriting of the said Notary, and verily believe the signature to be his genuine signature.

In Testimony Whereof, I hereto set my hand and affix the seal of the Superior Court of Baltimore City, the same being a Court of Record, this 1st day of September, A. D. 1912.

[SEAL.] (Sig.) STEPHEN C. LITTLE,
Clerk of the Superior Court of Baltimore City.

Copy of Resolution.

That, Whereas, it is necessary for the effectual transaction of business that this Company appoint agents and attorneys with power and authority to act for it and in its name in States other than Maryland, and in the Territories of the United States and in the Provinces of the Dominion of Canada and in the Colony of Newfoundland.

Therefore, be it Resolved, that this Company do, and it hereby does, authorize and empower its President or either its Vice-Presidents in conjunction with its Secretary or one of its Assistant Secretaries, under its corporate seal, to appoint any person or persons as attorney or attorneys-in-fact, or agent or agents of said Company, in its name and as its act, to execute and deliver any and all contracts guaranteeing the fidelity of persons holding positions of public or private trust, guaranteeing the performance of contracts other than insurance policies and executing or guaranteeing bonds and undertakings, required or permitted in all actions or proceedings, or by law allowed, and

Also in its name and as its attorney or attorneys-in-fact, or agent or agents to execute and guarantee the conditions of any and all bonds, recognizances, obligations, stipulations, undertakings or anything in the nature of either of the same, which are or may by law, municipal or otherwise, or by any Statute of the United States or of

any State or Territory of the United States or of the Provinces of the Dominion of Canada or of the Colony of Newfoundland or by the rules, regulations, orders, customs, practice or discretion of any board, body, organization, office or officer, local, municipal or otherwise, be allowed, required or permitted to be executed, made, taken, given, tendered, accepted, filed or recorded, for the security or protection of, by or for any person or persons, corporation, body, office, interest, municipality or other association or organization whatsoever, in any and all capacities whatsoever, conditioned for the doing or not doing of anything or on any conditions which may be provided for in any such bond, recognizance, obligation, stipulation, or undertaking, or anything in the nature of either of the same.

I, Wm. T. Morgan, Assistant Secretary of the United States Fidelity and Guaranty Company, hereby certify that at a regular meeting of the Board of Directors of said Company, duly called and held at the office of the Company, at the City of Baltimore, on the 11th day of July, A. D. 1910, at which was present a quorum of said Directors, duly authorized to act in the premises, resolutions were passed and entered on the minutes of said Company, of which resolutions the foregoing is a true copy and of the whole thereof.

In Testimony Whereof, I have hereunto set my hand and the seal of the United States Fidelity and Guaranty Company, this 1st day of September, A. D. 1912.

[SEAL.] (Sig.) WM. T. MORGAN,
Assistant Secretary.

I, Wm. T. Morgan, Assistant Secretary of the United States Fidelity Trust and Guaranty Company, do hereby certify that the above and foregoing is a full, true and correct copy of the original power of attorney given by said Company to C. Bird Gould and George H. Schaeffer of Des Moines, Iowa, authorizing and empowering them to sign bonds as therein set forth.

Given under my hand and the seal of said Company, at Baltimore, Maryland, this 2nd day of September, A. D. 1912.

[Seal United States Fidelity & Guaranty Company. Incorporated 1896.]

WM. T. MORGAN,
Assistant Secretary.

(Endorsed:) Filed November 20th, 1912, Wm. C. McArthur, Clerk.

[Endorsed:] Certified Copy No. 15279. General Power of Attorney from United States Fidelity Company, to C. Bird Gould, Des Moines, Iowa. 9-1-12. United States Fidelity and Guaranty Company, Baltimore.

412 And thereafter to-wit: On the 23rd day of November A. D. 1912 there was filed in said cause a Praecipe for a Transcript of the Record on Appeal which said praecipe is in the words and figures as follows to-wit:

413 In the District Court of the United States, Southern District of Iowa, Central Division.

No. 71-M. In Equity.

THE DES MOINES GAS COMPANY
vs.
CITY OF DES MOINES et al.

To the Clerk:

You are requested to take a transcript of record to be filed in the Supreme Court of the United States, pursuant to an appeal allowed in the above entitled cause and to include in such transcript of record the following, and no other papers or exhibits, to-wit:

Pleadings, Orders, etc.:

Bill of Complaint.
Motion for preliminary Injunction.
Views of the Trial Court—Smith McPherson, Judge.
Temporary Restraining Order.
Præcipe for Appearance, Defendants' Solicitor.
Notice of Hearing for Temporary Injunction and Leave to Amend Bill of Complaint, with Acceptance of Service thereof by Defendant's Solicitor.
Order Granting Leave to Amend Bill of Complaint.
Amendment to Bill of Complaint.
Affidavit of John H. Blair.
Affidavit of Simon Cassidy.
414 Affidavit of William A. Baehr.
Affidavit of Jansen Haines.
Affidavit of Jansen Haines.
Affidavit of F. M. Hubbell.
Affidavit of B. F. Kauffman.
Joint and Several Demurrers of the Several Defendants to Bill of Complaint.
Order granting Temporary Injunction, filed Jan. 6, 1911.
Bond Des Moines Gas Company for Temporary Injunction $100,000, filed Jan. 13, 1911.
Subpœna in Chancery with Marshal's Return of Service.
Temporary Restraining Order.
Marshal's Return of Service Thereof.
Temporary Injunction with Marshal's Return of Service thereon.
Answer of City of Des Moines, et al.
Replication.
Order appointing Robert Sloan, Esq., Special Master.
Oath of Office Robert Sloan, Esq., Special Master.
Order of Robert Sloan, Esq., Special Master, setting time for hearing cause.
Request for Additional Findings by Defendant.
Report of Robert Sloan, Special Master, filed April 5, 1912.

Supplemental Report of Robert Sloan, Special Master, in Response to Defendant's Request for Additional Findings.
Stipulation as to Preliminary Draft of Master's Report.
Complainant's Exceptions to Report of Special Master.
Defendant's Exceptions as to Report of Special Master.
Supplemental Report of Robert Sloan, Special Master, as to Exhibits and Witnesses, filed May 10, 1912.
Proceedings of Hearing had July 9, 10, 11, 12, 1912 before Hon. Smith McPherson, Judge, on Exceptions to Master's Report.
415 Opinion of Hon. Smith McPherson, Judge, August 21, 1912.
Decree, filed August 21, 1912.
Notice of Hearing of Appeal of Modification of Decree.
Appeal from Modification of Decree.
Resistance to Appeal from Modification of Decree.
Decree Filed October 10, 1912.
Petition for Appeal and Order allowing same.
Assignment of Errors.
Prayer for Reversal.
Bond on Appeal.
Citation with Acceptance.
Præcipe for Transcript of Record.
Supersedeas Bond.

Evidence Before the Master:

Appearances.
Opening Statements by the Hon. George H. Carr.
Opening Statement by Robert O. Brennan, Esq.

Complainant's Testimony:

Testimony of Jansen Haines.
Testimony of B. F. Kauffman.
" " Mack Olsen.
" " R. P. Bolton.
" " H. M. Porter.
" " R. R. McCutchen.
" " W. P. Brodnax.
" " E. P. Walter.
" " Henry Moul.

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Testimony of E. L. Heiser.
" " Henry I. Lea.
" " W. A. Baehr.
" " William A. Randolph.
" " William J. Hagenah.
" " Homer A. Miller.
" " Simon Cassedy.
" " Andrew Cooke.
" " Harold Almert.

" " Arthur Reynolds.
" " William C. Harbach.
" " C. S. Walker.
" " J. E. McDonell.
" " E. S. Root.

Defendants' Testimony:

Testimony of A. C. Hauge.
" " B. S. Walker.
" " W. H. Arnold.
" " A. S. Wilcoxen.
" " F. A. Mathis.
" " William D. Marks.
" " W. F. Douthirt.
" " George D. Dobson.
" " James Hall.
" " James Parker.
" " E. C. Pease.
" " Andrew Sangster.
" " Jansen Haines.
" " Edward W. Bemis.
" " John MacVicar.
" " James R. Hanna.
" " G. W. Curran.
" " E. M. Sherman.

417 Complainant's Testimony in Rebuttal:

Testimony of A. E. Hollingsworth.
" " J. A. Pearson.

Defendant's Testimony in Sur-rebuttal:

Testimony of W. F. Douthirt.

Complainant's Testimony in Rebuttal:

Testimony of John W. Alvord.

Defendant's Testimony in Sur-rebuttal:

Testimony of W. F. Douthirt.
" " Mack Olsen.
" " B. F. Kauffman.
" " Henry Moul.

Testimony Closed.
Stenographer's Certificate as to Testimony.
Master's Certificate as to Testimony (Not Signed).
Master's Certificate as to Testimony (Signed).

Exhibits:

Complainant's Exhibit No. 1: Certified Copy of Record of Articles of Incorporation of Des Moines Gas Company.

Exhibit No. 2: Certified Copy of Record of Ordinance No. 1767 of City of Des Moines passed December 27, 1910.

Exhibit No. 3: Proceedings of the City Council of City of Des Moines October 21, 1910, page 958.

Exhibit No. 4: Proceedings of City Council of City of Des Moines February 1, 1911, pages 1186 & 1192.

Exhibit No. 5: Map of gas works real estate,

418 Exhibit No. 6: Map of City of Des Moines showing location of gas works.

Exhibit No. 7: Copy of letter Jansen Haines to John MacVicar, dated November 22, 1910.

Exhibit No. 8: Letter John MacVicar to Jansen Haines, dated November 25, 1910.

Exhibit No. 9: Copy of letter Jansen Haines to John MacVicar, dated November 26, 1910.

Exhibit No. 10: Letter John MacVicar to Jansen Haines dated November 29, 1910.

Exhibit No. 11: Copy of letter Jansen Haines to John MacVicar, dated December 2, 1910.

Exhibit No. 12: Letter John MacVicar to Jansen Haines dated December 2, 1910.

Exhibit No. 13: Letter John MacVicar to Jansen Haines dated December 3, 1910.

Exhibit No. 14: Copy of letter Jansen Haines to Mayor and City Council of City of Des Moines dated December 28, 1910.

Exhibit No. 15: Inventory of property of Des Moines Gas Company, Volume I.

Exhibit No. 16: Inventory of property of Des Moines Gas Company, Volume II.

Exhibit No. 17: Street main map Des Moines Gas Company, Eastern District.

Exhibit No. 18: Street main map Des Moines Gas Company, Western District.

Exhibit No. 19: Street main map Des Moines Gas Company, Valley Junction District.

Exhibit No. 20: Report of Henry I. Lea on the Des Moines Gas Company.

Exhibit No. 21: Report of W. A. Baehr on the Des Moines Gas Company.

Exhibit No. 22: Report of W. W. Randolph on the Des Moines Gas Company.

Exhibit No. 23: Report of W. J. Hagenah on Financial Condition of Des Moines Gas Company.

Exhibit No. 24: Des Moines Gas Company, statement of Profit and Loss covering periods from January 1, 1906, to December 31, 1910.

419 Exhibit No. 25: Des Moines Gas Company, Annual Investment Value on 8 per cent Earning Basis, depreciation 2¼ per cent.

Exhibit No. 26: Des Moines Gas Company, Annual Investment Value on 8 per cent Earning Basis; depreciation 2 per cent.

Exhibit No. 27: Des Moines Gas Company, Schedule comparing Capital Expenditures as per Books with Average of Engineers present value.

Exhibit No. 28: Des Moines Gas Company, Gross Revenue and Net Earnings, without Allowing for Depreciation for 3 years ended September 30, 1910.

Exhibit No. 29: Des Moines Gas Company, Gross Revenue and Net Return, applicable to Interest and Profits for 5 years ended December 31, 1910.

Exhibit No. 30: Des Moines Gas Company, Gross Revenue and Net Return applicable to Interest and Profits for 5 years ended December 31, 1910, excluding Valley Junction.

Exhibit No. 31: Des Moines Gas Company, Working Capital December 31, 1910.

Exhibit No. 32: Des Moines Gas Company, Gas Sales first 6 months of 1911.

Exhibit No. 33: Des Moines Gas Company, Statistical Data.

Exhibit No. 34: Des Moines Gas Company, Detailed Statement of Gas Sales, June 30, 1888 to December 31, '10.

Exhibit No. 35: Statement of Active Meters in Service December 31, 1886 to December 31, 1910.

Exhibit No. 36: Des Moines Gas Company, Statistical Percentage Schedule.

Exhibit No. 37: Mains in Ground by Years, January 1, 1889, to December 31, 1910.

Exhibit No. 38: Photograph of Insurance Map, gas works territory.

Exhibit No. 39: Consolidated Gas Company, New York, City's Exhibit No. 126.

Exhibit No. 40: Des Moines Gas Company, Photograph of Stairway on Purifier House.

Exhibit No. 41: William D. Marks' diagram showing estimated cost of laying gas mains.

Exhibit No. 42: William D. Marks' data sheet for diagram showing estimated cost of laying gas mains.

420 Exhibit No. 43: William D. Marks' data sheet for diagram showing estimated cost of laying gas mains as taken from Buffalo testimony, defendants' exhibit "G".

Exhibit No. 44: Table showing average price, total sales, sales per capita, total meters, sales per meter, population, (44-A). population per meter, miles of main, and works capacity of the Cities of Lawrence, Cambridge, Lowell, New Bedford, and Springfield, Mass., year- 1901 to 1910 inclusive, taken from State reports.

Exhibit No. 45: Tax Return Statement, made by Des Moines Gas Company, January 1, 1909.

Exhibit No. 46: Tax Return Statement, made by Des Moines Gas Company, January 1, 1910.

Exhibit No. 47: Tax Return Statement made by Des Moines Gas Company, January 1, 1911.

Exhibit No. 50: Average Gross Revenue and Net Return applicable to Interest and Profits for 4 years ended December 31, 1909.

Exhibit No. 49: Average Gross Revenue and Net Return applicable to Interest and Profits for 4 years ended December 31, 1909, excluding Valley Junction.

Exhibit No. 50. Average Gross Revenue and Net Return applicable to Interest and Profits for 5 years ended December 31, 1910.

Exhibit No. 51: Average Gross Revenue and Net Return applicable to Interest and Profits for 5 years ended December 31, 1910 excluding Valley Junction.

Exhibit No. 52: Profits on basis of 90¢ gas and average expenses for 5 years to December 31, 1910.

Exhibit No. 53: Profits on basis of 90¢ gas and average expenses for 5 years to December 31, 1910, excluding Valley Junction.

Exhibit No. 54: Profits on basis of 90¢ gas and adjusting operating expenses.

Exhibit No. 55: Profits on basis of 90¢ gas and adjusting operating expenses.

Exhibit No. 56: Annual Investment Value on an 8 per cent earning basis, without depreciation.

Exhibit No. 57: Working Capital, (referring to Hall's Exhibit F of the Defendant's Exhibit 30) including Current and Working Assets and Current Liabilities less Bills Payable.

Exhibit No. 58: Working Capital (referring to Hall's Exhibit F of the Defendant's Exhibit 30—including Current and Working Assets and Current and Accrued Liabilities.

421 Exhibit No. 59: Explanation of Working of Wisconsin Theory of Investment Values, using as a Basis an Original Investment of $1,000 with Annual Additions of $1,000 for 20 years.

Exhibit No. 60: Table referring to Defendant's Exhibit No. 34.

Exhibit No. 61: Adjustment of Gross Corporate Income as shown by Complainant, and as Recorded in Defendants' Exhibit No. 30. Exhibit "A".

Exhibit No. 63: Organization Expenses, Des Moines Gas Company.

Exhibit No. 64: Blue print "straight line depreciation 20 year period."

Exhibit No. 65: Table giving statistical data of seven Massachusetts Cities, compared with William D. Marks' unit cost, Defendants' Exhibit No. 23.

Exhibit No. 65-A: Table giving statistical data of seven Massachusetts Cities, compared with William D. Marks' unit cost, Defendants' Exhibit No. 23, Street Main Details.

Exhibit No. 66: Table showing sales for seven Massachusetts cities 1900, 1905, and 1910, also giving per capita sales for 1910 correcting page 86 Defendants' Exhibit No. 43.

Exhibit No. 67: Table showing total for year- 1900, 1905 and 1910, of seven Massachusetts cities, giving mains, meters and sales, correcting page 87 of Defendants' Exhibit No. 43.

Exhibit No. 68: Agreement—Edward W. Bemis and City of Des Moines—

Exhibit No. 69: Synopsis of transaction of the U. G. I. Company with the Des Moines Gas Company as prepared by Mr. Andrew Sangster.

Exhibit No. 71: Miscellaneous papers and letters produced in Court by Mayor James Hanna.

Exhibit No. 71-A: Tabulation made by Mayor James Hanna from letters contained in Complainant's Exhibit No. 71.

Exhibit No. 72: Copy of letter Mayor Hanna to Prof. Wm. D. Marks dated February 11, 1911.

Exhibit No. 73: Bill of Prof. Wm. D. Marks to the City of Des Moines, dated February 29, 1911, for professional services and expenses.

Exhibit No. 74: Prof. Wm. D. Marks' report to the Mayor and City Council of the City of Des Moines in re Des Moines Gas Company, dated February 17, 1911.

Exhibit No. 75: Clipping from "Register & Leader" February 21, 1911.

422 Exhibit No. 76: Clipping from "Tribune" February 21, 1911.

Exhibit No. 77: Verified copy of audit of Boston Consolidated Gas Company for year ended June 30, 1911.

Exhibit No. 78: Copy of letter J. A. Pearson, Purchasing Agent, to various oil companies.

Exhibit No. 79: Proposed Contract Des Moines Gas Company and Nashville Refining Company, May 3, 1909.

Exhibit No. 80: Letter Sun Oil Company to J. A. Pearson, January 7, 1909.

Exhibit No. 81: Letter Great Western Oil Company to J. A. Pearson May 11, 1909.

Exhibit No. 82: Letter Gas Oil Company to J. A. Pearson, May 5, 1909.

Exhibit No. 83: Cost of laying water mains in Buffalo Municipal Water Works, fiscal year 1902, prepared by W. J. Hagenah.

Exhibit No. 84: Cost of laying water mains in Buffalo, Municipal Water Works, fiscal year 1903 prepared by W. J. Hagenah.

Exhibit No. 85: Cost of laying Buffalo Municipal Water Works, fiscal year 1904, prepared by W. J. Hagenah.

Exhibit No. 86: Cost of laying water mains Buffalo Municipal Water Works, fiscal year 1905, prepared by W. J. Hagenah.

Exhibit No. 87: Cost of laying Water Mains Buffalo Municipal Water Works, fiscal year 1906, prepared by W. J. Hagenah.

Exhibit No. 88: Recapitulation Sheet—cost of laying water mains in Buffalo, Municipal Water Works, 1902 to 1906 inclusive, as shown by pipe extension records, prepared by W. J. Hagenah.

Exhibit No. 89: Unit cost of water mains laid in Buffalo Mu-

nicipal Water Works 1902 to 1906, inclusive, prepared by W. J. Hagenah.

Exhibit No. 90: Liability Insurance estimated on basis of 1910 pay role and sales of 532,000,000 cubic feet of gas.

Exhibit No. 91: Statement of Gas Sales ten months ended October 30, 1911.

Exhibit No. 92: Certified copy of Deed, Capital City Gas Light Company to Des Moines Gas Company, March 1, 1906.

Exhibit No. 93: Statement of Revenue and Cost of Operating 10 months ended December 31, 1911.

423 Defendants' Exhibit:

No. 1: Tax Return Statement made by Des Moines Gas Company, January 1, 1908.

No. 2: Des Moines Gas Company, Street Main Instruction Order Blank.

No. 3: Des Moines Gas Company, Street Main Instruction Order Blank filled in.

No. 4: Des Moines Gas Company Street Main Authorization No. 520.

No. 5: Copy of page No. 59, Des Moines Gas Company street main record book No. 7 showing sketch covering Authorization No. 520.

No. 6: Copy of report Henry I. Lea on the Gage County Gas Light and Power Company, Beatrice, Nebraska, February 3, 1911.

No. 8: Des Moines Valuation, notes on depreciation by J. B. Klumpp.

No. 9: Historical Development Curves No. 1 Des Moines Gas Company.

No. 10: Historical Development Curves, Hypothetical Plant, No. 3, Des Moines Gas Company.

No. 11: Historical Development Curves No. 2, Des Moines Gas Company.

No. 12: Detailed Statement of Gas Sales, 1904 to 1910.

No. 13: Record of mains laid by year and sizes, 1888 to 1910.

No. 14: History of Price of Gas, Des Moines Gas Company.

No. 15: Statement of Profit and Loss, years ended September 30, 1908 and September 30, 1909, Des Moines Gas Company.

No. 16: Statement of Profit and Loss, years ended September 30, 1910 and December 31, 1910, Des Moines Gas Company.

No. 17: Des Moines Gas Company, cost of Services 1906 to 1910 inclusive.

No. 18: 1911 Annual Estimate and Correspondence pertaining thereto, Des Moines Gas Company.

No. 19: Copy Oil Contract, dated May 6, 1907.

No. 20: Copy Oil Contract, dated May 14, 1909.

No. 21: Copy of Coke Contract, dated May 27, 1911.

No. 22: Capital City Gas Light Company, Des Moines Gas Company—Analysis of Real Estate Account.

424 No. 23: Report Wm. D. Marks on Des Moines Gas Company.

No. 24: Wm. D. Marks' diagram showing estimated cost of laying gas mains, being the same as Complainant's No. 41.

No. 25: Capital City Gas Light Company, Stockholders' and Directors' Minutes, Volume I.

No. 26: Capital City Gas Light Company, Stockholders' and Directors' Minutes, Volume II.

No. 27: Des Moines Gas Company, Stockholders' and Directors' Minutes, Volume I.

No. 28: Des Moines Gas Company, Directors' Minutes, 10 pages, covering Meetings of April 24, 1911, May 22, 1911, June 26, 1911, July 10, 1911, and July 24, 1911.

No. 29: Plat of Property adjacent to gas works showing assessed valuation thereof, prepared by James Parker.

No. 30: Report of James Hall, of Marwick, Mitchell and Company, on the Des Moines Gas Company.

No. 31: Des Moines Gas Company, Rate Regulation Account for the years 1909 and 1910.

No. 32: Figures made by Mr. Hall in endeavor to reconcile Defendants' Exhibit 30 with Complainant's Exhibit 23.

No. 33: Report of James Hall, of Marwick, Mitchell and Company—Investment Value of Plant, Des Moines Gas Company, December 31, 1910.

No. 34: Explanation of Wisconsin Theory of Investment value, using as a basis an original investment of $1,000 with annual additions of $1,000 for 20 years, prepared by James Hall, of Marwick, Mitchell and Company.

No. 35: Summary of Plant Investment as per books, January 1, 1895, to December 31, 1910, prepared by James Hall of Marwick, Mitchell and Company.

No. 36: Estimated Average Investment and Return from Estimated Revenue, prepared by James Hall, of Marwick, Mitchell and Company.

No. 37: Contract Des Moines Gas Company and Percival Porter Co. Agent, in re street main extension.

No. 38: Capital City Gas Light Company, Des —, Iowa, Cash invested in Construction and Working Capital December 31, 1894—as shown by Affidavit of Edw. G. Pratt, filed June 14, 1895, in Cause No. 2033, Equity in the U. S. Circuit Court, Southern District of Iowa, being Capital City Gas Light Company vs. City of Des Moines.

No. 39: Affidavit Edw. C. Pratt, June 7, 1895, in Case Capital City Gas Light Company vs. City of Des Moines.

No. 40: A part of the affidavit and statement of Edw. G. Pratt as filed in the Case of Exhibits Nos. 38 and 39, supra.

425 No. 41: Transcript of testimony in No. 2330 Equity Capital City Gas Light Company vs. City of Des Moines.

No. 42: Affidavit Edw. G. Cowdery, June 6, 1895, in Cause No. 2330 Equity, Capital City Gas Light Company vs. City of Des Moines.

No. 43: Report of Edward W. Bemis on the Des Moines Gas Company.

No. 44: Pamphlet entitled "The Issue in the Foreground—Gas".

No. 45: Price of Cast Iron Pipe, Des Moines Gas Company, Edw. W. Bemis.

No. 46: Illustration of Sinking Fund Method of Financing Depreciation by E. W. Bemis.

No. 47: Operating Expenses and Profits, 1910 and 1911, Des Moines Gas Company, by E. W. Bemis.

No. 48: Bill, Des Moines Gas Company to the U. G. I. Company, for fee paid A. B. Cummings, March 23, 1905.

No. 49: Bill, Des Moines Gas Company to the U. G. I. Company, expenses of F. C. Morgan, March 14, 1906.

No. 50: Bill, Des Moines Gas Company to the U. G. I. Company, expenses of D. B. Reinhardt, March 31, 1906.

No. 51: Bill, Des Moines Gas Company to the U. G. I. Company for notary services, April 3, 1906.

No. 53: Bill, Des Moines Gas Company to the U. G. I. Company, October 31, 1906, October time of J. S. Harrison.

No. 54: Bill, Des Moines Gas Company to the U. G. I. Company, September 30, 1906, September time of J. S. Harrison.

No. 55: Letters between Jansen Haines and Lewis Lillis, in re journal entry of September 15, 1910.

No. 56: Treasurer's Check Book, Des Moines Gas Company on First National Bank, Philadelphia.

No. 57: Voucher, September 15, 1911, Des Moines Gas Company to the U. G. I. Company.

No. 58: Voucher, September 15, 1911, Des Moines Gas Company to the U. G. I. Company.

No. 59: Analysis of Accounts, Des Moines Gas Company with the U. G. I. Company, March 1, 1906 to December 31, 1910.

No. 61: The U. G. I. Company statement taken from Moody's Manual Service 1910.

No. 67: Des Moines Gas Company operating expenses, 8 mos. ending December 31, 1910.

No. 68: Des Moines Gas Company, additions to plant, January 1, to August 31, 1911.

426 No. 69: Des Moines Gas Company; Note of gas sales for 12 months to February 28th in each year—1907—1911.

No. 70: Mr. Sangster's figures analyzing the account of the U. G. I. Company and Des Moines Gas Company, being the same as Complainant's Exhibit No. 69.

No. 71-A: Ordinance of the City of Minneapolis passed February 23, 1910.

No. 71-B: Ordinance City of Minneapolis passed March 24, 1910.

No. 72: Letter J. R. Hanna to Jansen Haines dated February 7, 1911.

No. 73: Letter Jansen Haines to Mayor J. R. Hanna dated February 14, 1911.

No. 74: Prof. Bemis' analysis and correction to Complainant's Exhibit No. 65—

No. 75: Prof. Bemis' correction for page 92 of his report, Defendants' Exhibit No. 43.

No. 76. Prof. Bemis' margin between price of gas on the one hand

and manufacturing expenses, leakage and taxes on the other hand, in Des Moines, and in seven Massachusetts cities.

No. 77: Des Moines Gas Company, rate regulation expense, January 1 to August 31, 1911, prepared by Mr. Sangster.

No. 78: Semi-annual statement of Commercial Trust Co. of Philadelphia, at close of business on July 31, 1911.

No. 79: Capital City Gas Light Company, Copies of improvement and repair authorizations Nos. 439, 460, and 467, covering the million foot holder and 8 ft. 6 in. water gas set.

No. 80: Summary of data on which were based the tables Nos. 91 and 92 in the report of E. W. Bemis, Defendant's Exhibit No. 43.

No. 81. Wisconsin theory—summary of Investment Account after crediting depreciation charge and on operating expense—July 1, 1896 to December 31, 1910, prepared by James Hall of Marwick, Mitchell and Company.

No. 82: Bill, Des Moines Gas Company, in account with Blaise & Blaise, dated April 1, 1911.

No. 83: Voucher, Des Moines Gas Company, to Blaise & Blaise, April 1, 1911.

No. 84-A: Extract from U. G. I. ledger 7-A and 8-A, Des Moines contract No. 87.

No. 84-B: Extract U. G. I. ledger 7-A and 8-A Des Moines contract No. 52.

427 No. 84-C: Transcript from construction records of George J. Roberts, showing detailed cost of constructing oil plant and water gas apparatus at Des Moines, Iowa.

No. 84-D: Transcript from construction records of George J. Roberts, showing detailed cost of constructing gas holder at Des Moines, Iowa.

No. 84-E: Extract from U. G. I. ledger 8-A showing account with Des Moines Gas Company March 1, 1906, to December 31, 1910.

No. 84-F: Contract—Stacey Manufacturing Company and George J. Roberts, October 18, 1902, for erection of gas holder on land adjoining gas works of Capital City Gas Light Company at Des Moines, Iowa.

Respectfully,

(Sgd.) GEORGE H. CARR,
WILLIAM L. READ,
NATHANIEL T. GUERNSEY,
(Attorneys for Appellant.)

Service of the foregoing præcipe for record accepted and copy thereof acknowledged at Des Moines, Iowa, this 23rd day of November 1912.

(Sgd.) H. W. BYERS,
R. O. BRENNAN,
Attorneys for Appellees.

(Endorsed:) Filed November 23rd, 1912. Wm. C. McArthur, Clerk.

428 And thereafter to-wit: On the 27th day of November A. D. 1912 there was filed in said cause a Supersedeas Bond Under Clause Six of the Final Decree Herein which said Bond is in the words and figures as follows to-wit:

In the District Court of the United States, Southern District of Iowa, Central Division.

#71-M.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, Charles W. Schramm, John Wesley Ash, Zell G. Roe, and Robert O. Brennan, Defendants.

Supersedeas Bond Under Clause Six of Final Decree Herein.

Know all men by these presents: That we, The Des Moines Gas Company, a corporation organized under the laws of the State of Iowa, with its principal place of business in the City of Des Moines, in said state, as principal, and The United States Fidelity & Guaranty Company of Baltimore, Maryland, as surety, are held and firmly bound unto the City of Des Moines, James R. Hanna, John MacVicar, Charles W. Schramm, John Wesley Ash, Zell G. Roe and Robert O. Brennan, in the sum of One Hundred Fifty Thousand and 00/100 ($150,000) Dollars, for the payment of which well and truly to be made, we bind ourselves and each of us, the successors of each of us jointly and severally, firmly by these presents.

Sealed with our seals and dated the 4th day of November, A. D. 1912.

The foregoing obligation is, however, upon the following express condition:

Whereas, on the 27th day of December, 1910, the City of Des Moines passed an ordinance fixing the price of gas sold and
429 delivered, at $.90 per thousand cubic feet; and thereto said moneys collected as aforesaid, if it shall fail to make said appeal good, then this obligation shall be void, otherwise the same shall be and remain in full force and effect.

[Des Moines Gas Company Seal.]

DES MOINES GAS COMPANY,
(S'g'd) By JANSEN HAINES, *President;*
Principal.
THE UNITED STATES FIDELITY & GUARANTY CO., *Surety,*
(S'g'd) C. BIRD GOULD, *Att'y in Fact.*

Attest:
(S'g'd) W. B. KEFFER, [Surety Company Seal.]
Assistant Secretary.

Approved.
(S'g'd) SMITH McPHERSON, *Judge.*

(Endorsed:) Filed November 27th, 1912. Wm. C. McArthur, Clerk.

430 Whereas, on the 6th day of January, 1911, the court entered herein an order temporarily restraining the defendants from enforcing the said ordinance, but providing that in the event it should be determined by the final decree in this case, that said ordinance of December 27, 1910, is valid, that complainant should refund, on demand to the persons by whom payment was made, all sums of money collected by it for gas sold and delivered from and after the 1st day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910; and,

Whereas, on or about the 10th day of October, 1912, a final decree was rendered herein, adjudging said ordinance valid; and,

Whereas, it is provided in the said decree that in the event an appeal is taken and the said decree affirmed, then complainant shall refund all moneys collected and received for gas sold and delivered in excess of the rates provided in said ordinance of December 27, 1910; and,

Whereas, it is provided in said decree that the provisions thereof with respect to the refund of ten cents per thousand feet of gas in excess of the rate fixed by said ordinance may be superseded, upon condition that the complainant file a bond for that purpose in the penal sum of One Hundred Fifty Thousand ($150,000) Dollars, with sureties to be approved, and,

Whereas, the above named Des Moines Gas Company has prosecuted an appeal to the Supreme Court of the United States to reverse the final decree rendered in the above entitled cause by the District Court of the United States for the Southern District of Iowa, Central Division, on or about the 10th day of October A. D. 1912;

Now therefore, the condition of this obligation is such that if the above named Des Moines Gas Company shall prosecute said appeal to effect, or shall promptly refund to the persons entitled.

431 And thereafter to-wit: On the 29th day of November A. D. 1912 there was filed in said cause a præcipe for additional parts of the record by the Appellees which said præcipe is in the words and figures as follows to-wit:

432 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M. In Equity.

DES MOINES GAS COMPANY
vs.
CITY OF DES MOINES et al.

To the Clerk:

You will please take a transcript of the following portions of the record in the above entitled case, in addition to the portions of the

record indicated in the præcipe filed by Appellant on Nov. 23d, 1912, to-wit:

Notice of Application for an Order for Complainant to turn over certain exhibits to Defendants with Acceptance of Service thereof by Complainant's Solicitors.

Application for an Order directing the Officers of the Complainant Company to deliver to Counsel for Defendants certain exhibits.

Resistance to Application for an order directing Jansen Haines, President of Complainant, to turn over and deliver to Counsel for Defendants certain exhibits.

Order of Robert Sloan, Esq., Special Master, requiring Jansen Haines to turn over certain exhibits to the Clerk of the Court.

(S'g'd) R. O. BRENNAN &
H. W. BYERS,
Solicitors for Appellees.

Service of the foregoing is accepted this 29th day of November, 1912.

(S'g'd) N. T. GUERNSEY,
W. L. READ, AND
GEO. H. CARR,
Solicitors for Appellant.

(Endorsed:) Filed November 29th, 1912, Wm. C. McArthur, Clerk. By Louis J. Adelman, Deputy.

433 And thereafter to-wit: On the same day November 29th 1912 there was filed in said cause a Stipulation in regard to certain defendants exhibits which said stipulation is in the words and figures as follows to-wit:

434 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M. In Equity.

DES MOINES GAS COMPANY
vs.
CITY OF DES MOINES et al.

It is hereby stipulated and agreed between the parties hereto as follows:

There are of record in this case Defendants' Exhibits #60, 62, 63, 64, 65 and 66, being books of account of the Des Moines Gas Company covering the period from March 1, 1906, to December 31, 1910. These books contain about 2,000 pages. There are in evidence certain statements, calculations and tabulations made by various witnesses taken from and based upon said books of account. The record contains objections to all or a portion of said statements, calculations and tabulations on the ground that they are incompetent, the books of account being the best evidence.

Now therefore, for the purpose of reducing the size of the transcript of the record, it is expressly agreed that said exhibits may be omitted and that all statements, calculations and tabulations taken from and based upon said books of account shall be received with like force and effect as tho the said books of account were set forth in the transcript, and all objections to said statements, calculations and tabulations because said books are the best evidence and because a transcript of said books has not been taken and filed herein, are expressly withdrawn and waived.

Dated this 29th day of November, 1912.

(S'g'd) N. T. GUERNSEY,
W. L. READ,
GEO. H. CARR,
Solicitors for Complainant.

(S'g'd) R. O. BRENNAN &
H. W. BYERS,
Solicitors for Defendants.

(Endorsed:) Filed November 29th, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

435 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Clerk's Certificate to Part One (1) of Transcript.

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the District Court of the United States for the Southern District of Iowa, and as successor in office of the Clerk of the Circuit Court of the United States for said District and State, hereby certify the foregoing designated as part one of the transcript (pages 1 to 434, inclusive, all contained in one bound volume) to be a true, full and complete copy of all matters and things relating to the pleadings, proceedings, Master's Reports, Exceptions thereto and Decrees, as called for in the Appellant's præcipe and the Appellee's præcipe for a transcript in cause numbered 71-M Des Moines Gas Company verusu the City of Des Moines, Iowa, et aly., lately pending in said District Court of the United States for the Southern District of Iowa as successor of the Circuit Court of the United States for said District and State, as full, true and complete as the originals thereof now on file and of record in my office in the City of Des Moines in said District.

In testimony whereof, I have hereunto set my hand and affixed the seal of said Court at my office in the City of Des Moines in said District this 30th day of November A. D. 1912.

[Seal U. S. District Court, Southern District of Iowa.]

WM. C. McARTHUR,
Clerk as Aforesaid.

436 In the Supreme Court of the United States, October Term, 1912.

No. 884.

DES MOINES GAS COMPANY, Appellant,
versus
CITY OF DES MOINES et al, Appellees.

Stipulation

The parties hereto at this time deeming it unnecessary to a proper presentation of this case to print the entire transcript, it is stipulated and agreed that the Clerk shall omit from the printed record the following portions thereof, to-wit:

PART I—PLEADINGS, ORDERS, ETC.

	Page
Motion for Preliminary Injunction	11
Views of the Trial Court	13
Præcipe for Appearance, Defendant's Solicitor	22
Notice of Hearing for Temporary Injunction and Leave to Amend Bill of Complaint, with Acceptance of Service thereof by Defendant's Solicitor	24
Affidavit of John H. Blair in support of application for temporary injunction	33
Affidavit of Simon Casady in support of application for temporary injunction	35
Affidavit of William A. Baehr in support of application for temporary injunction	38
Affidavit of Jansen Haines in support of application for temporary injunction	57
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437 Affidavit of B. F. Kauffman in support of application for temporary injunction	92
Subpœna in Chancery with Marshal's Return of Service	112

Part 3—Exhibits.

Appellant's Exhibits— Page

No. 5. Map of Gas Works Real Estate 1
(This is a blue print of a part of Scott & Dean's Addition to Des Moines; the land owned by the Gas Company being enclosed in red.)

No. 6. Map of City of Des Moines showing location of Gas works 2
(This is a map of the City of Des Moines in five colors.)

No. 15. Inventory of Property of the Des Moines Gas Company—Volume 1 3
(This is the Company's Inventory of its property. The property described in this inventory is identical with the property listed and valued in Appellant's Exhibits Nos. 20, 21 and 22, and Appellees' Exhibit No. 23, being reports of Messrs. Lee, Baehr, Randolph and Marks.)

No. 16. Inventory of Property of the Des Moines Gas Company,—Volume 2 284
(This volume contains maps, sketches and photographs of the property enumerated in Volume 1 of Inventory, Exhibit No. 15.)

No. 17. Street Main Map, Des Moines Gas Company, Eastern District 458

No. 18. Street Main Map, Des Moines Gas Company, Western District 459

No. 19. Street Main Map, Des Moines Gas Company, Valley Junction District 460
(The above three maps cover the distribution system of the Company and are on a large scale. If reproduced for binding, the scale would become so small as to make the maps useless.)

438 No. 25. Annual Investment Value on an 8% Earning Basis—Depreciation 2¼% 819

No. 26. Annual Investment Value on an 8% Earning Basis—Depreciation 2% 820
(Exhibits Nos. 25 and 26 above are computations based on the Wisconsin theory as used by Mr. Hagenah.)

No. 37. Mains in Ground, by years, 1889 to 1910 inclusive 831
(This table shows the mains in the ground January 1, 1889; the amount laid each year; the amount taken up each year, showing the number of feet in use to beginning of each year, from January 1, 1889 to January 1, 1911. This exhibit is the same as Appellee's Exhibit No. 13.)

Page

No. 38. Photograph of Insurance Map, Gas Works Territory 843
No. 40. Photograph of Stairway on Purifying House... 844
No. 56. Annual Investment Value on an 8% Earning Basis—without depreciation 852
(The same comments on this Exhibit Apply as on Nos. 25 and 26.)
No. 59. Explanation working of the Wisconsin theory of investment values, using as a Basis an Original Investment of $1,000 with Annual Addition of $1,000 for 20 years..... 853
(The same comments apply to this Exhibit as Nos. 25, 26 and 56, above.)
No. 77. Verified copy of Audit of the Boston Consolidated Gas Company 862

Appellees' Exhibits—

No. 2. Des Moines Gas Company Street Main and Instruction Order Blank 895
(This Exhibit is the same as No. 3 except that in No. 3 the blanks are filled in.)
No. 24. William D. Marks' Diagram showing estimated Cost of Laying Gas Mains..... ——
(This Exhibit is identical with Appellees' Exhibit No. 41.)
439 No. 25. Stockholders' and Director's Minutes..... 1107
No. 26. Stockholders' and Director's Minutes..... 1320
No. 27. Stockholders' and Director's Minutes..... 1508
No. 28. Stockholders' and Directors' Minutes..... 1749
No. 29. Plat of Property Adjacent to Gas Works..... 1760
No. 33. Report of James Hall of Marwick Mitchell & Company.—Investment Value of Plant December 31, 1910 1835
(This Exhibit is based on the Wisconsin theory and is omitted for the same reasons that the Wisconsin Theory Exhibit of Mr. Hagenah is omitted.)
No. 24. Explanation of Wisconsin Theory of Investment Value 1843
No. 44. "An Issue in the Foreground—Gas"..... 1987
No. 78. Semi-Annual Statement of the Commercial Trust Company of Philadelphia, July 31, 1911.... 2053
No. 81. Wisconsin Theory—Summary of Investment Account, after crediting depreciation charge as an operating expense..... 2057
(Same reason as for No. 33.)
Nos.
84-A, 84-B) All being Transcripts and Extracts from the
84-C, 84-D) U. G. I. Co. Ledgers 7-A and 8-A and from
84-E, 84-F) the Construction Records of George J. Roberts 2060

It is further stipulated that if either party hereto shall desire to referred to has been omitted from the printed transcript.
to be not printed pursuant to this stipulation, no other party hereto shall object to such reference upon the ground that the matter referred to has been omitted from the printed transcript.

If it shall later appear to either party that any portion of the transcript to be omitted from the printed record, under this
440 stipulation, should be included in the printed record, the same shall, upon request of said party, be printed by the Clerk.

Signed at Des Moines, Iowa, this 30th day of June 1913.

N. F. GUERNSEY,
GEO. H. CARR,
Solicitors for Appellant.

H. W. BYERS,
ROBERT O. BRENNAN,
Solicitors for Appellee.

441 [Endorsed:] File No. 32,459. Supreme Court U. S., October term, 1913. Term No. 397. Des Moines Gas Company, appellant, vs. City of Des Moines et al. Stipulation to omit parts of record in printing. Filed July 9, 1913.

[End of Volume I.]

(23,459)

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1913.

No. 397.

DES MOINES GAS COMPANY, APPELLANT,

vs.

CITY OF DES MOINES ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

VOLUME II.

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VOLUME II.

DES MOINES GAS COMPANY
vs.
CITY OF DES MOINES et al.

1 In the Circuit Court of the United States, Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES, JAMES R. HANNA, JOHN MACVICAR, C. W. Schramm, J. W. Ash, Zell G. Roe, and R. O. Brennan, Respondents.

Before Hon. Robert Sloan, Special Master in Chancery.

Reported by J. P. Blaise and Frank C. Walrath.

Appearances.

Carr, Carr & Evans, Read & Read, Guernsey, Parker & Miller, Attorneys for Complainant.
H. W. Byers and R. O. Brennan, Attorneys for Respondent.

Case called at Ten o'clock A. M., July 12, 1911.

2 *Opening Statement on the Part of the Complainant by Judge George H. Carr.*

If the Court please: The time that will be necessarily consumed in the taking of the evidence in this case will, we apprehend, not be measured by days, but by weeks, and for that reason it has seemed to us that it would be helpful to make quite a full and comprehensive statement in this case, and that the aid that will come from that will justify the time reasonably consumed in making such a statement. If that accords with your Honor's view, I will proceed to make such a statement of our side of the controversy.

The MASTER: I have read the pleadings and one or two of the affidavits.

Judge CARR: This action is brought by the complainant, the Des Moines Gas Company, to restrain the defendants, the City of Des Moines and its officers from putting into operation an ordinance passed on the 27th day of December, 1910, fixing the price of gas at ninety cents, on the ground and for the reason, that the rate fixed is

not a reasonable rate and that it is so low as to result in confiscation of the complainant's property.

On the 7th day of February, 1896, the City of Des Moines, during litigation that was then pending between the City and that Capital City Gas and Light Company, the predecessor of the present complainant Company, passed an ordinance, contractural in its character, ficing the price of gas sold and delivered at $1.30, which by the terms of the contract was to be reduced from time to time until in 1906 it arrived at the lowest price provided for in the contract, which was $1 per thousand cubif feet for gas sold and de-
3 livered, with the provision that where payment was not made before the 15th of the month following the month in which the gas was delivered, the Company could charge an additional ten cents.

Now, that ordinance, as I say, became operative in 1896 and continued for five years. That ordinance being a fifteen year ordinance, expired by its terms on the first day of January, 1911. In October, 1910, the City Council passed a resolution appointing Mr. MacVicar, who is an official and member of the council and one of the commissioners, occupying the position of Superintendent of Streets and Public Improvements, and the City Solicitor, to prepare an ordinance and submit it to the council fixing the price at which gas should be sold. Shortly after the passage of that resolution Mr. MacVicar inquired of Mr. Haines, Manager of the Gas Company, as to what his attitude and position was in respect to furnishing gas. That inquiry was replied to by Mr. Haines on the 22nd day of November in a written communication, and following that a number of letters were exchanged.

It is our purpose, your Honor, to offer that correspondence in evidence. There is a presumption recognized by the courts generally that a rate fixed by a rate-making body is a just and fair rate.

The MASTER: That is, it is presumptively so?

Judge CARR: Yes, but that presumption is based upon this further presumption that in making the rate the rate-making body has looked into the situation and has taken into consideration all elements which enter into the establishing of a fair rate; that they have made an investigation and have not acted arbitrarily and jumped at the matter, but have made a judicial investigation for the purpose of ascertaining what would be a fair rate. I say the presumption of law necessarily involves that further presump-
4 tion. Now, we have the holdings of courts of high authority that where it is shown that the rate-making body acted without making such investigation, then the presumption, if not entirely overcome, is at least largely nullified. Now, as I say, it is our purpose to offer this correspondence in evidence and to show that the City Council in passing this ordinance on December 27th, made no investigation, and the purpose of offering the letters and communications in evidence is to show the attitude of the respective parties prior to the enactment of this ordinance, and setting forth in some detail the claims of the respective parties. We think it is competent evi-

dence and we think it will be instructive as showing the attitude of the parties.

It will be necessary, of course, that that correspondence which is not so very lengthy be read to your Honor, and with your permission I want to read it at this time as a part of the opening statement and then it will perhaps not be necessary to read the letters when they are offered.

This letter, dated Des Moines, Iowa, November 22, 1910, your Honor will remember, was the answer of Mr. Haines, manager of the Company, to the request of Mr. MacVicar for a statement of what the Company was willing to do, and it reads as follows:

"Hon. John MacVicar, Supt. Streets and Public Improvements, Des Moines, Iowa.

DEAR SIR: You have asked me to submit a proposition as to the rate at which the Des Moines Gas Company is willing to furnish gas to Des Moines consumers. You express the hope that it can see its way clear to accept a rate below the present net rate of $1.00 per thousand cubic feet. Being desirous of securing to the people of Des Moines the lowest rate which the Company can accept, consistent with sound business principles, I have given to the question careful consideration, and herewith have the honor of submitting to you the conclusion arrived at.

There is involved in the problem a fundamental principle which has been firmly established by the decisions of the courts of last resort, both State and Federal, and which is so eminently fair as to receive the sanction of all just minded men. This principle may be stated as follows:

5 The Company is entitled to a rate which will, after the payment of operating expenses and taxes, and after deducting a reasonable allowance for depreciation, leave a sum sufficient to afford it reasonable interest and profits upon the present value of its plant and assets, taking into consideration the character of the investment.

The rules by which the value of the property and assets is to be ascertained are in the main well settled, and with these rules you are familiar, and, therefore, I need not state them here.

The gross revenue from the sale of gas for twelve months ended September 30, 1908, was $457,105.95; for twelve months ended September 30, 1909, was $491,944.49; and for twelve months ended September 30, 1910, was $526,393.50. The average annual gross revenue for the three year period ended September 30th, 1910, was $491,781.31.

For the twelve months ended September 30, 1908, the operating expenses and taxes were $281,613.48; for the twelve month- ended September 30, 1909, were $283,339.06; and for the twelve months ended September 30, 1910, were $345,262.43. The average annual operating expenses and taxes for the three year period ended September 30, 1910, were $303,411.66.

The MASTER: Does that include the expenses of all repairs?

Judge CARR: Yes.

"Deducting from the average annual gross revenue, for the three year period, the average annual expenditure for operating expenses and taxes, there remains an average annual net earning for the period of $188,369.65. From this sum there must be deducted for depreciation, the sum of $49,178.13, which sum is ascertained by taking ten per cent of the average annual gross revenue from the sale of gas——"

I might say in passing that further on I shall have occasion to call your attention to this item that he speaks of as reserve for depreciation, and the reason for it and the principles upon which it is based.

The MASTER: What is the amount?

Judge CARR: $49,178.13.

The MASTER: Including repairs?

Judge CARR: That is the amount set apart or provided for to replace the property. Of course gas property, like all other properties, has a life; it can not exist and go on beyond a certain period.

6 The MASTER: The question I asked you was, does that include or exclude repairs.

Judge CARR: That excludes repairs.

"That this is no more than a reasonable allowance for depreciation will hereafter appear.

This leaves $139,191.52 as the average annual net amount received by the Company for interest and profits, which amounts to eight per cent on $1,739,894.00.

The above amount of $49,178.13 deducted for depreciation is only 2.82 per cent upon this sum, and can not, therefore, be regarded as an unreasonable allowance for that purpose.

However, I am clearly of the opinion that the present value of the Company's property and assets is largely in excess of $1,739,-894.00. A careful inventory and valuation of the Company's property and assets is now being made and I shall be happy to submit the same to you upon its completion. If you so desire, I will be glad to have the City Engineer co-operate with the engineers who are now engaged in making this inventory and valuation.

I shall also be pleased to afford full opportunity to you or the Superintendent of Finance and Accounts, or a committee of the Council to examine the books and records of the Company for the purpose of verifying the correctness of the above statements of revenue and expenditures and to that end will furnish you every facility for an exhaustive and satisfactory investigation.

When you shall have verified the statements above made I believe you, the Council and the people of Des Moines will recognize the fairness of our present charge for the service which we render.

Very respectfully, yours,

(Signed) JANSEN HAINES, *Manager.*"

To that communication Mr. MacVicar on the 25th day of November, 1910, replied as follows:

"Mr. Jansen Haines, Gen. Mgr. Des Moines Gas Co., Des Moines, Iowa.

DEAR SIR: I have your letter of the 22d and in reply beg to say, I regret exceedingly that my hopes for a speedy and amicable adjustment of gas rates at the expiration of our present agreement, January 1st, 1911, are possibly not to be fulfilled. I believe the reduction asked for, namely, from $1.00 to 90¢, a continuation of 2% of gross receipts to city and the installing at the expense of your company, a laboratory to be conducted by the city to test meters, quality and pressure of gas, should be granted.

I have read your letter carefully and note your figures upon which you express your belief that the 'Council and the people of Des Moines will recognize the fairness of our present charge for the service which we render.' I beg leave to say, however, that your belief is not well founded as far as I am personally con-
7 cerned and am inclined to think your figures will not convince the City Council or the people of Des Moines that the present rate of $1.00 per thousand cubic feet is a fair or reasonable rate for the service you render. I will not undertake to analyze your figures for my experience has taught me that such an undertaking would not perhaps be profitable for reasons which follow: I recall the fact that fifteen years ago your Company contested an ordinance reducing gas rates from $1.70 to (as I recall) $1.25 and proved to the court that gas could not be made in Des Moines profitably for less than $1.70. I also recall that the figures which you presented to the court and on which it determined that the city ordinance reducing rates was void, did not convince the people of Des Moines, and in their behalf certain of the press and a committee of citizens kept up a vigorous demand for a reduction in rates until questionable methods were resorted to whereby a large sum of money was paid to a newspaper in an attempt to stifle this demand of the press and the people for cheaper gas. An exposure of this questionable transaction by the editor at a meeting of the City Council, at which it was understood an ordinance satisfactory to your Company was to be passed, promises for the adoption of which were said to be secured by means quite as questionable and more criminal than the means resorted to to suppress the newspapers. In the face of the exposure the ordinance failed to pass and your Company made a reasonable proposition for settlement which was approved by the Citizens' Committee and by the City Council, covering a period of fifteen years. The new rate began at $1.30 per thousand on a sliding scale which finally reduced the price to the present rate of $1.00, which has maintained for the past five years. This agreement has been faithfully lived up to by the city and the time has arrived for readjustment of the contract.

I am not convinced by your figures, for observation has taught me that a few years ago when St. Paul was asking for a reduction of gas from $1. to 85¢ a gas engineer rendered a full and detailed statement of gas conditions in that city, and make the following remarkable showing. The engineer found that gas could not be

sold by the company with a profit for less than $1.40. He found, however, that if the company reorganized its plant and installed modern appliances, it could make gas at a profit for about $1.28, but no less. This expert gave these figures in the face of the fact that the company was selling gas for $1.00, and I believe offered to compromise with the city for 90¢ or 95¢. My observation goes further and shows me that gas is sold in Milwaukee by a private company at 60¢ and in Duluth under municipal ownership for 75¢. In Cincinnati by a private company from 50¢ to 75¢ and in Chicago at 85¢. Cedar Rapids has established in the Iowa courts a rate of 90¢.

I also recall further experience in our recent attempt to control water rates. Figures presented by the company to the courts resulted in the court finding that 30¢ per thousand gallons for water is too low to yield a reasonable profit to the company. To
8 be fair with them (from the court's standpoint), rates should be advanced. Des Moines was merely asking a moderate reduction to 20¢ per thousand gallons in face of the knowledge she has that many other cities are getting the same for 5¢, 6¢ and 7¢ per thousand gallons.

Permit me at this point to call attention to the fact that in spite of the convincing figures furnished, your company did agree to a rate of $1.30 at a time when it was claimed that the output of your company was but 50,000,000 feet per year, with a gross income of $46,159.50. Within five years your gross income increased to $190,416.50 per year and in ten years to $375,402.22 per year, and at the present time, according to your own figures, your output was over 526,000,000 feet, and gross income from sales of gas alone $526,293.50, a remarkable increase of more than 1,30¢ in fifteen years, while the increase in population of the city has been but little over 50%. I have also learned from the very best authority that within two years after this reduction in price for gas your company was making more money than ever before in its history. In the face of this material increase in output and profits, which was largely accomplished in the reduction of rates, it appears strange that your company hesitates to make another reasonable reduction at this time, which in my judgment would again increase the use of gas and profits to your company.

There was a time when your company claimed it could not furnish gas lower because it cost so much for coal shipped in from Virginia, but now I am advised you use no coal in the manufacture of the water gas which we are consuming, and your plea now is that it costs so much for coke in Des Moines. However this may be, the fact remains that Des Moines, while it is paying less than some cities, it is paying more for gas than many other cities no more advantageously situated than is Des Moines.

Des Moines is not getting a high class of gas for illuminating or heating in my judgment. A blue flame smoky gas such as we have, indicates, I believe, a low grade water gas which is highly

approved neither for heat or light unless mantles are used for lighting.

I note that your figures give only receipts from sales of gas and says nothing of the income from sales of by-products, which in the manufacture of gas is important.

In view of these facts the figures are not convincing, and if I am to take your letter as final I will feel justified in reporting to the council and ordinance fixing rates which in my judgment it would be fair to demand.

Respectfully,
(Signed)
JOHN MACVICAR,
Superintendent Department of Streets and Public Improvements.

9 To that communication, under date of November 26th, 1910, Mr. Haines replied as follows:

"Hon. John MacVicar, Supt., Department of Streets and Public Improvements, Des Moines, Iowa.

DEAR SIR: In reply to you- published letter of yesterday, copy of which I have not yet received, I beg to call your attention to my letter of the 22d inst. to you in which I submitted figures showing the gross revenue derived by this company from the sale of gas together with figures showing the net revenue after deducting operating expenses, taxes and depreciation, and also computation showing that this amount of net revenue would yield but 8% upon $1,739,894.00. I expressed the opinion that the present value of the plant and assets of the Company was largely in excess of this sum. I assumed that you (and the Council) would be interested in knowing the value of the property and the net revenue received under the present rate as it is apparent that the question, as to what is a reasonable rate for gas, could only be determined from these facts.

In your reply to me under date of November 25, 1910, you say the figures submitted are not convincing. You will observe that I did not ask you to accept my unsupported statement as to the accuracy of the figures, but that I invited the fullest investigation of them by the city. To this end I offered to submit for your inspection the books and records of the Company and further invited your cooperation in ascertaining the present value of the property. I have done this, believing that it was only by this means that the city could be fully informed as to the facts upon which a just and reasonable rate could be based.

In your reply to me you do not point out any other method by which a reasonable rate can be determined. You say, that, if I do not recede from the position taken in my communication to you, you will feel justified in reporting to the council an ordinance fixing rates, which in your judgment will be fair. You thus indicate your purpose in fixing a fair rate in the ordinance which you propose introducing, but you do not advise me by what means the fairness of this rate is to be determined. If you have any other means of determining a fair rate than that indicated in my letter, I would be pleased to have you advise me.

You say that, while Des Moines is paying less for gas than
10 some other cities, it is paying more than many cities no more advantageously situated.

You appear to recognize the fact that gas rates in any particular city does not necessarily determine what would be a reasonable rate in Des Moines, and this is unquestionably true as local conditions effecting the question are seldom, if ever, precisely the same. For example, I do not understand you to claim that the exceedingly low rates in Cincinnati, Milwaukee and Duluth should be any criterion for Des Moines, as you have mentioned the lowest rates in the United States, or Canada, and because the Milwaukee rate you quote applies only to large consumers, the ordinary rate being 80¢ per thousand in addition to a monthly increment charge and because of the further fact that in Cincinnati only natural gas is sold.

In Milwaukee a large proportion of the gas furnished to the public is purchased as a by-product from the Milwaukee Coke & Gas Company. The Milwaukee Coke & Gas Company are manufacturers of coke and ammonia and use what is known as Semet Solvay Oven Process. The gas produced from this process is a by-product. This process can only be used successfully where there is a very large market for coke and where there is very low transportation charges on the coke used.

Milwaukee and Duluth, you will observe, are both available for very low cost water transportation from the coal fields of Pennsylvania by the Great Lakes.

Duluth, a municipal plant, purchases its gas from the Zenith Furnace Co., manufacturers of coke, tar and ammonia, the coke being used for ore furnaces in the great iron district of Duluth.

The process of manufacture used by the Zenith Furnace Company of Duluth, is known as the Otto Hoffman Process and is something similar to the process of manufacture in Milwaukee. The gas furnished to the people in Duluth, however, is but seventeen candle power as against twenty-two candle power in Des Moines.

You will observe from these few instances that the price obtaining in other cities depends entirely on the local conditions and the comparisons cannot be made with Des Moines unless a comparison of these conditions is taken into account.

I will be pleased to furnish you any information obtainable to bring these comparisons in price to a comparison of local conditions. I have a very large and complete library on the sub-
11 ject and will be pleased to afford you every facility for using the same.

I submit this communication to you in the hope that you will reconsider your purpose not to make an investigation of the conditions of the company.

Very respectfully yours,

(Signed) JANSEN HAINES, *Manager.*"

Now, in reply to that Mr. MacVicar, under date of November 29, 1910, wrote:

"Mr. Jansen Haines, Mgr., Des Moines Gas Company, Des Moines, Iowa.

DEAR SIR: I beg to say that I am not impressed with your continued appeal for an examination into the net revenue of your company before determining what reduction in gas rates Des Moines is entitled to under the new agreement which must be entered into January 1st, 1911. I do not assume that the question of the expense of production should not be considered in determining what is a fair rate for gas. An examination of your books and property which would determine whether you are entitled to earn a return on a $2,000,000.00 investment on your plant would of necessity cover the entire period of the life of your plant and involve many months' investigation by expert bookkeepers and engineers involving a considerable expense with only questionable results, leaving the real issue of whether or not Des Moines is entitled to a reasonable rate, as compared with what other cities are paying, for determination in the courts.

It is probable the city will desire to accept your offer and make some examination of your books. I am impressed, however, when I enter your spacious counting room and view the great array of clerks and volumes of books, and where I recall former experience of gas and other public service investigations, that possibly your books are kept more with a view to supporting a high rate for gas than showing a reasonable cost or your real profits.

Referring to your letter of the 26th inst. wherein you state, in mentioning gas rates, in Cincinnati at 50¢ and 75¢, in Milwaukee at 60¢ and Duluth at 75¢, that I name the lowest rates in the United States and Canada. This is not strictly correct and I call your attention to the rates in Hamilton, Ohio, by private corporation at 30¢ per thousand cubic feet and by municipal plant at 80¢. This is a combination coal and water gas while Des Moines gets only water gas. Grand Rapids 50¢ to 90¢, combination coal and water gas. Detroit, Mich., 50¢ to 80¢, combination coal and water gas. Cleveland, Ohio, 75¢, combination coal and water gas. Springfield, Ohio, 85¢. You further state that the rate I quote of 50¢ to 75¢ in Cincinnati is for natural gas. I find that natural gas is sold in Cincinnati at from 12¢ to 30¢. It is likely that this has put manufactured gas / largely out of the market but previous to 1909 manufactured gas was sold in Cincinnati at from 50¢ to 75¢, as stated in my former letter.

12

You will pardon me if I have the suspicion that your sudden and unexpected demand for an examination of your books is more for the purpose of delay than for determining a reasonable rate. I have reason to believe that not only your Gas Company but our Water and Street Railway Companies, with the support of the Telephone Company, have determined to support in the next legislature a public utilities measure similar to the bill before the legislature two years ago, which will take the regulation of rates for public services out of the hands of the city council and the people, and place it in a State Board to be appointed by the Governor.

I learn that you, in company with N. T. Guernsey, attorney

for many of our local corporations; Geo. B. Hippe and Harry Polk, of the Des Moines City Railway Company and other well known citizens of the state of Iowa, who are supposed to be influential in controlling state legislation, recently held a conference in Chicago. I want to ask if there was not discussed at this meeting the support of the public utilities bill which Senator Sammis says will be introduced early in the session of the next legislature. Confirming this suspicion I yesterday overheard Attorney Reed in his argument before the District Court at Adel, in referring to this public utilities measure, say that the passage of such a bill depriving the city council and the people of the right to regulate public service companies was "an end most devoutly to be wished."

Respectfully,

(Signed) JOHN MACVICAR,

Superintendent, Department of Streets and Public Improvements."

13 Under date of December 2, 1910, Mr. Haines replied to that communication as follows:

"Hon. John MacVicar, Supt., Department of Streets and Public Improvements, Des Moines, Iowa.

DEAR SIR: Replying to your favor of the 29th ultimo, I beg to say that in my letter of November *of* 22d I stated that the 'fundamental principle which has been firmly established by the decisions of the Courts of Last Resort, both State and Federal,' and which I might add has been adopted by the Public Utilities Commissions in various states, is as follows:

The company is entitled to a rate which will, after the payment of operating expenses and taxes, and after deducting a reasonable allowance for depreciation, leave a sum sufficient to afford it reasonable interest and profits upon the present value of its plant and assets, taking into consideration the character of the investment.

You state in your letter of the 29th ultimo that you are not impressed with my continued appeal for an examination into the net revenues of this Company before determining what reductions in gas rates Des Moines is entitled to. You further state that it will take many months of investigation by expert bookkeepers and engineers, involving a considerable expense, etc., to do this work.

By referring again to my letter of November 22d you will find that I stated that 'a careful inventory and valuation of the Company's property and assets is now being made and I shall be happy to submit the same to you upon its completion. If you so desire I will be glad to have the City Engineer co-operate with the engineers now engaged in making this inventory and valuation.'

The particular reason that prompted this proposition was to avoid the delay and expense you mention in your letter. This is an engineering problem simple of solution, but requiring careful and painstaking detail and your City Engineer, because of his knowledge of local condition, should, I believe, be well qualified to cooperate with our engineers in this work.

I would respectfully suggest that, in order to avoid any further

delay and additional expense, you instruct your engineer to co-operate with our engineers, who are now making this inventory and valuation of the plant and assets of this Company. This
14 work is well under way, but is in such condition that the accuracy of the data already collected may be easily checked and time thus saved.

Insofar as the examination of our books to verify the statements, of net earnings contained in my letter of November 22d, is concerned, I beg to say that this may proceed at the pleasure of the Council, and that, while I realize that some delay may be occasioned by this work, I do not wish you to consider for a moment that it is my desire to take advantage of this delay, nor is it clear to me that any possible benefit could accrue from delay.

This proposition, which is made in good faith, is for the sole purpose of giving to the City the fullest information as to the facts from which my claim, that the present rate is no more than reasonable is based.

The preemptory passage, at this time, of an ordinance which by its terms would be unremunerative and therefore lead to litigation, would be subject to all the objection of delay referred to in your letter, and indeed would cause very much greater delay, for a final decision in the courts could not be hoped for under two or three years.

It is my earnest desire to avoid, if possible, the tremendous expense of such litigation, which ultimately must be borne by the consumer and taxpayer and which in a question of this kind would be sufficient to rebuild the Locust Street bridge, or pay for $1,000 acres of park land, or run the entire police and fire department for a period of nine months.

There seems to be in your letter a note of suspicion, but let me say that there are no mysteries or secrets in the gas business; there is nothing to conceal or withhold. The nature of the business involves many problems requiring the highest engineering skill and resourcefulness. Doubtless these problems and terms appear mysterious to the man engaged in some other pursuit, but we stand ready at any time to explain and describe to any interested party the processes used, the methods employed and the results obtained.

I regret that you should have expressed the belief that our books are kept with a view of supporting a high rate for gas, thereby implying that a bogus set of books is being kept for the purpose of deception. Even though you have no faith whatever in my honesty, or that of the Company, which I represent, had you stopped to consider the position in which we would be placed by pursuing such a course, I am sure you would not have made such a statement.

15 Referring to the rates quoted in your letter I beg to say that many instances of rates, both lower and higher than in Des Moines, can be quoted, but the rate established for any given locality must depend entirely upon the local conditions and upon the return provided by such a rate on the value of the property required to produce it.

You will find by application to the cities, whose rates are quoted in your letter, that generally their initial rate is for say the first 5,000 or

10,000, and sometimes 50,000 cubic feet of gas consumed, and for the next similar amount a reduction is granted, and for very large consumers a very low rate is made. Cities that have adopted this plan claim, as I understand it, that it is fair because of the fact that the accounts of small consumers occasion as much, or more, investment and expense in handling as the large ones, yet they yield but small revenue. This principle is recognized by such rate making bodies as the Utilities Commission of Massachusetts, New York and Wisconsin.

In reply to the question contained in the last paragraph of your letter, which I quote as follows:

'I learn that you, in company with N. T. Guernsey, attorney for many of our local corporations, Geo. B. Hippee and Harry Polk, of the Des Moines City Railway, and other well known citizens of the State of Iowa, who are supposed to be influential in controlling state legislation, recently held a conference in Chicago. I want to ask if there was not discussed at this meeting the support of the public utilities bill, which Senator Sammis says will be introduced early in the session of the next legislature.'

I have to inform you, that if any such conference, as you refer to was held, I had no knowledge of it; that I did not hold a conference with the gentlemen named, or any of them, nor was I invited to attend any such conference; that I have never, at any time, attended a conference in Chicago with the gentlemen named, or anyone else, called for the purpose of considering a public utilities measure in the Iowa legislature. This may be due to the fact that it is well known that I have not favored such a measure. I have believed that under the commission form of government, such as we have in Des Moines, such problems as the gas rates could, and should, be settled as business matters. At the same time it is obvious that no better argument can be used by those favoring a utilities commission than the fact that the adjustment of rates and regulation of utilities by local authorities has led in the past to unsettled conditions,
16 impairment of credit, and inefficiency of service.

I again beg of you to cooperate with me in making the inventory and valuation of the Company's plant and assets and verify the figures submitted to you in my letter of the 23d ultimo.

Very respectfully yours,
(Signed) JANSON HAINES, *Manager.*"

Under date of December 2nd, 1910, Mr. MacVicar wrote Mr. Haines as follows:

"Mr. Janson Haines, Mgr. Des Moines Gas Co., Des Moines, Iowa.

My Dear Mr. Haines: I have asked City Engineer John Budd to take up with you the matter of the inventory of your plant. He will delegate Mr. Maxwell of his department to personally investigate this matter.

Thanking you for this opportunity, I am,
Respectfully,
(Signed) JOHN MacVICAR,
Superintendent Department of Streets and Public Improvements."

On December 3rd Mr. MacVicar wrote Mr. Haines as follows:

"DEAR SIR: Is my information incorrect which is that you were in Chicago on or about November 1st with N. T. Guernsey, Geo. B. Hippe, H. H. Polk and others, or any or all of them.

Awaiting your answer, I am,

Respectfully,

(Signed) JOHN MACVICAR."

On the 27th day of December, without waiting for the completion of this inventory and appraisement of the property, without ever having availed themselves of the opportunity offered to investigate the records of the Company for the purpose of ascertaining the amount of their revenues, and their net revenues after deducting taxes and expenditures without ever in any manner doing anything to ascertain the value of the property, the amount which the Company had invested in the property, the City Council on that day received a report from Mr. MacVicar and from the City Solicitor, Mr. Robert Brennan, which it will be our purpose, at the proper time, to offer in evidence, but I will not stop now to read it.

17

Immediately upon the filing of the report which contained a proposed ordinance, the City Council, without notifying Mr. Haines, without giving Mr. Haines any opportunity to be heard, without affording the Company the slightest opportunity to come before the council and make its showing as to what would be a reasonable return upon its property devoted to this public use, without, as I say, any investigation into the situation, and under a suspension of the rules passed that ordinance of November 27th. Knowledge of its passage only came to Mr. Haines on the 28th, and as I recall it, through the public press.

Now that is the ordinance which we are here attacking as being invalid, and it reads as follows:

"An ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas and prescribing penalties for a violation thereof.

Be it ordained by the City Council of the City of Des Moines:

SECTION 1. From and after the first day of January, A. D. 1911, the rate to be charged and collected for gas by any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, is hereby fixed as follows, to-wit: Ninety (90) cents for each one thousand cubic feet.

SECTION 2. If any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants shall reduce the price of gas to its patrons below the price fixed in this ordinance, then any such person, firm or corporation shall not charge any person or persons for gas, a price in excess of that which said person, firm or corporation has charged any other person. The provisions of this section shall not be construed to prohibit special contracts for lower rates to large consumers.

18

SECTION 3. Any person, firm or corporation using the streets, highways, avenues, alleys or public places of said city in supplying or distributing gas shall pay to the City Treasurer for the use of said City of Des Moines, as a license or occupation fee, for each year that the streets, highways, avenues, alleys and public places of said City are used in supplying or distributing gas, beginning January 1st, A. D. 1911, two (2) per cent of the gross receipts for gas sold during such year; the same to be paid semi-annually and within thirty (30) days after the expiration of the preceding six (6) months."

Just in passing, before we leave that section, you will observe that it provides for the payment of two per cent of the gross receipts to the City as a license or occupation fee. Now, our contention is, and I think we are amply justified in that contention by the holdings of our courts, that is an illegal exaction. That is a provision which was in the old ordinance, which was contractural in character, and is a provision which the Company has at all times submitted to.

The MASTER: The amount so paid would include the expenditures?

Judge CARR: Yes, this has been included in the expenses—as a part of the tax. As I say, I wanted to call your Honor's attention to that at this time. What our ultimate position may be I am not prepared to say. We have not yet attacked that feature of the ordinance as being invalid. Heretofore we have been in a position of submitting to that exaction. It is significant in this, with
19 that provision in the ordinance submitted to by the Company, it actually makes a rate, not of ninety cents, but of eighty-eight cents or a fraction over, because the City gets of what we receive of the consumer at a ninety cent rate, at last two per cent.

"SECTION 4. Any person, firm or corporation supplying or distributing gas to said City of Des Moines or its inhabitants, shall furnish gas of not less than twenty-two (22) candle power.

SECTION 5. Nothing in this ordinance contained shall ever be construed to in any manner recognize any franchise or other rights claimed by any person, firm or corporation to use the streets, highways, avenues, alleys or other public places of said City for the purpose of laying or maintaining mains and pipes in supplying or distributing gas to said City or its inhabitants.

SECTION 6. Any person, firm or corporation supplying or distributing gas to said City of Des Moines, or its inhabitants, or any officer, agent, collector or employé of such person, firm or corporation who shall charge, demand collect or receive any rate or compensation for gas supplied or distributed to said City of Des Moines, or to any inhabitant thereof, in excess of the rate fixed by the ordinance, or any person, firm or corporation or officer thereof failing to pay the license fee provided for herein, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine in a sum not exceeding one hundred dollars ($100.00) or by imprisonment in the City jail for a period not exceeding thirty (30) days

SECTION 7. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SECTION 8. This ordinance being deemed urgent for the imme-

diate preservation of public peace, health and safety, shall be in full force and effect from and after the first day of January A. D. 1911, and after its passage and publication as provided by law."

In regard to section 8, I want to call your Honor's attention to that provision of the law under which ordinarily an ordinance shall not go into effect until ten days after its passage, except where there is an urgency for the preservation of the public peace, health
19½ and safety. Now that kind of an urgency provision was put into this ordinance. It is not very apparent just how any public peace, health or safety would be involved or affected by the passage of this ordinance. I simply call attention to it as being one of the evidences, or an additional evidence of the haste and lack of consideration, as we contend, which actuated the City Council in the passage of this ordinance.

The MASTER: It does not affect the validity of the ordinance?

Judge CARR: We are making no point on that.

The MASTER: You are treating the ordinance as valid, but are assailing it on the ground that it is confiscatory?

Judge CARR: Yes, sir. The only attack made upon it is the one attack, that it does not afford a fair and reasonable return upon the property and is therefore confiscatory.

These matters to which I have been calling attention are for the purpose of showing the attitude of the parties, for the purpose of showing that this rate-making body whose duty it was under the law to investigate and inquire into the things which must of necessity be involved, and are involved, in determining a fair rate did not do that; they did not do what the court is now compelled to do, to investigate, first as to the value of the property; what money has the Gas Company invested or expended upon which they are entitled to a fair return; and the question of what return a given rate will yield, and then the ultimate question, will the return the Company will receive afford a fair return upon its property. I should here say our proof will show that while the City has suggested in this letter of Mr. MacVicar that an engineer should be put on the work for a short time while the inventory was being made, they never to this day have availed themselves of the invitation, and the continued invitation, to come and verify our statements as
20 to our revenue and to investigate our records, and our records have been open to them at all times for the purpose of making such investigation; and up to the present time no such investigation has been made.

Upon the passage of this ordinance, on the 27th day of December, on account of its drastic provisions, it became necessary for the complainant either to submit to it or seek relief in the courts. Thereupon a bill was prepared and presented to his honor, Judge McPherson, and a temporary restraining order was issued, which was followed later by a temporary injunction. The inquiry now of course is, whether the allegations of our bill are supported by the evidence.

Your Honor undoubtedly is aware, from what I have already said, that the question to be determined is whether this ordinance

will, if it goes into effect and operation, yield a fair return or revenue upon the property or the money which the Company has invested in this public utility.

The MASTER: That is the real question.

Judge CARR: That is the real, ultimate question. As I understand it, the courts will not attempt to make a rate, but they will inquire whether a rate which has been fixed by a rate-making body is a just and fair rate. That depends, of course, upon whether it is confiscatory in character.

The first subject of preliminary matters to which our evidence will be addressed will be the ascertainment of what the property is. Now at the time referred to in Mr. Haines' letter, a corps of engineers was put upon this property for the purpose of making a detailed and full inventory of it, and the work was pushed forward energetically and with as much speed as possible. We have the result of that work. We have it in the form of a bound volume containing a detailed inventory of all of the property of the
21 company, and that is accompanied by another volume which contains sketches of the buildings and apparatus and machinery of the Company—sketches of a character from which an expert, a contractor and builder, could take these plans and specifications and ascertain the cost of reproducing the property. It is also accompanied by quite a good many photographs which show the property generally and in some detail; and is also accompanied by maps which show the distribution systems of the Company, and by that we mean the mains and services laid under the street- over the city.

The MASTER: That is on the 10th day of January, 1911?

Judge CARR: It was made about the time of the correspondence, along in November and December, and completed some time during the winter and early spring.

The MASTER: It is an inventory up to January first?

Judge CARR: Yes, since January first. Our proof will go first to the establishment of that inventory. The City has been furnished with a copy of it several weeks ago. We have not learned yet whether it will be accepted as correct or not. I don't know how that will be. We will determine that before we get to that point. If it should be accepted by the City, it will shorten the taking of the evidence materially. If it is not, we shall show the correctness of the inventory by proof.

Having shown what property we have, then we shall bring evidence to show the value of the property. First of all, is the real estate. The Company has—I may not be accurate in all my statements—as I remember it, about two blocks and a half, ordinary city blocks of real estate, that is used and necessary to be used in connection with its business, the property upon which is located what we speak of as the manufacturing plant, or the plant of the Company. The evidence will show that it lies on the east side of the river, near the river; that it is advantageously located.
22 for that purpose, and centrally located with respect to the distribution district. It is not subject to overflow and is very ad-

vantageously located as to trackage facilities, which become an important matter. We shall bring witnesses who are familiar with the real estate values in Des Moines, for the purpose of establishing the value of that property, of the real estate, as unimproved property. I may say in passing, our evidence will show that the value of the property will be somewhere from $225,000.00 to $230,000.00, as unimproved property, depending upon its location and its advantageous location in all respects, and particularly as trackage property, and the amount of such property necessary for such purpose as that of the Des Moines Gas Company.

When we come to the question of the value of the property beyond the real estate, the rule is well settled that the most satisfactory way of ascertaining the value of the property of these public utilities, is by the reproduction method; that is, the inquiry is what would it cost to reproduce the property now. Then, of course, there is the element of depreciation if the property is not new, and of course these properties are generally not new; the amount of allowance, which is a matter of judgment, to be made to reduce the physical value of the property I am speaking of now below what it would cost now.

I might say our evidence upon that question, the physical value of the property—upon the value of the property including physical value, and another element of value we speak of as a going value will be shown by those who are experienced in that line of work; men who had experience in constructing gas plants, and engineers who will be able to give to your honor the result of their knowledge and experience for the purpose of ascertaining what it would cost to rebuild this plant now. It might be well to call your honor's attention here to the fact that there is involved in the prob-
23 lem more than the inquiry as to how much money it would take to procure the material and pay for the labor necessary to construct. There are other elements of costs that enter in, and of course cost makes for values. To give your Honor the thought in the concrete, I will inquire now what you would do if you were about to construct some large manufacturing enterprise or building, or large office building? What expenses would you necessarily be to? Suppose you were doing that as a corporation instead of an individual. You will readily see there is first involved the expense of incorporation—preparation of your articles of incorporation and the legal expenses attending it, and the procuring of a permit or license from the state of Iowa and payment of the corporation fee—all expenses you would have to bear in order to organize your corporation. Then you would have to procure your site.

The MASTER: It this corporation organized under the laws of the state?

JUDGE CARR: Yes. We shall introduce our articles of incorporation and show the date of organization. By the way, this Company has been referred to in this correspondence as having had certain litigation. That was not this Company. It was its predeces-

sor, the Capital City Gas & Light Company. This Company was organized in 1906.

The MASTER: And took that property over at that time?

JUDGE CARR: Yes, and ever since operated it.

The MASTER: By purchase?

JUDGE CARR: By purchase, yes.

As I said before, the next thing would be to procure your site, and you would very likely be put to the necessity of optioning certain property, because if you have to buy of several people, you could not buy and close the deal with one man and hope to get the other man to sell to you to advantage afterwards. Then after you had your real estate purchased there would be involved
24 the expense of your plans and you have to have an architect who can make plans for your property. Then contracts would have to be made with contractors, including the legal expenses incurred, along that line. Then during the period of construction there perhaps would be premiums on liability insurance for employés. You probably would not want to take the chances of a damage suit without some insurance; there would be at least that element entering into it. There would be the interest you would lose on your investment during the period of construction. If it took you three years to construct your buildings, you would have some of your money in at the start and you keep it invested during the three years and get no return on it until the end of the period. Then there are the taxes, and so on. That will be sufficient to call your Honor's attention to what we speak of commercially as overhead charges; and it will be shown by witnesses that there enters into the cost of such work and such property as the Des Moines Gas Company property many large items and dollars of money that you must put in, as well as pay for your material and labor to get the physical structure completed.

The Des Moines Gas Company, as I have stated, has this real estate and upon this real estate they have a good many buildings and machinery which cost a great deal of money to reproduce. I will give you what the evidence will show as accurately as I can as to the general character of our manufacturing plant. What brings it clearly to my mind more than anything else is to just follow the process of manufacture and may be it will come out in the evidence, and it may be interesting to know how we go about these things. I think in a few words I can give you some conception of the character and magnitude of the plant.

There enters into the manufacture of gas three elements, so far as the material is concerned; that is, this Company manufactures what is known as water gas. Now there are three crude or
25 raw materials which enters into it: steam, coke and crude petroleum. Now these three things are brought together and make up the product. That is done in this way: the steam is generated in a large boiler provided for the purpose. A large quantity of the coke is used and transported to Des Moines in car load lots and dumped into what is called coal sheds, which are situated ad-

vantageously with regard to the tracks and consist of a number of bins. Now this coke is placed in these bins from the cars and then it is taken by means of what is termed a buggy—hand barrow—to an elevator and there hoisted to a level of what is called the operating room and carried into the operating room. The steam is carried there by means of pipe. In the process of manufacturing, there is a structure that is known as a generator, that is a large steam generator eight or ten feet—we have several of them—but the largest is ten feet six inches in diameter and I think about eighteen feet in height. This generator is lined with fire brick, as indicated by the photograph I show you- Honor of those generators. Now, up in the operating room where this coke is taken, the top is removed from this generator and the coke is put down in there, and then by means of blowers it is heated to a white heat, so that you have a great mass of incandescent carbon—coke is pretty nearly pure carbon. Now, through that body of live coal is turned this steam either by forcing it up through from below or from above down; I think they can reverse the process; and the steam passing through this heated mass of carbon produces by chemical action what is known as water gas. Now this gas is non-illuminating; it has all the heat, but it is non-luminous; it burns a blue flame, but does not give off any light at all. In the process there, there unites with the blue flame gas a quantity of sulphurous compound. Now from the generator the gas is taken to another cylinder just like it, which is called the carbureter. In the interor of the carbureter there is fire brick laid in checker work form, and into the
26 carbureter is injected this crude petroleum, and coming in contact with these hot brick evaporates. The oil in its evaporized form unites with the water gas, forming carbureted water gas. It is the carbon in the oil that gives to the gas the illuminating property. Now this carbureted water gas is not in the proper condition yet; so it is carried over there into another cylinder of the same size, which is known as super heater where a very high temperature is uniformly maintained and the gas is subjected to that in this super heater, which has the effect of uniting and welding the carbon that comes from the water gas. Then you have your gas complete, but it is still not fit for use, because there are two general classes of impurities in it, one being the tar product, coming as I understand it, from the crude petroleum, and the other, the sulphur compounds, which are very objectionable producing a very disagreeable odor, like a rotton egg smell. The next thing is to get rid of these. So this gas is taken to a washer, another process condenser, where some of it is eliminated and then it is carried into what is called a relief holder. That is a large structure which costs a good deal of money. It still has the offensive elements that come from the sulphurous compound which must be eliminated. It is then taken from the relief holder to what is called a purifying house—four steel bins or boxes, 20 feet square and 7 or 8 feet deep. They are supplied with steel covers of great weight and can only be taken on and off by means of a moving crane. These boxes are placed upon iron or steel pillers. And in these boxes there is

placed what is called an oxide, or oxide of iron, which is composed of chips which they get from the planing mills, coarser than saw dust, but something of that order, and in that is placed iron filings which they obtain from machine shops, and that is treated to water and I think salt or something of that kind that makes the
27 iron rust. Then the boxes are filled with this oxide, and the gas when it comes from the relief holder is forced through these boxes, and the chemical reaction of the gas coming in contact with the iron fiber forms sulphate of iron, or something of that kind, and this removes the obnoxious element of the sulphur compound. Now that is adjusted that the gas may be put through the process of reversing the operation of each one of these boxes. That is, you can start box number one, two, three or four. By this process of reversing the boxes you can use all of them and maintain a uniform foulness. From there it is ready for use. Then it is carried to the station meter for measurement. That word meter does not convey to your Honor any idea of the expense of that meter As I recall it, I think it cost $8,000.00 From that meter it is carried into the holders. We have two holders; one capable of containing something over a million of cubic feet, and the other about half that size, and those are very expensive structures. From these holders the gas then enters the mains through what is called the governor.

This will give you some little or faint idea. I will not attempt to go into details of the structures at this time.

Then comes the distribution system. We have 182 miles of mains in the city of Des Moines, varying in size from the largest, 24 inches in diameter, down to about 4 inches. I call your Honor's attention to a plat here which will show the distribution system.

At this point I will say that in getting at the value of this property it will be our contention, and our proof will tend to show it, the value of these mains, that is the reproduction cost of the mains as laid under pavement. I apprehend our friends on the other side will contend that is not a proper element, and there are some
28 commissions, notably the Wisconsin Commission, which does not consider the cost of laying mains under paving in rate cases, unless it is shown that the pavement was actually laid before the main was put in. But our contention will be, and perhaps will be in dispute, that we are dealing all the time with the cost of reproduction; we are not dealing with the question of what a thing costs. When I speak of the value of our real estate, I do not mean what it cost us fifteen or twenty years ago; I mean what it costs today, or at the time concerning which the inquiry is directed.

The MASTER: What date do you claim for that?

Judge CARR: The ordinance was passed December 27th 1910. I think the evidence will show that there has been no material change. Our period of inquiry will practically be as of January 1st of this year. Now, as I say, the question is as to what it would cost to reproduce, as the inquiry is as of the present. What is the value of the property as of the present time, and that is to be ascertained by what is would cost to reproduce it. It is our contention that

we are entitled to a valuation upon the property that will ascertain and determine what will be the expense of the distribution system as it is at the present time or at the time of the inquiry, under pavement, less of course the element of depreciation.

There is involved in the inquiry, not simply the reproduced value of the physical property—or as some courts say, the bare bones of the property. We are dealing with a property which has a business. The courts have said in these rate making cases that you cannot attach a value to a franchise which a company gets from a city, in the way of a right to do business, while it may have a value for rate making purposes. They also say, what we speak of commercially, that good will is not an element to be considered

But the courts do recognize, as far as I am advised, even
29 in rate cases, as also in condemnation cases and assessment cases, they recognize what they have come to speak of as the going value, or the value of the property as a going concern, and it will be our contention, that there is a marked difference between the property completed and ready to do business, and a property which has attached to it a business already established. It costs money to get the business, and that makes for value.

To give you a clear conception of our thought, I can perhaps do no better than by giving a brief quotation from one or two of the courts. Take for example the Supreme Court of Massachusetts, in th- 60th N. E. Rep., 981, where it is said:

"It is plain that the real commercial market value of the property of the Water Company is, or may be, in fact, greater than the cost of reproduction, less depreciation, of the different features of the physical plant. Take for example a manufacturing plant. Suppose one manufacturing plant has been established for some ten years, and is doing a good business, and is sold as a going concern. It will sell for more on the market than a similar plant reproduced physically would sell for immediately on its completion, before it had acquired any business."

In a Connecticut case they have said:

"It was also proper for the commission to pay regard to the fact that the plaintiff had an established business, built up after experiments and changes during a long period. * * * It indisputedly had been so built up, and whatever had been sunk in experiments in order to secure, and with the result of securing, a good working plant, was properly considered as entering to some extent into the value of a plant."

The Supreme Court of the United States in the Omaha Water Works case said:

"That there is a difference between even the cost of duplication, less depreciation of the elements making up the Water Company plant, and the commercial value of the business as a going concern is evident."

30 In the case of National Water Works Company against Kansas City, Justice Brewer, who wrote the opinion, said:

"The original cost of the construction cannot control, for 'original cost' and 'present value' are not equivalent terms. Nor would the

mere cost of reproducing the Water Works plant be a fair test, because that does not take into account the value which flows from the established connections between the pipes and the buildings of the city. It is obvious that the mere cost of purchasing the land, constructing the buildings, putting in the machinery, and laying the pipes in the streets—in other words, the cost of reproduction—does not give the value of the property as it is today. A complete system of water works, such as the company has, without a single connection between the pipes in the streets and the buildings of the city, would be a property of much less value than that system connected, as it is, with so many buildings, and earnings, in consequence thereof, the money which it does earn. The fact that it is a system in operation, not only with a capacity to supply the city, but actually supplying many buildings in the city,—not only with a capacity to earn, but actually earning,—makes it true that 'the fair and equitable value' is something in excess of the cost of reproduction."

It may be said that rule is all right enough when you come to a condemnation case, but it is our contention that the courts do not so define it. I call your honor's attention to this element, as it will be one of the elements covered by the proof.

This element of going value has been recognized by the courts as a tangible thing, something that makes for value; something that attaches to the property and is a part of the property. The difficulty has been in finding the yard sticks by which to measure that value, and various methods have been adopted by the engineers who have studied this problem, for the purpose of trying to measure what that value is—something which everybody recognizes as an element, but just how to get at it is the question. Sometimes they have taken a percentage of the gross earnings. The Supreme Court of Oklahoma, as I recall it, allowed twenty per cent to be added to the physical value.

In our case, we shall introduce evidence by experts and we
31 will show the correct method, a method that will be persuasive and will satisfy the mind of the court not only that there is a very substantial element in a so-called going concern value, but that we have ascertained the way by which it is fairly and accurately measured.

At this time, 12 M. an adjournment was taken until 1:30 o'clock P. M.

32 TWO O'CLOCK P. M., WEDNESDAY, *July* 12, 1911.

Hon. George H. Carr continued his opening statement on behalf of Complainant, as follows:

If the court please, just a word further with regard to the proof with respect to the value of the property. As to the unimproved real estate as I have already said, we expect to bring men who are familiar with the values in Des Moines, because it seems to us that that would be the most competent and satisfactory evidence. But when we come to the value of the property in addition or beyond the value of the unimproved real estate, then we must go for our proof

farther than the local parties. That is for the reason that it seems to us no one is competent to inform the court as to the reproduction cost of a property like the gas plant, including all the various items that go into it, the manufacturing appliances and all that, excepting those who have by years of study and experience along this particular line fitted themselves to give an expert opinion on the subject. For that reason we shall present the testimony of a number of gentlemen who have had not only the preliminary education that fits them for it—preliminary education of civil engineers and preliminary education of specializing in this particular line, but men who have had years of experience in constructing and in reconstructing gas properties and who have become familiar with the property of the Des Moines Gas Company, not only from an inspection of the inventory which we have prepared and to which I have referred this forenoon, but from an actual examination of the property upon the ground.

There is involved in the question that confronts us in addition to what I have heretofore referred to, an element that we speak of as depreciation, or reserve depreciation distinguishing that from
33 the depreciation that must be allowed to ascertain the present value of the property, the depreciation over the property as it would be now. There is still another element that we will, I think, speak of generally in the evidence as reserve depreciation, or reserve for depreciation, to speak with perfect accuracy. Along that line the testimony will be directed to establish what amount should be set apart and allowed to meet that expenditure, and that is based upon this thought. When one has a manufacturing project or machinery of any kind, even the mains of a distribution system as they lie in the ground, there is a constant deterioration going on. If it is a machine, it wears out. Now you may by timely repairs preserve the life of your property to an extent, but it is manifest, and our common knowledge teaches us, that with all timely and needed repairs there comes a time when the mechanism is exhausted, is worn out, and if it is a structure like a pipe in the street there is a time when that is worn out and has to be replaced.

Your honor will see that what we are trying to get at in a case of this character is what rate of return will be equitable and just between the corporation and the public. A rate of return which would simply allow interest upon invested capital manifestly would not be just and equitable because in such a situation a corporation goes on for a given length of time, getting a fair return upon its investment, but at the end of that period its investment is gone, so that the courts and rate making bodies recognize that there is involved in the proposition the question of setting apart or making allowance of such sum as will be sufficient to replace the property at the end of the period of its usefulness. Our engineers will be able, I think, to give your honor from experience approximately the life of such a property, the composite life.

But there is another thing that I think will be brought
34 out in the evidence that enters into it and that is the element spoken of as obsolescence. That is to say, a piece of mechanism which you buy to-day to perform a certain function may be

the best available for the purpose for which you desire it and a year from now or five years from now that same piece of machinery may be so improved that economy requires you to discard your old machinery, although not worn out, and put in a more improved apparatus. We have only to think of the sowing — as your honor first knew the sowing machine, when we were younger men, and as they are now, or the reaper or harvester that perhaps we bound grain on or followed behind on the ground.

The MASTER: I don't know anything about those things as I quit the farm before they were used.

Judge CARR: Now what would a McCormick harvester—that was the first machine of that character I ever worked on—what would a McCormick harvester be worth to-day that was manufactured back in 1870 or '75, although it had been kept perfectly, had not been used, but kept stored and housed properly? We can see at once that it would be practically of no value. That is what is meant by obsolescence and that enters in somewhat. But the principle is, as I say, the elementary principle that when an investor puts his money into a public utility, justice and fair dealing between him and the public requires that he shall have such a return upon his investment as will not only award him a reasonable revenue from the property but will enable him to replace the property when it is worn out. In other words, he is entitled to not only his interest, but he is entitled to a net annual return that will enable him to preserve his capital.

We will probably in the evidence speak of depreciation reserve, or reserve for depreciation, and here again we shall have
35 difficulty perhaps in finding an exact yard stick by which to measure it. Our evidence will develop the subject coming from men of experience who have studied the subject largely and have had experience in dealing with the question and we shall learn from them what in their opinion should be set apart and reserved or what sum should be allowed, what sum should be taken into consideration and allowed for this element of reserve depreciation.

Then we come to the ultimate question in the case which is what is a fair return? What is a fair return? Of course, the first inquiry is what is the value of the property. That must be first found before you can determine what you will find a return upon. Our evidence will show that the value of the property of the Gas Company used and necessary to be used in its business as a going concern will be considerably in excess of three million of dollars, and for the purpose of an illustration I want to give your honor, I am going to assume three millions of dollars. That will be, as I say, considerably below what our evidence will show the value of this property to be, and considerably below what we alleged it to be. There have been before the courts numerous rate cases, in some of which the courts have said to the complainant company, "We are not satisfied that this rate will prove confiscatory of your property, you have not tried it out, you have not experimented with it, you do not know to what extent the decreasing of the price of gas is going to increase your output." On the showing now made,

as they have said in some cases, we will not grant relief. You may try this for a while and if after a practical trial it turns out that your apprehension in well founded, and that the rate will not produce a revenue which is a fair revenue, and it is confiscatory of your property, then we will give you relief. I apprehend
36 it will be contended here that it is experimental yet as to what will be the result of putting into effect this 90 cent ordinance. As to that, and it is within the allegation of our bill, I want to give your honor an outline of what our evidence will be. We shall show some results under the dollar rate. I am not going to attempt at this time to burden your mind with any mass of figures—I don't think that would be wise, you probably would not retain them now—but I want to show one or two figures as illustrative of what our experience has been under a dollar rate. They are not the figures that are alleged in the bill, but cover a somewhat different period. The average net return applicable to interest and profits for the five year period ending December 31st, 1910, which carries the period on beyond the allegation of the bill—you- honor remembers my statement at the time the bill was drawn the last period at which we could get complete figures was September 30th, but now being later, we are able to get figures up to the last of the year, the close of the year 1910. The average net return which could be used for interest and profits after taking out the charges that must be paid, operating expenses, taxes and the reasonable reserve for depreciation we have $117,291.68, and if we assume for the sake of argument a valuation of three millions, which I say again is not our claimed valuation of this property—we claim the valuation of this property is considerably in excess of that amount—but for the purpose of illustration only I am taking an assumed value of three millions of dollars. On that assumption of three millions of dollars the amount would give a return in the way of interest and profit of three and nine tenths of one per cent, or, putting it in round numbers, a little less then four per cent. That is the experience of this company during that period of five
37 years. Had the value of the property been the same during all that period that would have been the result under the dollar ordinance or dollar rate. Of course, the property five years ago was not worth as much as it is now by considerable. I do not know just the difference, but for the purpose of illustration, I am assuming five years ago, if the value of the property had been what it is today, our returns during that period under the dollar rate would have amounted to a trifle less than four per cent upon the investment.

Now try another illustration: take the return applicable to interest and profits, the net return for the year just ended, the year 1910, which I understand to be one of the best years, if not the best year perhaps in the history of the company. The profits for the year ending December 31, 1910, were $132,784.32, which on an assumed valuation of three million, would show a return of four and four-tenths per cent, or practically of four and one-half per cent.

The MASTER: Twenty thousand dollars difference in the net receipts between the two years?

Judge CARR: An increase for that year, yes sir, over the average for the five years. The first figure, $117,000 is the average for the five year period. It was not an increase of 1910 over 1909, but an increase of one year over the average for the five years period. Of course, Des Moines has been growing rapidly during that period. Now we say that on the assumption that I have made, which I think will be fully established by the proof we have, that our experience under the dollar rate would have only netted a return of four and one half per cent and surely that is not an amount that would cause investors to turn green with envy.

What would be the result of the ordinance had given us
38 a ninety cent rate. The result in net return for interest and profits for gas sold at ninety cents as provided by the ordinance the net return for 1910 would have been $73,885.29, instead of a return under the dollar rate for 1910 of $132,784.32. If we had only been getting ninety cents, the net return would only have been $73,885.29. In other words, cutting the return in two, because the ten per cent all comes out of the net return, which would make an interest earning on a valuation of three million of two and forty-six hundredths per cent, or two and a half per cent, in round numbers. The ultimate inquiry, I say, would be, is that a fair return?

On that subject, your honor, I want to ask the privilege to quote briefly from what Mr. Justice Beckham said in the Wilcox case against the New York Consolidated Gas Companies, reported in the 312th United States. This is only an excerpt of what he said in speaking of the subject of what is a fair return upon such an investment. "There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality. Among other things, the amount of risk in the business is a most important factor as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them. One who invests his money in a business of a somewhat hazardous character is very properly held to have the right to a larger return without legislative interference than can be obtained from an investment in government bonds or other perfectly safe security."

39 In this case we shall claim that with regard to the question as to what is a fair return it is a matter of proof. Of course courts have some common knowledge on the subject, but we regard that as a matter that it is proper to put witnesses upon the stand who are competent to prove not the ultimate question perhaps as to what is the fair return. I do not mean that, but the earning capacity of money, the earning power of money in this community, and here is the inquiry, not in a money center like New York, but in Des Moines and under the conditions which prevail. To cover that proposition

we shall bring witnesses who are competent to tell your honor what the earning power of money is and that which is charged by them, because we think that is one of the things that enter in on money in Des Moines on a perfectly secure investment, money like where money is invested in such securities as a first mortgage bond in Iowa real estate say at half value, and I know of no safer security than that, that money this seeking investment demands a return of five and a half to six per cent. That if you have money to loan you can find ample opportunity to invest your money in such securities or other securities of a like stability and security at that rate of interest. So that you are having none or practically none of the hazard of which Mr. Justice Peckham speaks. There is no hazard ordinarily connected with loaning money on first mortgages on Iowa real estate at half or two thirds of its value. Now as Mr. Justice Peckham well remarks and he recognizes the fact that the rate of return which is given and expected upon an investment depends upon the risk which a man takes. We shall show that you could not get money in this country to invest in any ordinary business enterprise at any such return as that, that is, unless a man expected a return larger than six per cent. We can show I think if the mat-
40 ter for investigation that even a bank, and I don't know of any safer business enterprise than a well conducted bank—some hazard of course, but the risk is not large—I don't believe there is a banker in the city of Des Moines, but what if it was within the power of the legislature of the state of Iowa or the city council of Des Moines to say to the banker you shall not charge a rate of interest upon your loans which will net you a return of more than ten per cent, I don't believe we have got a bank in Des Moines but what would go out of business because investors would rather put their money into securities where they can get six per cent without any hazard, without any risk, without any annoyance, than invest it in the safest kind of business enterprise where there is no hope for a return beyond eight or ten per cent.

There is connected with the investment in the securities of a public utility like a gas company the risks of the ordinary business venture, perhaps not altogether the same but there is that same kind of a risk. In putting your money into a public utility the skill of management, the honesty of administration and all that enters in as a risk, as an element of risk in the business chance as it does in any ordinary enterprise. And beyond that there is an added risk and I think it is a matter that is properly to have in mind. If, as Judge Peckham says, the question of what you are entitled to as a fair return on the property depends upon the risk of the investment, then surely the added risk of which I shall speak should be kept in mind, and that is the risk which every investor in a public enterprise under the laws of this state incurs. His property is subject to regulation, the rates that he may receive are subject to determination by the rate making bodies. Of course if a rate is made which is con-
41 fiscatory, he may appeal to the courts for relief but the courts have no power to take the matter up and determine what is

an equitable and just rate, that must be left to town councils, city councils and in proper cases to the legislative body, where as we have in this case an illustration, the question of what is a fair rate is given mightly little consideration—mightly little consideration. Simply because it is said that nobody has got such and such a rate and without any inquiry into the subject as to what is a just rate, without determining the elements that necessarily enter into it the law making body fixes a rate. Now the investor has no hope of a rate that is larger which might be hoped for in some of the ordinary enterprises. He cannot hope for anything but this rate and he is in constant danger of being put in a position where he wont get this rate. There is hazard. Then, again, if the rate is made which is confiscatory and he appeals to the court for relief and the court gave him relief, holding the ordinance void or the law void—whatever it might be—the very next day the law making power can get together and make another rate, and then to the courts again for relief. There is that hazard. Then, again, there is the hazard that an investor in a public utility has of having his property taken—I don't mean without compensation—but taken. I apprehend if I was an investor with money in certain securities like real estate securities, something of that kind, in view of the fact that one of the things that makes such securities desirable in the length of time for which money is loaned so you have got nothing to do but look after your interest, no trouble and no expense in investment, long time investments as we all know are attractive and affect the rate of interest. A man puts his money into a five year farm mortgage or into
42 government bonds running ten, fifteen or twenty years, whatever it may be, and he knows he has got the investment for that period, but the fellow who puts his money into a public utility he don't know whether he has got an investment for six months or six weeks, because it is within the power of the city to condemn his property and take it from him. That enters in as a hazard of the business. Then, again, he don't know when he invests his money in a public utility how soon the city will say, well we ought to have competition, and it is within the province and power of the city, except in a few cases when exclusive franchises are given for a period, it is within the power of the city to license somebody else. All these things in addition to the ordinary business hazard enters into the question of what is a fair return on property for as Justice Peckham says, the fair return is to be determined by the risk which the man incurs in making the investment, so that we shall bring, as I say, investors, bankers and others in Des Moines to show the state of the money market in Des Moines. I assume that we must be confined to this as far as we can, if there is any market for money here, this is what governs. We shall bring investors for the purpose of showing what is the earning power of money in the various kinds of security with which we have to deal. I think now your honor, unless there is something that I have overlooked, that is all.

The MASTER: One question I wanted to ask you, this two per cent

that amounts to practically $10,000 a year; is that two per cent in lieu of taxes?

Judge CARR: No, sir; our property is assessed just as yours would be if you lived in Des Moines, a valuation is placed on it by the assessor and we pay taxes the same as anybody else and in addition to that pay two per cent as a license.

43 COURT: I suppose that is required then as so much for a franchise. The net receipts after taxes and expenses of all kinds the two per cent is taken out?

Judge CARR: That is my understanding of it. When we speak of net returns we mean the revenues which are left to us after the expenditures for operation and incidental repairs, not for reserve depreciation of course, but such repairs as we must make as we go along keeping up the property and for taxes including this occupation tax, that is what we have got left after we pay all charges.

COURT: The fund upon which you could declare a dividend.

Judge CARR: Yes, sir.

Opening statement by Robert G. Brennan on behalf of the defendants as follows:

May it please your honor:

It seems to us that counsel for the complainant in this case has traveled outside the scope of an opening statement preceding the introduction of the testimony in the case. However, we have no quarrel with counsel for having given the master the benefit of his views on the law and what he expects to cite in support of complainant's contention. He has called attention at the beginning of his statement to certain correspondence between one of the Commissioners of the city of Des Moines and the manager of the Des Moines Gas Company, complainant in this action.

The local Gas Company, of which the complainant is the successor in interest, is no stranger to the courts of this community, both of the State and of the Federal courts. Away back in 1893 a con-

troversy arose and an action was instituted by a citizen of the

44 State of Iowa and against the then Capital City Gas Light Company, growing out of an ordinance adopted by the City Council of the City of Des Moines, under a statute passed by the legislature. The City of Des Moines, in order to protect its interests under the ordinance, filed its petition of intervention in the said court and the right of the city to regulate rates was challenged in that proceeding. The court, however, determined that the statute was broad enough and specific enough to enable the city council to regulate the prices and charges which the company should charge and receive for the services rendered. Upon the trial of this case, the history of the organization of the company and an examination of the assets of the gas company was made and without going into detail, it will suffice to say, that the court held that by virtue of the ordinance which was in effect prior to the adoption of the ordinance, which had for its purpose the regulation of rates, that the city council was without power in that case to pass the ordinance

at the time that it was passed; but in this connection, I am reminded that I am a little ahead of the story. The District court held in the case to which reference has been made, that the local gas company was not able to manufacture and distribute its product to the city and the citizens for less than $1.40 per thousand cubic feet, if I remember rightly. After the District court had rendered its decision, the city council, in order to meet the suggestion of the District court, passed another ordinance in conformity with the views so expressed by said court. Then it was, by the filing of a supplemental petition on the part of the company, that the court decide that the city was without right to regulate the rates until the first day of January, 1896, notwithstanding
45 the general powers given under the statute, upheld the company's contention as set forth in its supplemental petition and held that the regulation prescribed by the ordinance premature. After the expiration, however, of the period fixed by the District court the City Council again passed an ordinance regulating and fixing prices or charges for gas in the City of Des Moines. Thereupon the company exhibited its bill in the United States Circuit Court for the Southern District of Iowa, and in that proceeding, the history of this company was gone into. The amount of real estate which it owned, the prices which it had paid for it, the number of miles of mains, the number of its consumers, were all investigated and determined. It was then contended on behalf of those who represented the City of Des Moines, that by reason and because of the reduction in the price of gas, that the output would increase and that the price fixed and established in the ordinance was reasonable. We make this statement to your honor in this connection from the fact that Mr. MacVicar, an individual member of the city council, is sharply criticised because he did not go to the extent that Mr. Haines suggested in carrying on his investigations, and on account of the attempt by counsel to leave the inference with your honor that the city council was relying entirely upon the information which Mr. MacVicar might secure through his negotiations with Mr. Haines, and that Mr. MacVicar's information on the subject was limited to a marked degree; whereas, in truth and in fact, the City of Des Moines was in possession of all the facts and testimony which had been introduced on these several trials, a part of which is preserved in the clerk's office in this court. We believe that an examination of the testimony taken on the former trials will disclose that the gas company was manufacturing
46 and distributing somewheres between forty-five and fifty million cubic feet of gas annually, and that the output of gas under the ordinance which was agreed to by the company and the city, commencing January 1st, 1896, and extending over a period of fifteen years, expiring on the 1st day of January, 1911, has increased over eleven hundred per cent. We further believe that as this trial progresses, your honor will see from an analysis of the testimony that at each period of the history of this ordinance, which was in force for the period of fifteen years, that at each five

year period, or when the price of gas was reduced automatically under its terms and provisions, that the increase in the output largely exceeded the natural growth and development of the city, and that the increased output was influenced largely by reason and because of the reduction in the rate. Mr. MacVicar, in his correspondence, was familiar with these circumstances; was familiar with the entire history of the litigation involving gas rates in the City of Des Moines extending back for a period of seventeen or eighteen years. That the city council was in possession of information that Cedar Rapids, a city in this State, had passed an ordinance regulating the price of gas and fixing it at ninety cents per thousand cubic feet. That a contest arose with respect to that ordinance; that it was carried through the district court of Linn County to the Supreme Court, and that said ordinance was sustained by the highest judicial tribunal of the State of Iowa. They also knew, or must have known, that the gas company operating in the city of St. Louis was contemplating a voluntary reduction in the price of gas, and that on the 1st day of May, 1911, as we understand it, it did voluntarily reduce the price of gas from something over one dollar down to eighty cents. The city council knew that our
47 neighboring city on the north, Minneapolis, had secured reductions in the price of gas from over one dollar per cubic feet to eighty and sixty cents. All of these changes were going on and were known to the members of the city council. It must have also been in the minds of those charged with the duty of fixing a reasonable rate; that even if Mr. MacVicar and Mr. Haines should carry on their negotiations for a reasonable length of time, there was no assurance that they would be able to reach anything like a definite conclusion. And in as much as the ordinance prescribing the rates for gas in the City of Des Moines would, by its terms, expire on January 1, 1911, it was quite necessary and expedient that action should be taken in the premises within a reasonable time.

Thereupon the city council, in the exercise of its legislative functions, saw fit to pass the ordinance of which complaint is made in this case and it is our contention that notwithstanding counsel has attempted to challenge the good faith of that ordinance and to cast the burden upon us to sustain it, that the ordinance, under the law, stands before your honor the expression of a deliberate legislative body, clothed with full authority in the premises and that every presumption recognized by the law obtains in its favor and that the burden of proof is now upon the complainant in this case, to show to your honor by at least a fair preponderance of the testimony, that the ordinance will not afford a reasonable return upon the investment and that the enforcement of this ordinance will result in the confiscation of the complainant's property, unless they can show that beyond any question, their suit must fail.

Now they speak about inviting the city authorities to investigate and to co-operate with the company in investigating the value of

the property in order to arrive at what would be a just rate
48 in the premises. They evidently have no more idea of what their property was worth than the city council or any one else, and that fact becomes very manifest in this case. We have simply to refer to the original bill which was filed in this case.

COURT: Two million seven hundred thousand Dollars?

Mr. BRENNAN: Yes, sir. In their original bill in this case they alleged under oath that the value of complainant's property was Two million seven hundred thousand dollars.

Judge CARR: I beg pardon, we didn't so allege, we alleged it was in excess of that.

Mr. BRENNAN: The allegation was that it was two million seven hundred thousand or upwards.

Now on the face of that bill it occurred to the representatives of the city, that the company was not entitled to the relief prayed for and when the matter came up before his honor, Judge McPherson, at Council Bluffs, the city interposed a demurrer because on the face of the bill, keeping in mind the amount of the receipts of the company from the sale and distribution of gas, it was earning five and fifteen hundredths per cent upon a dollar rate, and on a two million seven hundred thousand dollar capitalization. And keeping in mind also that it has been the experience of every community, which has undertaken the task of regulating and fixing reasonable rates, that the output of the product increased to such an extent that the company could afford to sell gas at the reduced price. Upon the filing of this demurrer, complainant in this case, in less than a week after having filed its original bill, filed the amendment herein in which it sets up that the value of its plant has increased from two million seven hundred thousand to the sum of four million ninety-

two thousand dollars. And thereupon the court stated that
49 it would overrule the city's demurrer pro forma, but without in any manner passing upon the merits of the original bill as exhibited. So it seems to us that at the very outset of this case, it is hardly proper for complainant or its counsel to challenge the motives of the legislative body which passed the ordinance in question when the complainant, or its predecessors, had been operating under an ordinance for fifteen years in this city and apparently becoming prosperous by reason of the profits earned thereunder, because your honor please, we say that there will be but one question, and that the litigation to which I have called your honor's attention, the company was capitalized at about Six hundred thousand dollars. That when this last organization was perfected in 1906, or the re-organization or merger, or whatever you may choose to term it, the capitalization was fixed at something like two and one-half millions. Notwithstanding all the facts and circumstances above suggested, we find that when the complainant in this case is confronted with a situation where a demurrer is about to be sustained, or should be sustained, they find it convenient to say that the value of their plant is four million ninety-two thousand dollars or upwards.

Now with regard to the questions involved in this case, if your honor please, we say that here will be but one question, and that

is a question of fact pure and simple. The questions of law in this case have been settled by the highest tribunals of the State and of the United States, so that we will be concerned, I take it, at arriving at what the fair reasonable investment of the complainant is, and what is necessary to render the service, such as it is rendering in this community; and unless the evidence shows by at least a fair preponderance of the testimony, that the return allowed by the ordinance will be so low as to amount to confiscation, then the bill must be recommended by your honor to be dismissed.

50 Now they complain about the two per cent clause that they are required to pay and which they have been paying as an occupation tax. The language of the ordinance in controversy is identical with the ordinance under which the complainant has been operating up to January 1, 1911. In other words, under the prior ordinance, the complainant was entitled to charge and receive of the consumers one dollar and ten cents gross.

COURT: How long had that ordinance been in force?

Mr. BRENNAN: Fifteen years.

COURT: Same rate for fifteen years?

Mr. BRENNAN: No, a sliding scale was provided in the ordinance so that at the end of the last five years the people were getting their gas at one dollar and ten cents gross; or, if they paid their bills on or before the 15th of the month, then they got it for one dollar.

COURT: Is there any time in this ordinance?

Mr. BRENNAN: No, no time is fixed in the ordinance whereby the consumer may get reduced rates. It is made ninety cents flat.

COURT: I mean is this extended for any length of time?

Mr. BRENNAN: The ordinance in question, no. It is not in any sense contractual, but it simply fixes the price of gas at ninety cents per thousand cubic feet.

COURT: I notice one peculiarity about it, not to be deemed as a matter of franchise.

Mr. BRENNAN: This ordinance and the prior ordinance to which we have called your attention expressly recites that nothing in the ordinance should ever be construed as granting any franchise, rights or privileges to use the streets. In other words, it was

51 the thought then, and it was the thought at the time the city council passed the ordinance effective from and after January 1, 1911, to eliminate any questions of franchise rights and to simply have the single question of the reasonableness of the rate involved, the company having operated its gas works for fifteen years and paying to the city on the basis of two per cent of its gross earnings. That is to say, the company had been paying that amount right along so that the two per cent clause as an occupation license inflicts no greater hardships upon the company than the former ordinance. It seems to us, therefore, that we will be concerned here principally in ascertaining the amount of the company's investment. That is the amount of a reasonable investment to perform this service.

COURT: That the real question is whether or not, considering the value of this plant, it is confiscatory.

Mr. BRENNAN: That seems to us the only question in this case. Of course, growing out of that counsel will impress their views upon you with regard to these risks, these extra-ordinary risks. The mere fact that the legislature of this state has delegated to a subordinate legislative tribunal the right to fix a rate which shall be reasonable, and that the courts, both state and federal, stand by as guardians of persons who have made their investments in public utilities, that notwithstanding all of these safeguards, that it is absurd to seriously insist that the consumer must pay an additional price for his gas because the legislature has seen fit to confer the powers of regulation upon a proper tribunal.

It is further contended in this case by counsel for the complainant in the opening statement, that the duplication rule is the only practical way of arriving at what this property is worth. Now it is true,
and we concede that the courts in the absence of something
52 better, have adopted this method and have allowed the parties
to introduce into the case what is called the duplication theory or rule, but the courts have said repeatedly that it is not the only way of arriving at the value of the property; but in some instances, is the most available one. In other words, if you have the books of the company; If you have a record of its investment; if you have a record of what it has charged off each year, or which it should have charged off each year for depreciation, you will be aided very materially at arriving at what is the true investment. But they say, that in considering this problem and carrying out this duplication method, that consideration must be given as to the amount that it would cost to lay its mains under paved streets. In other words, remove the present pavement, dig the trenches, place the pipes and service connections therein then cover the pipe, reconstruct the pavement in compliance with the ordinances of the city. They want the consumer to pay for all that in a rate case, even though the mains and service connections were laid in advance of the construction of the pavement. The commission of Wisconsin repudiated a claim of that character on the part of the gas company in a rate case. The Supreme court in this state in the Cedar Rapids Gas Co. repudiated it and they used in substance this language: They say that the theory of requiring the consumer to pay for the mains and for the excavations and reconstruction of the pavement loses sight of the fact that pavements are subject to the ravages of time; that they are reconstructed from time to time and that mains may be laid during the process of the construction or reconstruction of the pavement. It also loses sight of the fact they say, that the franchise
period may come to an end and that it would be necessary for
53 the company perhaps to remove its mains from the streets, in
which event, the company is required to take up the mains and restore the pavements.

So that among the contingencies which may arise in the operation of a gas works, two of which are suggested by the Supreme Court of the State of Iowa, negative the idea that the consumer, when we are concerned with a rate making case, must pay for all of these hazards which enter into the business.

COURT: While you are at it will you give me that case?

Mr. BRENNAN: Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, 120 N. W. R. Page 966.

Again it is claimed on the part of counsel for the complainant that they are also entitled in a rate case to have added to the physical value of the property what is called its going concern value. We have been through that in a former inquiry of this court in the case of the Des Moines Water Company vs. City of Des Moines, now pending before his honor, Judge McPherson, on the exceptions to the Master's report. So far as his honor, Judge McPherson, is concerned, he has not passed upon the question of going value in a rate case, so far as we are advised.

COURT: Let me understand. Suppose these pipes prove to be worthless, not doing anything or not used. If they are ready to be used by a company which would charge whatever price they want to that would be a going concern of one kind. If they are to be used but subject to regulation, that would be a going concern of another kind.

Mr. BRENNAN: Yes, that is the point I was coming to. If
54 you are going to consider going value at all, in connection with an inquiry of this nature, you have first got to determine what would be a reasonable rate. Having ascertained what would be a reasonable rate, then your going value would be based upon the value of the income produced by that rate and not by an exorbitant charge. For instance, suppose that the company was earning a million dollars a year, based upon a two dollar rate. Now, if going value would be considered at all, it would not be fair to the consumer to charge him up with going value based upon that exorbitant rate. But of that we will have more to say when we come to discuss it after the evidence is in. We claim, however, and insist very seriously and strenuously that in a case where a rate is involved and where you have a company such as you have here enjoying a monopoly with no chance for competition, that going value should not be considered. They also speak in this case about having one hundred eighty-two miles of mains in their distribution system. They have mains, as I understand it, scattered all over the city. The city covers an area of some fifty-four square miles. They are anticipating the future to some extent. A few things like that will enter into this inquiry and become more significant as we proceed.

COURT: If I catch your thought there you claim that they have got a great deal of property, their money invested with respect to the future and no need of it at the present, is that the idea?

BRENNAN: That is the idea. Just as to what the extent of that is we are not now able to state, but we expect to show by the evidence in this case.

Now if your honor has examined the Knoxville Water Company case against the City of Knoxville, a case that was decided about
55 the same time that the Wilcox case was decided, you no doubt, will recall that the Supreme Court of the United States refused to pass upon the right of the water company to have this going value considered in a rate case. That the Supreme court said

they did not have to consider that question, and that it was not decided in that case. We make no question that if we were condemning the Des Moines Gas Company's works, or if we were purchasing we would not expect nor would it be just that we should expect to take that property over at its physical value.

COURT: You mean by that what it cost to put it there.

Mr. BRENNAN: The cost of putting it there and allowing a reasonable sum for the business they have created. But where you have a company occupying the field, enjoying a monopoly, and the question comes up, what is a reasonable rate, it is not just to allow the company to add one, two, three or four millions of dollars of going value in order to keep up the price. We say that to permit this would certainly work a grave injustice to the consumers. And then keeping in mind also that during the early period of this company, they were charging $1.40, $1.45 and perhaps $1.70 extending over a period of years. They say that this going value is introduced and is legitimate for the purpose of reimbursing the company for the losses which it incurred in the early history or formative period of the company and that these losses are returned to it through this going value theory. But it must be kept in mind that the amount they were charging during the early years, as compared with what they have been charging and receiving the passed fifteen years. Just as the Supreme court of the United States in the Knoxville Water case when they undertook to have added a certain per cent of rate depreciation, that it would not be fair and just to the consumer because it was the duty of the water company
56 and its officers as practical business men engaged in an enterprise of that character, to anticipate that the physical property would wear out and become extinct and therefore, good business judgment suggested that a depreciation account should have been kept from the installment of the plant. And the court would not allow the company at such a late date to come in and charge up to the consumer an amount for depreciation sufficient to spread it over a series of twenty or thirty years, but that the company should start in now as to what would be fair each year. So that the depreciation account properly invested would extinguish the original cost of the property within a certain number of years. That is the theory. Apply that common sense theory of depreciation as the Supreme court applied it. If you are going to allow going value at all, you must allow it upon that same theory.

The other case to which counsel refers, the Kansas City case decided by Mr. Justice Brewer, I think Judge Carr made reference to that case as upholding the theory that they were entitled to the going value. If I remember rightly in analyzing that case, it cannot be determined that the court allowed any specific sum as going value. As I recall the facts, the city officials had consented to an encumbrance being placed against the properties and the company adopted the value which the parties had placed upon the property. And while the court did go into the question of going value and attempted to differentiate between property which was just starting and one which was earning an income, yet when you come to analyze

the case, you will see that the amount which the court placed upon the property as representing its true value did not take into account any going value. I think that the case of the Omaha Water Company clearly distinguishes between a purchase case and one which involves a rate but as I said before these matters are more or
57 less outside the scope of an opening statement. You will have the benefit as the city council had the benefit of the history of this plant from its organization in this city. You will know the amount of its capital, how much it was capitalized at so many years ago when this re-organization was affected, the number of miles it had when this litigation occurred in the state courts and in the federal courts. You will know what has been added to it since; you will know from records in that case just what its real estate cost them, where it is situated and all about it and whether they have added to their holdings since that time. You will have all that before you just as the city council had it before it, and if it becomes competent, we expect to introduce and show what other cities similarly located are paying for gas, and while we have no doubt with regard to the ability and skill of the several witnesses summoned here on the part of the complainant, modesty forbids us to tell about our witnesses to any great extent, but we feel confident that Prof. Marks and the other witnesses that we shall introduce here will measure up with equal efficiency with the witnesses for the complainant in this case. So, if your honor please, we are brought here into this court by the complainant in this case. It charges that the ordinance has the effect of confiscating its property. We have traversed the material allegations of the bill, we say that experience has taught that the reduction in the price of gas will result in an increase in the output to such an extent that this company can well afford to furnish gas to the consumers of this city for ninety cents. We are confident of our position, the city council was confident of its position when it passed the ordinance. We believe that the foregoing statement in a general way outlines the position of the defendants in this case.

58 JULY 13, 1911.

Forenoon Session.

Convened at 9:30 o'clock A. M.

Complainant's Testimony.

Judge CARR: The complainant offers and reads in evidence Exhibit No. 1, which is a certified copy of the record of the articles of incorporation of complainant, duly certified by the Secretary of State of the State of Iowa, as follows:

"THE STATE OF IOWA,
Secretary of State:

I, W. C. Hayward, secretary of State of the State of Iowa, do hereby certify that the attached instrument of writing is a true

and correct copy of the articles of incorporation of the Des Moines Gas Company, of Des Moines, Polk County, Iowa, as the same appear of record in this office.

In testimony whereof, I have hereunto set my hand and affixed the seal of the Secretary of State of the State of Iowa. Done at Des Moines, the capital of the state, this 22nd day of February, A. D. 1911.

[SEAL.] (Signed) W. C. HAYWARD,
Secretary of State."

"*Des Moines Gas Company.*

"Know all men by these presents, That we, the Undersigned, for ourselves, our successors and associates, do hereby form and organize a body corporate for the purpose of pecuniary profit, and for the purposes hereinafter expressed, under and by virtue
59 of the laws of the State of Iowa, and under the provisions of Chapter 1, Title IX, of the Code of Iowa, and for that purpose do hereby adopt, execute and acknowledge the following Articles of Incorporation:

Article I.

The name of this corporation shall be Des Moines Gas Company. The principal place for the transaction of its business shall be at Des Moines, Polk County, Iowa, with the right to establish and maintain branch offices at such other points as the Board of Directors of said corporation may from time to time determine.

Article II.

The general nature of the business to be transacted by said corporation shall be to own, operate and maintain gas plants in the city of Des Moines, Iowa, and in any other place or places in the State of Iowa, and to construct and erect all buildings and improvements of every kind and nature necessary to conduct and carry on the gas business, and to lay an- maintain gas pipes and mains, and to erect and maintain gas posts and fixtures, and to manufactire gas and to furnish the same for heat, light and power, or any of them, from said plant or plants, and to make all necessary and adequate connections with the said pipes and mains for the purpose of distributing said gas to consumers of the same.

And the said corporation shall have the power to buy, own hold or lease any real estate that may be deemed necessary to the transaction and conduct of its business, and sell or lease any portion of the same from time to time as may be deemed necessary, and
60 shall have power to buy, own, purchase and deal in all kinds of tools, appliances, goods, wares and merchandise, and any and all other material that it may require or deem necessary in the transaction of its business, with the right to sell and dispose of any portion of the same, to make and execute any and all necessary contract or contracts with any municipality or municipalities, individ-

uals, firms or corporations with relation to the furnishing of gas for any purpose whatever.

The said corporation shall also have power to buy, purchase and own any franchise or franchises from any other person, firm or corporation, granted to such person, firm or corporation for the purpose of operating gas plants or laying down and locating gas pipes and mains.

And the said corporation especially shall have the power to buy, purchase and own all the property, real, personal or mixed, and all the rights, franchises, licenses and privileges heretofore granted to or held by the Capital City Gas Light Company and to carry out, and execute, all contracts heretofore made by said Company.

The said corporation shall have power to do every act necessary to operate and maintain gas plants for the purpose of furnishing light, heat, power or fuel in the city of Des Moines, Iowa, and any other place or places as the Board of Directors may from time to time determine.

The said corporation shall also have power to issue its notes, bonds, or other evidence of debt, and to secure the same, or any part thereof, by a mortgage or deed of trust upon any or all of its real or personal property, and upon all of its franchises, rights, licenses and privileges, and upon all or any portion of its gas pipes or mains, and all machinery, appliances, material, and every article of
61 property that may be owned by it, together with all franchises obtained by it from any municipality or municipalities.

And the said corporation shall also have power to buy, own, purchase and sell any stock of any other corporation that its Board of Directors may determine, and shall have all powers given by law to corporations for pecuniary profit necessary for the proper and legitimate conduct of its business.

Article III.

The amount of the unauthorized capital stock of said corporation shall be Two Million two hundred and fifty thousand dollars ($2,250,000.00) divided into Twenty-two thousand five hundred (22,500) shares, of the par value of one hundred dollars ($100) each.

Whatever of said stock shall be subscribed, the same shall be paid for at such times and in such manner as the Board of Directors may order and determine.

Article IV.

The time of commencement of said corporation shall be on the first day of March, 1906, and shall continue for a period of twenty (20) years thereafter, with the right of renewal or dissolution thereof, as provided by the statutes of the State of Iowa.

Article V.

The affairs of said corporation shall be conducted by a Board of five (5) Directors, who shall be elected by the stockholders at each annual meeting thereof, to be held in each year on the first Tuesday

in April, and the first annual election of said corporation shall be held on the First Tuesday in April, A. D. 1907, and until the first annual election, or until their successors are chosen, the following named persons shall constitute and be a provisional board of directors, to-wit:

62 Geo. H. Carr, James P. Hewett, Craig T. Wright, F. Corlies Morgan, Rollin Norris.

The Board of Directors shall elect as the officers of said corporation a President, one or more Vice-Presidents, a Secretary, an Assistant Secretary, a Treasurer and an Assistant Treasurer.

The board shall also have authority to appoint such other managing officers or agents as they may from time to time determine.

At all meetings of the stockholders of said corporation each share of stock shall be entitled to one (1) vote, either in person or ny proxy, duly authorized in writing.

Until the first annual election, or until their successors are chosen, the provisional Board as herein nominated shall have all the powers of the regularly elected Board of Directors of the corporation, and shall, after these articles are recorded and certificate of Incorporation issued, meet and elect the officers herein defined.

Special meeting of the stockholders of the corporation may be called at any time by the President, (or ny any one of the Vice-Presidents in case of the absence or disability of the President), or upon the written request of the holders of one-third of the capital stock outstanding at the time, on five days' notice to each stockholder, by mail, at his last known post office address, specifying the time, place and object of said special meeting.

All vacancies in the membership of the Board of Directors and all vacancies in the offices of said corporation shall be filled by the Board of Directors.

Article VI.

63 The highest amount of indebtedness to which the said corporation shall at any time subject itself shall not exceed two-thirds of its capital stock.

Article VII.

The private property of the shareholders and members of the corporation shall be exempt from all corporate debts.

Article VIII.

These articles may be amended, repealed, changed or modified at any annual meeting of the stockholders of said corporation, or at any special meeting called for that purpose, upon compliance with the statutes of the State of Iowa, in such cases made and provided.

Article IX.

Subject always to the by-laws made by the stockholders, the Board of Directors may make by-laws, and from time to time may alter,

amend or repeal any by-laws; but any by-laws made by the Board of Directors may be altered or repealed by the stockholders at any annual meeting, or at any special meeting, provided notice of such proposed alteration or repeal be included in the notice of the meeting In witness whereof the incorporators of the said incorporation have hereunto affixed their respective names this 28th day of February, A. D. 1906.

GEO. H. CARR.
JAMES P. HEWETT.
CRAIG T. WRIGHT.
F. CORLIES MORGAN.
ROLLIN NORRIS.

STATE OF IOWA,
County of Polk, ss:

In this 28th day of February, A. D. 1906, before me, Geo. E. Cromley, a Notary Public in and for said county, personally
64 came Geo. H. Carr, James P. Hewett, Craig T. Wright, F. Corlies Morgan and Rollin Norris Personally to me known to be the identical persons named in and who executed the foregoing Articles of Incorporation, and they severally acknowledged the execution of the same to be their voluntary act and deed for the purposes therein expressed.

In witness whereof I Have hereunto set my hand and affixed my official seal at Des Moines, in the State of Iowa, on the day and year above written.

[SEAL.]

GEO. E. CROMLEY,
Notary Public in and for the County of Polk, State of Iowa.

POLK COUNTY, IOWA:

Filed for record Feb. 28, 1906 at 12.5 o'clock P. M., and recorded in book 18 page —.

MRS. FRANK W. DODSON, *Recorder.*

STATE OF IOWA, *ss:*

Filed for record in the office of Secretary of State February 28th A. D. 1906 and recorded in book 1-4, page 95.

W. B. MARTIN,
Secretary of State.
D. A. HITES, *Deputy.*

Proof of publication filed May 12, 1906."

Judge CARR: Complainant offers and reads in evidence Exhibit 2, being a duly certified copy of the record of the ordinance No. 1767 of the city of Des Moines, passed December 27, 1910, and signed on the same day, and duly certified by the City Clerk, it being the ordinance in controversy, as follows:

65 *"Ordinance No.* 1767.

"An Ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas and prescribing penalties for a violation thereof.

Be it ordained by the City Council of Des Moines:

SECTION 1. From and after the first day of January, A. D. 1911, the rate to be charged and collected for gas by any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, is hereby fixed as follows, to-wit: Ninety (90) cents for each thousand cubic feet.

SEC. 2. If any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, shall reduce the price of gas to its patrons below the price fixed in this ordinance, then any such person, firm or corporation shall not charge any person or persons for gas, a price in excess of *of* that which said person, firm or corporation has charged any other person, firm or corporation has charged any other person. The provision of this section shall not be construed to prohibit special contracts for lower rates to large consumers.

SEC. 3. Any person, firm or corporation using the streets, highways, avenues, alleys or public places of said City in supplying or distributing gas shall pay to the City Treasurer for the use of said City of Des Moines, as a license or occupation fee, for each year that the streets, highways, avenues, alley- and public places of said City are used in supplying or distributing gas, beginning
66 January 1, A. D. 1911, two (2) per cent of the gross receipts for gas sold during such year; the same to be paid semi-annually and within thirty (30) days after the expiration of the preceding six (6) months.

SEC. 4. Any person, firm or corporation supplying or distributing gas to said City of Des Moines or its inhabitants, shall furnish gas of not less than twenty-two (22) candle power.

SEC. 5. Nothing in this ordinance contained shall ever be construed to in any manner recognize any franchise or other rights claimed by any person, firm or corporation to use the streets, highways, alleys, avenues or public places of said City for the purpose of laying or maintaining mains and pipes in supplying or distributing gas to said City or its inhabitants.

SEC. 6. Any person, firm or corporation supplying or distributing gas to said City of Des Moines, or its inhabitants, or any officer, agent, collector or employee of such person, firm or corporation, who shall charge, demand, collect or receive any rate of compensation for gas supplied or distributed to said City of Des Moines, or to any inhabitant thereof, in excess of the rate fixed by this ordinance, or any such person, firm or corporation or officer thereof failing to pay the license fee provided for herein, shall be deemed

guilty of a misdemeanor and upon conviction thereof shall be punished by a fine in a sum not exceeding one hundred dollars ($100.00) or by imprisonment in the City jail for a period not exceeding thirty (30) days.

SEC. 7. All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SEC. 8. This ordinance being deemed urgent for the immediate preservation of the public peace, health and safety shall be in full force and effect from and after the first day of January, A. D. 1911, and after its passage and publication as provided by law.

67 Passed December 27, 1910.
Signed December 27, 1910.

JAMES R. HANNA, *Mayor.*

Attest:

NEAL JONES,
City Clerk.

I, Neal Jones, City Clerk of the City of Des Moines, hereby certify that the above and foregoing is a true copy of an ordinance passed by the City Council of said City at a meeting held December 27, 1910, signed by the Mayor December 27, 1910, duly recorded and published as provided by law, February 4, 1911.

NEAL JONES,
City Clerk."

Judge CARR: Complainant offers and reads in evidence from Exhibit 3, being the published proceedings of the City Council of the City of Des Moines, published under date of November 5, 1910, by authority of the city, being the following portion of the proceedings of the Council under date of October 21, 1910, as follows:

"No. 2449.

Be it resolved by the City Council of the City of Des Moines:

Whereas, The contract between the Gas Company and the City of Des Moines, relative to rates expires January 1, 1911; therefore be it resolved by the City Council of the City of Des Moines: That the Superintendent of the Department of Streets and Public Improvements and the Legal Department be requested to recommend to the Council a new schedule of rates and regulations.

Moved by MacVicar to adopt. Motion carried. Yeas: Ash, MacVicar, Roe, Schramm, Hanna (5). Nays: None."

68 Judge CARR: For the purpose of showing the date of the proceedings, we also offer the following which appears on page 955 of said published proceedings, as follows:

"DES MOINES, IOWA, *October* 21, 1910.

No. 2432.

Council met at 9 o'clock a. m. pursuant to adjournment. All members present except Roe. Mayor Hanna presiding."

Judge CARR: Complainant offers in evidence from Exhibit 4, being proceedings of the City Council of the City of Des Moines published February 1st, 1911, by authority of the City, the following from page 1186:

"DES MOINES, IOWA, *December* 27, 1910.

No. 2977.

Council met at 9 o'clock a. m. pursuant to adjournment; Mayor Hanna presiding; all members present."

Judge CARR: And the following from the proceedings of said date, being roll call No. 2994:

"Report of Superintendent of the Department of Streets and Public Improvements, stating that, I beg to report herewith an ordinance fixing gas rates, and call your attention to communication of City Attorney accompanying same, presented, to which was attached the following communication from City Solicitor:

DES MOINES, IOWA, *December* 27, 1910.

Hon. John MacVicar, Superintendent of Department of Streets and Public Improvements.

DEAR SIR: Agreeably with your request, I herewith submit draft of an Ordinance fixing the price which every person, firm or corporation shall be entitled to charge and receive for the supplying or distribution of gas to the City of Des Moines or its in-
69 habitants.

You will note the absence of provision in this ordinance with respect to the pressure at which the gas shall be furnished; also, for a renewal or extension franchise authorizing the use of of the streets, highways, avenues, alleys or public places of the city for the purpose of laying down mains and pipes for the distribution of gas.

These omissions are due to the fact that Ordinance No. 751 approved February 11, 1896, and the rights and priviliges conferred thereby, expire January 1, 1911. In these circumstances it occurred to me what the city most desires is to have an ordinance in effect from and after January 1, 1911, fixing the price of gas, and that the other matters to which reference has been made can await the result of further inquiry and investigation. In fine, an ordinance fixing a reasonable rate for gas is one to which no exception can

be taken, and is the measure of what the Company can recover and the consumer must pay. This power of regulation is authorized by Section 725 of the Code. However, if you shall couple with this same ordinance a provision which requires the gas to be furnished at a certain pressure, you immediately draw into the question the effect of the enforcement of such a provision upon the distributing system, and the reasonableness of the same, and furnish the pretext for litigation on the part of those engaged in manufacturing and distributing gas. Nor in my judgment, is it practicable to attempt to grant in this ordinance the use of the streets and public places for the purpose of laying mains and pipes for distributing gas. Action upon such an ordinance should be deferred until a full investigation can be made touching the legal status of those now occupying the streets and engaged in such business. A number
70 of ordinance- have heretofore been passed granting to certain persons or corporations the use of the streets of the city for laying down mains and pipes for the distribution of gas. Some of these ordinances show upon their face as having expired by lapse of time. It has never been made clear, so far as I am able to discover, which of the ordinances referred to the company now occupying the field is operating under, or claims the right so to do. As investigation along the lines suggested will require considerable time and careful attention both as to the facts and the law.

For these reasons, the regulatory ordinance prescribing the rate should be considered independently of the questions involved in a general investigation of the gas situation in Des Moines.

Now, as to the reasonableness of the rate fixed in the proposed ordinance, to-wit: ninety (90) cents per thousand cubic feet, which is the amount incorporated therein to meet your suggestion, I assume is arrived at after due investigation of the subject as well as taking into account the character of the gas product furnished, the substances from which it is manufactured, local conditions, and the price charged in other cities for a like commodity manufactured and distributed under substantially like conditions. Of course, as you know, a quasi public corporation is not entitled as of right and without reference to the interests of the public, to realize a given per cent upon its capital stock; nor is it within the province of the courts to guarantee a certain fixed return to a public utility. It is the duty of the council to fully and fairly investigate and prescribe a rate that will be compensatory; that is, just to both the owner and the public. The right to regulate is not unlimited. It must not be exercised arbitrarily or in such manner as to be
71 destructive of the property employed in the public service. On the other hand, a rate adopted by proper authority, which affords a reasonable return on the value of the property devoted to the public use does not in any manner offend the Constitution and will not be interfered with by the courts. In Wilcox vs. Consolidated Gas Co., 212 U. S., page 19, it is said in effect, that where the margin between possible confiscation and valid regulation is narrow, the rates will not be set aside.

Experience in Des Moines in common with other cities, teaches that a reduction in the price of gas results in an increased con-

sumption and in increased earnings, and that the cost of furnishing the gas does not increase in proportion to the increased amount of gas furnished. The question of how much an increased consumption under a lower rate will increase earnings can only be answered definitely and correctly by a practical test of the ordinance.

These suggestions are dropped as indicating the trend of modern judicial expression pertaining to the question with which you are now confronted, and which must be submitted to the legislative branch of the city government for solution along these lines.

Respectfully,

R. O. BRENNAN,
City Solicitor."

"Moved by MacVicar that report and communication be received and filed. Motion carried. Yeas: Ash, MacVicar, Roe, Schramm, Hanna (5). Nays: None."

Judge CARR: Complainant offers and reads roll call No. 2995, as follows:

"An Ordinance entitled, 'An ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its
72 inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the City in supplying or distributing such gas and prescribing penalties for violation thereof', presented, and received its first reading. Moved by MacVicar that rules be suspended, the second and third readings omitted and ordinance placed upon its final passage. Motion carried. Yeas: Ash, MacVicar, Roe, Schramm, Hanna (5). Nays: None."

Judge CARR: Complainant further offers in evidence and reads roll call No. 2996, as follows:

"No. 2996.—Moved by MacVicar that ordinance do now pass. Motion carried. Yeas: Ash, MacVicar, Roe, Schramm, Hanna (5). Nays: None:"

73 Mr. JANSEN HAINES, being first duly sworn on the part of complainant, examined in chief by Judge George H. Carr, testified as follows:

Q. Please state your name, age and place of residence.

A. My name is Jansen Haines. I am forty years of age, and live in Des Moines, Iowa.

Q. How long have you resided in Des Moines, Iowa?

A. Since the 25th of March, 1903.

Q. What if any connection have you with the complainant, the Des Moines Gas Company?

A. You mean at present?

Q. Well, from the time you came to Des Moines.

A. I was manager of the Des Moines Gas Company from March 25, 1903, until July 10, 1911, and have been president of the Company since July 10, 1911.

Q. As manager of the Company, state to the court in a general way what your duties were.

A. I had as manager of the Company charge of all the affairs of *of* the Company in Des Moines, the employment of all the employés of the Company. I had charge of the receipt and disbursement of all the funds of the Company and directed the operations of the Company.

Q. During the time that you were general manager of the Company did it have a local president; that is, a president that resided in Des Moines?

A. No, sir; not until three days ago when I became president.

Q. Now, since you have been elected president of the Company, what is the fact as to your duties with respect to the Company—I to inquire, has the scope of your duties generally been
74 changed in any way?

A. No, sir; practically not.

Q. Prior to coming to Des Moines as general manager of the Des Moines Gas Company, had you any experience in the gas business?

A. Yes, sir.

Q. Did you have a preliminary course of training, college course, I mean, for the purpose of fitting yourself for this line of work?

A. I did, yes sir.

Q. In what school?

—. In the University of Pennsylvania Mechanical Engineering school.

Q. From that institution, when did you graduate?

A. I graduated in 1893.

Q. Please tell the court in a general way what experience you have had in the gas business prior to the time of coming to Des Moines, Iowa.

A. I was employed on April 4, 1896 as a cadet engineer in the service of the United Gas Improvement Company of Philadelphia, and in that capacity I had charge of various construction work and drafting, estimating, inspecting the gas works and properties of that Company and of other companies not connected with the United Gas Improvement Company. After about four years of that kind of work, which included testing at their various stations of the quality of gas and the efficiency of their apparatus. I was employed at various times as acting or temporary manager or superintendent at some of their plants, while the regular manager was absent, from illness or other causes, and in March 1903, came to Des Moines, as I have above stated, as manager of the Company.

Q. Now, prior to your graduation had you had any experi-
75 ence in connection with the gas business?

A. Not with the gas business. I left school when I was seventeen years old and I was employed in a forge and iron works in Philadelphia for about two years. Then I took what money I had saved and what I could get from my father and went to the University of Pennsylvania and took a five years' course there in three years, and subsequently went to the western part of the country and did surveying and engineering work where I could secure

it. I went back to Philadelphia in 1894, secured employment in an insurance office during the day and did drafting and engineering work at night until I was employed by the United Gas Improvement Company in April, 1896.

Q. How long a period were you engaged in the capacities you have stated, in the gas business, before coming to Des Moines as general manager of the Des Moines Gas Company?

A. From April 4th, 1896, to March 25, 1903—practically seven years.

Q. Mr. Haines, do you know what real estate is owned by the Des Moines Gas Company in the city of Des Moines, used and necessary to be used in its business of manufacturing gas in this city?

A. Yes, sir.

Q. I wish you would describe to the court specifically and by specific description the real estatte owned by the Company.

A. Do you wish me to descri*pt* it with the aid of the map?

Q. If you can first describe it and refer to the map later——

A. I think I would rather have the map. The property of the Des Moines Gas Company consists of Lots numbers 3, 4, 5, 6, 7, 8, 9 and 10 in block "B" Scott & Dean's Addition to Fort Des Moines, now included in and forming a part of the city of Des Moines, Iowa, being the whole of block "B", except Lots 1 and 2. Also the whole of Block "C", situated in Scott & Dean's Addition
75½ to *to* Fort Des Moines. Also Lots 3, 4, 5, 6, and 7 in Block "T" situated in Scott & Dean's Addition. Also Lots 3 and 4 in Block "K" together with one-half of the east and west alley and one-half of the north and south alley abutting on said Lots 3 and 4, being a little more than a quarter of a block, situated in Scott & Dean's Addition. Also all of Lot 9 and 10 in Block "M" being one quarter block, situated in Scott & Dean's Addition.

Q. You spoke, Mr. Haines, in describing the property of alleys in some of those blocks.

A. Yes.

Q. What is the fact with regard to the ownership of those alleys: what proceedings have been taken in regard to it?

A. The alleys referred to were vacated by city ordinance to the Gas Company for use in its business.

Q. Now after the vacation of the alleys was there a conveyance of the title by the city?

A. Not of those alleys; not any further conveyance.

Q. Than the resolution of the council vacating and conveying it to the company?

A. Yes.

Mr. Byers: We do not know what the record will show as to that matter, but will look it up and make our objections later if we deem it necessary.

Q. On this Exhibit #5, Mr. Haines, in what way if at all is the property that you have described indicated?

A. It is indicated as enclosed in red lines—red border.

Q. Now I see on this exhibit near the bottom a double line which is marked "River bank July 2 1904", what do those lines indicate?

A. Those lines indicate the edge of the shore July 1904.

Q. Of what river?

76 A. Of the Des Moines river.

Q. Now on this plat or map on Vine Street and Market Street and Elm Street I notice certain dotted lines with crosses, what do those marks indicate?

A. The lines on Vine Street indicate the double track of the main line of the Chicago, Rock Island Pacific Railway.

Q. And on Market Street?

A. On Market Street it indicates the single track of the Keokuk & Des Moines Railway; and on Elm Street the single track of the Chicago, Burlington & Quincy railroad.

Q. Mr. Haines, have you a plat or map that will show the location of this property with respect to the city at large?

A. Yes, sir.

Q. Will you produce it?

A. Yes. (Witness produces map marked Exhibit 6)

Q. Referring, Mr. Haines, to Exhibit 6, I wish you would state what that is?

A. Exhibit 6 is a map of the city of Des Moines which was published in 1910, by Mr. Hubinger, who had just completed, as I understand, the surveys of the city at that time.

Q. State whether that is a map which is in general use and generally recognized as a correct map of the city of Des Moines?

A. I so understand it.

Q. Now does that map show the location of the public buildings in Des Moines?

A. Yes, sir; it shows some of them.

Q. What puglic buildings does it show?

A. It shows the court house, the railroad stations, the state capitol, public library, post office, the old city hall and new city hall, coliseum, the various churches and theaters, the state

77 fair grounds, college buildings, and also the gas works.

Q. Is there anything on the map that indicates or shows distances from some assumed center?

A. There are circles drawn, with the court house as the center, and the radius of the circle representing half miles.

Q. The first circle is a half mile from the court house as a center?

A. Yes, sir.

Q. And the second is a mile, and so on?

A. Yes, sir, each of those circles indicates a half mile and the others indicate additional half mile radius.

Q. What is there on this map, Exhibit 6, that indicates the location of the gas plant?

A. The property of the Gas Company is indicated in a general way, or with such accuracy as you can indicate it on a map of this size by the black ink and an arrow about six inches long, pointing to the gas works, and at the other end of the arrow are the words "Gas Works Property".

Q. Now, I notice on this map colors, what do those colors indicate?

A. The streets are white, and the blocks are filled with brown or green color.

Q. What does the green coloring represent as contrasted with the brown color?

A. The green color represents public property or unplatted districts, as I understand it.

Judge CARR: With the understanding that we will substitute a properly prepared map, we now offer in evidence Exhibits 5 and 6.

Q. What is the fact Mr. Haines, as to the desirability of the location of this property for the use of the Des Moines Gas Company, and in answering that question I would like to have you state
78 generally its desirability and availability for that purpose.

A. The property is situated on the main line of the Rock Island Railroad; with siding facilities on the north; the Keokuk & Des Moines cuts through the property, giving siding facilities on Market Street; the Chicago, Burlington & Quincy lies to the south of the main plant and part of the property lies south of that railroad, so that it really cuts through the south part of the property, and while it has no siding facilities on the side of the Gas Company's property, it has siding facilities on its own property adjoining, which may be used by the Gas Company, and has been used by the Gas Company for unloading material. So that this property has unusually desirable railroad facilities for unloading cars in bulk or in car lots to its own property.

Q. What is the fact as to the accessibility of the property in that respect for other roads not directly connected with it; that is, other roads entering Des Moines, I mean?

A. The Belt Line Railway transfers cars to the Gas Company's property without extra charge, by some arrangement with the railroads—I do not know specifically what that contract is; but on account of these trackage facilities we have no additional charge to pay for switching cars to our sidings, so that we have an opportunity for competitive service from any point and on all the railroads entering Des Moines, and are not tied up to one railroad. The K. & D. and the Burlington own the block of property lying east of Block C on which part of the Gas Company's plant is located, and which can be used for additional trackage facilities for use at any future time they so desire. The property of the Des Moines Gas Company, generally stating, is on the half mile line from the court house, and two blocks south of East Walnut Street, on the
79 east bank of the Des Moines river, which makes it available for ready distribution of material to any part of the city—accessible for either receiving or delivering material by wagon. The property itself is above flood line so far as is known. Therefore the plant is protected from being overflowed by the Des Moines river. This is rather an important feature because in 1903, on May 30th, we had a very serious flood in Des Moines, and the surrounding property was covered up to six or seven feet of water. But our property stood then and stands now on a little elevation, just sufficient elevation to protect it against serious damage or the possibility of shutting down on account of the flood.

The MASTER: Natural or artificial.

A. It is both; some natural elevation, and it has been augmented by filling in.

Q. Did you have any difficulty from the highest flood that has been known in Des Moines in your experience, and perhaps in the history of Des Moines—was you required to shut down or did it in any way interfere with the operation of the plant?

A. No, sir; it operated on an island; that is, it was surrounded by water during the flood and was practically cut off from communication for twelve or fourteen hours, and we had no district in the city of Des Moines that was not properly supplied with gas at any time during the flood. There were a few cases of individual meters that were shut off from some fault, but not to exceed a dozen; and there was no district which was shut off. The Master asked me whether it was naturally higher. I do not know whether I can answer that from my own knowledge, because some of it had been filled in before I came here. My impression is it was more or less of a natural elevation, and then I know it has been augmented
80 since. The property is advantageously situated in regard to our distribution system, because it is low and it is comparatively near the center of the population and of the building of the city.

Q. You have stated that it is advantageously located, because it is low. I wish you would state to the Master what advantage there is in that.

A. I mean it is low in respect to the northwestern and the eastern part of the city, and the advantage in that is, that the gas being lighter than air, tends to rise, and it therefore requires a less expensive and less extensive system of street mains to supply those outlying districts.

Q. Does that affect the question of pressure?

A. Yes, it affects the question of pressure, because the supply of gas is dependent on the pressure at the point at which it is manufactured, and the higher the elevation on the outlying districts, the easier it is to maintain a sufficient pressure without the extreme expense of larger mains.

Q. Mr. Haines, I wish you would describe in a very general way what improvements and facilities for the manufacture of gas you have erected upon this real estate that you have described.

A. On Block G our general manufacturing plant is situated and is enclosed in brick and steel buildings. On Block D we have our stable and storage yards. On Block K, that is on the quarter block which I have mentioned, we have the storage of the reserve supply of coke and unloading apparatus for unloading pipes and heavy castings. On Block M, or the quarter block which I have mentioned, we have two oil storage tanks of about 300,000 gallons capacity, each of them. On Block T we have our valves for controlling the mains which run under the river, and also the pumps for
81 removing the condensation of water that may accumulate in these mains, and which would tend to shut off the supply of gas.

Q. Now referring to the distribution system, how many miles of mains have you now in use?

A. You mean as of January 1st.

Q. Yes, January 1st, 1911.

A. About 182 miles.

Q. How many services have you or had you?

A. About seventeen thousand services.

Q. Will you p-ease state in a few words to the Master what you mean by services?

A. We distinguish betwe-n mains and services, your Honor, in this way: The mains are the pipes in the street, and the services are the pipes which run at right angles to them and connect the main with the meter in the house. We have about seventeen thousand services or pipes connecting the main with the meters in the house.

Q. How many meters had you in use at that time?

A. My recollections is, about nineteen thousand seven hundred. It is within a comparatively few of that number, but I am not sure of the exact number.

Q. Now, speaking of January 1st of the present year, have you any less meters or any less services, or any less miles of mains in use now than you had on the first of January.

A. No, sir; we have removed some meters, but we have added more than we have removed. We have also added services and we have cut off some services, but added more than we have cut off. We have also laid two or three additional miles of mains since the first of January.

82 Q. You may state, if you know, what was the per capita consumption in Des Moines about January first, 1911.

A. The per capita consumption for the year 1910; that is, the total consumption divided by the population of the census of 1910, is about six thousand per annum. The total amount of gas sold for *for* the year 1910 divided by the census population of the city of Des Moines for 1910 gives, I believe, about six thousand cubic feet of gas.

The MASTER: That is the federal census?

A. Yes, sir, the federal census.

Q. I wish you would state to the court, Mr. Haines, if you will the condition of this property, speaking generally now, and referring to its condition, the repair it is in, referring to the time spoke of as of January first, if there is any difference between the present time and January first.

A. The property I should say is in excellent condition. There have been some little additions since January first, such as were contemplated previous to that and would be naturally made, but nothing of any particular consequence. I have personally visited a number of gas works within the last year, and I believe the property of the Des Moines Gas Company will——

Mr. BYERS: That is hardly competent.

Judge CARR: Well I will not urge the matter at this time.

Q. What is the per diem or daily capacity of your manufacturing plant, Mr. Haines?

A. The capacity of our plant is about five million cubic feet a day; that is, the capacity of all the apparatus for manufacturing gas would be about that. Now we have five units, as we call them for manufacturing of various capacities, but we have to plan the capacity of our plant to take care of the maximum period
83 of consumption, and provides for delay through accident or delay in transit—shipment, and at all times keep a constant supply of gas in the mains of the city.

Q. What is the fact, Mr. Haines, as to whether your manufacturing plant and distribution system is adequate for the needs of the people of Des Moines at the present time?

A. I should say there was no question about its being adequate to supply the needs of the city at present, and there is no indication that it is not so.

Q. What can you say as to whether the property which you have in use in the gas business at the present time—I am speaking now of January first—was excessive or more than is required for the reasonable use of the people of Des Moines?

A. The maximum capacity of our plant is about five million, and our maximum demand last winter was two million two hundred and twenty-eight thousand, a little over two and a quarter million. That maximum demand is the demand in t-enty-four hours—the maximum demand in twenty-four hours. Now in order to provide for that demand without any danger of interruption, we are required to have practically double the manufacturing capacity, or twice as much manufacturing capacity as the demand, so that in the event of accident, which might disable one of our machines, there would be no interruption from the delay necessary to repair it.

Q. You are acquainted with one of the defendants in this case, Mr. John MacVicar?

A. Yes, sir.

Q. What official position did he hold as a member of the council in October, November or December last year?

A. Superintendent of the Department of Streets and Public Improvements.

Q. Did you have a request from Mr. MacVicar communi-
84 cated to you, in October with respect to what proposition the Company would make with respect to the price at which it would furnish gas after the first of January?

A. Yes, sir.

Mr. BYERS: I will suggest that if you go into that matter, we will insist on following it up to the final breaking off of negotiations.

Judge CARR: Well, Brother Byers, you will have to be governed by your own ideas as to what is proper. If that is intended as a warning or threat, I have it.

Mr. BYERS: It is merely a suggestion, Judge. I object to that line of testimony as being wholly immaterial and incompetent.

Judge CARR: I am not intending now to go into any communications or conversations between Mr. MacVicar and Mr. Haines. I only want to refer to the circumstances as preliminary to what I next intend to do.

Q. Now after receiving that request from Mr. MacVicar, did you answer it by written communication?
A. I believe, yes, sir.
Q. And on what day?
A. On November 22nd, 1910.

Judge CARR: Mr. Byers or Mr. Brennan, have you the original letters written to Mr. MacVicar.
Mr. BYERS: I don't know that we have; I thought we turned them over to you; but we make no question as to a copy.

Q. Have you a correct copy of that letter, Mr. Haines?
A. I have, yes sir.
Q. Will you produce it?
(Witness produces copy.)

85 The MASTER: Do you desire to interpose the same objection you suggested a while ago?
Mr. BYERS: The record may show an objection to each of these communications, without repeating it as you go along.

Q. Is Exhibit 7, now shown you a correct copy of the letter delivered to Mr. MacVicar on the date of November 22nd to which you referred?
A. Yes, sir; it is a correct copy of the letter I delivered myself to Mr. MacVicar.

Judge CARR: The complainant now offers and reads in evidence Exhibit No. 7.
Mr. BYERS: We interpose the same objection as last above.

Q. Did you receive a response to your letter of November 22nd?
A. Yes, sir.
Q. Will you please produce it?

Mr. BYERS: We object to having the record made up for counsel in this manner. It is very expensive.
The MASTER: Let me suggest that in taking the opening statements yesterday these letters were copied into the record and it is not necessary to repeat them now.

Q. Is the letter Exhibit No. 8, now shown you, the letter from Mr. *Mr.* MacVicar to you under date of November 25th, to which you have referred?
A. Yes, sir.

Judge CARR: Complainant now offers and reads in evidence Exhibit 8, being the letter from Mr. MacVicar to Mr. Haines under date of November 25.
Mr. BYERS: We make the same objection as was made to Exhibit 7.

Q. Did you reply to the letter of Mr. MacVicar of date
86 November 25th, Mr. Haines?
A. I did, yes sir.
Q. Have you a copy of your answer to his letter?
A. I have, yes sir.

Q. Will you please produce it? (Witness produces letter.)
A. Yes.
Q. Is Exhibit 9, now shown you, a correct copy of your letter to Mr. MacVicar under date of November 26th?
A. It is, yes sir.

Judge CARR: Complainant now offers and reads in evidence Exhibit 9, being letter from Mr. Haines to Mr. MacVicar under date of November 26th.
Mr. BYERS: We interpose the same objection as heretofore made.
Judge CARR: You are not including in that objection that it is not the best evidence.
Mr. BYERS: The objection formerly made was that it was immaterial and incompetent. We waive the identification of the letters and make no objection to the fact that copies are used instead of the originals.

Q. Did you receive from Mr. MacVicar a further communication subsequent to November 26, or in reply to your letter of November 26th?
A. I did, yes sir.
Q. Will you please produce it?
A. I will.
Q. Is Exhibit No. 10 the letter to which you refer?
A. It is, yes sir.

Judge CARR: The complainant now offers and reads in evidence Exhibit No. 10, being a letter to Mr. Haines from Mr. MacVicar under date of November 29th, 1910.
Mr. BYERS: We make the same objection and the same
87 waiver as to the former exhibit.
Q. Did you reply or address a further communication to Mr. MacVicar following his communication to you of November 29.
A. I did, yes sir.
Q. Have you a correct copy of your letter to Mr. MacVicar?
A. Yes, sir.
Q. Will you please produce it?
A. Yes, sir.
Q. Is Exhibit No. 11 the copy of the letter to which you refer?
A. Yes, sir.
Q. And is this a correct copy of the letter addressed by you or sent by you to Mr. MacVicare under date of December 2nd?
A. Yes, sir.

Judge CARR: The complainant now offers and reads in evidence Exhibit No. 11, being a copy of letter addressed to Hon. John MacVicar under date of December 2, and signed by Mr. Haines.
Mr. BYERS: We interpose the same objection and waiver as to the former exhibits.

Q. Did you receive a further communication from Mr. MacVicar?
A. I did; yes sir; under date of December 2nd.
Q. Will you please produce the communication?

A. Yes. (Witness produces same.)
Q. Is Exhibit 12 now shown you the letter to which you refer?
A. Yes, sir.

Judge CARR: Complainant now offers and reads in evidence Exhibit No. 12, being a letter to Mr. Haines from Mr. MacVicar under date of December 2nd, 1910.

Mr. BYERS: Defendants make the same objection and waiver.

The MASTER: It is understood that objection shall apply to all this evidence.

88 Q. Did you receive a further communication from Mr. MacVicar?
A. Yes, sir.
Q. Of what date?
A. December 3.
Q. Is Exhibit 13 the letter or communication to which you refer?
A. It is, yes sir.

Judge CARR: Complainant now offers and reads in evidence Exhibit 13, being a letter to Mr. Haines signed by Mr. MacVicar under date of December 3, 1910.

Q. Now I will ask you if the letters and copies of letters which you have here produced and which have been marked from Exhibit 7 to 13 inclusive, are the same letters and copies of letters that were read in the opening statement yesterday and by the Reporter incorporated into the record?
A. Yes, sir.
Q. Now subsequent to the passage of the ordinance, on the 27th day of December, 1910, did you address a communication to Mr. MacVicar, or to the council of the city of Des Moines?
A. Yes, sir.
Q. Will you produce that communication?
A. Yes.
Q. Is Exhibit 14 a copy of the communication to which you refer?
A. Yes, sir.
Q. And is Exhibit 14 a correct copy of a letter written by you to the mayor and city council of the city of Des Moines under date of December 28th?
A. Yes, sir.

Judge CARR: The complainant now offers and reads in evidence Exhibit No. 14.

Mr. BYERS: I understand this is after the passage of the or-
89 dinance. It is objected to in addition to the former exhibits because it is a communication made to the council subsequent and is immaterial and irrelevant to any issue herein.

Judge CARR: This letter was not read in the opening statement and I will read it. It is as follows:

"To the Honorable Mayor and the City Council of the City of Des Moines, Iowa.

GENTLEMEN: I am advised by the press of the passage by your Honorable Body of an ordinance to reduce the price of gas. I respectfully submit that you have acted with less consideration than should have been given to a subject which so vitally concerns one of the largest industrial concerns in your city.

The Des Moines Gas Company is an institution whose welfare is inseparably connected with that of the City. Its management has at all times recognized this fact and has endeavored to accord fair and courteous treatment to the people of Des Moines and to you as their representatives.

On November 23d I wrote to your Superintendent of Streets and Public Improvements, inviting the fullest investigation of the facts, which should be known before recommending to you a rate that would be just to both the Company and the public. Every facility was tendered to make such investigation thorough and complete. The request, that this investigation be made, was again urged in my letter of November 26th and again in my letter of December 2d.

On November 29th, Mr. MacVicar wrote me as follows: 'It is probable the City will desire to accept your offer and make some examination of your books,' and on December 2d, he detailed Mr.
90 Maxwell, one of the City's Engineers, to cooperate with our engineers in the work of ascertaining the value of the property of the Gas Company.

Although the work of ascertaining this valuation was begun on November 22d, and has been carried on by a large force of experienced engineers and their assistants in order to insure all reasonable dispatch, owing to the vast amount of detail, it is not yet completed.

As yet the opportunity offered to you to verify the statement of the earnings of this Company, submitted in my letter of November 22d, addressed to Mr. MacVicar, has not been acted upon.

As far as I am advised no report was submitted to the Council by Mr. MacVicar, of any facts upon which a reasonable rate must be based, nor was I accorded the privilege of appearing before the Council to submit for your consideration any facts which bear upon the question of what is a reasonable rate.

I note that your City Solicitor in his report to you on this subject as published said 'It is the duty of the Council to fully and fairly investigate and prescribe a rate that will be compensatory that is just to both the owner and the public.' I am at a loss to understand how you are able to 'fully and fairly investigate' so as to prescribe a rate that is just to the Company and the public without having completed the physical valuation of the property, or verified the statement of earnings submitted. Am I not justified, therefore, in assuming that you have given the subject less consideration than was necessary in order to enable you to do justice to the Company, as well as to the public?

I am not unmindful of the fact that the ordinance of February

7, 1896, which lowered the price of gas from $1.70 per thou-
91 sand cubic feet, by a series of reductions at successive periods, to $1.00 expires on January 1, 1911.

Information and the offer, such as submitted in my letter to Mr. MacVicar of November 22d, would have been cheerfully given at an earlier date, had the Council raised any question as to the reasonableness of the present rate or in any way indicated their purpose to insist that the present rate was too high.

I again appeal to you to complete the investigation as to the value of the property and to verify the statement of earnings submitted, before taking such final action as appears to suggest no recourse but a resort to the courts.

A continuation of the present rate until the investigation as to its fairness has been entered upon by you, has been completed, can result in no hardship to the public and is surely preferable to long and expensive litigation.

Very respectfully yours,

(Signed) JANSEN HAINES, *Manager.*"

Mr. BYERS: We object to having that paper copied into the record. It so clearly appears to be entirely irrelevant to any issue in this case, the statements in it being self-serving, and no court anywhere in this country would admit testimony of this kind. It simply pads this record and makes an unnecessary expense.

Judge CARR: If it is desirable at this time to discuss the materiality of these letters, I will do so. This testimony is not offered for the purpose of padding the record. We are offering it because we believe in good faith it is a material item of evidence.

Q. Now, Mr. Haines, some time prior to December 27th,
92 1910, did you set about to the making of an inventory of the property of the Gas Company for the purpose of ascertaining just what the property was and for the purpose of ascertaining its value?

A. I had such an inventory in preparation. I was out of the city on October 24th when the resolution directing Mr. MacVicar and the legal department to recommend to the Council a rate for gas in Des Moines was passed, and I was notified of its passage by letter. I then immediately arranged for a complete inventory of the property of the Des Moines Gas Company to be made, as stated in my letter of November 22 to Mr. MacVicar. On November 3rd, 1910, the engineers, some of them who were to make this inventory arrived, and continued through January in Des Moines making their field notes and drawings in a large room which I provided for them near the gas works. When they had completed their field notes and the sketches which required their presence in Des Moines they took this data and notes and completed some of their sketches in Philadelphia, I believe. I was not present when they did it in Philadelphia.

Q. Who had charge of the making of this inventory of the manufacturing plant?

A. Mr. Broadnax.

Q. What if any assistance did he have during the work?

A. He had five assistants, three of whom arrived on the 2nd of November, 1910; two of them on the 3rd of November, 1910, and Mr. Brodnaux arrived on the 4th of November, 1910.

Q. Who is Mr. Brodnax, what is his business?

A. He is an engineer of several years' experience; I don't know how many.

Q. Who had charge of the inventory as to the distribution system?

A. Mr. Walter.

Q. Was he also an engineer of experience?

93 A. Yes, sir. He arrived on November 16th, 1910; he had charge of the inventory of the distribution system—the mains, services and meters. He had eleven assistants.

Q. What is the fact as to whether the work of making this inventory of the property from the time it was begun it was continued and pushed to completion as rapidly as possible?

A. The work was prosecuted as rapidly as it could be. The men took many of their measurements in the day time and made some of their drawings at night; they worked over hours as much as men could work on account of their eye-sight. That is true of the force that took the inventory of the distributing system, but the vastness of the work and the amount of detail required a long time to do it with the accuracy with which it was done.

Q. Did the city engineer or some engineer from the engineer's office work with your engineers in making this inventory?

A. The city engineer delivered a letter to me from Mr. MacVicar on December 2nd which has already been placed in evidence and which instructed him to co-operate with our engineers in taking this inventory. I immediately took him over to the rooms where these engineers were at work and introduced him to them and told them that he was to be offered and given every facility for checking their work to satisfy himself of the correctness of the measurements, and that they were to remeasure any measurements which he raised any doubt about, and in every way satisfy him that our work was being accurately and conscientiously done.

Q. What was the name of the engineer?

A. His name was Maxwell.

Q. Do you know whether he continued from that time on to work with your engineers while the inventory was taken in Des Moines?

A. He worked with them; I saw him with them frequently

94 over at the plant where the engineers were making the inventory of the manufacturing plant, and he came to the office and worked with the engineers at my office on Seventh Street when they were making the inventory of the distribution system, and of the records of the distribution system.

Q. Was a detailed inventory of the property prepared by these engineers?

A. It was, yes sir.

Q. Have you that inventory?
A. I have.
Q. Will you produce it?
(Witness produces inventory.)
Q. In how many volumes is this inventory and the accompanying sketches bound?
A. It is in two volumes, and in addition to these two volumes there are some maps.
Q. Please examine Exhibit 15 and state if that is the first volume of the inventory to which you have referred?
A. It is, yes sir.
Q. Please examine Exhibit 16 and state if that is volume two of inventory to which you have referred?
A. It is, yes sir.
Q. Mr. Haines, did you furnish the city or Mr. Brennan as legal representative of the city with a copy of this inventory?
A. I did, yes sir.
Q. At whose request?
A. At the request of Mr. Brennan.
Q. And when was that?
A. On March 8, 1911.

Q. Was the copy you furnished him a complete copy, I
95 mean of the first and second volume, as you have produced it here?

A. Yes, sir; it is.
Q. And that was given to him on March 8th?
A. On March 8th, at his request for the use of the city engineer.

Judge CARR: I would like to inquire of you gentlemen whether we can agree upon this inventory being correct or not. Of course if we must go on and prove in detail the accuracy of the inventory it will cover considerable time. Inasmuch as we furnished you an inventory so long ago we had hoped you would be in a position to point out wherein you claim it is not accurate and thus avoid the time it will take to prove it.

Mr. BYERS: We are not ready to do that at this time.

Judge CARR: Your Honor can readily see that one of the first things we shall do in this case is to prove what property we have, and I hope that counsel will be able to give us an answer on this subject in the near future. We can not go forward with our case very far until we have shown what property we have.

Mr. BYERS: The only thing we can do is to check out what we find there. It is no inventory, it is just a list of the items, and we will check them as rapidly as we can.

Judge CARR: If you mean that you will not be able at any time to admit the accuracy of this inventory, we might as well prove it.

Mr. BYERS: Some things I know myself.

Judge CARR: We will pass this for the present and will not offer these exhibits at this time, because I do not — we have sufficiently
laid the foundation for it. And until the city attorneys can
96 determine whether they can accept it or not.

Q. Mr. Haines, did the city or Mr. MacVicar or any representative of the city at any time avail themselves of this offer of your invitation to them to come and inspect your records for the purpose of verifying the statements you made in this connection as to the receipts and expenditures of your company?

A. No sir.

Q. Has that been done at any time down to the present time?

Objected to on part of the defendants as being incompetent and immaterial.

A. No, sir.

Q. Now, Mr. Haines, was you notified of the filing or making of the report by Mr. MacVicar which was submitted and which has been offered in evidence, and which was submitted on the 27th day of November?

Objected to on part of defendant as immaterial and incompetent.

A. I was not.

Q. Was you invited by anyone representing the city to appear before the council at the time this report was received or at any time prior to the passage of this ordinance of December 27th.

Defendants interpose the same objection as last above made.

A. I was not

Q. Was you or any representative of the Des Moines Gas Company at any time prior to the passage of this ordinance invited or given an opportunity to appear before the council for the purpose of presenting such reasons as they might have to present or such showing as they might be prepared to make with respect to
97 what would be a reasonable rate for gas in the city of Des Moines?

Defendants interpose the same objection as last above made.

A. I was not.

The MASTER: As I understand the position of you gentlemen for the city, you claim that all this evidence preliminary to the passage of this ordinance is immaterial.

Mr. BYERS: Absolutely, yes sir.

The MASTER: And Judge Carr, I understand you claim it is proper to be considered for the purpose of weakening the presumption in favor of the ordinance and the rate fixed.

Judge CARR: That is the only object of offering this testimony. I might say we have authorities upon that subject.

The MASTER: I do not care to hear you any further now; I simply wanted to know your positions.

Q. When did you first learn of the passage of this ordinance of December 22nd?

A. A reporter of one of the newspapers called me up, I think just about noon, half past eleven or twelve o'clock, and asked me if I heard anything. I told him no. Then he told me of it.

Q. Was that the day of the passage of the ordinance?

A. That was on the day of the passage of the ordinance.
Q. It was passed in the forenoon then?
A. Yes.

At this time, 12 M. an adjournment was taken until 1:30 o'clock P. M.

98 TWO O'CLOCK P. M., THURSDAY, *July* 13, 1911.

JANSEN HAINES being cross examined by Hon. H. W. Byers, testified as follows:

Q. You came to Des Moines in 1903?
A. Yes, sir.
Q. Did you take immediate charge at that time of the property of the Des Moines Gas Company?
A. Yes, sir.
Q. Who was your predecessor?
A. Col. E. G. Pratt.
Q. Do you have under your control now and in your possession the *the* inventory that was furnished to you at that time?

Objected to as not proper cross examination.
COURT: I will not pass on the objections now.
Judge CARR: I make the further objection that it assumes a fact not established, namely, that an inventory was furnished him.

A. I had no inventory furnished to me at that time.
Q. What property was turned over to you at that time?
A. The property of the Capital City Gas Light Company.
Q. And what did that consist of at that time?
A. Certain real estate, buildings and——
Q. The same real estate that is included in the inventory that was marked Exhibits 15 and 16?
A. Part of that real estate but not all.
Q. What part of it was not turned over to you at that time?

Objected to as not proper cross examination.
COURT: I think it bears on his knowledge, you may go ahead.

A. That part which is situated in Block K and in Block M.
99 Q. The lots then or the tract of ground covered by this inventory that are in Block K and Block M have been purchased since you became manager of the company?
A. Yes, sir.
Q. And when was it purchased?
A. I can't give you the exact date.
Q. Well about the time?
A. About four years ago I think, four or five years ago.
Q. How much ground is included in those two tracts.
A. Well in Block K there were two lots and in Block M two lots and in Block K there was the half of the alleys which were not vacated at that time.
Q. Well you claim that the alleys were vacated since that time and the ground conveyed to the gas company?

A. The alleys were vacated about three or four years ago.
Q. How did that come to be done, do you remember, who carried on the negotiations, if any one?
A. About the alleys?
Q. Yes?
A. There was a petition presented to the council requesting their vacation.
Q. Petition on the part of the Gas Company?
A. We joined in the petition, yes, with the other property owners.
Q. And was that all there was to it, just a petition to vacate the alleys?
A. No the council proceedings will show that.
Q. Well your part of it, what else did you have to do with it, the Gas Company?
A. That is all I had to do with it.

Q. That is all you had to do with it and that is all so far
100 as you know that was done was simply the alleys were vacated, your part of the alley?

A. Yes, that is what I stated before.
Q. You immediately took possession did you of the alleys, that part that was vacated?
A. Well we use it, yes.
Q. And you are using it now?
A. Yes, part of it, not all of it.
Q. As part of this gas plant?
A. Yes, sir.
Q. And part of both of the alleys that were vacated?
A. No, we are only using part of one alley at the present time?
Q. You claim the other and have included it in your invoice?
A. Yes.
Q. How much of a strip of ground is that?
A. Eight feet wide I think.
Q. And how long?
A. 140 feet—132 feet about that, within a few inches.
Q. You say it is only eight feet wide and 132 feet long?
A. Yes, sir. The alleys are sixteen feet wide and this is half of the alley.
Q. How much of a strip is the other one on the other street?
A. The same size.
Q. The vacation then did not extend clear through the block?
A. No.
Q. Just that part of the alley that abutted on these lots you owned in blocks M and K?
A. No, there was no vacation in Block M. It only referred to the vacation in Block K, Block M stands, the lots 9 and 10.

Q. I know, but there was part of that alley vacated you
101 said a moment ago?

A. No, sir; not in Block M.
Q. What other block was it?
A. Block K.

Q. All in Block K was it?

A. It was just simply the alleys adjoining three and four on the — and on the east.

Q. Then I was correct in asking you if it was not just that part of the two alleys that abutted on the lots that belonged to your company?

A. In Block K.

Q. Yes. Four lots in Block K?

A. Two lots in Block K.

Q. Three and four and nine and ten?

A. No, nine and ten in Block M. Three and four are in Block K.

Q. You have shown have you on this map here the vacation of the alley extending the full half block north and south and half block east and west?

A. In what block?

Q. In Block K.

A. Yes, sir.

Q. So the vacation was across the half block north and south and *and* east and west of Block K?

A. Well the vacation I refer to is simply the half of the alley abutting on the northwest quarter block in block K. It abuts on the south side of lot 3 and on the east side of lots 3 and 4.

Q. That would be then the vacation extended half way across the block both ways, that is your claim is it?

This red line on the south side of lot 3 in Block K and on
102 the east of lots 3 and 4 Block K is where you claim the alley is vacated and you claim now that it belongs to the Gas Company?

A. It was vacated for the use of the Gas Company.

Q. Did the company pay anything for it?

A. No, sir.

Q. That part of the plant the company has no investment in the ground, that is true isn't it?

A. They paid no money for the ground.

Q. Is all the real estate owned by the company located on the east side of the river and south of Walnut street?

A. All of the real estate in Des Moines, yes.

Q. I meant in Des Moines. Does this local company have real estate anywhere else?

Objected to as not proper cross examination and immaterial.

A. Yes, sir.

Q. Did it acquire that real estate since you became manager of the company?

A. Yes, sir.

Q. And did you carry on the negotiations for it?

A. Yes, sir.

Q. How much real estate does the company own?

Judge CARR: I would like it understood that this is all objected to as incompetent, immaterial and not proper cross examination.

Mr. BYERS: It might become very material.

COURT: Where did you say this real estate was?

A. It is t-oo small lots in Valley Junction which is a small town adjoining Des Moines, town of about 2,500 inhabitants, immediately west of Des Moines.

Q. When did you acquire these lots Mr. Haines?

A. It was about 1905 I think. I don't know the exact
103 date, but it was about that.

Q. Well will you say that it was prior to the reorganization of the company in 1906?

A. Yes, it was.

Q. No doubt about that. Now is that all the real estate that this local company owns or has any interest in?

A. Yes, sir.

Q. The real estate on the east side of the river and the two lots *lots* at Valley Junction?

A. Yes, sir.

Q. Now on this property east of the Des Moines river and south of what buildings were there when you took charge of the property, I will make that south of Court Avenue, of course south of Walnut street would cover it, but say south of Court Avenue.

A. The present purifying house, part of the building immediately north of it.

Q. The first item you mention the purifying house, what is the character of that building?

A. It is a brick building with slate roof.

Q. Solid brick walls or veneered brick?

A. Solid brick walls.

Q. And when was it erected?

A. I dont know.

Q. You say you don't know?

A. That is what I said, yes.

Q. Have you ever examined the books or records of the company to ascertain?

A. I might have.

Q. Well, I am asking you if you have?

104 A. I don't recollect whether I have or not, but probably I have.

Q. If you think you did make such examination when did you make it with respect to say January of this year?

A. I am sure I have no recollection at all.

Q. If you did so at all, it was long prior to January of this year was it?

A. Might have been, I don't know that.

Q. Are you sure that you have not since, are you?

A. I am not sure I have not since. I did look up the date of the erection of some of these buildings, but I can't give offhand the dates on which they were built from my recollection now.

Q. You have books and memorandum in your office here in

Des Moines that does show just when that building was built have you not?

A. I probably have, I don't know. I never paid any particular attention to it in that respect. I think the inventory shows *shoes* these dates where they are accessible in every case. I have not burdened my mind with that, that is all.

Q. The inventory does not show anything with respect to this property that would be involved in book entries that were not taken from your books does it?

A. I really don't know how the engineers got the date of that building. Some of the buildings have the dates marked on them. Some of them I presume were acquired from the general knowledge around the plant as to when they were built. They were built prior to my taking charge of the plant. When I found they were in good condition I did not take any further—make any further examination of when they were built.

Q. When you came here in 1903 Mr. Haines, to take over this property, you examined it thoroughly did you not?

A. Yes, with reasonable care.

105 Q. And checked up every item of property did you not?

A. I made an examination of it yes.

Q. Well answer the other question.

A. What do you mean by checking it up?

Q. I mean this when you came here to take over this property you *you* were furnished with a detailed statement of just what the company had here and with that statement you went over this property and checked it up to see if the property was here did *did* you not?

A. I don't recollect being ever furnished with any detailed statement at all. I was familiar with the property when I came here.

Q. What did you do in the way of ascertaining what property was when you took over the management of the concern?

A. I went over it and inspected it with Col. Pratt.

Q. Colonel Pratt was going out wasn't he?

A. Yes, sir.

Q. He had had the same complete charge over this property that you were taking on hadn't he?

A. As far as I know yes.

Q. He managed the local affairs, disbursed all the funds, employed all the help, made the reports to the parent company or home company did he not?

A. As far as I know. Of course I had nothing to do with Col. Pratt's employment.

Q. Didn't you check up with him when you came here to take over the property?

A. I went over the property with him, he showed me what the property was, where it was and introduced me to the men who were in charge of the different departments under me.

Q. What else did you do in the way of ascertaining what was here?

106 A. I went over the city with him and he showed me in a general — where the mains supply of the city was located.

Q. That all?
A. Practically all yes.
Q. At that time was there any statement made or furnished to you about this property, the particular items that belonged to it or anything of that kind?
A. No, sir.
Q. Nothing of any kind?
A. No.
Q. You say you have never seen any such sta*me*nent?
A. No, sir.
Q. And there is no such entries in the books?
A. You mean prior to January first?
Q. At the time you took over this property what entries if any made in the books with respect to the property that came into your hands?
A. Well the books were there and were simply continued as they were.
Q. That is not quite an answer, Mr. Haines.
A. Just the usual entries that are made from day to day.
Q. Any charges made to you or any credits to Col. Pratt, anything of that kind?
A. Certainly not, no sir.
Q. Did the company at that time have anybody else here in charge of their business who was responsible in any way for the business other than Col. Pratt?
A. No, I think not.

Q. At that time, 1903, who were the responsible officers of
107 the Gas Company?

A. Col. Pratt was the manager and Mr. Keffer was I think secretary, W. B. Keffer.
Q. Who were the directors?
A. I don't recall who the directors were at that time. The books will show who they were.
Q. Who are they now?

Objected to as not proper cross examination.

A. The books will show. I don't recall who the directors are now. I know some of them.
Q. Do you mean to say now you don't know who the directors of the company are that you are now president of?
A. I don't see why I should not say that.
Q. Do you say that?
A. I don't recollect them without refreshing my memory. I don't elect them.
Q. They elect you don't they?
A. Yes, sir.
Q. Where are the directors located?

Objected to as immaterial and not cross examination, my *my* thought is that this cross examination ought to be kept reasonably within the scope of the direct examination.

Mr. BYERS: We are entitled to this information, every bit of it.
COURT: The question is who are the directors if you know?

Mr. BYERS: This question is where are they located?

A. Some of them I think, I think all of them are in Philadelphia, at least their residence is Philadelphia.

Q. Who owns the Des Moines Gas Company, perhaps that is a shorter way to get at it?

Objected to as not proper cross examination.

108 A. The United Gas Improvement Company in Philadelphia.

Q. Did that corporation own the company that you took over the management of in 1903?

A. Yes, I believe so.

Q. And that is a corporation organized in the state of Pennsylvania is it?

A. I have never seen its articles, I suppose it is. It is located in Pennsylvania.

—. Are there any resident stockholders in this so called Des Moines Gas Company?

A. No, sir; not to my knowledge.

Q. Are you a stockholder? ?

A. No, sir.

Q. Is Mr. Keffer?

A. No, sir.

Q. Is there anybody in Des Moines that holds any of this stock that you know of?

A. Of the Des Moines Gas Company?

Q. Yes.

A. Not that I know of.

Q. Or the United Gas Improvement Company?

A. I suppose there are some, the stock is widely scattered throughout the United States.

Q. Does the Des Moines Gas Company have any stock at all?

A. So far as I know it does.

Q. Who told you if you know?

Objected to as immaterial and not proper cross examination.

A. I can't say that I know of my own knowledge.

Q. Give us the name of anybody that you say owns any, any person or corporation, any of the stock of this local concern?

109 Same objection.

A. I have never seen the stock certificate book and I can't answer that of my own knowledge.

Q. Is that the only way you have of knowing who has stock?

A. Of my own knowledge. I have never seen any of the certificates of stock in the hands of local people here.

Q. You are now president aren't you?

A. Yes, but I am not interested in the stock.

Q. When were you elected president?

A. On Monday the 10th.

Q. Of this present month?

A. Of this month.

Q. The days before the commencement of this hearing.
A. Yes, sir.
Q. Where were you elected, where was the meeting held?
A. I was simply notified that I had been elected.
Q. Notified from where and by whom?
A. From the office of the United Gas Improvement Company in Philadelphia.
Q. By some officer or its secretary?
A. Yes, sir.
Q. Who are the officers of the United Gas & Improvement Company?

Objected to as immaterial and not cross examination.

A. I can furnish you with their published report if you would like to have it showing the officers in detail.
Q. If you know, just tell me.
A. I know some of them. Mr. Thomas Dolan is the president, of Philadelphia. Mr. Randall Morgan is second vice president; Mr. S. T. Bodine is first vice president, Mr. Louis Lillie is secretary and treasurer, no he is treasurer and Mr. W. F. —— ——, is
110 *secretary and treasurer, no he is treasurer and Mr. W. F.* Dothert is secretary. Mr. Walter Clark is third vice president and genera- superintendent. Mr. Lillie is treasurer and fourth vice president I think.
Q. All of these gentlemen you have just named, do they reside in Philadelphia?
A. Yes, their principal place of residence is there I believe.
Q. Do you have in your possession and under your control as part of the records and papers of the office here in Des Moines a copy of the articles of the United Gas and Improvement Company.
A. I have not no sir.
Q. Have you ever seen them?
A. No, sir. I say no, I may have seen them in some printed form, I don't recollect them.
Q. Do you make a daily report to your home company?
A. No, sir.
Q. How often do you report?
A. I report various matters when they come up and make some reports monthly and some at other periods.
Q. What reports do you make monthly?

Objected to as immaterial and not proper cross examination.
COURT: I don't see how that is cross examination.
Mr. BYERS: It seems to me it is in view of his examination in chief as to what he does here. He is in sole charge of this property, disburses all the funds, makes all the contracts and has complete charge of it gave a description of the property and all about it.

A. Reports of the moneys received and disbursed during the month and the materials on hand, received, and used, such reports as that, some in detail, some more in detail and some less.
111 Q. You make daily reports of receipts and expenditures do you not?

A. Not outside of Des Moines. These reports are made to me.

Q. Who makes them to you?

A. The various men in the emplly of the company who have charge of receiving or disbursing materials or moneys.

Q. And from these daily reports you make up your monthly report, is that right.

A. That is not exactly correct, no. The monthly reports are made up from the same data as is furnished to me daily, that is fro- the same source.

Q. What you mean by that is that the daily reports are entered on the books and then the monthly report made from the books.

A. That is not correct. The reports that are made to me -re made from the entries that are made on the books and at the end of the month certain of these entires are compiled into monthly reports, some weekly reports, some bi-weekly reports, depending on what information is desired.

Q. These monthly reports, are they made in duolicate?

A. How do you mean in duplicate?

Q. One copy kept here and one sent to the head office?

A. Oh they are taken right off of our books here.

Q. Do you make them up in duplicate and keep one copy here and send one away?

A. No, sir. Some of them we do and some not.

Q. Which ones do you do that?

A. Well our vouchers are made up in duplicate for the sake of convenience. Our stock sheets of material on hand are made up in duplicate for the sake of convenience because the compila-
112 tions of the report are more easily used for subsequent figuring than getting it from the books. Our other entries such as journal entries and ledger entries are simply copied from the books and no changes made in them.

Q. These reports for instance after they are completed, fully made up and completed are sent to the home company at Philadelphia?

A. Yes, sir.

Q. And no copy or duplicate kept in your office?

A. As I stated in some cases there is and others there is not.

Q. The reports you say are duplicates of some items made up on the report but the report itself, are there any duplicate copies kept in your office?

A. Well there are. Of course to undertake to get at — this way is rather compliacted. The idea is to keep a complete report of our operations at Philadelphia. Now if there is any necessity for duplicating these reports here, we keep a copy otherwise they are simply kept on the books.

Q. I am not asking you about any cases of necessity, but I am asking about the general practice there in that local office. I simply want to know whether the reports that are made monthly to the home company copies of those reports are kept on file here.

A. I think I can say that we have an exact reproduction of all of those reports here either on the books or as copies of the reports as sent in.

Q. Then it is the practice of the office to make those reports in duplicate is it not?

A. Well not all of them except in that way.

Q. Well substantially all of your monthly reports I am talking about?

113 A. Well as I stated some of the reports are simply copied off the books, the reports sent in and the book remains here as the duplicate and in other cases where the reports are compiled from different books we keep a copy of the report there and *and* send the report in.

Q. Is there ever any report sent in that is not compiled from different books, a regular monthly report?

A. Yes, of course there is. The report of the journal entries are copied right off of the journals.

Q. You take this report of journal entries do you and let it go at that?

A. No, that is part of the other report.

Q. The rest of it you take from some other book?

A. A part of the other reports are made up in the same way.

Q. Let me get just what I want and see if we cannot get together on it. What time in the month do you make your report?

A. Well some of our reports are made on the first of the month and *and* the third, they are strung out until about the 15th.

Q. What is in the reports that are made out the first of the month?

A. The first of the month shows the send out for the month previous.

Q. What do you mean by send-out?

A. I mean the amount of gas which was sent out in the month previous, that is accessible on the first of the month at seven o'clock and we try to get that report off on the first or second.

Q. What else is in that report?

A. The materials used in the manufacture of gas.

Q. And what else?

A. Weather report.

Q. Anything else?

114 A. Tenperature and barometer and candle power of the gas, quality the amount of tests that have been made of the gas practically the general information in regard to the manufacturing end of the business during the previous month.

Q. I suppose these reports contain the heat value or thermal value whatever you call it?

A. I don't recollect whether we are putting that on the report or not now.

Q. Have you given us everything that you do put on that you remember?

A. All that I remember of now.

Q. Is that report, the one we are talking about now, is that report made out in duplicate?

A. No, sir; that is copied from our record here.

Q. So that that report when completed is forwarded to the home office at Philadelphia?

A. Yes sir.
Q. And kept there?
A. Yes, sir.
Q. Or is it returned to you?
A. No it is not returned, we have all the data here.
Q. So if we should want reports made by this office here, the monthly reports covering the items and information you have just stated, to put into the record which is made out on the first of the month you would have to get them from the home office?
A. Yes, you could get the same data here.
Q. I am not asking about data, I am asking about the report itself?
A. Yes, sir.
Q. Now what goes into the report made on the third of the month?
115 A. Well now you want to know the dates and what is in all these reports, it is going to be pretty hard for me to tell you because I don't make the reports out individually. There is usually a large package about that big of reports that come in during the month.
Q. You know in a general way what is going on up there?
A. I would prefer to take the time to refresh my memory on that.

COURT: What he wants to know is in a general way.

A. In a general way reports come in during the first fifteen days of the month.
Q. No I want to know now that is the one you say you send the company on the third.
A. Well, I would prefer to not answer that question until I had an opportunity to refresh my mind on the dates of these reports and what they contain. I am familiar with the reports when I see them, know whether they are correct, but I pay very little attention to the dates on which they come in.
Q. Who in your office would have more accurate information about it than you?
A. Well the heads of the different departments that make these reports to me would know.
Q. They don't make up the general report do they?
A. Yes, they make up these reports, turn them over to me and I pass on them and send them along.
Q. The heads of the different departments, all they do is to report what is properly reportable from their department.
A. That is all.
Q. That then comes to you?
A. Yes, sir.
Q. You make up or somebody for you makes up the general report?
116 A. Yes, sir.
Q. If you don't remember the one that goes in on the third, you said one went in the 10th. What goes in that report?
A. I can't answer that question accurately the way you want it,

and I would prefer not to do so now if I could be allowed to give it in accurate form.

COURT: Well he is not asking you to be accurate, just give your best recollection, that is all you can do.

A. Well your honor I can't remember these dates specifically what goes in on the specific dates.

Q. If you don't remember you may look it up at your leisure and *and* we will reserve that part of your cross examination until later but I will proceed a little further along that line and ask you what is done with the reports that are made on the third what do you do with them after completed?

A. Mail them.

Q. Where do you mail them?

A. To Philadelphia.

Q. You keep a duplicate here?

A. We keep the original record here.

Q. I am not asking you that, asking you whether you keep a duplicate of this report as it is made up, this general report?

A. You mean the report of the operations of the previous time?

Q. On the third or whenever you say you send it in or the 10th.

A. You mean of the operations of the previous month, report of the operations of the previous month?

Q. If that is what goes in with it, yes.

A. That is the report I described to you before.

Q. When is that sent in?

A. That is sent in the first or second.

117 Q. That we have been over and we have got these reports located, we know where they are and all there is of them. I am now ask- about reports made later on the thi-d, the sixth and 10th you say? Are any of those kept here?

A. Some of them are, but not all.

Q. What ones are kept here?

A. Well the report of our sales department of the new business I keep a copy of that here.

Q. Right at that point, what is your sales department?

A. Sales of stoves and fixtures and all kinds of lighting appliances.

Q. Anything else?

A. Well that practically covers the ground.

Q. Your sales department——

A. It is what we call our new business department.

Q. Stoves lamps, and light fixtures and includes gas too?

A. Yes simply includes cubic feet of gas sold.

Q. Do you handle anything else except the items that have just been mentioned?

A. Practically nothing else, no. I think that covers the whole field, domestic and industrial field, as we handle it.

Q. The report of your sales department, when is that made?

A. That is mailed as soon after the first of the month as we can get it ready. Generally from a week to ten days.

Q. And is a duplicate of that report kept here?

A. Yes, I keep a duplicate of that report.

Q. You have a duplicate of that?
A. Yes, sir.
Q. You have duplicate reports showing sales of your entire business there covering all the months I suppose of the year 1910
118 and 1911 up to this time.
A. I think I have them all yes.
Q. And for 1909?
A. I think I have them all yes.
Q. And 1908?
A. Yes, sir.
Q. 1907?
A. Well I don't know how far back they go. Some of the older ones may not be here.
Q. When did you commence the practice of making out these reports in duplicate?
A. Oh I don't remember, six or seven years ago.
Q. Right away when you came here didn't you?
A. Yes, most of them.
Q. That practice had not been followed prior to your administration had it?
A. No.
Q. That was one of your plans and methods?
A. Yes, sir.
Q. That would begin as early as 1903 would it not?
A. I began with some of it, keeping duplicates of some of them.
Q. There was no one else in charge of the business of the Unider Gas & Improvement Company's business at Des Moines but you was there?
A. You mean any local man in charge here?
Q. Yes?
A. No.
Q. Right from the beginning?
A. Yes sir.

Judge CARR: We object to the question as not proper cross
119 examination and assuming a fact not proven by the evidence, the inquiry is as to the business of the United Gas Improvement Company not the business of the Des Moines Gas Company.

Q. Now when you came here in 1903 from whom did you get your instructions with respect to what you were to do and what property you were to take over?
A. My instructions came from the superintendent of works in Philadelphia that I had been appointed manager for Des Moines of the Capital City Gas Light Company in Des Moines.
Q. Where did you receive them?
A. Receive what.
Q. These instructions?
A. In Philadelphia.
Q. You were at the home office were you not?
A. I was at the Philadelphia office of the United Gas Improvement Company.

Q. That is the home office isn't it?

A. Yes, sir.

Q. Do they have any other general headquarters except at Philadelphia that you know of?

A. Not that I know of.

Q. Who at that time was general superintendent as you say?

A. Mr. Rollin Norris, he was superintendent of works.

Q. Was it from him you got your instructions?

A. It was.

Q. And in response to the instructions you got from him you came to Des Moines and took over the business.

A. I did.

Q. What else besides this real estate and business did you take over at that time?

120 A. I don't understand the question. I took charge of all the property of the Capital City Gas Light Company at that time.

Q. That don't mean much to me Mr. Haines. What was that property?

A. It consisted of the manufacturing plant, besides the real estate already mentioned and distribution system mains, and meters, and services and wagons, teams, equipment, tools, supplies all the general paraphernalia and office records that go with the gas business.

Q. Anything else?

A. I think that covers the ground.

Q. Well they were operating at that time just as they are now were they not, a retail store?

A. Oh yes, that business was——

Q. Well tell us what that was and the extent of it?

A. The business of selling stoves and fixtures and lamps mantels, glassware, in order to develop the use of gas in all branches.

Q. Street lighting?

A. Yes, at that time the Capital City Gas Light Company lit the streets.

Q. Do you know about how many street lights they had at that time?

A. I don't recollect.

Q. Had a large number did they not?

A. Not very many, I think about six or seven hundred.

Q. At that time Mr. Haines how many miles of main did they have?

A. Oh I don't recollect.

Q. You have some recollection about it don't you?

A. I think it was something less than a hundred miles or less than ninety miles. I have forgotten what it is. It is in the record

121 here.

Q. In what record?

A. The records we offer- the city here some time ago, November. We offered to show them all this and whan you have been discussing here in November.

Q. Well that is not what I am asking you Mr. Haines. What I

want to get at now is the number of miles of mains that this company had when you took charge of it in 1903.

A. I can't say from recollection. It was something less than a hundred miles my recollection is.

Q. How much less?

A. That I can't say.

Q. Was there seventy five miles?

A. I won't say.

Q. Was there 50?

A. I won't say.

Q. 40?

A. I won't say.

Q. Was there 20?

A. I won't say.

Q. How many service connections were there?

A. I can't say that.

Q. About how many?

A. I suppose there were about in the neighborhood of 8,000 something like that.

Q. 8,000 in 1903. And about how many meters?

A. About the same number of meters.

Q. Now why won't you say that there was more than 20 miles of mains?

122 A. Of course there was more than twenty miles of mains, no question about that.

Q. You have some idea about how many there were?

A. As I said something less than a hundred, but I would not swear to it as I don't know. I can look it up for you and let you know tomorrow. I have no objection to telling you at all, the only question is I don't like to trust my memory on a detail of that kind.

Q. You haven't looked it up recently?

A. No.

Q. You had looked up all these other facts you testified to this forenoon so you knew exactly how many you had, knew the connections and how many miles of main you had, looked that up for the purpose of your testimony?

A. Certainly.

Q. But you haven't looked up anything else?

A. No, sir.

Q. Now in 1903 when you came here, you immediately investigated the relation of your company and the ordinances that were then in existence did you not?

A. I read the ordinance yes.

Q. So that you knew just what the arrangement between the company and the city was immediately after you came here in 1903?

A. You mean in what respect.

Q. Well in any respect with relation to rates and the furnishing of gas and the amount that the company should charge for it.

A. Yes, sir.

Q. You knew just how long that arrangement was to run didn't you?

A. Showed in the ordinance, yes. I read the ordinance.

Q. In 1903 Mr. Haines, you say that there was something
123 less that a hundred miles of main. Do you know how long that main had been down, do you know how long any part of it had been in use.

A. Part of what main?

Q. Of the less than a hundred miles that was in service when you came here.

A. No I only know in a very general way.

Q. Well in a general way, tel- us.

A. I don't know of my own personal knowledge except that it was commonly known that mains had been laid here since I think 1864 there had been mains or 1865, along in there, and that there was at one time, from general knowledge there was a gas works at the point of the 'Coon down here which was moved over in 1876 to the other side of the river where it now is.

Q. Are you still using some of those mains?

A. I suppose so yes.

COURT: These questions you are only answering from information are you?

A. Yes, such questions as that.

Q. Well is there anybody here from whom that information could be gotten except you that you know of?

A. You mean as to the period of building the gas plant?

Q. Yes, as to the physical history of this plant?

A. I suppose there are many people here in town who know about it.

Q. That is, in charge of this business or connected with this business?

A. No.

Q. It is somebody in connection with the business that we want the information from. Now about what part of the less than
124 hundred miles of mains that you say was in use when you came here is still in use.

A. Practically all of it and more.

Q. And the 8,000 service connections that were in use when you came here how many of those are still in use as they were originally laid?

A. Well that I don't know, there is 8,000 and many more added, some of them may have been renewed or replaced and of that number I can't tell you specifically which ones are still in use and which ones not.

Q. As a matter of fact have any of them been renewed?

A. Oh yes, a great many of them.

Q. Do you know any instance where a service connection that was in in 1903 has been taken out and substituted with a new connection?

A. Oh yes there has been a great many of them.

Q. How many miles, can you give any idea as to the number of miles or number of connections?

A. No. I can find out for you. It is all a matter of record on our books.

Q. You haven't that in tabulated form anywhere?

A. I don't believe we have had now no.

Q. When did you last examine the books to ascertain these facts?

A. I don't know when those repairs became necessary, they are made as part of the operation of the plant just the same as a saw would be filed or tool be sharpened.

Q. You say now you have about 17,000 service connections?

A. Yes, sir.

Q. When was the largest part of these 17,000—the additional 8,000 I suppose you mean by that 9,000 have been put in since you
125 came here?

A. About that, yes.

Q. During what period was the majority of these service connections made?

A. Well they have been—of course as the city grows and the built up portion expands like the waves from a pebble dropped in water the number of them increases in each direction.

Q. That is not what I asked you. The question I am trying to get is what particular period if there was any period that the majority of these 9,000 service connections were made?

A. Well they are added so many each year. Added from year to year as people demand them.

Q. The same number every year?

A. No naturally not because it would depend upon the number of buildings erected.

Q. What portion of them were put in in the last three years?

A. I can't tell you exactly, but I should say they run about twelve or fifteen hundred a year now, somewhere in that neighborhood.

Q. How did they run in the last three or four years, that was an even increase at that rate the last three or four years?

A. About that. As the city grows larger of course the number each year increases.

Q. You have 17,000 now.

A. Yes, about that.

Q. How many dead ones?

A. I can't answer that, I don't know.

Q. You can give us about how many can't you?

A. Well it would be simply the best of my general judgment and guess.

Q. Is there anybody else has any better judgment about it than you?

A. Yes, I suppose somebody who has examined them.

126 Q. Do you know of any body who has examined them?

A. Yes, sir.

Q. Who is it?

A. He will be called I suppose later as a witness, later on.

Q. You have his information have you.

A. Not with me.

Q. He had no information in the beginning except what he got from your books?

A. Oh yes I sjppose he did. He will be able to tell you about that when he is called.

Q. You don't know about that?

A. Not of my own knowledge.

Q. Well give me your judgment then about how many there are.

Objected to as not proper cross examination and because the witness has stated that he has no information on the subject, his judgment is certainly not valuable.

A. I should say probably about five per cent of them are not in use, possibly less than that.

Q. How about the meters, how many meters are out that are not in use?

A. I believe that would run probably about six per cent of the meters which are cut off and not in use today, but of those some will be turned on tomorrow and some more turned off, so it keeps about six per cent I believe.

Q. Are you willing to put it six per cent and leave it?

A. As far as I know yes.

Q. Have you investigated it?

A. I have previous times from time to time.

Q. You know as a matter of fact what is the rate now?

127 A. Not any closer than that. I know it runs about six per cent.

COURT: About six p-r cent of your meters that are out are not in use?

A. Yes, sir; A man will move into a house and ask us to turn on his meter and we will turn it on. He will move out again or somebody else move out and we shut their meter off and leave it shut off until somebody else goss into the house provided they go in within a few months. If they don't occupy the house within that time we remove the meter and test it.

Q. The meters belong to the company do they not?

A. Yes, sir.

Q. So you know at once when a meter is not in operation, you know it at once?

A. I don't personally no.

Q. No but the company does.

A. Yes, of course.

Q. You told Judge Carr that you had complete charge of the local plant and managed it, disbursed the funds, and did everything else that was properly under the manager's power. Now I suppose that included the purchase of material.

A. It includes part of the purchase of material, that is the ma terial which is purchased locally.

Q. What is purchased locally?

A. Well the current small supplies and materials. It does not include such items as coal and coke which are purchased under con tract by the purchasing agent of the company in Philadelphia.

Q. How about oil?

A. Oh I meant oil. The coal is purchased locally because we have local mines to buy it from, but the coke and oil are purchased by the purchasing agent in Philadelphia.

128 Q. Under contract.

A. Under contract yes.

Q. Have you any of those contracts?

A. Yes, I think I have copies of them—no I have not copies of the contracts either, I only have copies of some of the essential features in the contract, such as quality and quantity to be supplied, such things as that.

Q. Where are the contracts under which coke and oil is furnished to the Des Moines plant?

A. I don't know, I suppose they [illegible] in Philadelphia. That is the original contracts as I said I have not copies of the original contracts I believe as executed here. I believe I have not copies of the original contracts as executed here, but I have memoranda of the essential features of the contract as it concerns me.

Q. Have you signed any of these contracts?

A. I have not sign- them, they are signed by the purchasing agent I suppose.

COURT: Of the United Gas Company?

A. Yes, sir.

Q. Purchasing agent of what?

A. Des Moines Gas Company and United Gas Improvement Company.

Q. Who is the purchasing agent of the Des Moines Gas Company?

A. Mr. J. A. Pearson.

Q. Where does he live?

A. Philadelphia.

Q. He is purchasing agent of the United Gas & Improvement Company?

A. I believe he is, yes. He signs himself so I think.

Q. He don't ever sign himself as purchasing agent of the Des Moines Gas Company does he?

129 A. When he buys supplies for the Des Moines Gas Company he always does.

Q. Did you ever see a contract signed that way?

A. Yes, sir.

Q. When?

A. All of his orders and correspondence are signed that way.

Q. You have seen his contracts?

A. I have never seen the original contracts for the purchase of oil or coke, but other contracts he makes for other materials which he buys to supply us were signed that way.

Q. Does he buy any other material for this company?

A. Yes, sir.

Q. What other material?

A. He buys stoves, lamps, mantles, glassware.

Q. The truth is that all of that part of the business of this gas company, the purchase of the oil and the coke and the stoves and

all of that class of property is purchased by the parent company and shipped to you?

A. All of the supplies which can be contracted for in large quantities and a better price obtained on that account are bought through the purchasing agent, but for little items which can be bought locally in case of rush for repairs or anything of that kind, they are bought through my order here.

Q. You don't buy any stoves do you here in Des Moines?

A. Practically no, no sir.

Q. None made here?

A. No, none made here.

Q. You don't buy any of these fixtures here do you?

A. Occasionally I dom yes.

Q. If you want one hurriedly and can get it from some-
130 body else you get it in town?

A. Yes, sir.

Q. But all stock and mains and pipes, all that class of material is purchased by this purchasing agent of the United Gas & Improvement company?

A. Yes, all material bought in bulk and a better price obtained because bought in bulk, is handled in that way.

Q. This plant over here when you came to Des Moines was not being operated just as it is now is it?

A. No I don't suppose so, it depends on what respect you mean?

Q. The method of making gas was not the same?

A. When I came here the Capital City Gas Light Company was making a mixture of coal and water gas.

Q. Now you are simply manufacturing water gas?

A. Now we are manufacturing water gas only.

Q. When did you commence doing that?

A. About five weeks after I arrived.

Q. Up to that time the plant had been run so far as you know as a mixed coal and water gas?

A. Yes sir.

Q. About how much oil do you use over there, and have you been using since you have been here say yearly, annually?

A. Well it is the neighborhood of thirty to thirty five thousand barrels a year.

Q. How is that shipped h-re?

A. It is shipped in tank cars.

Q. Where from?

A. Well some of it comes from the Kansas field and some from the Ohio field.

Q. No- we will stop there and take a car, a car of oil or
131 tank car of oil is delivered here for the Des Moines branch of this gas company say today. When do you get the information with respect to its cost and all that sort of thing?

A. The oil is shipped here on a contract with one of the oil companies, sometimes the Standard Oil Company, sometimes the Sun Oil Company or whatever company they purchase it from. They send a notice when the car is shipped.

Q. Who sends that notice?

A. The company which furnishes the oil, they send us instructions where to return the tank car. They send us a bill for the oil, a bill of lading, and we pay the bill as it is rendered and return the tank car to the point they desire it sent to.

Q. In this particular case that I am trying to use as an illustration you get from the oil company and not from the gas company a statement as to the amount of oil shipped and the price, do you not?

A. Yes, certainly.

Q. When you do that do you have anything in your office from which you can determine whether that price is the price fixed in the contract or not?

A. Oh yes of course.

Q. What do you have?

A. I told you I had a memorandum showing the terms of the contract that would apply to my operations here.

Q. Then in other words you have a complete copy of the contract so far as it affects Des Moines?

A. Have a copy of all vital features to Des Moines and general wording of the contract I don't think I have any copy of that. The information that I have is simply the price, the quantity, the

132 quality that is to be delivered, the terms of payment.

Q. The reason that that situation exists is because, is it not, that this same United Gas Improvement Company has other plants like the Des Moines plant where oil is furnished under the same contract?

A. Under the same contract?

Q. Yes.

A. I don't know anything about that. The advantage to be obtained through the purchasing agent is that he can in buying a large quantity can get it at a better price.

Q. Well there would not be this large quantity for Des Moines?

A. No, it might be a large quantity for a number of other places, probably it is.

Q. The reason he buys a large quantity is because they have a number of places to use it.

A. That sounds reasonable.

Q. Cedar Rapids is one of those places?

A. I never had any information it was, always heard the contrary.

Q. Burlington?

A. Burlington is a property in which they are interested, what that interest was I don't know.

Q. Any place in Iowa?

A. Yes, sir.

Q. Where?

A. Sioux City.

Q. Any other place?

A. No not in this state to my knowledge.

Q. Boone?

A. No.

133 Q. Ottumwa?

A. No.

Q. The same is true of contracts for coke?
A. Certainly.
Q. Coke is shipped here the same *was as* oil?
A. You mean the same general terms?
Q. Under the same circumstances you have just related?
A. Yes, sir.
Q. Council Bluffs belong to the company?
A. I never heard of it, having any connection with the United Gas Company.
Q. You say it is not?
A. I never heard of its having any connection, always heard the contrary, never to my knowledge.
Q. Most of your coke comes from Milwaukee?
A. At present, yes.
Q. From whom does the coke come?
A. Purchased from Pickens, Brown & Company, agents for the Milwaukee Gas & Coke Company.
Q. What is the Milwaukee Gas & Coke Company, does it have any relation to the United Gas & Improvement Company?
A. Not to my knowledge.
Q. You say not to your knowledge?
A. Not to my knowledge. It has a different process from any of the processes——
Q. Isn't it true that it is one of the plants in which the United Gas Company has an interest?
A. Well I should say it is absolutely untrue, but as I said before I am not familiar with the stock certificates of either company.
Q. You are willing to say it is absolutely true?
134 A. I am willing to say it is absolutely untrue so far as my knowledge goes.
Q. About how much coke do you get annually from Milwaukee?
COURT: It seems to me you are anticipating.
A. From six to eight thousand tons a year.
Q. Has it run that way right along since you have lived here?
A. Naturally no because the business has doubled since I came here, more than doubled.
Q. Over what period did it double, when did it commence to double?
A. Well I suppose it commenced the day after I arrived and continued ever since.
Q. Commenced right away when you got here.
A. Yes, sir.
Q. Been doubling up every year since?
A. Not as fast as that no sir.
Q. Well about how fast.
A. That will all be shown——
Q. That is not the question, about how fast.
A. It has about doubled I suppose in the last six or seven years.
Q. Then the last seven years is the period in which you had the largest growth of the business here in Des Moines, is that right?

A. I should say in general that it right, yes.

Q. There never was so far as you know, and you have general information about it a seven year period before in the history of the plant when the business increased as rapidly as it did the last seven years?

A. I think that is right, yes.

Q. Now just a little bit about your plant over here. All of this property except two lots that are in Valley Junction is located east of the Des Moines river and south of the main line of the
135 Rock Island railroad?

A. Yes, sir.

Q. And is it not true that that is in a part of Des Moines that is the least valuable and less valuable in a commercial way of any other part of the city?

A. I should say directly to the contrary, from my experience and judgment on real estate in the city.

Q. The values over there are higher than they are on the west side?

A. For similarly situated property in respect to trackage and other facilities I should say they were less valuable than the most on the west side of the river.

Q. Do you know of any property sold in that neighborhood at all the last seven or eight or nine years except what you bought yourself?

Objected to as not cross examination.

A. Oh yes I know in a general way of several.

Q. What did you pay for the lots you bought yourself?

Objected to as not proper cross examination and immaterial.

Q. Lots 3 and 4 in K as I remember it Scott & Dean's Addition, what did you pay for those?

Objected to as not proper cross examination and immaterial.

A. That I believe was the first property that I bought before the company had ownership interest in there in Block K and the man that owned it wanted to get out of there and I paid him $7,500 and I think a small commission over that if I recollect.

Q. For the two lots?

A. Yes for the two lots.

Q. Did you buy any others besides those two lots over there?

136 Judge CARR: I want it understood I am continuing the objection to the testimony on this subject on the ground that it is not proper cross examination and immaterial.

A. I bought lots 9 and 10 in Block M.

Q. For the Gas Company?

A. For the Gas Company.

Q. And what did you pay for these?

A. $4,500 and a commission on it.

Q. A commission, what do you mean by that?

A. I think the commission was $150, something like that.

Q. You mean you paid somebody $150 to get them for you?
A. Yes, sir.
Q. At $4,500.
A. I think that was what it was yes.
Q. Where are lots 9 and 10 with respect to the main plant of the company.
A. Southwest of all the other property and below the Q tracks and on lower ground than all the other property, they are subject to overflow.
Q. All of this ground is lower than Court Avenue, Walnut street and Grand Avenue isn't it?
A. All of what property?
Q. All of the real estate they own over there?
A. The real estate the Des Moines Gas Company owns?
Q. Yes.
A. Certainly not.
Q. Don't the river run from Grand Avenue towards Court Avenue?
A. It is down the river but it is not lower in elevation.
Q. Have you bought any other property in there since you came here for the company?
137 A. No, sir.
Q. Been any buildings erected there since you came here?
A. You mean on the gas property.
Q. Yes.
A. Oh yes there has been a generator house.
Q. When was that built?
A. That was built last year I think.
Q. How much of a house is that?
A. Well if you want the dimensions I would rather refer to the memorandum, because I can't——
Q. Is it a brick house.
A. It is a brick house, brick and steel construction with a slate roof.
Q. One or two stories?
A. It is equivalent to about three or four stories, but it is divided in the center with one floor because the arrangement of the machinery in there demands that.
Q. Any other building built since you came?
A. An extension to the office building.
Q. What is the character of that?
A. That is a one story extension similar in design to the office building and about I think 12 feet additional.
Q. What is the office building?
A. It is the main office of the works.
Q. I know but what is it? Brick or wood?
A. Oh no brick building with slate roof.
Q. Put about 12 feet additional on that?
A. I think so.
Q. Any other buildings built over there?

138 A. Yes, built two pump houses.

Q. What is the character of those?

A. One of them brick—both of them brick with tar and gravel roof.

Q. One or two stories?

A. Well there is one that is simply a small one story building and *and* the other is one story above ground and a pit excavated as a basement.

Q. Both small buildings?

A. Both small buildings.

Q. Any others?

A. There have been alterations to the other buildings, but no detached buildings except an oil house.

Q. I am talking about buildings, not repairs or anything of that kind?

A. Well there was a small oil house—you mean since I came here?

Q. Yes, since you came here.

A. And a holder with capacity of 1,132,000 cubic feet with a steel tank.

Q. When was that purchased?

A. I don't know when it was purchased, it was erected in 1903.

Q. Do you mean that it was an old one when you got it.

A. No, sir.

Q. Why do you say you don't know when it was purchased?

A. Because I didn't purchase it. It was in process of construction when I came here.

Q. So we are safe in taking it for granted it was new when you came here?

A. It was furnished new when I came here.

Q. That was in 1903?

139 A. Yes, sir.

Q. That is still there and in use now?

A. Oh yes.

Q. Anything else?

A. Last year we erected a meter house.

Q. What do you mean by that, a place to store meters?

A. No, it is a house to house the station meter. The station meter is a large meter to measure the output of the gas as it comes from the works.

Q. Is that much of a building?

A. I can't give the dimensions of it off hand.

Q. A small affair isn't it?

A. You can best tell from the record the size.

Q. Brick?

A. Brick.

Q. One story?

A. One story building with slate roof.

Q. Anything else you think of.

A. Well there is a boiler house on Block B.

Q. When was it built?

A. That I think was built about three years ago.
Q. What is the character of the building?
A. That is a corrugated iron and steel building.
Q. One story.
A. Yes, sir.

—. ——.

A. There is a boiler house on Block C of brick slate roof to house the boiler.

Q. Is there any part of the machinery down there in the main plant that is not in operation now.

A. You mean at this present moment?

140 Q. Yes.

A. I suppose so yes.

Q. Is there any part of it that is not in operation right along that has been abandoned for some time?

A. Well I would not say it has been abandoned, part of it has been shut down.

Q. Well that you don't use?
A. That we don't use?
Q. Yes.
A. I suppose possibly there is machinery there we don't use certainly.
Q. Much of it?
A. No, I don't think so.

Q. You said you bought two lots in Valley Junction. Does this company have a lighting business in Valley Junction operated from Des Moines?

A. The Des Moines Gas Company has yes.

Q. Well that is what I mean. About how many miles of main do they have.

Objected to as immaterial and not proper cross examination.

Q. Is it not part of this plant here, all operated from here, connected with this plant?
A. Yes, it is operated from the Des Moines Gas Company office.
Q. You have charge of it?
A. Yes, sir.
Q. It is not an independent and separate plant?
A. Not at all.

Q. It is all operated in connection with the Des Moines Gas Company's plant here in Des Moines.

A. Yes, sir.

141 Q. You have made all the arrangements and carried on the negotiations with Valley Junction for the franchise, did you not?

Judge CARR: I want it understood that this is all objected to as not proper cross examination and immaterial.

A. Yes, sir. That is I did——
Q. That is you represented the Des Moines Gas Company?
A. I represented the Des Moines Gas Company yes.

Q. The franchise was taken in your name in the first instance wasn't it?

A. Yes, sir.

Q. And is still carried that way isn't it?

A. I think the franchise has been assigned to the Des Moines Gas Company.

Q. At any rate it was originally taken in your name?

A. It was taken in the name of Jansen Haines and W. B. Keffer, grantees.

Q. Mr. Keffer is the secretary up there?

A. Yes, sir.

Q. You furnish Valley Junction gas that is made over here on the east side of the river in these buildings that we have been talking about this afternoon.

A. Certainly.

Q. And furnish it to them under the ordinance that you secured the passage of over there.

A. Yes, sir.

Q. And in that ordinance I believe there is this same two per cent clause that is in the ordinance under which you furnish gas to Des Moines?

A. No, sir, not to my knowledge.

142 Q. Don't you pay Valley Junction two per cent?

A. No, sir.

Q. But you pay to Des Moines——

A. The city of Des Moines gets two per cent for the gas sold outside to Valley Junction.

Q. That is you pay the city of Des Moines two per cent of the gross receipts on the Valley Junction business?

A. Yes, sir.

Q. That is under separate contract from the ordinance under which you were operating or is it under the same one.

A. I don't recollect, I suppose that is a matter for legal opinion not being a lawyer I can't tell.

Q. That plan was worked out since you came here?

A. Yes, the two per cent is paid on all our gross receipts from the sales of gas and has been independently of where it was sold or when sold or to whom sold except from the period of February 7, 1893 on. In 1893 this compromise was agreed upon with the city by which we should pay them two per cent of the gross receipts from the sales of gas subsequent to that period and pay it semi annually.

COURT: Been paying it ever since.

A. Yes, sir.

Q. Isn't this the situation, are you not mistaken about it being paid under your original arrangement. Isn't it true after you got the franchise from the town of Valley Junction, or city of Valley Junction that you procured the council here in Des Moines to grant consent to your making connections and in return for that consent you paid this two per cent on the Valley Junction business?

A. I would have to look that up, I don't know.

143 Judge CARR: I want to state here by way of suggestion that this is a matter of ordinance and if the provisions of the ordinance are material the ordinance itself is the best evidence of what the provisions are. I don't see how it could be of any use in taking Mr. Haines' opinion in regard to it.

Q. I won't press that if you don't know what the arrangement was.

A. That calls for a sort of judicial opinion I should think.

Q. You did, however, know shortly after 1903 when you came here that the then arrangement with the city would expire the first of January 1911?

A. Yes, sir.

Q. You knew that?

A. Yes, sir.

Q. Now you told Judge Carr this morning that you was away from home in October when the city council appointed a committee or directed a member of the council and the legal department to take some action with respect to the gas situation in Des Moines?

A. Yes, sir.

Q. Now up to that time what had you done in the way of ascertaining just what property you had there, what was the value of it what it cost to make gas and all that sort of thing?

A. Up to October 1st?

Q. Yes.

A. It was subsequent to that——

Q. Well I am not asking subsequent, I say up to that time what had you done in the way of ascertaining what property you had and what it was worth and what it cost to make gas in Des Moines.

Judge CARR: You mean aside from general knowledge I suppose?

Q. Yes, aside from general expert knowledge?

A. Nothing that I know of. I didn't feel that it was my
144 place to do anything of that kind.

COURT: The question was, what had you done?

A. I hadn't done anything except continue the operation of the plant.

Q. What did you expect would be done on the first of the year when your arrangement expired with the city, what was your plan?

Objected to as an improper question, immaterial, not proper cross examination being immaterial what his expectations were.

COURT: In one view of it I am inclined to think the question is a proper question.

A. I don't think that I expected anything. My plan was simply to continue the operation of the plant and sell the gas the same.

Q. You knew Mr. Haines, didn't you, that the city council was not in possession of the information necessary to ascertain the value of your property or the cost of making gas in Des Moines in October?

A. Yes, that is why I offered to give them the opportunity to obtain the information.

Q. I didn't ask you why you offered it, I simply wanted to know

if you did not know they didn't have that information. Not it was your plan was it to just continue the old arrangement after the first of the year and continue to charge the city and th- consumers the same rate for gas that you had during the period of the former arrangement, that was your plan was it?

A. Yes, sir.

Q. And that was the intention of your company was it?

A. Yes, sir.

Q. There was no purpose on the part of the company or you to make any reduction whatever in the price of gas after the 1st of January 1911?

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A. No purpose on the part of the company or us to make any r-duction or increase in the price of gas.

Q. Proposed to go on with the same arrangement that you had for the past year?

A. Yes, sir.

Q. When you commenced your debate with Commissioner MacVicar—you will pardon me for terming it that—it was your intention was it to be entirely frank with the city in the information that you gave?

A. Yes, sir.

Q. You had no intention to mislead the city council or public in any statement that you made in your letter?

A. Absolutely none.

Q. Why did you put then into your letter this statement, the letter of November 22d that has been marked in this case Exhibit 7—let me withdraw that question for a moment. If I understood your testimony correctly this forenoon you stated that you wrote the first letter to Mr. MacVicar in response to a verbal suggestion from him with respect to a change in the company's arrangement with the city. Am I right in that?

A. I don't know whether you quoted the testimony right, but what you say is practically true.

Q. Now you say practically true, what is the real truth?

A. The real truth was it was not a suggestion, it was a request from Mr. MacVicar for a proposition.

Q. What did Mr. MacVicar say he wanted you to do?

A. My recollection is that he asked if I would submit a proposition to him of what we would do in respect to the price of gas after the first of the year. If those were not the words they conveyed the thought as I recollect it.

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Q. Now when was that that you had that talk?

A. That was on the 1st of November I think, either the 1st or 2d of November immediately on my return.

Q. 1910?

A. 1910.

Q. Now what did he say to you with respect to what the city expected or hoped in regard to the new arrangement as to rates?

A. My recollection is that he said that the city, or I don't think he said the city, he said that he expected a ninety cent rate and subsequently asked me for this proposition. I met him by appointment in his office at the city hall. I think it was on November

first, just after I came back to the city. I had been in the east attending a meeting of the American Gas Institute when this ordinance was passed.

Judge CARR: The resolution.

A. When this resolution was passed.

Q. Then taking your answer right at that point, up to the time of the passage of that resolution you had done nothing in the way of making an inventory of the gas company's property?

A. No, sir.

Q. When if ever was an inventory made of that property after your connection with it prior to the one that was made within recent weeks?

A. There was no detailed inventory made during my connection with the company. There was a rather perfunctory inventory made in 1908.

Q. Where is that inventory?

A. I don't know.

Q. Perfunctory in what respect?

147 A. Well it was gotten up rather hurriedly and rather roughly for *for* the purpose of taxation.

Q. And was furnished to the assessor was it?

A. I think the totals were furnished to the assessor. I don't believe the details of it was.

Q. Who was the assessor at that time?

A. That would be——

Q. Charlie Schramm wasn't it.

A. Schramm I think.

Q. One of the present commissioners?

A. I think so, yes.

Q. You furnished him in 1908 made under your supervision a general statement as to the value of the gas company's property in Des Moines didn't you?

Objected to as not proper cross examination.

A. Yes, sir.

Q. When you furnished that to him it was for the purpose and you knew at that time it was for the purpose of advising him with respect to the value of the property for the purpose of making an assessment as assessor did you not?

Objected to as not proper cross examination.

A. Well I made my report to him on the blank under this section 1323 of the code.

Q. Made it under oath too didn't you?

Objected to as not proper cross examination incompetent and immaterial.

COURT: Of course the paper ought to be produced.

Q. You made that statement under oath too didn't you?

Same objection, not the best evidence, immaterial, not proper cross

examination, the witness has not given any testimony as to
148 the value of the property, has not been interrogated in regard to it at all.

COURT: There is only one theory upon which it might be competent and that it is not necessary for me to state here. Of course the contents of the paper, you would not have a right to ask him about the contents of the paper.

Mr. BYERS: I don't want that now, I will take care of that later. What we want to know of the witness is what he did.

A. I don't know or recollect whether I made that statement to him any more than talking to him, under oath.

Q. You signed your name and swore to the paper didn't you?

A. I don't think I did. The paper would show for itself.

Q. If the paper purports to show that you swore to it, that is the fact?

A. Yes, certainly.

Same objection and calling for a conclusion.

Q. On November 22d in response to Mr. MacVicar's request for a proposition from your company you gave in that letter certain facts and figures with respect to the business of the company in Des Moines?

A. What letter is this?

Q. It is the letter of November 22d, the first one of the series.

A. Yes, sir.

Q. You knew when you wrote that letter and mailed it to Mr. MacVicar that the purpose of the letter or the purpose of MacVicar in asking for a proposition was to base an ordinance upon the part of the city council involving the gas situation in Des Moines didn't you?

Q. And it was with that in view you wrote the letter was it not?

149 A. It was at his request for a proposition.

Q. Why did you make up this sort of a statement after stating the earnings of the company and deducting from the average gross revenue the expenditures for operating expenses and taxes, and *and* the $49,000 item for depreciation, a sum which you say is *is* ascertained by taking ten per cent of the average annual gross revenue, then you say this leaves $139,191.52 as the average annual net income received by the company for interest and profits which amounts to 8 per cent on $1,739,894. Why did you make that statement?

A. Read the rest of it, you will find out Mr. Byers.

Q. Answer me as to that, why did you take the $1,739,894 as a basis?

A. I will explain it to you. I took the average annual net income of $139,000 and divided it by 8/100 or 8 per cent and that gives $1,739,000. At that time we had no knowledge of the value of the property in sufficient detail and accuracy to state it or we would have stated it and for that reason I said that, however, I believed that the value of the property is largely in excess of this sum, which it is.

Q. You were willing at that time when you wrote this letter to take the responsibility upon yourself of submitting a proposition to the city council upon the basis of the value of the property of this Des Moines Gas Company at $1,739,894?

A. The question is was I willing to take the responsibility?

Q. When you wrote this letter you were willing and that is the thought you wanted to convey to Mr. MacVicar and the council of the city of Des Moines to be such that the earnings of the company was shown on your books at the time you -rote this letter and
150 measured upon the basis of the value of the total plant of $1,739,894?

A. No, sir; that has nothing to do with it at all. The statement was made because I did not have any competent figure to give as the value of the property.

Q. Well did the council have any?

A. And therefore I took the earnings and divided it by 8 per cent and on the sum arrived at by that division I—rather I obtained the sum of $1,739,000. Now that was not understood to show the value of the property, had no connection with the value of the property, the figure was given to show that it would only earn 8 per cent on less than the value of the property.

Q. Why did you adopt the 8 per cent proposition. What did you want to convey to the council and public by these figures?

A. It was just after the Master in Chancery had established the 8 per cent as the rate of return on investment which the Des Moines Water Company was entitled to and I used that simply as a precedent.

Q. Now let me put this question to you, you as general manager of the Des Moines Gas Company with all the information that you yourself had and which you had gained in a period of about eight years as not only general manager with respect to physical property, but general manager and general disbursing officer of the company in Des Moines, you were willing with that information to accept 8 per cent, a return of 8 per cent upon a valuation of $1,739,894?

(Question withdrawn.)

Q. When you wrote this letter Mr. Haines, you were undertaking to advise the council through Mr. MacVicar as to the income of the company here in Des Moines, didn't you, you set out the
151 figures as you claim they were and would appear from your books?

A. Yes, sir.

Q. Then after you had done that and found what you claimed in this letter to be your net revenue——

A. Yes, sir.

Q. Then you said to the council that that would represent 8 per cent upon a valuation of $1,739,894.

A. I would like to see that correspondence.

Q. All right sir.

A. In answer to your question I want to state that you incorrectly read this letter. This refers to $139,191.52 as the average annual net amount received by the company for interest and profits which amounts to 8 per cent on $1,739,894.

Q. Isn't that the way I read it?

A. No, sir. You read it on a valuation of that amount.

Q. No, that is my question, I didn't read it from the letter.

A. I thought you were reading it from the letter. I didn't state in this letter or at any time it was a valuation.

Q. Is that all you claim for it, that you didn't use the word "valuation"?

A. How do you mean?

Q. What did you expect the council to understand by these figures $1,739,000.

A. What any man would understand from reading this letter. I presumed they were intelligent enough to understand it as I wrote it.

Q. If your property was worth more at that time you didn't know it?

A. I stated it in the letter did I not?

Q. You said you thought it was in excess?

152 A. I said I believed it was.

Q. You had all the information in the world about it except a detailed invoice?

A. Yes, and I went on and suggested in the letter that I would have an inventory and valuation made and that the city council could appoint their engineer to co-operate with my men, get the advantage of all information they were collecting and that they could verify the statements I had made there by an examination of my books. That continues in the letter.

Q. You know at that time that the council and Mr. MacVicar did not have the information you had.

A. That is offered in here to give it to them.

Q. I say you knew it?

A. Certainly that is why I offered to give it to them.

Q. Suppose the city council and Mr. MacVicar had acted upon this letter and passed an ordinance permitting you to earn eight per cent upon $1,739,894, you would have understood that they believed that to be the value of your property wouldn't you, and that was what you intended for them to understand?

A. No, sir; it is not absolutely.

Q. If it was more, why didn't you say so, why didn't you give them figures?

A. I made that proposition to them with the offer that they should go into my books.

Q. Who wrote the letter?

A. I wrote the letter.

Q. Who dictated it?

A. I dictated it.

Q. Who took it down?

A. I think the girl in my office.

153 Q. What stenographer?

A. I think the girl in my office.

Q. Well did she?

A. One of them must have.

Q. Did your stenographer take that?
A. Absolutely.
Q. In your office?
A. Yes, sir.
Q. You have the notes up there?
A. I don't suppose so, have enough copies without.
Q. Did you dictate the petition in this case?
A. No, sir.
Q. Who dictated that *the* bill of complaint?
A. I suppose our counsel dictated it, I mean counsel for the company.
Q. Who was the counsel at that time?
A. Messrs. Carr and Read and Guernsey.
Q. At the time that petition or bill of complaint was drawn did you have any additional information with respect to this property over what you had when you wrote this letter?
A. Only in a general way. We hadn't completed our inventory at that time.
Q. When you wrote this letter Mr. Haines and gave these figures as figures that the council might rely upon anyway as being at least low enough for the value of this property, what idea did you have in your mind as to the value of the property, what did you take into consideration.

Objected to as immaterial, not proper cross examination, simply calling for an examination of the witness.

COURT: I hardly think that is competent cross examination, but we will take the answer.

Judge CARR: I make the further objection the question assumes a statement which is not true and if it is not true any evidence taken to show he assumed a figure as the value of the property, it is not so assumed at all in the letter.

COURT: I don't understand these letters are evidence of any facts stated there at all. They are not evidence of the facts stated in them and cannot be evidence of the facts at all.

Mr. BYERS: I understand that perfectly.

COURT: If they were evidence of the facts I would not hesitate a moment in saying that was cross examination.

A. As to the first part of the question there was not anything in the letter or in my mind nor no thought or effort to convey any valuation of the plant in submitting that figure of $1,739,000. That is fully explained in the letter, it is simply a question of ta-ing the earnings as they were on the books and as we offered to submit to an examination for verification by the council and dividing it by the percentage which had been allowed by the Master in Chancery in the water case and which the council was thoroughtly familiar with and by doing so we arrived at a certain sum that had no relation to the valuation of the property, was not referred to as the valuation of the property and I had at that time no way of getting what the valuation of the property was and therefore in the rest of the correspondence I made con-offers to the council to investigate and co-

operate with our engineers because I had not that information and I knew they could not get it and I wanted them to have it.

Q. Well now you have not answered the question at all.

A. Well I can't do it.

155 Q. You were in the management and control of this business in 1906 were you not?

A. Yes, sir.

Q. Was that the date of the reorganization, the year of the reorganization?

A. The organization of the Des Moines Gas Company was in 1906 yes.

Q. What was the name of the corporation before 1906?

A. The property belonged to the Capital City Gas Light Company.

Q. What was the Capital City Gas Light Company?

A. A corporation organized under the laws of the state of Iowa.

Q. Did it have any relation to this United Gas & Improvement Company?

A. Part of its stock or all of it, I presume was owned by the United Gas Improvement Company.

Q. Is the record of the reorganization up there in your office?

A. You mean the minute books.

Q. Yes.

A. Why yes I suppose they are now.

Q. What became of the property of the Capital City Gas Light Company?

A. It was purchased by the Des Moines Gas Company.

Q. At what price?

Objected to as not proper cross examination, immaterial and incompetent.

A. I don't know without referring to the minute book, I can't give the figures.

Q. Well you had them at your elbow when you wrote this letter didn't you?

A. No, I did not.

Q. Where were you when you wrote this letter?

A. In my office.

156 Q. Where was this information?

A. I presume it was in Philadelphia at that time.

Q. It is here now is it?

A. I believe it is here now, yes.

Q. And so you knew nothing about it at that time?

A. About what.

Q. The price at which the property was taken over.

A. I had heard and in a general way was familiar with it. I had no authority in it, it was merely——

Q. Who closed up the books of the Capital City Gas Light Company?

A. I presume the auditors did at that time, the auditors of the company.

Q. Didn't you have anything to do with it at all?

A. Not personally no.

Q. Was it done over there in your office?

A. Yes, sir.

Q. Can you tell us now about what this property was put in in 1906?

Objected to as being immaterial and not proper cross examination.

A. No, sir.

Mr. BYERS: I would like to have you get the information for me and furnish it to us in the morning if you can, furnish the minute book showing the proceedings covering the transfer of the property of the Capital City Gas Light Company to the Des Moines Gas Company, or United Gas & Improvement Company which ever the transfer was made to and the reports, the monthly reports for November—beginning say with September, October, November and December of 1910?

Judge CARR: We insist most earnestly that these two items of evidence called for are not cross examination of this witness.
157 If they are proper items of evidence, they may be obtained in a proper way on a proper showing, but they are not cross examination either one of them of any matter gone into in the remotest degree by this witness and therefore unless the Master so orders we don't want to come down here with a lot of matters inquired for that we do not regard as cross examination, but if your honor thinks they are and we should produce these things we will.

COURT: I have not any question about these things being proper at the proper time. The only question in my mind is about when what time they become competent and under what circumstances.

Mr. BYERS: We will stand upon the record just now as it is and they do not produce then we will ask for a rule.

Here the further hearing was adjourned until 9.30 A. M. tomorrow.

158 FRIDAY, *July* 14, 1911.

Convened at 9:30 A. M.

All counsel for respective parties present.

Testimony on the part of complainant resumed as follows:

The MASTER: Before beginning I want to ask a question. Was Mr. Haines asked the question as to the total receipts and expenditures for the past three years?

Judge CARR: No, sir; he was not asked anything as to expenditures or receipts or as to values. His evidence was confined entirely to a general statement of the property owned by the Company.

Mr. BYERS: We did not go into that.

The MASTER: With reference to these papers last night, I haven't any question but what you are entitled to investigate all that pertain to the receipts and expenditures and values, etc., and it is the duty of the complainant here to produce them.

Judge CARR: I might say in regard to that, some days ago Mr. Brennan asked for arrangements to be made for an expert accountant on behalf of the city to come to the office and examine records, and asked that a room be prepared without interference and annoyance of the Gas Company and we notified Mr. Brennan on Monday of this week that we had such a room prepared for him.

Mr. BRENNAN: I want to say that Mr. Hall, our expert accountant was delayed and I forgot to tell you about it.

159 THE MASTER: You are asking now that these accounts may be investigated. You can produce anything bearing on that question.

MR. BYERS: Of course the court understands, and Judge Carr does, too, the situation of the city. Now, the books of accounts and information necessary to arrive at a fair judgment about the value of the property, the character of the business and a reasonable rate, that information is peculiarly within the control and under the supervision of the witness. Now, on this preliminary examination of the President of this company, even though it is on cross examination, I have thought it entirely proper to ascertain just what documents we ought to examine and what documents and papers have been kept in connection with the business.

The MASTER: That is all proper enough. You are entitled to them some time or other; as to that I have no question at all.

Mr. BYERS: Of course, another purpose—I ought to be frank enough to state it now—another purpose of pressing this witness on these documents and detailed information was to meet the alleged charge on inference that may be drawn from the character of the testimony Judge Carr introduced yesterday with respect to these communications.

The MASTER: I suppose these papers will be produced without the necessity of any order.

Judge CARR: If they ask for an investigation of any records that we do not think it is proper for them to investigate then it may become a question for your Honor to pass upon. Whatever records we have that show the expenses and receipts that go into the accounts, of the figures that go into our bill, that your Honor will

160 want us to produce, it has been our attitude from the start to give the city a full opportunity for an examination. We thought we ought to have the right to try our case in what we thought an orderly way and that the other side have no right under the guise of cross-examination to change the order of proof.

The MASTER: I do not expect to pass upon the matter of cross examination. So far as that is concerned I will let the record be made. I expect to continue that on both sides. I know there were several questions I thought were improper, but as they went on, I saw their relevancy as proper cross examination.

JANSEN HAINES, re-called for further cross examination. Examined by Mr. Byers, and testified as follows:

Q. Just briefly, Mr. Haines, about your testimony of the desirability of the location of this property on the east side, among other

things in your responses was the statement that the Belt Line furnishes cars without charge. What is the Belt Line?

A. What I mean by the Belt Line?

Q. Tell me now what is the belt line.

A. What I meant by the Belt Line, is the Des Moines Union Railway.

Q. That is what you meant? The road you referred to was the Des Moines Union?

A. Ordinarily known as the Belt Line here.

Q. Where is its trackage with respect to your property?

A. Its track is about a half a block north of the Rock
161 Island track, but it has the switching arrangements with the other roads there; it switches the cars of all the other roads.

Q. And uses the other roads' tracks?

A. It uses its own yards and the other roads' tracks.

Q. That is to say, if a tank of oil was to be shipped to you over the M. & St. L. road, it would be delivered at the plant by the Des Moines Union?

A. No, that is not correct.

Q. Tell us how it would be?

A. We do not get tank cars by the M. & St. L., but if we did it would be delivered to the yards of the Des Moines Union Railway and they would switch it to the Rock Island and it would be delivered on our siding or the siding adjacent to our works by the Rock Island switching engine.

Q. And the Des Moines Union would perform that service without charge to your company?

A. Yes, sir.

Q. Did you make that statement for the purpose of showing the value of the location of the plant there because of that facility being furnished *being furnished* without charge; was that your idea?

A. I think that makes for value.

Q. Who made that arrangement with the Des Moines Union?

A. What arrangement do you mean?

Q. That you referred to having delivered the cars of material and supplies to your plant without charge to the plant?

A. I don't know.

Q. When was it made?

A. Why it is a matter of common knowledge, but the details of it I don't know. It is regularly known by all shippers of car
162 lots here in Des Moines. I have always understood it to be so.

Q. That wouldn't furnish us the information that shippers generally know it; is it a general arrangement with all the shippers?

A. With all the railroads.

Q. Then there is no difference between your plant with respect to this service and any other plant in Des Moines?

A. There is this difference, as I understand it: that if we were located on one of those roads without these facilities, that there could be an extra charge of two dollars a car for handling the cars on our siding.

Q. You mean some particular roads entering Des Moines?

A. Yes.

Q. Are there some roads entering Des Moines that are not furnished this service by the Des Moines Union?

A. That is my understanding.

Q. Then it is a matter of contract between your company and certain railroads and this Des Moines Union?

A. It is not a matter of contract between our company and any railroads that I am aware of. The contract as I understand it, is between the railroads. What the terms of the contract are, naturally I am not familiar with.

Q. Well, if a car load of oil is shipped over the Northwestern Railroad, how do you get it?

A. I believe that is handled through the Des Moines Union yards the same way. But of course we are not interested in the matter. In buying the oil we do not have to pay an additional switching charge, which I understand some plants in Des Moines do have to pay for car lots received.

Q. That is to say, this Des Moines Union serves your company without compensation and charges other local plants switching
163 charges for the same kind of shipments?

A. That is correct. The switching charge as I understand it is made, but it is absorbed on the road on which shipments enter Des Moines.

Q. What I want to get at, is just what you claim for this statement that you receive service in transportation that don't cost you anything and therefore it made your plant that much more value.

A. Haven't I so stated it?

Q. Is that all there is to it?

A. I think the evidence covers it, as far as I know.

Q. Now, the Northwestern does not reach your yards?

A. No.

Q. The Milwaukee does not reach your plant?

A. No.

Q. The M. & St. L. does not reach your plant?

A. I don't know whether the M. & St. L. does or not under some trackage agreement between the Keokuk & Des Moines.

Q. It has no track of its own that approaches your plant?

A. No, but the K. D. cuts through one of the streets that goes through our property and there has been a general understanding that they are operating under a lease or contract with the M. & St. L.

Q. The Chicago, Milwaukee & St. Paul does not reach your plant?

A. You just asked me that and I said no.

Q. The Illinois Central does not reach your plant?

A. No.

Q. Does the Burlington reach your plant?

A. Yes, the Burlington line through Des Moines really cuts through the south part of our property.

Q. Now, Mr. Haines, let us see if we can get at the advan-
164 tage that comes to your plant by reason of the service of the Des Moines Union. If a car load of coke, for instance, is

shipped from Milwaukee to Des Moines over the Chicago, Milwaukee & St. Paul Railway, the freight is charged to what point?

A. In the first place we do not buy coal in Milwaukee; we buy coke.

Q. I said coke.

A. Pardon me. If that is shipped to us we pay the freight at the tariff rate from Milwaukee to Des Moines and the car is ultimately placed on our siding or the siding adjoining our plant.

Q. Now, that car of coke would be delivered by the Milwaukee Railroad where, in Des Moines?

A. You will have to ask the Milwaukee people to tell you that. I am not familiar with their trackage system.

Q. You ship a great deal over their road?

A. Certainly. I said they are delivered on the siding at our plant. It is delivered there, I should say. It is delivered so far as the freight paid to them is concerned, we pay the freight bill to the Milwaukee road and the car arrives at our siding at the plant.

Q. Who delivers it at your siding of your plant; what transportation company delivers it to you?

A. The Rock Island or Des Moines Union switch engines deliver it at the plant there.

Q. Does this Belt Line you refer to have anything to do with it?

A. Yes, sir.

Q. That was your understanding you had in your mind when you gave this answer?

A. Yes, sir.

Q. Another advantage you suggested was that it was above flood line. Now that is due entirely to a fill that had been made
165 there by the Company itself?

A. Well, as I stated yesterday, the ground has been higher, the flood line, practically all the time since I have been in Des Moines.

Q. All the ground you describe here belonging to your Company?

A. No, the part on which the vital part of our plant is situated.

Q. Right around the main plant the ground is higher and it is filled four or five feet?

A. Block- B and C, what I referred to, the vital part of our plant which were protected as being above the flood line.

Q. That is all because of an artificial fill?

A. It is partly so, but what the original levels of the ground were I cannot state, because I was not here many years ago.

Q. How many miles of main are there in connection with the Valley Junction service?

A. Approximately six or seven miles, I think.

Q. Is that included in your 182 miles?

A. No, sir.

Q. That was separate?

A. That was separate.

Q. How many street mains do you have in Valley Junction, or connections, or street mains?

Objected to on part of the complainant as not proper cross examination.

Q. I mean that is served now by this plant over here.

A. Let me understand your question please. May I ask whether you mean street mains or services?

Q. Street mains.

A. Just about six or seven miles in Valley Junction.

Q. Does that include the mileage from Des Moines to Valley Junction?

A. No, sir.

Q. How much is there of that?

166 A. About five or six miles. That main also serves consumers in Des Moines all the way out.

Q. Exactly. There is then, if I understand you, about eleven miles of main that makes the main service connection between the plant here on the east side of the river to the town or city of Valley Junction?

A. That is not correct; because the mains between here and Valley Junction supply a number of consumers on its own route.

Q. I understand that. You get your gas to Valley Junction through a main about eleven miles long, four or five miles of it within the city of Des Moines and five or six of it outside of the city?

A. The five or six outside of the city I have not included in the 182 miles, but the 182 miles does include the mains laid in Des Moines.

Q. Am I right in the statement just made?

A. My answer is correct, if it answers your question.

Q. About the service connections in Valley Junction, or about eleven miles from this plant?

A. No, sir; there are about six miles from this plant.

Q. That then is the distance from the plant to the farthest point that your main runs in Valley Junction, is that right?

A. It is about that. Yes, the map will show it right there before you, I think it is six or seven miles.

Q. What is the annual amount of gas furnished the Valley Junction end of your plant?

Objected to on part of the complainant as not proper cross examination and immaterial.

Mr. BYERS: To avoid any possibility of that objection being good, I will change the question.

167 Q. What part of this two and one quarter million or this five million capacity that you talked about yesterday is kept or served to Valley Junction?

A. I should say about one to one and a half per cent possibly.

Q. Give it to me in cubic feet?

A. In the capacity?

Q. The amount you furnish?

A. We sell about seven million feet of gas a year in Valley Junc-

tion out of about five hundred and thirty odd million feet, including Des Moines, which is a little more than one per cent.

Q. How many service connections do you have in the Valley Junction line?

Objected to on part of complainants as immaterial and not cross examination.

A. Let me first understand what you mean by Valley Junction line.

Q. Is there any difference between the Valley Junction line and the plant, except that it extends beyond the territorial limits of the city—I refer to the service in Valley Junction and outside of the city of Des Moines?

A. Your question is too hard to answer; it is too involved.

Q. Well, let me get the complication out—this plant over here serves both Des Moines and Valley Junction?

A. Yes, sir.

Q. You have no separate or independent plant in Valley Junction?

A. No, sir.

Q. Whatever gas is served to Valley Junction is made in the plant over here on the east side?

A. Yes, sir.

Q. It is made in the machinery you say has a capacity of about five million cubic feet?

168 A. Yes, sir; that capacity includes several machines.

Q. Now, then, how many service connections do you have on the Valley Junction line outside of Des Moines?

A. Will you pardon my making a little technical change in your question. Isn't the question you mean, how many service connections have we to our main system in Valley Junction?

Q. Well, answer it that way.

A. We have, I think, about five hundred; but I don't know the exact number off-hand; about five hundred and forty, I think.

Q. It would be fair to say somewhere between five hundred and five hundred and fifty?

A. I think that would be correct.

Q. How many meters do you have?

A. Approximately the same.

Q. And the Valley Junction service and everything pertaining to it so far as the business end of it is concerned is carried on from the general office here in the city of Des Moines?

A. No, that is not correct. We have an office in Valley Junction which handles the receipts from the sales of goods and supplies customers there with fixtures and what we term sundry sales.

Q. That is a mere branch of this office; you furnish from this office all the supplies?

A. Yes, sir; it is simply a branch office.

Q. You say the daily capacity of the plant is five million cubic feet?

A. Yes, the total daily capacity of the manufacturing plant is five million cubic feet.

Q. Now what would be necessary—could you make five million cubic feet tomorrow over there?

A. I think we could, yes sir.

Q. Are all the machines over there ready for gas making right now?

169 A. Well, it simply means the question of starting up the engines and blowers of the plant.

Q. Has it ever been run to its full capacity?

A. There has never been any occasion to run to the full capacity.

Q. You have been here about eight years?

A. Yes.

Q. There never has been a time when it was run to anywhere near the capacity of five million cubic feet?

A. Now, let me explain what I mean by the capacity of the plant, if that is competent.

Q. Just answer this question.

A. Yes, it was run during the winter month, it was run to approximately half of that capacity.

Q. What is the greatest number of cubic feet of gas that was ever made since you have been here, in that plant in one day?

A. About two and a half million feet; but the additional capacity of course is for reserve in case of break-down, as I have explained before.

Q. Now, two and a half million you say has been manufactured over there upon some particular day within the last year?

A. Approximately so.

Q. What do you mean by approximately so?

A. Put it in this way: Our maximum delivery of gas from the works last winter was 2,228,000 feet. The operation of our manufacture is continuous and we cannot make just that much gas and stop; so that we have to make a little more or less, whatever it happens to be each day, than the amount actually sent out during that day. That is the reason, I say we have manufactured approximately two and a half million feet, but just exactly what that is I should have to go back over each daily record to see.

Q. What I am trying to get at is the greatest amount that
170 has been made in that plant upon any given day since you have been here.

A. Well, the greatest demand upon the plant does not necessarily follow that *that* the amount is sent out.

Q. I mean the amount actually furnished?

A. The amount of gas delivered was 2,228,000, but it is frequently necessary to make more.

Q. Do you mean delivered to consumers or delivered to the holder over here?

A. No, I mean delivered to the consumers through the distribution system for consumption from the holders.

Q. What was the greatest amount ever delivered to the holders?

A. I can't answer that. It is measured, but I don't keep that in mind.

Q. It is measured and the amount recorded in the books every day?

A. Oh, yes; every day.

Q. And the amount that goes out to consumers is measured and tested every day?

A. The amount that goes out to consumers is the amount that interests me; the other does not.

Q. That is, what you might term over-supply or waste, doesn't concern you?

A. We have not discussed over-supply or waste; what do you mean by that?

Q. Don't you know what I mean by that. If you were to make three million cubic feet of gas when you only needed two million, you would simply carry the other over to the next day?

A. That is the idea; then we make less the next day.

Q. So you are only concerned in the amount that goes to the consumer.

A. That is what I had reference to.

171 Q. Is there any difference between the amount delivered to the consumer at his meter and the amount that leaves your station meter?

A. Yes, sir; of course there is.

Q. That would be waste?

A. That is due to leakage or condemnation in the mains.

Q. You don't get any pay for that?

A. No, we don't get any pay for it.

Q. What is the size and capacity of the water gas generators over here?

A. We have what is known as two six foot sets or units, with a capacity of about three hundred thousand cubic feet each. Then we have two eight foot six sets or units with a capacity of about 1,200,000 cubic feet per day each, and these are in duplicate, so that in case of interruption of the service by breakage or necessary shut down for repairs we will be provided with capacity in our reserve apparatus against that shut down. Now last year having exceeded the safe capacity of our reserve apparatus, we erected an additional larger unit, ten foot six, standard size, with 2,000,000 capacity, and we are now so situated that we have sufficient manufacturing capacity with our largest unit down for repairs, and that largest unit when it is in operation is of sufficient size to take care of our ordinary and normal demand and allow us to suspend the operations of the other sets which are naturally less economical in operation than the largest units.

Q. In other words, with your plant as now constructed you can serve all of the consumers that you have by running your plant at about one-half its capacity?

A. Yes, sir; that is correct.

Q. How long has that been so?

172 A. Some time last year; I have forgotten exactly the date.

Q. Give us the date as near as you can?

A. I think the date was in that inventory. It was installed in 1909.

Q. As I understand your answer, Mr. Haines, when your largest unit over there, the one with a capacity, as I understood you to say, of about two million is out of order, you can serve the consumers of the Gas Company very readily with the balance of the plant?

A. That is our idea. That is the reason for it and that is why it is so.

Q. Now Exhibit 7, Mr. Haines, which is one of the communications to Mr. MacVicar of date November 22, in that you say that the gross revenue from the sale of gas for twelve months ended September 30th, 1908, was $457,105.95; did that include gas sold to Valley Junction?

A. I really forget, Gen. Byers; we got up those figures in the office and they will show on our books whether it did or not. It was such a small percentage that I am not sure whether I included it or neglected it; it would amount to about one and one-half per cent.

Q. You say for September 30, 1910 it was $526,293.50; I suppose the same answer will apply to that?

A. The same answer.

Q. You say for the twelve months ended September 30, 1908, the operating expenses and taxes were $281,613.48; now what expenses were included in that item?

A. Well, if the Valley Junction receipts were left out of it, they would be left out of it too.

Q. Do you have any recollection about it?

A. I don't recollect that.

173 Q. Do you keep a separate set of books in your office for the expenses for Valley Junction and a separate set for Des Moines?

A. No, we keep one record of all.

Q. And the officers and employés of the Des Moines Gas Company here at Des Moines who serve the end that goes to Valley Junction, that expense is all included in your general expense account here, isn't it?

A. Yes, it is all provided for.

Q. And the probability is it is included in these figures, is it not?

Objected to on part of complainant as being improper cross examination.

Q. What will you say about this expense item for the three year period ended September 30th, 1910, $303,411.66; what does that include?

A. Well, the items will all be shown on our books. I do not carry those figures in my head and cannot possibly do it.

Q. Can't you tell me in a general way what it covers?

A. It covers the same form of classification and expenses as shown on our books.

Q. Can you give me in a general way what they are as shown on your books.

A. The books show for themselves.

Q. That is the only answer you can make?

A. That is the best answer, yes sir.

Q. Is there anything charged to depreciation in these operating expenses?

A. The books will show.

Q. Do you know whether there is?

A. No, sir.

Q. Not in your operating expenses?

174 A. No.

Q. You say in this letter that there must be deducted for depreciation the sum of $49,178.13; does that item appear on your books anywhere?

A. No, sir.

Q. Does any similar item appear on the books anywhere since you have been running the Gas Company in Des Moines?

A. No, sir. That was taken from the Wilcox case in New York, as applicable to our situation here.

Q. You thought your case and the Wilcox case was so near alike that you could make the same depreciation charge here?

A. There are some elements of similarity.

Q. You wouldn't want to stand for the same thing as to rates?

A. I haven't been asked to.

Q. Has the Company since you have been in the management of it, been making any charge on the books at all for depreciation?

A. It started to for some specific items a few years ago.

Q. How long ago?

A. About two or three years ago.

Q. It had not, however, up to that time had any such account?

A. No.

Q. Give us as near as you can the time when it began to do that?

A. Well these items covered minor depreciation, on small items, simply specific items.

Q. What was the character of it?

A. They were of the automobile expenses, the engineer's automobile.

Q. Well, anything else, any other item?

A. And on the motor cycles used for our men, just includes motor cycles and automobiles. I think those were the only things charges off specifically, except the stable equipment.

175 Q. Now out of what fund have you been paying the general repairs of the plant?

A. What do you mean by fund?

Q. To what account or fund would you charge up your general repairs?

Objected to on part of the complainant as not proper cross examination.

Q. I am trying to get at now as near as I can to something about these items you put here in this letter.

A. The general repair items are, repairs to machinery are charged according to the standard classification of accounts against the various accounts, manufacturing or distribution. But it is not customary and never has been customary to charge specifically depreciation on their books, excepting in a very few instances.

Q. When you put the addition on the office over here a year or two ago, what account did you charge that to?

A. That was a property account. I have forgotten the name of the account. When we make an improvement of that kind a special account is opened for it and is kept in that account.

The MASTER: You mean by betterment an addition to the value of the property?

A. We distinguish between betterments and improvements in our classification of accounts.

Q. Let us take this one item here and see if we can get any information out of it: On September 30th, 1910, you say the operating expenses were $345,288.43; what is the largest item included in that sum total?

Objected to on part of the complainant as not proper cross examination; the witness did not in his testimony in chief go into this matter at all, and the propriety or impropriety of taking
176 the time for this—I want to call your Honor's attention, there is now at this moment an expert accountant going over the accounts which of course later in this case will go into this matter fully. I don't see why we should go into this matter with Mr. Haines.

Mr. BYERS: When you had this letter identified and offered and read it into the record, not only once but twice, was it your purpose to give these figures standing in this court?

Judge CARR: It was my purpose to do just what I did do.

Last question repeated to the witness.

A. Well, it would be impossible for me to answer that without looking at the books.

Q. Every single item of repairs of the plant for that year, and during that period is included in that general sum, isn't it?

A. It should be, yes sir.

Q. And if there was any reconstruction of buildings or any additions to any of the buildings over there it would be included in that sum?

A. Absolutely not, no sir.

Q. Where would it appear?

A. It don't appear in that statement at all; it was not expected to appear there; that has nothing to do with the improvements and extensions of the plant. It does not so state in the letter.

Q. I don't so claim it. I am simply trying to find out what you covered in that item. What else besides repairs in connection with the plant did you include in the item?

A. All the operating expenses, including taxes.

Q. And the salaries of officers, assistants, helpers and employés?

A. All which were properly charged against operating im-
177 provements but not those charged to improvements or betterments.

Q. Now, in this item was included the taxes for the company, the entire tax of the Company here in Des Moines?

A. In Des Moines, Yes sir.

Q. All that they were required to pay is included in that item.

A. Yes, sir.

Q. If you will just tell the Master what you consider properly chargeable to operating expenses, that will end this examination so far as I am concerned; you have used that term two or three times.

A. If your Honor, please, there is a very long list of items entering into the operating expenses, a great many materials that are used, and I cannot enumerate all of them, but perhaps the principal ones, and as many as I can recall of the others. But I don't think I can remember them all.

The MASTER: You could not be expected to remember the items.

A. The manufacturing materials and the labor used in manufacturing——

The MASTER: You mean by that the coke and coal?

A. I mean such principal items as oil, coke, coal, water and such minor items as waste and little repair items, and the tools that enter into repairs, and the labor of operating our machines, unloading our coal and coke, unloading our oil, and cleaning up around the works and the labor of repairs, and all the labor and material which is not used for the construction of improvements or betterment to the property. Then in our distribution department all the labor and material used in repairing mains, meters and services, but none of the labor or material which is used for extensions of mains or betterment of mains or meters or services. In our meter
178 department the labor and material necessary to remove and repair, shut off and turn on the meters and test the meters and tag the meters—each meter is tested and a number placed on it, tested and tagged before it is sent out—and all the labor and material in connection with that, but not labor and material used in setting the meter the first time, because that is an improvement or betterment, and after it has been once set and brought back then it becomes an operating expense. In our office all the clerical hire, the salaries of our officers and employés employed in keeping the books and records of the Company, accountants, and the usual office supplies of stationery and advertising, and in this statement we have the balance of either profit or loss from the sales of our sundry supplies, which is kept in a separate table. If at the end of the year that business showed a profit, the profit is deducted from our operating expenses; if it shows a loss, it is added to our expense. As a matter of fact, the profit or loss is about one-half of one per cent one way or the other—just about breaks even. So that this statement includes only the operating expenses of the Company and has nothing to do with the extensions or improvements or betterments. Now, all the labor and material in this sundry department, stoves, fixtures, lamps and mantles, all the labor and material is kept in separate accounts and the men's salaries are kept on time cards. Every item they use is taken out on written orders and the entry is made on the books from these orders. All the material received in that account goes into the store room, and is charged to the store room and when

it is taken out by these men it is withdrawn from the storeroom and all the labor in connection with that—if you order a stove set,
179 his time is kept separate on a time card and is charged to one of the sub-accounts under that head. If that sale of that stove shows a profit at the end of the year, that profit is deducted from our operating expenses. As I said before, that business amounts to about $60,000 or $70,000 a year, but it practically washes itself.

Q. Is there rental in that expense account?

A. The rental of the office and rental of the shop and ware house which we have near the works. The rental of the office is partly charged to operating expenses and partly is charged to this account of sundry sales, but is not charged to any construction account or betterment account, and of course it becomes in that way an operating expense.

The MASTER: Do you mean you have a separate office at the works?

A. We have a main up town office, where we have the sundry sales business of stoves and fixtures, and then we have at the works rented a shop, three story building and basement, where our meter testing department is and where we store our small pipes, fixtures and supplies.

The MASTER: That is what you refer to as rental?

A. Yes, sir.

Q. And your main office?

A. Yes, sir.

Q. I suppose it includes all the salaries of the general officers?

A. Yes, sir.

Q. And no separation as to Valley Junction end?

A. I think in that statement we include the Valley Junction end but the expense of the Valley Junction local office is simply kept as a part of our office expense but on separate accounts.

180 Q. Well, if an accountant for the defendants in this case was to go to your office now for the purpose of ascertaining accurately the operating expenses of the plant in Des Moines alone, he couldn't do it, could he?

A. I believe he could do it within probably one one-hundredth of one per cent.

Q. He couldn't do it without resorting to some percentage plan, could he?

A. He could do it in this way: he could take the average cost per thousand cubic feet of gas supplied in the whole situation and proportion the cost of that to Valley Junction, which was used in Valley Junction and the portion used in Des Moines. The difference is so slight in percentage. It is about ninety-eight per cent to Des Moines; it wouldn't make any material difference in our earnings.

Q. Whether it makes any difference or not, there is no way to ascertain, except to refer to some percentage plan?

A. By properly proportioning it.

Q. Do you keep a separate improvement account?

A. Yes, sir; for the cost of the labor and material used for improvements.

Q. Do you keep a capital account?

A. Yes.

Q. And an administration account?

A. Well I don't understand what you mean exactly by administration account. We have a very elaborate system of classified accounts to which all these various items are charged as accurately as they can be subdivided, and these accounts will speak for themselves. The classification of these accounts is in quite a large sized volume nearly as large as one-half of this inventory. That classifi-
181 cation is so kept as to carefully subdivide all these accounts and see that the charges are accurately and consistently made.

The MASTER: Is that done for the purpose of determining whether on a particular part of the business you are losing or earning money?

A. Yes, sir.

Q. When did you commence that system Mr. Haines?

A. I don't remember the exact date. The system which we use is what is known as the classified system of accounting, adopted by the American Gas Light Association, and the American Gas Institute later.

Q. Just after the Wilcox suit?

A. O, no; long before that.

Q. How long before?

A. Several years before, I believe. That is my understanding of it. The present form of classification is naturally an evolution in bookkeeping. It is a system which has been in cintemplation for many years by the association and was developed by them several years ago; and there have been certain additions from time to time, and amendments to it for the purpose of developing the accuracy of the system.

Q. Didn't that system include a depreciation account?

A. I don't think the depreciation account has been added specifically to it in recent years, but the classification we use does not contemplate the use of that.

—. You told me yesterday you would ascertain from the copy that you kept of your statement of the value of this property that you gave to the assessor in 1908; did you ascertain that?

Objected to on the part of complainant as not proper
182 cross examination; the witness not having been interrogated on the subject of values and it is clearly not cross examination. Besides it is incompetent. The return made to the city, whatever it is, speaks for itself.

A. I did not ascertain it. But the assessor never used the figure; he assessed us about one half the value that was given at that time.

Q. I didn't ask you that. Did you find the copy of a statement that you made?

A. No sir, I didn't look for it.

Q. You told Judge Carr when you came here the property was in excellent condition, is that correct or did your answer go to the present?

Judge CARR: I want to correct counsel. He did not tell me that. I didn't ask him any such question. My inquiry as to the condition of the property was directed to the present time.

Q. Well, how was it when you came here then?

Objected to on the part of complainant as immaterial and not proper cross examination.

A. You mean its general condition?
Q. Yes.
A. I should say it was below the average at that time.
Q. That was in 1903 you came here?
A. Yes, sir.
Q. Since then you have brought it up to its present excellent condition, as you state.
A. I have used every effort to.
Q. And out of the proceeds of the Des Moines business?
A. What do you mean by that?

183 Q. Well the receipts from the business in Des Moines.

A. I have used some of the receipts from Des Moines, but very largely the money furnished by the United Gas & Improvement Company of Philadelphia for that purpose.

Q. Did you make any further examination with respect to the property on the east side, the two alleys that you said were vacated to ascertain whether the Company owned that ground or not?
A. Why, yes sir I did.
Q. What did you find?
A. I found roll call 1551 in the year 1907, which is on the record.
Q. That was the roll call vacating the alleys?
A. That is the only one I found.
Q. That is the only thing you claim any right to these alleys on?
A. No, sir.
Q. What else?
A. I don't know but we couldn't base it on that as the only claim.
Q. Have you any conveyance to that ground?
A. I don't know whether there is anything in addition to that or not.
Q. Haven't you had anybody examine the records for you to ascertain?
A. No.
Q. You may examine defendants' Exhibit No. 1, Mr. Haines and state whether that is the statement you referred to as having made in 1908, which you said was a perfunctory statement.

Objected to on the part of complainant as not proper cross examination.

A. This is the statement which was filed for the assessor

184 to place a value on the property, and I believe was made up from the previous assessment.

Q. Is that your signature attached there?
A. My signature is not on that, no sir.
Q. You furnished the original of that statement, did you?

Objected to on the part of complainant as not proper cross examination, incompetent and immaterial.

A. I furnished the original—how do you mean?
Q. To which that is a duplicate and swore to it, didn't you?

Complainant interposes the same objection as last above made.

A. That is the statement as I understand it.
Q. Did you examine that closely to see if your signature was not there—who wrote Jansen Haines' name there under that statement in the middle of that paper?
A. Oh, I wrote that.
Q. That is your signature?
A. Yes, sir.
Q. That refreshes your recollection now that you furnished the statement?
A. Oh, I never denied that I furnished the statement. I didn't swear to the statement down here; I thought that was what you referred to. I delivered that to Charley Schramm.
Q. You swore to the statement above?

Objected to on part of complainant as immaterial, not proper cross examination and incompetent.

Q. At the time you signed this statement and swore to it were the items and figures included in the exhibit above the statement where your signature appears, on the paper at the time?
A. Yes, this was signed when the statement was filed with
185 the assessor.
Q. That is, the statement was complete at the time you signed it and swore to it; the statement as to the property and its value?

Complainant interposes the same objection as last above and because this witness has not yet stated that he swore to that statement.

Mr. Byers: It shows it was sworn to.

(Last above question repeated.)
A. Well, it was complete as far as any figures on it were concerned.
Q. I mean this paper, as it appears now, with the figures and all was filled out and completed at the time you subscribed your name?
A. Yes, sir.
Q. Now did you swear to it?
A. I don't remember whether I took the oath or not. I think I did not, and that Charley added on that and assumed I had. But if I did not, I don't think it makes any difference.
Q. It was correct anyhow?
A. I don't say it was correct; it was correct as far as my information went at that time.
Q. What was you furnishing the statement for?
A. Presumably for the assessor to fix the assessment of the property, and he never did it.

Q. You understood too, that you were furnishing under the law of this state the sworn statement of the value of the Company's property?

Objected to on part of the complainant as not proper cross examination, incompetent, immaterial and calling for a conclusion.

A. Only in so far as I would judge its value at that time; that is what information I had to give.

186 Q. You know at that time, too, under the law of this state it was your special duty to furnish that information and to furnish it under oath?

Objected to on part of the complainant for the same reason as last above.

A. Only when I had the information. I could only give what information I had. I have already stated I had no inventory at that time.

Q. Who is W. B. Koffer?

A. He is at present assistant secretary and assistant Treasurer of the Des Moines Gas Company.

Q. Who was he at that time?

A. I think he was the same at that time. I don't think there has been any change in his title since. You mean January 1, 1908?

Q. Yes. Where is he now?

A. I don't know. He has been ill for six months and been away most of the time.

Q. Well, this statement was correct, was it not; authorized capital $2,250,000.

Objected to on part of the complainant as not proper cross examination, immaterial and not the best evidence.

The MASTER: Seems to me we are getting out a good ways.

Mr. BYERS: I am testing the accuracy of this witness.

Judge CARR: On something he has not said on direct examination at all.

(Last above question repeated.)

A. The articles of incorporation will show; if they show that amount, that is correct.

Q. Where did you get the amount when you put it in here?

Complainant interposes the same objection as last above.

187 A. I didn't put it in here.

Q. Was this statement correct: This stock is not worth par; the value of the capital stock is not in excess of the value of the property as assessed. Was that statement true when you write it in this paper?

Complainant interposes same objection as last above.

A. As far as my knowledge went at that time.

Q. And the property was assessed at that time on the valuation that was furnished in this paper, was it not?

A. Why I don't understand exactly what you mean by that.

Q. When you wrote that statement on there, what valuation did you have in your mind, what were you referring to?

Complainant interposes same objection as last above.

A. Referring to the method of assessing the property of the Des Moines Gas Company under the statute.

Q. The value of the property the figures furnished here, was $1,020,000. Was that the amount that you say in this statement that the capital stock was not worth to exceed that?

Complainant interposes the same objection as last above.

A. I really don't recall what I meant at that time, if the statement does not speak for itself; I don't know that I can recall very much about that.

Q. Just look at it and explain what you meant by that statement?

A. What I meant by this statement was to give to the assessor the information called for in the statute.

Q. I am now referring to the statement you wrote in the paper yourself under your signature; what did you mean by that?

Complainant interposes same objection as last above.

A. I don't know that I had a very clear meaning of that; Charley Schramm wrote it and asked me to sign it and I didn't see
188 anything objectionable and signed it.

Q. Do you mean to say to the Master you don't know what you swore to? What do you think now it refers to?

Objected to on part of complainant as immaterial.

A. I don't think either he or I could tell what it refers to now.

Redirect examination by Judge CARR:

Q. You were asked with respect to the amount of gas manufactured at your plant in Des Moines which was furnished to Valley Junction. I think you stated to Gen. Byers that it was somewhere about one per cent of the entire output. I want to inquire whether when you began supplying Valley Junction, or during any of the time that you have supplied Valley Junction, it required any increase in your capacity to manufacture, or affected the situation at all so far as your capacity was concerned?

A. Well in answer to that I would say, that the daily send-out and the capacity necessary to manufacture and supply it, fluctuates so much that the additional gas consumed in Valley Junction would not require any *de*preciable difference whatever in the capacity. In other words, our daily send-out or daily consumption of gas, fluctuates very much more than one per cent, fluctuates probably thirty or forty per cent at times, and we would have to have sufficient capacity to meet the maximum of that fluctuation, and the daily fluctuation in the daily send-out is even more than it is in the monthly or yearly send-out. That is to say, that in the evening, for the hours from about six, or when the sun goes down until the people go to bed and turn the light out, is our largest period of

demand for gas during the day, and that hourly demand is
189 greater than the demand during the early morning or the period between breakfast and dinner, or after dinner, and that variation is—well it fluctuates from one hundred per cent maximum to probably ten per cent at the minimum; so that the additional capacity required to supply Valley Junction would be a negligible quantity.

Q. Now, in speaking of the extra or reserve capacity of your plant you referred in your cross examination to the machinery for *for* manufacturing or the generating process; what can you say as to the capacity of your plant in other respects, so far as holders and distribution, etc., and the mechanism that goes with that are concerned?

A. The various component parts of our manufacturing plant have to balance each other. In other words, if our storage capacity is low, or if our capacity for storing the gas is relatively small in proportion to the amount of gas used in the twenty four hours we have to have a very ample reserve capacity in the manufacturing, because of the variation in the hourly send-out of gas. For instance, during the hour in the winter time, or through the fall and winter, in the hour from half past five, approximately, to ha*ve* past six or seven, the people are cooking supper or the houses are lighted up and the demand is very heavy. That is what we call our maximum hour.

The MASTER: You don't manufacture the gas just as it is used?

A. We manufacture it into a storage holder, and that is a large receiver for the gas, and the gas enters it from the manufacturing plant in one point and is withdrawn from it in another, so that we are continuously making into it and it is being continuously withdrawn; but if we make it faster than it is being withdrawn,
190 this receiver rises in the air and stores a surplus amount of gas manufactured.

The MASTER: How much can you store?

A. We can store in this one holder 1,132,000 cubic feet, or just a trifle more than one half of the maximum day's send-out last winter; In other words, this would only run us for a half day.

The MASTER: The distributing part, does that hold any?

A. No, nothing to amount to anything; nothing but a two or three minute supply.

Q. That is to say, if the regulator which lets the gas in stopped the gas in the mains would furnish the supply how long?

A. If we shut the valve from the works which controls the distribution system, the gas would go out almost like that. (Witness snaps finger.) It might burn for a few minutes in some places, but would almost instantly pass out. So there is no storage capacity in the mains. We have an additional holder that holds only 300,000 cubic feet, but it is only used in an emergency, because the pressure is insufficient to properly supply the whole of the city.

The MASTER: This other was how much?

A. We have one holder which holds 1,132,000, and one which holds 300,000 and then we have what is known as a relief holder

which holds 175,000, but the gas in the relief holder is unpurified gas—raw gas.

Q. I want to ask this further question—would it be practical and good business management and could you give good service if your plant was only capable of manufacturing the maximum amount of gas required to supply your customers?

Objected to on part of defendants as incompetent, immaterial and not reexamination.

Q. In other words, what is the necessity for the reserve capacity?

191 Defendants interpose same objection last above made.

A. These machines for manufacturing gas, which we call sets or units, have to be re-lined or shut down for repairs, and in our business we have to be absolutely sure to keep the supply of gas on the city at all times. It is a fundamental principle that is drilled into every gas engineer to keep the gas on the town at all times. We have to be safe at all times in our capacity and we have to keep sufficient capacity to absolutely insure that. The gas has never been out in Des Moines since I have been here in eight years, in any district or in the whole city. That is, of course, occasionally there are individual stoppages of some one consumer, something of that kind; but the gas has never been shut off on the mains.

Q. What are the exigencies with which you have to contend, or which you are required to anticipate, which you may have to contend with that would cause a br-aking down, or chutting down of one of these units of manufacture.

A. We have to shut down these machines and re-line them and put new checker brick in, and during that period they are out of commission, and we cannot manufacture on them. In addition to that, if one of our engines breaks down, we have to be in a position to start another; if the gas through any oversight should leak back of any one of our gas pipes which is furnishing water to these mains, they would explode and we would have to put on another machine immediately—that has happened since I have been here—to absolutely insure a constant supply of gas to the city.

Q. You spoke of the necessity of shutting down to re-line the generator and perhaps some of the other mechanism, with fire brick I wish you would explain that to the court more fully, and

192 how frequently you have to do that, and how long it takes, and how long you have to shut down to do these things.

A. These units or shells are all lined with fire brick, and it is in these units the gas is manufactured. The unit consists of three shells, which in our largest unit are ten feet six in diameter and about twenty two or twenty four feet high; the other two are short. These are lined with fire brick and resist the intense heat in them; and two are filled with what we call checker brick; that is, fire brick placed on edge, piled regularly on edge, with a little space between them so that the heated air and gas can go between the brick and absorb the heat from the brick. Now, after a machine has been run continuously for several weeks or months, these brick become as

we term it, carbonized, or accumulate carbon and become inefficient and have to be replaced clean.

The MASTER: How often?

A. The time varies. Machines should run about from sixty to ninety days, but then they have absolutely got to be clean.

Q. Now, when the plant is shut down for the purpose of making these needed periodical repairs, time has to be allowed for them to cool, so that the workmen can go in and work?

A. Yes, of course, the time that they have to be shut down does not make very much difference because after they are shut down it stops operation entirely; but the length of time they are shut down is of no consequence.

Q. It would be impracticable to fill your holders and then repair before the supply in the holders went out?

A. We would not do it without a very large storage capacity. It takes several days; it is not a question of stopping for a few minutes.

193 & 194 Q. So that independent of the exigencies from break downs you have a period of every sixty or ninety days where it is absolutely necessary to have this reserve power for manufacturing?

—. Yes, sir.

—. Now, when you are delivering up to your maximum of two to two and a half million in twenty-four hours, you have to run your full manufacturing capacity during that whole time or only a portion of the twenty four hours; explain that to the court.

A. We have to run the full twenty-four hours and we run whatever capacity is demanded by the rate at which the gas goes out. That is, if we are only requiring two million feet a day, we run one machine; if we require three million feet a day, we will add another machine. When that demand has gone off we will shut it down and bank the fires on it and hold it in reserve; but we are up at our maximum day to the practical operating limit of safe capacity without using our reserve until it is required.

The MASTER: Does one machine make more gas than is consumed?

A. The largest machine has an approximate capacity of both of the next size. The largest machine we have is what is recognized as the largest efficient unit to build. The other machines were built, because at the time they were built they were efficient for the amount of gas demanded.

Q. Do you have to stop the operation of those units or generators for the purpose of cleaning the fires and getting the refuse from the coke out of the generator?

A. Yes, the generator or machine in which the gas is made has to be shut down for a period, varying from an hour to two or three hours to remove the ashes and clinkers from the fire; that has to be done once or twice or three times a day, depending on the
195 quality of coke which we used and the condition of the fire; and during that period of course the machine is not making gas. We have to be in a position, so that if that period comes dur-

ing the maximum hourly send-out hour we will be able to continue the manufacture with other machines, because we have not got a reserve capacity in our holders to safely carry us over that point.

The MASTER: In other words, you must keep on the gas?

A. We must keep on the gas.

Q. Mr. Haines, for the information of the Master, you spoke of the times when the maximum amount is required, have you any term used commonly that designates the extreme capacity of the plant; have you any term that you use that applies to the largest quantity of gas that you carry for delivery—I have heard the term peak load spoken of, what does that mean?

A. Peak load is a term which has come from the electrical business, but it has been adopted in our business to represent the maximum send out. Now in keeping track of the operations and keeping in touch with the safe operation of our property or plant, we have to watch the maximum weekly demand and daily demand and maximum hourly demand and that reduces the maximum hourly demand to a maximum demand in fifteen minutes, so that we will know at what rate the gas is going out and be prepared to anticipate that from day to day, and also at what rate we can manufacture the gas, so that by watching our storage and our manufacture and our send-out, we can insure this necessary constant supply.

The MASTER: How do you spell peak?

A. P-e-a-k. That idea comes from counting the amount of gas sent out each hour, on a piece of paper, and with respect to a straight line at the bottom of the paper, and then connecting these
196 points by a continuous line which forms a curve and at one point there is an apex in that curve where the maximum hourly send-out is represented by the highest point and that is called the peak load.

The MASTER: That is the point when the largest amount of gas is being consumed at any hour of the day?

A. Yes, sir.

Q. You referred in answer to Gen. Byers' question about the vacation of an alley or some alleys over there. I want to ask you what was done by the Company after these alleys were vacated by the city for the Gas Company, as you stated.

Objected to on part of defendants as being incompetent.

A. We occupied the whole of the north and south alley and the half of the east and west alley. I don't think we occupy the half of the east and west alley at present, but in the north and south alley we keep our derrick for unloading and the storage of pipes.

Q. How long have you been occupying this alley?

Objected to on part of defendants as incompetent and immaterial.

A. Since the vacation in 1907.

Q. You spoke about a part of these alleys or the ground formerly an alley not occupying it; what is the fact as to whether it is fenced in as a part of your enclosure?

Objected to on part of defendant as incompetent and immaterial.

A. The north and south alley has been fenced in since 1907. Neither that alley nor the north and west alley, the north and south and alley has never been used since I have been here for traffic, and the east and west alley has only been used very slightly. It is below the street and inconvenient to get to.

197 Q. By the public you mean?

A. By the public, yes.

Recross-examination by Gen. BYERS:

Q. The fact remains Mr. Haines, with respect to the demand upon this plant over here, that your experience for eight years has shown the greatest demand of the consumers of Des Moines for any one day was two million and a quarter cubic feet?

A. Our maximum daily send-out in twenty four hours never exceeded that.

Q. Supposing you run your gas plant over there to its full capacity tomorrow and pass the gas on into the holder, how long could you keep it there?

A. What do you mean by that?

Q. Before it went out to the consumer?

A. The gas entering the holder would go immediately out to the consumers or as they demanded it.

Q. So that you have a holder that you can simply supply two million and a quarter feet, is that the idea?

A. Well now you are getting technical, up on a technical part of it.

Q. I want to straighten me out. I don't pretend to be a gas expert. Where did you store your gas?

A. In the holder.

Q. How long can you keep it in storage if it is not drawn off, shut it off, how long can you keep it there?

A. Keep most of it there indefinitely; part of it of course may escape from the holder.

Q. But the rest of it you could keep there indefinitely?

A. Yes.

198 Q. That is what I was trying to get at; you could keep it in the holder indefinitely. Now, then, what is the capacity of the holder you have?

A. Which holder do you mean?

Q. Any of them, all of them put together?

A. Our largest holder has a capacity of 1,132,000 cubic feet, and the next one is 307,000 cubic feet or 309,00– cubic feet.

Q. Is there any other?

A. There is a relief holder for unpurified gas with a capacity of 175,000.

Q. You don't put the gas ready for consumption in there?

A. No.

Q. I am talking about the holders that take the gas ready and fit for consumption.

A. You asked me to state them all.

Q. There is two of them.
A. Yes, sir.
Q. The two together have a capacity of how much?
A. About 1,430,000 feet.
Q. Not quite a third of the capacity of the plant?
A. Yes.
Q. I mean the manufacturing capacity?
A. That is, if we undertake to operate all of our machines at once.
Q. For the purpose of cleaning and ordinary repairs all you need is holder capacity, isn't it?
A. That is what we have the holder capacity for.
Q. I say that is all you need to take care of your capacity, is holder capacity?
A. Sufficient, yes.
Q. When you have that you are safe?
A. If the holder capacity will permit us to shut down our
199 machine, if it is large enough to extend over the period necessary for repairs, then we wouldn't be required to operate any reserve capacity.
Q. So that the only necessity is storage capacity more than anything else—it wouldn't help you a bit to have a manufacturing plant of ten million capacity and a holder of a million capacity.
A. That I should say would be out of proportion. It would depend entirely on the local conditions and the kind of demand required.
Q. So far as the local conditions are concerned, you have been here eight years?
A. Yes, sir.
Q. You know something about the history of this plant for a great many years?
A. What is common knowledge about town.
Q. In all the eight years you have been here there has not been any unusual shutting down or any unusual disturbance over there that made it necessary to have a large amount of gas on hand?
A. Well, I have always, since I have been here, studied and kept the various component parts in balance, so that as the business increases, if additional holder capacity is demanded, it will be provided and if additional manufacturing capacity is demanded, that will be provided. It is not always necessary to provide both manufacturing capacity and holder capacity at the same time.
Q. What you have done is to anticipate the future as to manufacture?
A. We feel entitled to do that, yes sir.
Q. Can you give the Master some idea as to when this point was reached in Des Moines, that you say made it necessary to increase the capacity of the plant?
200 A. The growth of a city and the growth of the business are dependent on each other, and they are gradual; and every few years as the demand is increased, we find it necessary to add another unit of manufacture, another manufacturing machine or an additional holder, and when the demand gets to the point at which we find from experience and judgment that there is an element of hazard or risk entering into this constant supply, then

we study the engineering problems involved and decide whether it would be better to construct additional machines or additional storage holders, and in deciding that we take into consideration the past growth of Des Moines, making a careful study of the future growth of Des Moines, the consumption of gas as it has been in the past, what we will anticipate it will be in the future, and we find from experience that those estimates of the consumption in the future are pretty well borne out; they have been made for many years and it is a part of the study of the business. Now when the danger point, or we can see in a year or two, the danger point will be reached, then we construct additional capacity, either manufacture or holder capacity, to provide for that anticipated increase. That is a part of the science of the engineers.

Q. That is very enlightening to me. What period in the future have you anticipated?

A. I should say, in a general way, if the growth of Des Moines continues as it has been, that in the very near future we would have to add an additional storage capacity or additional manufacturing capacity.

Q. You have not given me the point—what point in the future did you take into consideration, when you increased the capacity over here, give the Master the benefit of your judgment.

201 A. When this large machine was constructed in 1909, we were just about up to the safe limit of the capacity of the other machines. Now it would have been uneconomical for us to have constructed a small machine, half the capacity of this large one, because it could not be operated as economically. We felt and believed, and it has been demonstrated that this larger unit was more economical to us to use in manufacturing up to its capacity than it would have been to add one additional smaller unit.

The MASTER: He wanted to know what time ahead you anticipated in making this increase?

A. I suppose about three or four years; two or three years.

Q. Then you have not reached this point of complete saturation, as you referred to in your examination in chief?

A. When do you mean?

Q. At any time. You now state that it has been your policy and your practice since you have been here, to keep not only the capacity of your plant up to a point where it could meet present demands, but that you have followed out the line that observation and experience has demonstrated must be pursued in the gas business and have anticipated the demands of the future. If that is true, then you have all the time anticipated, ever since you have been here?

A. We have to anticipate the future because if we do not we get shut down and get out of gas.

Q. Then you do expect, and when you put in this additional machine over here, you did it on the theory that the output of the Des Moines Gas Company would increase year after year?

A. I think there is no question but what it will as the population of the City of Des Moines increases.

Q. And you have now everything prepared to meet that
202 future increase in growth?

A. Before next winter, yes sir.

Q. You expect the demand in Des Moines to about double itself in the next four or five years?

A. I should hardly say that, no sir.

Q. Well about that?

A. No, not in such a few years.

Q. What did you estimate in carrying out this settled policy that you have learned from experience?

A. We estimate about eight to ten per cent increase per annum.

Q. In the next four or five years then you would expect an increase of at least fifty per cent?

A. You understand of course those estimates are made and revised each year.

Q. And they are based upon the experience of the past?

A. Yes, sir.

Q. Now, just a word or two further about this Exhibit 1. I wish you would examine the figures and the writing below the print at the top of the exhibit and the statements that are written in your hand writing and tell me who made the figures.

Objected to on the part of complainant as not proper cross examination and certainly not proper re-cross examination and immaterial.

A. You mean the amounts placed in here?

Q. Yes, sir.

A. I have not the slightest idea.

Q. I mean also the writing at the right of the figures?

A. I have not the faintest idea.

Q. Will you give the Master the benefit of your recollection as to how it comes, after Mr. Keffer had sworn to that statement
203 on some day in February, you a month or so later also swore to it?

Objected to on part of complainants for the same reasons as last above.

A. The ordinary procedure in filing these is to file them some time before the end of March, there is a general date in which those reports are filed.

Q. That does not quite answer my question. When the statement was first prepared for the assessor, it was done by the secretary, Mr. Keffer, was it not?

A. Yes, sir.

Q. And he verified it?

Complainant interposes the same objection as last above to all these questions.

A. Now, that was done on the 16th day of February, 1908, and on the 14th day of March of the same year appears on the face of this exhibit a statement in your hand writing and over your signature.

Q. Do you know why it was that you were asked to make any statement with reference to this exhibit?

Objected to on part of complainants as not cross examination and not proper re-cross examination and incompetent and immaterial.

A. Why, yes; these blanks are supposed to be filled out and filed as soon after the first of January as possible. Now it is frequently very inconvenient to make these at that time and the assessor has nearly always as a matter of courtesy extended the time until later. It is usually a verbal understanding that they will be filed some time between the middle of March and the last of March and when they are finally completed they are simply placed on my desk and left there until he is ready for them.

204 Q. Isn't it a fact now that a controversy arose right away, the assessor questioned the valuation stated in this exhibit, and to settle that controversy you added your verification to Keffer's, and you wrote on this paper this statement?

A. I don't recall any such controversy; I don't remember; there may have been some.

At this time, 12 M., July 14th, 1911 an adjournment was taken until 1:30 P. M.

205 TWO O'CLOCK P. M., FRIDAY, *July* 14, 1911.

JANSEN HAINES continued on recross examination by Hon. H. W. Byers.

Mr. BYERS: In connection with the cross examination of the witness Haines, and to preserve the exhibit, we offer Exhibit 1 and read it into the record as follows:

Objected to as not proper cross examination, as immaterial and incompetent.

"Statement of the Des Moines Gas Company. Des Moines, Iowa, January 1, 1908. Made under Section No. 1323 of the code of Iowa for the purpose of assessment. Authorized capital $2,250,000. Number of shares thereof 22,500. Number of shares issued 22,500. Par value of each share 100. Amount paid in on each share (in property) 100. Total capital paid (in property) $2,250,000. Real estate owned by above corporation, lots 3 to 10, Block B Scott & Dean's Addition to Ft. D. M. $120,000. Lots 1 to 10, Block C $864,760. Lots 3 to 7, Block T, 760. Lots 3 and 4, Block K, 2,500. Lots 9 and 10, Block M, 2000. Lot 9, Block 15, Valley Junction, 12,000. Total $1,002,020. Opposite these figures is written the following: "Foregoing amount of $1,002,020 includes all gas machine apparatus, mains, meters, etc. Bonded indebtedness authorized, $1,500,000. Issued $852,000. This stock is not worth par. The value of the capital stock is not in excess of the value of the property as assessed. Jansen Haines, Manager. Sworn to and subscribed to before me by Jansen Haines this 14th day of March, 1908. Charles W. Schramm, city assessor. Dividends declared last year under numerous items here with a bracket opposite, none. Gross

earnings last year $430,900.83. Net earnings last year,
206 $51,311.41. Highest price of sales of stock during preceding year, no sale. Amount of surplus, none. Average price of last sales, no sales. Amount of profit added to sinking fund, no sinking fund. Highest price of sales of stock between 1st and 10th of January of current years, no sales. State of Iowa county of Polk, S. S. I W. B. Keffer of the above named corporation do solemnly swear that the above statement is true to the best of my knowledge and belief. Signed, W. B. Keffer. Subscribed and sworn to before me by W. B. Keffer this 15th day of February 1908. Fred P. Carr, Notary Public in and for Polk county. Section 1323, every such corporation on or before the 25th day of January shall furnish to the assessor of the assessment district in which its principal place of business is located a verified statement showing specifically with reference to the year next preceding the first day of January then last passed. Section 1357. If any corporation or person refuse to furnish the verified statements in this chapter required or list his property or take or subscribe the oath in this chapter required, the executive council or assessor, as the case may be, shall proceed to list and assess such property according to the best information obtainable and shall add to the taxable value thereof 100 per cent which valuation and penalty shall be separately shown and shall constitute the assessment. J. M. Welch Printing Company, Des Moines. 15959—12-06.

Q. I made some inquiry yesterday Mr. Haines with respect to the contracts for oil and coke and other material that you said was made by the purchasing agent of the United Gas & Improvement Company. Did you look to see if you had any of these contracts?

A. No, sir.

Q. Do you have any of them?

207 *Q. Do you have any of them?*

A. I don't know whether I have or not. I have some memorandum that give- the essential facts I think but I never bother my — about the rest of the contract.

Q. The memorandum you have is simply memorandum that your superior furnishes to you?

A. Furnished to me by the purchasing agent of the Des Moines Gas Company.

Q. But does not purport to be the contract itself but his statement of what the essential elements of the contract are.

A. The memorandum states that these are the facts of the contract, the essential features of the contract for my use. That is my recollection of it, it may be a copy of the contract for the stuff but I have not paid particular attention to it. The features that interested me were simply the prices and quality and term-.

Q. I wish when you go back to the office and have time you would examine your records up there and if you have any of these contracts I would like to have you bring one of them in when you come into court.

Objected to as not the proper subject of cross examination.

Q. Have you given now a list of all the buildings on the property on the east side of the river in your testimony here?

A. I have only given a list in a very general way. That is all shown in the inventory which we furnished to the city on March 8th.

Q. Are there any residences on the property, any buildings over there that are used for residence purposes?

A. No, sir.

Q. Or rented for that purpose?

A. No, sir.

Q. Are there any buildings over there used for any other
208 purpose than in the business of the manufacture of gas?

A. There are no buildings that are not used for the gas company used in supplying gas for the city of Des Moines, no sir.

Q. May be you distinguish between manufacturing and supplying?

A. I distinguish in making that answer, I meant to distinguish between manufacturing and stables, I don't consider stables part of the buildings used for manufacturing gas yet they are on the property of the Des Moines gas company and are used in the gas business in Des Moines.

Q. Are there any other kind of buildings?

A. No sir. Except the manufacturing buildings, holders and meters and store building for keeping materials in, that is all.

Q. And the stables?

A. And the stables.

Mr. BYERS: That is all now. I want to recall Mr. Haines before the case is over.

Redirect examination by Hon. GEORGE H. CARR:

Q. You were asked on cross examination with respect to whether the capacity to manufacture might not be practically and safely limited to the daily demand, having a sufficient holder capacity or storage capacity for the gas? Now I wish you would explain to the Master in detail whether it would be a practical and economic proposition to limit the capacity of the plant, to limit the manufacturing capacity of the plant to the daily demand relying on your holder capacity for the purpose of storing up gas to cover the demand that would be upon you during the time you would have to shut down your manufacturing plant? I wish you would
209 answer that fully in detail and give your reasons?

A. Well it would be possible to construct holders of sufficient capacity to store the gas required to supply the city over the period of shutting down the apparatus used in manufacturing gas for the time necessary to repair it or reline the machines under ordinary circumstances, but if that was done it would require so much ho-der capacity that it would be much more expensive to construct than it would — construct the reserve capacity of manufacture and the additional expense of the interest on that added investment would be greater than any loss of economy in the use of the reserve apparatus for manufacturing. In other words it would come, to give a storage capacity for

say, a period of eight days, seven or eight days which would be about the maximum time necessary to shut down for repairs, for current repairs or for repair in case of accident would require an investment in holder storage of upwards of a millio*j* and a half probably or more, a million and six hundred thousand dollars while the additional reserve apparatus for manufacturing would require an investment of approximately $150,000 so that it would require ten times the amount of investment in storage that it would in this reserve capacity and of cours- the interest on the additional investment would have to be provided and would mean a higher cost of manufacture of gas than the reserve capacity would require.

Q. To bring that idea out a little more fully, you have said, that a period of seven or eight days would not be an unexpected period in which you might have to shut down manufacture. Now what storage capacity would you require for a sufficient supply of gas to cover that period say, take it in the winter time when
210 your output is up to the maximum?

A. Well, it would require a storage capacity of about 16 or 17 million feet, or upwards of that, and that would be equivalent to about sixteen holders of the size of our present largest holder.

COURT: Sixteen did you say?

A. Sixteen. That is, we would have to build fifteen additional holders to safely shut down and depend on that storage for the relining and repairing of these manufacturing units, if we only had one to depend on.

Q. It is the estimated expense of such holders that is covered by the figure you have given.

A. Yes, sir.

Q. And the estimated expense of the reserve manufacturing capacity such as you now have is covered by your figure which you gave?

A. Yes; the figure of approximately $150,000.

Q. Now you were asked in regard to building for the future or anticipating future demands in making improvements. I wish you would explain fully to the court why it is more economic, if it is so, in improving your plant or increasing its capacity to increase it for a period that looks to some extent into the future rather than for the immediate future or present demand making your answer full and complete on that subject?

A. The maximum demand occurs in the fall and winter months and each year as the city grows or as the business grows there is an increase in that maximum demand which varies somewhat according to the weather. Some years we will get a maximum demand on the day before Christmas, if the weather is dark and stormy, as it frequently is about that time, it will be a certain figure. If in the succeeding year it should happen to be clear and
211 sunny we might not get that maximum demand at that same period. In fact in some years our maximum day has been less than it is on the previous year due to these weather conditions, although the general business will still show an increase from month to month and year to year. But in a general way that increase in maximum day corresponds about to the increase in the

growth of the business over a period of years which will average very nearly the same thing and we then estimate for safety that that maximum day will increase at the rate of about ten per cent.

Q. Over what period do you mean?

A. Ten per cent over the previous year. In other words, if our maximum day last year was 2,228,000 we would put our maximum day this coming winter, estimate it under similar conditions of the weather would be an increase of 228,000 feet.

Now to provide for that maximum would require an additional manufacturing capacity of 228,000 feet a day, but if we had a unit only capable of manufacturing 228,000 feet it would be more expensive to operate than if we should anticipate two or three of four years and construct and put into peration a unit which would take care of the growth for a period of two or three or four years and when we reach the limit of that unit add another large unit in the same way. If we did not do this our plant would today be constructed of twenty or thirty units of small capacity and inefficient in operation occupying more land and more real estate and subject to all the disadvantages of manufacturing on a very small scale in each community. Does that answer your question?

Q. I think so. You have been asked as to the period of
212 anticipation, of the period you looked forward for the purpose of keeping the plant up for future demand. Now I will ask you whether the plant as it was on the 1st of January was excessive in that there was invested more in the plant and its capacity was greater than was reasonably required for the future. I think you said somewhere in your evidence in the near future you would expect if the growth of the city continued and the demand resulting from that element would increase the demand that you would have to expand. Now I wish you would explain that in that respect.

Objected to in that form as incompetent and irrelevant and object to the competency of the witness, also as leading.

A. In developing the construction of the plant as I have stated before the various pieces of apparatus for manufacturing and purifying and storing gas have to be kept in balance, that is to say, that if we find that our storage holder is becoming too small by reason of the increase in the business then we will construct a new holder. If we find the manufacturing apparatus is too small, but our holder capacity will be ample provided we have the additional manufacturing capacity, we will construct additional manufacturing capacity. Now when the autumn comes around we make a careful estimate of the requirements for the ensuing year of the amount of gas which we anticipate we will sell and we also make a careful study of the capacity of the various components parts of the plant. Then we with the assistance of our engineering board or staff will take up the various engineering problems involved in the question of providing additional capacity in the weak parts of the plant as is shown by our previous year's operations. These ques-

tions of course involve the different methods of construction
213 and in the different modes of construction I mean whether we shall provide this coming year additional manufacturing capacity or additional holder capacity. For instance there are other component parts, but I use this for an illustration. Now when we devise the question of engineering problems entering into it, then we make careful study of the comparative cost of these engineering problems involved and decide upon the most economic method from the standpoint of engineering for the construction of the development of the plant to provide for the demand which we estimate for the next year and for the year after. These estimates are made each year, been made for many years and the same studies are made and the experience of the previous years used and with that information and keeping in mind all the time that the interest on the investment on one hand and the increased cost of operation on the other are to be met with if we make a mistake in engineering and designing, we aim to keep down those two items, keep down the interest on investment by constructing as economically as we can. Sometimes we have to make an investment which will provide for a few years in advance because it is the most economical thing to do. If we were to build without sufficiently contemplating the future, we would have to employ additional help, we would have heavier wear and tear on our machinery and we would have the uncertainty of being able to maintain our constant supply and render service to the people at the best price we could, at the lowest cost to the public. So these are the elemental features that control.

COURT: You act as engineer or do you have engineers under you?

A. I have an engineer who is in charge of the operation of the plant and who originates the estimates for these improve-
214 ments and brings them to me and they are passed upon by me, we discuss them, go over their features and present them in the form of an argument if we can make an argument for them from the standpoint of economy, the standpoint of desirability and necessity, then we forward them to the engineering department of the United Gas Improvement Company in Philadelphia which is composed of the most eminent gas engineers in this country. They take these estimates and thoroughly study them, give them the benefit of their experience and if it does not meet with their approval they return them to me for further argument. If my arguments are not sound they will tell me why. If I am still unable to argue for them they turn them down entirely and I cannot have the improvements at this plant. Without their approval and without my approval we cannot raise the money to make the improvements here at all and it is no easy matter for me to get money.

Q. Now, Mr. Haines, taking into consideration the principle which you have fully elaborated, I ask you whether the plant as it is today in your opinion is excessive?

Objected to as incompetent, immaterial, and object to the com-

petency of this witness and the question simply calls for a conclusion.

A. No, sir; I should say not without any question.

Q. With respect to the necessity of being in a position at all times to supply gas so as not to permit any interruption of the supply from one year's end to the other, I wish you would give to the Master a little more fully than you have heretofore done the reasons why that necessity exists?

Objected to as having been fully gone over.

COURT: The reason why it is necessary to keep a constant
215 supply of gas?

Judge CARR: Yes, and that involves also the effect that would follow from the failure to do that.

A. The first consideration is that an interruption to the supply of gas to the mains which is temporary, in other words if the plant shuts down, stops the supply of gas and then starts again the people who have had their burners lighted if their lights go out and the gas comes on again, they may be asphyxiated, may cause explosions in their houses, the escaping gas if it does not come to their attention in time to ventilate the rooms or to light it. The second reason I should say is that if a consumer wants to use gas and finds that his supply is shut off and he can't use it it is all an improper service, he will complain about it and he has every reason to complain about it, and after he has complained about it, he will use something else use coal, or kerosene, wood, gasoline or candles or whatever he can get and that loses his business by that competition and we want his business. It is part of our business to get his business and keep it by giving good service.

Recross-examination by Hon. W. H. BYERS:

Q. The estimates that you have just referred to that are made with such care and after debate and argument, I suppose are in writing?

A. Some of them are in writing and some I think are oral.

Q. How does the oral ones get down to Pennsylvania?

A. I was just going to state the engineering department of the United Gas Improvement Company is always at my service
216 for these discussions and correspondence in regard to these estimates. They have a number of engineers and if the occasion requires it they come to the Des Moines plant and inspect it, take their measurements, from their estimates, obtain their arguments, for or against it, and make their report accordingly.

Q. In order to save as much record as possible, is the estimate for last year in existence anywhere where we could get at it?

A. I think it is in existence.

Q. Is it here in Des Moines?

A. Yes, sir.

Q. Will you produce it?

A. That is for Judge Carr to say.

Q. Why for Judge Carr, you are president of the company aren't you?

Judge Carr: Do you mean to say has he the document where he can produce it?

Mr. Byers: No I asked him if he would produce it.

Judge Carr: We object to that as not proper cross examination and object to this method of seeking to get records. If there are any records in the case that counsel desire, or are proper for them to have, there is a proper way to get them, not by putting a witness on the stand and going outside the realm of cross examination and asking him if he will produce them?

Mr. Byers: That seems strange to me, in view of the fact that this testimony is based upon certain estimates and I simply want to know if these estimates are in writing and we can have them.

Court: You have a right to ask the question.

Q. Will you produce it?

A. Yes, certainly.

217 Q. Is there any difference between the kind of gas you sell, fuel gas and illuminating gas?

A. We manufacture and sell but one kind of gas.

Q. All goes through the same holder and out the same meter does it?

A. Yes, sir.

Q. And the large generator that you have been referring to was built last year some time?

A. Built in 1900.

Q. Finished when?

A. In 1900.

Q. If I remember your testimony correctly you have five of such generators from ten feet down to six something?

A. We have two six feet, two eight feet six, and one ten feet *sic*.

Q. That would be five?

A. Five, yes.

Q. When did you last use the two smaller ones?

A. I don't remember the exact date.

Q. How many years ago?

A. It was some months, I don't remember exactly how long.

Q. Was it within a year?

A. I can find out and let you know exactly if you want to know.

Q. Don't you know?

A. I don't operate them, I can't remember. The superintendent f the works operates them when it is necessary to operate them.

Q. You have been just telling us that you as manager made these timates, that you argued them bask and forward, in doing that ou knew all about these generators, how many of them were in use d how many of them you could use?

A. We can use any of them at any time. They are all 8 kept in condition to use at any time.

Q. I want to know when these two were used last?

A. I can bring the man that knows, I haven't it with me. It is

a question of some months, perhaps eight or nine months, maybe longer than that, maybe a year but would not be much over a year.

Q. When was the eight foot one used?

A. Within a few weeks.

Q. Get it something nearer?

A. I would rather give the exact date.

Q. I wish you would get this and give it to us when you come in again.

A. I will.

Q. Where are these two smaller generators with relation to the larger ones?

A. They are in a separate building so in case of any accident to the other they may be used independent of it.

Q. Has there been a time since you have known that gas plant when all of this machinery was out of order for eight days?

A. No, certainly not.

Q. When *t*ou told Judge Carr it would require sixteen holders or holders for sixteen million feet of gas if you were to shut down for eight days you meant by that to convey to the Master the impression that the whole business would be shut down for eight days did you not?

A. I stated it would require the equivalent of sixteen of our present holders to continue to supply for eight days if we were dependent upon one set of apparatus and it was shut down.

Q. No such instance ever occurred with respect to this plant did it?

219 A. We haven't that number of holders, but we have more than one set so it could not occur.

Q. You never have known at any time since you have known this plant over there except for one hour or two hours that had the entire machinery shut down so that you were not manufacturing at all?

A. Oh that is shut down very often for an hour or two.

Q. Because of breakage or something of that kind?

A. Shut down *of* an hour or two would not affect the storage.

Q. Of course you understand I don't mean is it shut down when you get all the gas you can use, but shut downs you are compelled to make?

A. Yes, we have had shut downs of I think up to 12 or 14 hours.

Q. Is that the longest you ever had?

A. The longest I would ever want to have with this plant.

Q. Is it the longest you ever had?

A. This once, I don't know of any other.

Q. When the entire plant was closed down?

A. Yes, the manufacturing plant of gas.

Q. That is the longest time is it 12 hours?

A. That is in my recollection.

Q. When was that?

A. I think that was the last time we blew up the blast pipe.

Q. I know, but when did you blow up the blast pipe?

A. It has been some years, really I don't remember now, a ques-

tion of some years, four or five years probably, three or four years, I don't remember exactly when it was.

Q. That was considered in these very careful estimates that that *that* might happen in four or five years was it?

A. Yes; certainly it is. One of the elements of hazard in
220 the business?

Q. That was the only time the plant shut down twelve hours?

A. Yes, sir.

Q. Now can you tell me another single time since you have known it that it shut down 12 hours.

A. That is the manufacturing equipment, stopped the operation?

Q. Yes, so you were not making gas.

A. I don't recollect any of that length of time. The operation of these machines is dependent on the demand. If the demand drops off so we can shut down we do shut down and if the demand does not stop we can't shut down. That is the situation and it is that situation that we have to provide for.

Q. You understand I am not asking about shut downs that are due to the fact that you have got gas enough to run for twenty eight or forty eight hours. I am talking about shut downs that you say you have to consider in providing sufficient capacity to make gas?

A. This is the kind of shut downs which we make, shut downs to repair and reline these gas manufacturing machines and sets or units as we call them and that may take from eight to ten or six to ten days depending on the size of the apparatus and the condition of them when we get into them.

Q. What is the capacity of the two smaller generators, you describe, what would be the daily capacity?

A. Of the two combined.

Q. Yes.

A. Oh six or seven hundred thousand cubic feet a day.

Q. And of the two eight feet?

A. About 2,400,000 cubic feet a day.

Q. About a million two hundred thousand each?
221 A. Yes, sir.

Q. And the capacity of the larger one is about two million?

A. About two million, yes.

Q. Which one of these five is in operation now?

A. I can't tell you.

Q. I don't mean this minute, but I mean in the last week?

A. Well the larger machine is the one we operate whenever possible because it is the most enconomic machine to operate.

Q. That is the only one that is in operation now.

A. You mean today.

Q. Yes, and the last week, two weeks, three weeks or a month.

A. When that machine is shut down you operate the next two machines.

Q. You do that if you operate at all, but I am not asking that,

the large one is the one in use and has been for the last few months?

A. We use the large machine as much as possible and rely on the other two when the large one is shut down.

Q. When did you use either of the other two last?

A. I said I would get you that exact information, I haven't at now.

Q. You don't know whether it is within a month or not?

A. That is within the jurisdiction of the engineer.

Q. Well don't you have that information in the office every day?

A. Yes sir.

Q. It is under your jurisdiction?

A. It is under my jurisdiction, but he has the say as to which machine shall go on and his report is made to me daily. That report is made on a little card and laid on my desk every day and if I had paid attention to it I could have told you today.

Q. Do you make any entry on any book from the card?

A. No, the card is made from entries on the books.

Q. On what book. A book found in the gas company's office.

222 A. Yes, in the daily records of the office.

Q. Now if I understand your methods as you undertook to explain to Judge Carr, of keeping the efficiency of the plant up there would be no such thing as depreciation at all would there?

A. Yes, sir.

Q. Where would it come in?

A. Well let me illustrate it. Suppose you buy a suit of clothes, if your clothes soiled you clean them. You wear them as long but ultimately you outgrow them or the fashion changes you want to get another suit of clothes and you have to discard them. Now there may be some value in those, some use for them, but they have depreciated and you can't use them.

Q. Are you giving that answer seriously or because you think it is the right point for a little humor?

A. No, sir; I mean it seriously. I simply mean to differentiate—

Mr. Byers: That is all.

Witness excused.

223 B. F. KAUFFMAN being called on the part of the complainant and sworn and examined in chief by W. L. Read, Esq., testified as follows:

Q. What is your name?

A. B. F. Kauffman.

Q. Where do you live?

A. In Des Moines.

Q. What is your age?

A. Thirty six years of age.

Q. What is your business?

A. Real estate and insurance, principally.

Q. Real estate in what way?

A. Buying and selling for myself and others.

Q. How long have you been engaged thus in the real estate business.

A. I have been more or less in the real estate business for a period of possibly fifteen years.

Q. When and upon what occasion did you firs- engage in the management and control of real estate?

A. I first engaged in that line of business in handling the property real property of my father's estate.

Q. Your father was B. F. Kauffman?

A. Yes, sir.

Q. How much of an estate, how much real estate?

A. Oh the real estate probably represented one hundred to one hundred and fifty thousand dollars in value.

Q. What kind of property was it in, city property?

A. Business ans suburban property.

Q. Business and suburban property?

224 A. Yes, sir.

Q. To what extent have you engaged in buying and selling real estate during that period?

A. You mean as to value?

Q. No. I mean the extent in which you have engaged in buying and selling real estate.

A. Well I have bought and sold real estate almost continuously for from ten to fifteen years on my own account and have become interested with other parties and for the past two or three years we have bought and sold on commission basis for others as a partnership, the firm of Witmer & Kauffman.

Q. What other business connections have you had during your business career in Des Moines?

A. I have been associated with the Iowa National Bank, the Des Moines Savings Bank.

Q. In what capacity?

A. As stockholder and director.

Q. Any other business associations or connections?

A. I have been a stockholder in a number of enterprises in Des Moines at different times.

Q. Have you had any connection with the different organizations in the city for the promotion of the growth of the city?

A. Yes, sir.

Q. What ones?

A. I have been director of the Commercial Club for about five years, President of the Commercial Club one year. Been a member of the Greater Des Moines Committee for three or four years. A member of the Des Moines Real Estate Exchange, Auditorium Board and Sundry organizations.

Q. To what extent and to what degree of closeness have you followed the course of real estate exchanges and sales in the

225 city of Des Moines?

A. I have followed them -ather closely. I have been very much interested in real estate and followed real estate transactions

since I have entered the business field. I was attracted to the field because I thought it was a sound business to engage in and I have given to real estate more or less thought that what money I hoped to accumulate I shall hope to accumulate largely by real estate transactions.

Q. In what manner have you kept yourself informed and in touch with the real estate movements in the city?

A. I was called as adviser in a great many private transactions both in leases and in sales, both by prospective purchasers and by possible sellers. I have watched to some extent the papers and I have tried to keep in touch with the principals of these *of these* transactions personally.

Q. Is that information confined to outside or residence property or also inside business property?

A. Well it has not been confined. My effort to obtain this knowledge has been rather general in all classes of property.

Q. With respect to the various real estate transactions in the city for the last number of years have you acquainted yourself with the details of the transactions, price, etc.?

A. To a very large extent. I have probably known of most of the important fields, most important transactions in the city.

Q. What has been the trend in values and prices for real estate in Des Moines?

A. Been increasing very rapidly.

Q. Covering what period, if there is any period in which that is more marked than other periods?

226 A. In my entire experience it has been increasing rapidly, particularly the last five to ten years.

Q. Does that observation apply to inside business property as well outside?

A. Applies to all kinds of property.

Q. What do you say as to the amount of increase, the percentage of the increase taking the same period with which to make a compar-son?

A. Within ten years it has increased according to different locations all the way from fifty up *tw* two, three and four hundred per cent.

Q. Where is the business and financial center of West Des Moines?

A. I should say the financial center of West Des Moines would be probably 5th and Walnut street, unquestionably 5th and Walnut street.

Q. What increase in value in the real es-ate closely in to the financial center would you say for the last ten years?

A. I recall one piece of property on the corner of 5th and Walnut that *that* was at one time or ten years ago, or twelve years ago, was held between $35,000 and $40,000.

Objected to as immaterial.

Q. At what price?

A. At between $35,000 and $40,000 and that property today could not be purchased for very much less than *R*$200,000.

Defendant moves to strike out the ans-er of the witness with reference to the property as being irrelevant and immaterial.

Q. What is the general range of values of real estate say from 8th street on Walnut, east to the river on the west side?

Objected to as irrelevant and immaterial.

227 A. The values will run from $800 and $1000 per f-ont foot up as high as f-om $4500 to $6000 per front foot, dexending some upon the size of the property in question.

Q. Where are the properties of the lower valuation found?

A. The *gih*est value would be at Sixth and Walnut and the decreasing values until you get to the river and decreasing going westward, the summit being Sixth and Walnut.

Q. What is the general range of values upon Court Avenue from the Court House east to the river.

Same objection.

A. The general value is from $1200 *tp* $1500 and decreasing down to a point as low -s $500 and then increasing as you near the river, as you arrive at the river.

Q. Increasing to what figure at near the river would you say?

A. Probably seven or eight hundred dollars per front foot.

Q. What building and what business is conducted on Court Avenue near the river?

—. Approximately the largest grocery jobbing house in the city, Warfield, Pratt Howell Company and the Brown, Hurley Hardware Company which is also probably the mos*y* completely equipped jobbing hardware house of the state.

COURT: You are speaking of the property unimproved, supposing the buildings removed?

A. I am speaking of the bare ground. This Warfield, Pratt Howell building is rather a handsome expensive building, and would bring the value of the entire property up high.

COURT: As I und-rstand you gave these values as just the ground itself.

A. Yes, sir.

Q. Mr. Kauffman, do you know where the property of the
228 Des Moines Gas Company is located?

A. Yes, sir.

Q. Where indicating on the map, Exhibit 6, is the property you have last mentioned, that of the Warfield, Pratt Howell Company, and the Brown Campt Hardware Company?

A. It is on the corner of Court Avenue and First street, it is on the river bank, west Des Moines.

Q. The map Exhibit 6, to which your attention is called has a number of circles drawn with the court house as the center.

A. Yes, sir.

Q. The property of the Des Moines Gas Company is situated where, with respect to the circles.

A. The property of the Des Moines Gas Company is situated within a half a mile of the center of the radius which is the center of the court house square, that being about a block south of the financial center of the Fifth and Walnut.

Q. Now the property of the Warfield, Pratt Howell Company and the Brown Hurley Company lies east of the court house and on the bank of the river?

A. Yes, sir.

Q. How far from the property of the gas company?

A. About one block north and west across the river.

Q. Calling your attention again to the general range of prices, what is the range of values on Locust street from the river west to Seventh or Eighth street?

Objected to as irrelevant and immaterial.

A. The values on Locust will run approximately from $3,500 to $4,000 per front foot at Sixth and Locust on the corner and at Seventh and Locust and decreasing as you go west and decreasing as you go east to the low point of about $300 to $400 per front foot
229 for the lowest value.

Q. That low point is at the river is it?

A. That low point would be west of the Coliseum, between that and Second street.

Q. Where is the business center of East Des Moines, the portion lying east of the Des Moines river?

A. The principal business of east Des Moines is confined largely in one path and the center of that path probably being Sixth and Locust street-. The business will run from the bridge out Walnut street to east Fifth street, north on east Fifth to Locust, east on east Locust to east Sixth, north on Sixth to Grand Avenue and east on Grand Avenue to the limit of the business territory.

Q. What is the general range of values of property in the business portion of east Des Moines?

A. What particular section.

Q. Well the business portion lying east of Fourth street at present if that is the region of the highest values.

A. The highest value is on east Locust between Fifth and Sixth and will run from $800 a foot up as high as $1,200 a foot and possibly a little bit more for corners, the average being about $1,000 a foot in that block.

Q. From Fourth street west to the river on Locust street and on Walnut what is the general range of values if you know?

COURT: Let me ask a question, Locust street runs east and west or north and south?

A. East and west.

COURT: And with reference to the Capitol?

A. It runs directly into the Capitol, into the center of the Capitol. The wide green line shown on the map there running into
230 the Capitol grounds. The values on east Locust street between the river and Fourth street will vary from $200 to $500

per front foot. The values on east Walnut street will run from $200 to $500 per front foot and one or two properties slightly in excess of $500 per front foot.

Q. Is this upward tendency or trend in values, does that obtain in east Des Moines business property as well?

A. Yes, sir.

Q. Has that upward tendency been at all marked in east Des Moines?

A. Yes, sir.

Q. Are there any circumstances to which that is attributable in your estimation?

A. Yes, sir.

Q. Please state what they are?

A. There has been a general movement especially in the past five years to cement the two sides of the river. In other words, to annihilate the river line which separates the one city into two cities and make it one city instead of two cities. That has been accomplished by moving the principal public buildings on the river front. The new city hall has been built on the east bank of the Des Moines river between Locust and Grand Avenue. The new Coliseum built on the river bank on the west side, between Locust and Grand. The city library has been built on the west bank of the Des Moines river between Locust and Walnut. Directly opposite on the east bank of the river the Park Board have purchased the property for park purposes. There has been a new reinforced concrete arch bridge across the river at Locust street the same width as the street between curbs, and that same style of bridge is now being constructed on Walnut street and will be completed probably this season. These
231 things have tended to cement the two sides of the river and the general growth and general prosperity of Des Moines have interested people in the entire section, in the entire community rather than in an individual quarter.

Q. Aside from growth and population, has there been a growth in the manufacturing and jobbing industries of Des Moines?

A. Yes, sir.

Q. If so to what extent?

A. According to the best estimates obtainable by the commercial club the jobbing done in Des Moines in 1900 amounted to $48,000,000 the jobbing done in 1909 was approximately $110,000,000 in Des Moines, showing a little bit more than double.

Q. You say you know the location of the Des Moines Gas Company's real property?

A. Yes, sir.

Q. I call your attention to the map, the plat marked Exhibit 5. You may describe the property as you understand it according to that map.

A. Lots 3, 4, 5, 6 and 7, in Block T, Scott & Dean's addition. All of Block C Scott & Dean's Addition. Lots 3 and 4, in Block K Scott & Dean's Addition. Lots 3, 4, 5, 6, 7, 8, 9, and 10, in Block B Scott & Dean's Addition, and Lots 9 and 10 in Block M Scott & Dean's Addition.

Q. Have you made an examination and investigation of the prop-

erty of the Gas Company that you have described with a view to placing a valuation upon it?

A. I have.

Q. When did you begin making your investigation?

A. During the latter part of 1910, latter part of December 1910.

Q. In a very general way, what character of property is
232 this, I mean is it served with railway trackage facilities?

A. Yes, it — served by railroad trackage.

Q. That has already been gone into and I shall not go into it, any more in detail except to inquire whether you acquainted yourself with the location of the railway tracks and the trackage facilities that this property has.

A. I did.

Q. By what railroads is it served?

A. It is served principally by the Rock Island and the Burling-[ton] but by reason of trackage arrangements the Des Moines Union terminal line receives cars from any road entering Des Moines and delivers at the property in question.

Q. In connection with the investigations of this property, made by you, were you furnished any information with respect to the alleys in the various blocks?

A. I was furnished with no specific information except that the alleys are vacated. The alleys in Block C and the alleys abutting the property in Block K and the alleys in Block B are vacated and used by the gas company.

Q. You have assumed then that the gas company has the use of them?

A. I assume that they have the use of these alleys.

Q. This you have referred to as trackage property?

A. Yes, sir.

Q. By that general term you mean what?

A. I mean property that is supposed to be used for manufacturing, jobbing ware house, or any purpose requiring facilities to enable owner to handle large amounts of incoming or outgoing freight economically.

Q. Property served by tracks and switches?

A. Yes, sir.

233 Q. In what district or what parts of Des Moines is trackage property located, I am referring to trackage property not remote but inside trackage property?

A. The principal trackage property in Des Moines in the west side of the river would run from First street from the river west and as far as Seventeenth street as an absolute limit, and as a practical limit about 12th street.

Q. South how far?

A. There is a strip about three blocks wide. There is other trackage property south that is owned and controlled by Mr. Hubbell and we refer to it as trackage property because of his ownership in the Des Moines Union Railroad he could make trackage property out of it.

Q. So far as property owned by Mr. Hubbell or the Hubbell estate, is that open and on the market for sale?

A. No, sir; it is not. In east Des Moines the trackage would extend from the river to Sixth street except the trackage which lies at a considerable distance around the packing house and the old starch works, probably a mile and a half further out.

Q. Within what limits or streets north and south in east Des Moines?

A. From a half block north of Vine to Elm street.

Q. That would take in the half block lying south of Court Avenue?

A. Yes, sir.

Q. And then south to Elm street?

A. It would be a little bit over a half block south of Court Avenue for the reason the block between Court and Vine is a little bit longer north and south than the average block.

Q. *Referring* your attention to the trackage property in west Des Moines, to what extent is that property already appropriated and in use?

234 A. Very largely, almost entirely.

Q. What use is being made of it in a general way? That is is it permanent or merely temporary?

A. Largely permanent.

Q. What tracts of trackage property in the west Des Moines district are available or obtainable now in the market?

Objected to as irrelevant and immaterial.

A. There is some property in the vicinity of Seventh, Eighth and Ninth streets on trackage that is available.

Q. How much property, how large tracts?

A. There is one quarter block that is available, 132 feet square, at $67,000 on the southwest corner of Seventh and Vine. There is another quarter block immediately west of that available at the same price on the southeast corner of Eighth and Vine.

Q. At what value?

A. At the same value $67,000. There is another property immediately south of that consisting of a quarter block available at the same price.

Q. That is $67,000 for the *w*uarter block?

A. For the quarter block.

Q. Any more.

A. I can't say that I can give you definite values on any other in that vicinity except there are some few other properties that could be purchased.

Q. Large or small?

A. Mostly small.

Q. What size?

Same objection.

A. From sixty six feet to a quarter block.

Q. These three quarter blocks you have mentioned do they

235 lie contiguous?

A. Yes, sir.

Q. What is the area of the property of the Des Moines Gas Company?

A. Approximately eleven quarter blocks. Approximately two and three quarter full blocks.

Q. There are two full blocks, practically full.

A. Two blocks, practically full blocks with the exception of two small lots, forty four foot lots.

Q. Two lots out of one block?

A. Yes, sir.

Q. Is there in the west Des Moines trackage district any tracts available on the market that can be obtained so large as the area of the Des Moines Gas Company's property in east Des Moines or as much as an even two blocks?

Objected to as irrelevant and immaterial.

A. No, sir.

Q. Have you made an investigation with respect to that matter?

Same objection.

A. Yes, sir.

Q. To what extent and how fully.

Same objection.

A. To the extent of inquiring of property owners and from my knowledge of the ownership, of the existing owners of the property.

—. You have been familiar and known the uses that have been made of these properties?

A. Largely.

Q. *Recurring* your attention to the trackage that is in east Des Moines, are there any available and if so to what extent of available trackage properties, what area?

236 Objected to as incompetent, irrelevant and immaterial.

A. There are some trackage properties immediately east of this property, but it is not possible to consolidate any large body of ground.

Q. You mean they don't lie contiguous?

A. Don't lie contiguous.

Q. What size tract of ground is lying east of there that is available?

A. The largest block in one body would be approximately a quarter block, that is available for purchase.

Q. What has been and what is the demand for trackage properties in Des Moines?

A. Been increasing very rapidly and very strong demand for good trackage property.

Q. The trackage property in Des Moines is limited to these areas that you have described?

A. Yes, sir.

Q. Unless you go away out by the starch works and out to the suburbs is that true?

A. Yes, sir.

Q. You made your examination and investigation and estimation of gas company's properties last winter?

A. Yes, sir.

Q. Did you know what the fair reasonable market value of the Des Moines Gas Company's property was say on the 1st day of January this year, 1911?

A. Yes, sir.

Q. Exclusive of any buildings or improvements on the property?

A. Yes, sir.

Q. You may state what that value was?

237 A. $223,670.

Q. That does not take into account any of the improvements?

A. No, sir; none of the improvements.

Q. In making your valuations and giving your valuation, you have given it as a whole with respect to all the property?

A. Yes, sir.

Q. In making your investigation and valuation, did you consider it in less quantities than the whole?

A. Yes, sir.

Q. You may give the valuation placed by you on the various subdivisions as made by you?

A. The entire block C I placed the value of $110,880. On the quarter block in block K, consisting of lots 3 and 4, I placed a value of $25,200. Lots 3, 4, 5, 6 and 7, in Block T, I placed a value of $11,800. Lots 3 to 10 inclusive in Block "B" I placed a value of $65,890. And lot- 9 and 10, in Block M, I placed the value at $9,900.

Q. Is this total valuation which you have given the aggregate of the *serval* value you have just stated?

A. Yes, sir.

Q. This property as a whole does it have any greater value than the aggregate in your opinion?

A. Approximately the same, the aggregate considering the pieces as I have stated them here.

Q. I am inquiring whethe- taking the property as a whole, the aggregate area of the five pieces, would have a greater value than the sum of the several values which you have given?

A. A property of this kind as a whole body has a greater value than the total of its component parts, but I think that the component parts of this can be so divided that the to-al will be

238 approximately the same, the total value will be approximately the same in each case, but there is a point of division that would reduce the value.

Q. Well what do you mean by that?

A. To use an extreme illustration, if you would take a lot of two feet frontage it would have no value.

Q. The separate little properties have any?

A. A forty four foot lot would have little value comparatively.

Q. For what purp-se generally aside f-om use as a location for a gas manufacturing plant is this property available and adoptable?

A. It is very desirable property for warehouse property, for manufacturing, for jobbing, or for the combined manufacturing and jobbing.

Q. Is there a demand, and if so state the fact for proper ties for warehouse and storage purposes in Des Moines?

A. Yes, sir.

Q. What concerns are here already?

A. The Blue Line Transfer Company, the White Line Transfer, the Merchants Transfer, the Bolton Transfer, what was the Bolton Transfer, I have forgotten the name now, the Graham Transfer and the Vee Transfer are the principal ones.

Q. What is the fact as to whether houses are used for the distribution of products throughout the state.

A. Yes, sir.

Q. To what extent is that industry developed in Des Moines?

A. All the principal farm implements and threshing machine houses have distributing points in Des Moines.

Q. Are there institutions here maintaining storage houses for that purpose?

A. Yes, sir; increasing in number yearly.

239 Q. Did you speak with reference to that among other demands for trackage property in Des Moines?

A. Include that as warehouse property.

Q. Are there other features that make for value in this property of the gas company than you have already described and called attention to, if so, I wish you would add it?

A. The principal things that I consider in making up my values was first, its close proximity to the financial center, its close proximity to the population center. It is on the east bank of the Des Moines river, it is two blocks south of the main retail business street of the city, it is on the main tracks running east and west through the city.

Q. Railway tracks?

A. Yes, railway tracks. It is about a block and a half, about two blocks south of what will be the ends of the civic center which is not in process and which will be one of the most beautiful civic centers there in the United States when completed. Its location on the river front gives a large advertising value. Every person coming into Des Moines over any railroad except the Northwestern crosses the river in going one direction or the other, they see the property, they see any building erected on it, they see any sign on the property and that is all of great value in considering a manufacturing project or jobbing house catering to the public of the state or to the public outside of the state, when you consider transcontinental tourists.

Q. Assuming a requirement for as much as two blocks or two and one half blocks of ground lying completely contiguous, trackage property for a given industry, where can it be obtained in Des Moines?

Objected to as incompetent, irrelevant and immaterial.

240 Q. Where is such a tract of ground available?

A. I think it is absolutely impossible to obtain it if it is similarly located.

Q. What do you mean by similarly located?

A. I mean served by the same roads, the same approximate distance from the financial center.

Q. Suppose you wanted adequate track facilities where can you obtain it?

A. You could obtain track facilities south of Elm in the property owned by the Hubbel estate, but not by purchase.

Q. I mean by purchase?

A. I don't think it could be obtained at all.

Q. What is the attitude of persons requiring trackage property with respect to leasing or buying.

A. It is very difficult to float a bond issue on leased ground. It is desirable——

Q. Is there any demand for leased property to the extent there is for purchase, what is the fact about it?

Objected to as immaterial.

A. There is demand for leased property but the demand for leased property is made almost entirely by those who have not financial standing to float a bond issue, and have not enough money to buy property.

Objected to as incompetent, immaterial and irrelevant.

Q. You speak I take it from your observation and experience in the matter?

A. Yes, sir.

Q. You have referred to the value of the gas property as of the first of this year. What is the fact as to whether or not there has been any depreciation or appreciation since that time?

241 A. That is a matter to which I have not given close consideration. There has unquestiojably been some increase of business property in Des Moines, every piece of property in Des Moines has increased in six months.

Q. You can't say there has been any depreciation?

A. Been no depreciation but has been a definite appreciation of some amount.

Cross-examination by R. O. BRENNAN, Esq.:

Q. You have been more or less active in the so-called booster movement and spirit in Des Moines the last four or five years have you not?

A. Yes, sir.

Q. And you were president of the Commercial exchange?

A. Yes, sir.

Q. And are now at this time?

A. No, sir.

Q. How recently were you connected with the Commercial Exchange as its president?

A. Up until December of last year.

Q. You have developed certain territory in West Des Moines, built up additions to the city have you not?

A. Yes, sir.

Q. About how many of those additions?

A. Our largest addition was Middlesex Addition consisting of forty acres between Thirty-first and Thirty Fifth streets and between Woodland and Center. Another section was an addition called Kauffman Place of twelve and three quarter acres, from Thirty-first to a block west of Thirty-eighth between Cottage Grove and University. We have handled a large amount of prop-
242 erty in Marquis Addition which we handled although we did not plat it.

Q. Your principal holdings are in West Des Moines are *you* not?

A. Largely.

Q. Do you have any holdings in east Des Moines?

A. Yes, sir.

Q. What part of east Des Moines?

A. From a quarter to half a mile north of the Jewish Cemetery.

Q. Residence property?

A. We have property we platted this year, suburban property, acreage property.

Q. Have any business property in east Des Moines?

A. No, sir. We have a couple of dwelling house properties over——

Q. But no business property?

A. No.

Q. It is your judgment is it Mr. Kauffman that within the past ten years there has been an extraordinary increase in values of real estate in the city of Des Moines?

A. Been a very marked increase.

Q. Well it has gone as high as three to four hundred per cent in that time in your judgment?

A. In a few rare instances gone that high I think.

Q. What would be the general average for the ten years?

A. Oh, the general average would be from fifty to two hundred per cent.

Q. That would be extraordinary wouldn't it?

A. In some respects it might be considered extraordinary, but in many other respects that advance was anticipated.

Q. What was this property worth ten years ago in your judgment?

A. I don't know.

243 Q. Have you any idea?

A. Not very much of an idea.

Q. Can you approximate its value?

A. I don't think that I could without going into it at length giving it a good deal of consideration.

Q. Has it increased two hundred per cent in ten years in value?

A. It is difficult to answer that question because ten years ago that property might have been considered almost worthless.

Q. Well was it so considered?

A. Pretty near so I guess, yes. Twelve or fifteen years ago, it certainly was not considered of any great value.

Q. Do you know what that property cost originally?

A. No, sir; I do not.

Q. That is the gas company, how much was paid for it?
A. I haven't any idea.
Q. Never have inquired into that?
A. Never have inquired.
Q. Counsel has directed your attention to certain parts of the city and he has asked you to tell about the values of real estate along west Walnut.
A. Yes, sir.
Q. You have fixed Sixth and Walnut as the heart of the business section of the city in West Des Moines?
A. I fixed Fifth and Walnut as the financial center and Sixth and Walnut as the summit of value.
Q. The financial center at Fifth and Walnut.
A. Yes, sir.
Q. Why do you fix Fifth and Walnut as the financial center.
A. I mean by financial center that Fifth street has always been in my experience and is still the principal street in the city
244 of Des Moines where are located the offices that transact the greater amount of business aside from the retail and jobbing and professional business that is transacted in the city of Des Moines. There is one bank at the corner of Fifth and Walnut, there are banks east, another bank north and hotels and depots and it is the financial center.
Q. The Citizens' National and Des Moines National banks are at Sixth and Walnut?
A. Yes, sir.
Q. The Fleming building is Sixth and Walnut?
A. Yes, sir.
Q. The Citizens' Bank Building?
A. Yes, sir.
Q. The Utica?
A. Yes, sir.
Q. The Securities building on Seventh?
A. Yes, sir.
Q. And the business has been going west?
A. Yes, sir.
Q. Younker Brothers are at Seventh street, Seventh and Walnut?
A. Yes, sir.
Q. And the business has been gradually going west for a number of years?
A. The city has been growing and has been expanding in the only open direction but business has not been leaving the older sections of the city.
Q. You say as you approach the river going east on either Walnut or Locust street that the prices gradually decrease?
A. Yes, sir.
Q. Until you come to the west end of the Coliseum building?
245 A. Yes, sir.
Q. Is that true immediately east of the Coliseum build-

ing, do they still decrease or do they stop at the west side of the Coliseum building?

A. No, sir; at the bridge east Locust street property between there and the Northwestern tracks you can't say it increases all the way from east to west or from west to east. The properties at the river and the Northwestern tracks move over on the east side out to the unimproved properties.

Q. The peak load is at Sixth and Walnut?

A. Yes, sir.

Q. And low tide down at the river bank at the Coliseum building in west Des Moines?

A. Yes, sir.

Q. What is property worth per front foot on Walnut street and on Locust street near the Des Moines river?

A. Property in Walnut street near the Des Moines river is worth approximately, that is property on Walnut street is worth in the neighborhood of $800 per front foot, exclusive of the building.

Q. Down on Walnut street what is it worth?

A. That was Walnut street I answered.

Q. On Locust street?

A. Locust street properties run down as low as three or four hundred dollars.

Q. The factory district of Des Moines is located where, that is the so called factory district?

A. I have never heard that term used, the so called factory district.

Q. Never heard the so called factory district developed by
246 Mr. Hubbell in southwest Des Moines?

A. I have always heard that referred to as the flood district.

Q. He has attempted at least to develop it as a manufacturing district the last few years.

A. He has attempted to put some use to the property and he has attempted to give unusually favorable leases for a term of ten years with a continuance of the lease at terms favorable to him to establish a value, made every effort he could to establish a value to that property and has succeeded very well.

Q. Where are the manufacturing interests in Des Moines located, what part of the city?

A. Located principally along the tracks of the various railroads entering Des Moines from Fifteenth street or from Seventeenth street east to east Fourth or Fifth street and then jumping a mile or mile and a half east into what is known as the packing house district, and starch works district, the distillery, and some factories, being developed up on the north and south line of the Short Line, and of the Great Western.

Q. Isn't it true the principal manufacturing center is in West Des Moines and not in east Des Moines, isn't that true and just as you have said ten years ago the property of the gas company was practically worthless?

A. I would not say on either side was the principal manufactur-

ing district or principal industries. We have very large institutions on both sides of the river and a great many on each side.

Q. What large institutions have we in East Des Moines and where located?

A. The packing house is the largest.

Q. That is located where?

247 A. Located about a mile and a half east of the property under consideration.

Q. And the property there you think, the packing district there is a manufacturing district of the city?

A. Yes, sir.

Q. And one that would compare favorably as to trackage location with the so called factory district in west Des Moines?

A. It has trackage which will both receive and deliver freight on a favorable basis.

Q. Well as I understand you, any manufacturing establishment which is located on a railroad has the advantage of the Des Moines Terminal Company taking care of cars placed on the siding so being located on the railroad is all that is necessary?

A. I think the question of being located on more than one railroad enters into it, the question of competition.

Q. If the Des Moines Terminal Company will take care of cars, and place them on the siding that is all they need.

A. All they need, but the question of expense for that service enters into it largely as to forming a value of the trackage.

Q. Do they charge for that service?

A. In some instances.

Q. In how many instances?

A. I don't know.

Q. You would say would you not that property in the vicinity of the packing house and where the old distillery was is as valuable as property near the Des Moines Gas Company's works would you not?

A. I should certainly think not.

Q. What would be the difference?

A. About two miles.

248 Q. I mean in value or price?

A. About the same value you would get in going two miles west of the west business center of Des Moines out Grand Avenue, decrease about that proportion.

Q. What would be that proportion?

A. Oh several hundred per cent.

Q. You have said there is a jump after coming to east 4th and east 5th street- then there is a jump in the factory district until you get out about 17th street?

A. Yes, sir.

Q. Between those points what business is carried on?

A. Practically none except switching. The property is almost entirely controlled by yards and their crossings.

Q. Railroad yards?

A. Yes, sir.

Q. What would you think the property would be worth in the vicinity of the packing house located on the railroads?

A. Oh that property would be worth, vary in price from $500 to $1,000 an acre and some of it possibly higher.

Q. Five to $800 an acre?

A. Five hundred to $1,000 an acre.

Q. Do you know how many acres was occupied by the Agar Packing Company with its buildings?

A. I do not.

Q. And manufacturing establishment?

A. No, sir.

Q. Do you know at what price that property was sold recently?

A. No, sir.

Q. Do you know of any trackage property having been sold or offered for sale in east Des Moines?

249 A. Yes, sir.

Q. Where?

A. I know of one piece of trackage on east 19th street and the Rock Island tracks.

Q. How much?

A. That is for sale, there is a piece of five acres for sale at $3,500, $700 per acre.

Q. East 19th and Vine street-?

A. East 19th and the railroad track makes a turn, it cuts across one corner of this tract. I don't know what the east and west street would be. It would be south of Vine.

Q. Have you sold any properties on east Court Avenue from the river to Fifth street at any time?

A. No, sir.

Q. Have you known of any sales within the past year on that street?

A. Yes, sir.

Q. Where?

A. Northeast corner of First and Court Avenue 132 feet square with buildings which were practically worthless sold for $27,000.

Q. How much frontage was there?

A. Slightly in excess of $200 a front foot.

Q. That is on the northeast corner of First and Court Avenue?

A. First and Court Avenue.

Q. That is the old Boehler property?

A. Yes, sir.

Q. What other properties have been sold over there the last year?

A. I don't know of other actual sales. I know of other values, but I don't know of any other actual sales.

Q. Do you know of any properties that have been sold on Vine street from First street to Fifth street?

250 A. Yes, sir.

Q. Where?

A. The southeast corner of Third and Vine.

Q. Southeast corner. When was that sold?

A. 132 feet square was sold this year, this year or late last fall. Within the past year at any rate.

Q. How much was paid for that property?

A. $8,500.

Q. How far is that from the manufacturing plant of the Des Moines Gas Company?

A. That is three blocks from First street and from the river bank. Be about two blocks and a half from the average center of the Des Moines Gas Company's plant.

Q. Immediately east?

A. Immediately east.

Q. Do you know of any other properties in that vicinity which have been sold or exchanged?

A. I don't think I know of any exchanges.

Q. Within the last year?

A. I don't think I know of any exchanges, there was one sale of a property I think located on the corner of Third and Elm I believe 66 by 132.

Q. Did it face Third street or Elm street?

A. That I don't know.

Q. Do you know how much it sold for?

A. I don't know the exact figure, it sold for a ridiculous sum and that is all I carried in my memory, that it sold for a ridiculously low price.

Q. What was that price?

A. I don't remember exactly. I think it was a little over $3,000.

251 Q. How far is that from the gas works?

A. About three blocks or three blocks and a half from the average center of the gas company plant.

Q. It makes some difference does it not in the value of property when it is four or five blocks away from the financial district as you call it, or financial center, it makes considerable difference in the value?

A. In the value, yes.

Q. And property which was situated on Court Avenue and on the east side of the river and between railroads was not regarded and is not regarded very valuable is it?

A. Yes, sir.

Q. In East Des Moines?

A. Yes, sir.

Q. When did it commence to increase in value?

A. The last two or three years, the last five years, or last seven or eight years, especially the last few years.

Q. You have said about ten years ago this property would be considered as practically worthless?

A. That is a figurative term. I don't know the value, I meant figuratively compared to the present value.

Q. It had the same trackage at that time, the Rock Island railroad was there ten years ago at that point?

A. Yes, sir.

Q. And Keokuk and Des Moines?

A. Yes, sir.

Q. And Des Moines Union tracks and Great Western tracks, all the tracks that are there now?

A. The trackage facilities are practically unchanged with the exception of possibly some different arrangements with the terminal.

252 Q. Can you tell the court of any large manufacturing institution or any large warehouse or storage house within a radius of two or three blocks of the Des Moines Gas Company's works built within the past ten years?

A. The Farley-Letcher & Company.

Q. What is the character of their business?

A. Mill work.

Q. Where is their factory located?

A. On Third and Vine, Fourth and Vine.

Q. Did they buy this property which was sold for $8,500?

A. Yes, sir.

Q. That is the property you speak of?

A. No, sir.

Q. I say did they buy that property?

A. Yes, they bought that property but not the property referred to a few moments ago.

Q. Do you know how much frontage they got?

A. I don't know the exact size of the property.

Q. Do you know what they paid for the property?

A. I do not.

Q. Did you make any inquiries?

A. Yes, sir.

Q. Were you able to find out?

A. Found out and had definite information.

Q. What was it they paid?

A. I have forgotten. I have the information in the office. My remembrance of it is $35,000 for the building and ground.

Q. What kind of a building is on the lot?

A. They have a two story building that is a very good building, it is a shell, a very good shell.

253 Q. What was the construction of the building?

A. It was brick walls with combustible floors and unprotected iron columns inside.

Q. Veneered walls?

A. Solid brick walls as I remember.

Q. Two stories. You don't remember the frontage that they had, the dimensions of their property?

A. I don't remember the frontage.

Q. You think that sold for in the neighborhood of $35,000?

A. That is my impression, that is my reme-brance. I have that information in my records in the office.

Q. Now what other factories in that vicinity?

A. Des Moines Incubator Company, Des Moines Manufacturing and Supply Company, Dempster Manufacturing Company.

Q. The Des Moines Manufacturing & Supply Company is First and Court Avenue?

A. Yes, sir.

Q. Been there for a good many years?

A. Yes, sir.

Q. Where is this incubator company?

A. On Third street.

Q. That Des Moines Incubator Company has been in business there 12 or fifteen years has it not?

A. I think they have been in business about twelve years, possibly that.

Q. Do they have any substantial buildings in connection with their manufacturing establishment?

A. Not many.

Q. They haven't any building of steel or brick construction have they?

A. No, sir; I think not, nothing of any value.

254 Q. The Des Moines Manufacturing & Supply Company has been in business at their location for at least twenty years has it not, twenty-five years?

A. For twelve to fifteen years I know of, I think longer.

Q. Now can you tell the court what factory of any consequence where they have erected and constructed building of either steel or brick construction or of any warehouse or storage house that have been located and constructed in that vicinity within the past five years?

A. The Advance Thresher Company erected a very good warehouse. The Nichols & Sheperd Company erected a warehouse and as I said the Farley-Letcher people, the Farley-Letcher people have one of the biggest factories in the state at Dubuque and this one here will be made so.

Q. The Advance Thresher Company have been in business more than ten years over there?

A. No, sir.

Q. Nichols & Sh-perd have been?

A. Yes, sir.

Q. Been there more than ten years?

A. Been about ten years, possibly eleven or twelve, the Advance Thresher has not been there ten years. The Mason Motor Car Company erected a factory, they later moved to Waterloo.

Q. So that is out of business?

A. Yes, out of Des Moines.

Q. They removed their factory to some other place?

A. Yes, sir. There is very little opportunity for any factory to get in that section on account of the ownership of the ground

255 there.

Q. On account of the net work of railroad tracks through there, isn't that true? The Rock Island railroad practically occupies Vine street doesn't it?

A. That is largely true, but the net work of railroad tracks commences east of Sixth. The ownership of the ground is such that it

is not available for purchase west of the property under consideration to practically Sixth stre-t.

Q. Go south of Court Avenue half a block and you strike two or three railroad tracks there, the Great Western, Des Moines Union, and Des Moines & St. Paul have a net work of tracks.

A. In fact the Des Moines Union tracks.

Q. Three or four sets of tracks there?

A. No, sir.

Q. How many?

Q. I think two.

Q. Just a few feet south of that you strike the Rock Island main line right of way?

A. A little over half a block you strike the Rock Island main line double track.

Q. Any switches turning out either side between the Des Moines Union and Rock Island?

A. The Des Moines Manufacturing Company have a switch to the Rock Island, but I think that is the north side of the track.

Q. Immediately south of the Rock Island right of way you strike what is called the K. D.?

A. Yes, sir.

Q. On Market street?

A. Yes, sir.

Q. How many tracks on Market?

256 A. One track.

Q. Any turnouts or switches there?

A. I think a switch there.

Q. How many?

A. One I think.

Q. Where is that switch located?

A. I can't give you definitely the location.

Q. Then the Burlington?

A. Yes, sir.

Q. And the Wabash?

A. I think the Wabash comes in over the Des Moines Union.

Q. The Burlington has its tracks down there?

A. Yes, sir.

Q. So that all the main railroads entering Des Moines with the exception of the Northwestern, their tracks run parallel to each other and cross the Des Moines river?

A. Yes, practically all.

Q. And they enter either the Rock Island station or Des Moines Union station?

A. Yes, sir.

Q. Of course the Chicago, Milwaukee & St. Paul that comes in from the west don't go on the east side of the river?

A. Yes, sir.

Q. The Northwestern also has its track running north and south on Walnut street and Court Avenue.

A. Yes, sir.

Q. And extending south to what point?

A. Running south to I believe Elm.

Q. Sp that all of the territory in east Des Moines lying south of Court Avenue and between the river and say east 20th and
257 south to Elm is practically a net work of railroad tracks and yards and switches, isn't that true?

A. No, sir.

Q. Well to what extent is it not true?

A. It is not true from the river bank to east Sixth street. The net work of tracks commences at east Sixth tracks where the railroads begin to cross each other and to branch in either a southeasterly direction or northeasterly direction.

Q. To what extent is the property aside from that occupied by the railroads proper or their rights of way, to what extent is it owned by the railroad companies?

A. Very largely. There is very little available for purchase, held by the railroads for their own use.

Q. Even on Market square over there, set aside for market square is used for railroad tracks?

A. I guess they have copped out part of that market square.

Q. Isn't it pretty hard to get in there without having to cross railroad tracks, take the Des Moines Gas Company a track on one side of the Rock Island and the other side the K. D.

A. Yes, sir.

Q. It is also in among railroads?

A. Yes; that is what one wanting property requiring large freight must get.

Q. You have said it did not make much difference in Des Moines having got the Des Moines Terminal Company, they will take care of the cars?

A. I have not said that.

Q. You said that in substance?

A. I said it made a great difference as to whether or not a piece of property was served by one road or served by other roads
258 so it had competition as to railroads.

Q. If you was on a railroad you would have no difficulty in having your cars transferred to your place of business?

A. You can have them transferred to your place of business, provided you have the price.

Q. Didn't you say it was only in rare instance where it was required, in a majority of cases there was no charges?

A. I said in certain instances there was a charge. You asked me how many and I said I didn't know.

Q. In placing your valuation upon the Des Moines Gas Company's property, Mr. Kauffman, did you consider the property lying along the bank of the Des Moines river as belonging to the company?

A. Yes, sir.

Q. Considered that as their property?

A. Yes, property in Block T.

Q. Did you make any investigation as to the legal title of that property?

A. I did not.

Q. You just assumed it belonged to the company?

A. I assume it belongs to the company.

Q. You also assumed because the company was in possession of these alleys that were vacated th- they also belonged to them?

A. I was assuming they had the use of it. I didn't inquire. I don't know the legal process of vacating alleys, I don't know how they vacate.

Q. In placing your valuation upon the entire property of $223,670 did you make any allowance from the fact that the company has but the use of the alleys, not the owners of the fee.

A. I considered that they had practically permanent use and permanent use is the same as ownership.

259 Q. So you treated the alleys the same as the balance of the prop- in making up your valuation?

A. Not the same as the balance of the property, I considered certain property there in fee simple. I didn't consider the alleys as to whether or not they were in fee simple, merely assumed they had the permanent use of these alleys from the fact they had been vacated.

Q. Suppose the city should undertake to re-occupy these alleys and streets over there, how much would you want to deduct from the $223,670 on account of that?

A. It is entirely a question of what division you would make in the property, if it would be for the use now existing, it would be damaging to run alleys in through that property and prevent the gas company from using it, prevent the present occupants from using them. But the property can be handled on a basis and maintain the same values on the basis of blocks, half blocks and probably quarter blocks. If it is handled to the small sized lot as a quarter block which I think it can be, and still maintain the same total value by using the same total of various quarter blocks, and still maintain the total value placed on the property it would make practically no difference because you have got to cut alleys through any way.

Q. You are considering you might take that property with the alleys re-established and develop it to different purchasers and get the property owner the same amount of money, that is what you mean?

A. I mean to take that property as it now stands——

Q. Take that property as it now stands and considering your valuations with these alleys re-established and opened up there, how much deduction would you make, if any, from the values

260 you have *have* placed on that property.

A. My value is not made for the use and occupancy of the Des Moines Gas Company made on the property irrespective of whether the Gas Company occupy it or not.

Q. When you place these values of $223,670 you placed that upon it for general commercial purposes did you?

A. For jobbing, manufacturing and warehouse purposes, distributing purposes, purposes requiring a block of ground of a certain size within easy access of the main business centers of the city of *the city of* Des Moines and having freight facilities.

Q. You didn't take into account the purposes and uses that the Des Moines Gas Company was making of it?

A. I don't mean for the purposes of the Des Moines Gas Company's occupancy.

Q. Or what it is worth to them?

A. I don't know what it is worth to the Des Moines Gas Company except the Des Moines Gas Company is owner and have their property there and is valuable for them f-om the fact they have used it.

Q. Is it subject to overflow?

A. A part of it I think, small part only.

Q. What part is subject to overflow?

A. Lots 9 and 10, Block M.

Q. Where are those lots located?

A. Southeast corner Second and Elm.

Q. Did you allow anything for that?

A. For the overflow?

Q. Yes?

A. My valuation was very much lower there than on the other portions.

261 Q. What did you place as the value of these lots?

A. $9,900.

Q. Do you know how much they paid for them.

A. No, sir.

Q. Do you know when they were purchased by the Des Moines Gas Company?

A. No, sir.

Q. What do you use as your standard in arriving at $9,900 for these lots?

A. The general basis of depressing the preop-rty as you go further south. Crossing more railroad tracks, which takes you further away from the business center and gets you into lower ground and gets you in competition with cheaper stuff of the overflow district of the southeast bottom.

Q. Any other portion of this property that is subject to overflow?

A. I am not positive as to what portion of Block "B" overflows. I don't think Block B overflows. I would be positive on that. I think that Block B is approximately the same level as Block C and Block C is where the main factory is located and is not subject to overflow.

Q. Now Mr. Kauffman you made an affidavit in this case did you not when the application was made for a temporary injunction in which you placed a value upon the property of the Des Moines Gas Company.

A. I believe that I did.

Q. About how much of an investigation did you make prior to the time that you made that affidavit?

A. I don't remember the length of time I spent on it.

Q. When were you first asked by the Des Moines Gas Company to investigate its properties for the purpose of either making an affidavit in the case where the temporary injunction was in-

262 volved or in this one?

A. I don't remember exactly. I think it was approximately the first of December, but I am not definite.

Q. Prior to that time you had not given any special attention to the Des Moines Gas Company's property had you?

A. Oh only in a general way. I had not undertaken to make an appraisal of it before that time nor had not been asked to before that time or approximately that time. I was familiar with the conditions.

Q. Your activities were principally in west Des Moines, that is your personal activities with respect to real estate?

A. My personal activities have been wasting a good deal of time finding out about other people's deals as much as it has been handling my own business. My own business largely, the past year has been confined to suburban lots with the exception of one or two larger transactions.

Q. And in interesting jobbers and others to come into Des Moines and buy lots and locate?

A. Yes and to locate factories in Des Moines.

Q. Have you located very many in east Des Moines?

A. I can't tell you how many have located in east Des Moines?

Q. Most of them have been located in west Des Moines that have come here haven't they?

A. No, I think not. Possibly most of them located in West Des Moines than east Des Moines. I would not be sure of that.

Q. I mean within the last year or two?

A. That is what I refer to, I think possibly more located in West Des Moines.

Q. Outside of one firm you mention, located in east Des Moines two or three blocks from the gas works, you don't have in
263 mind any other?

A. The Silo factories are located east of the river, five of them all been in two years.

Q. Where are they located, in what part of the city?

A. From Highland Park down to close to the packing house and on Maury street.

Mr. BRENNAN: That is all of the cross examination.

Here the further hearing was adjourned until 9:30 A. M., to-m*k*rrow.

264 SATURDAY, *July* 15, 1911—Convened at 9:30 a. m.

All counsel for respective parties present.

Testimony on part of complainant resumed as follows:

B. F. KAUFFMAN, re-called on part of complainant for further re-direct examination, examined by Mr. Read, testified as follows:

Q. You were asked with respect to a sale of some property on East First and Court Avenue, do you recall that?

A. Yes, sir.

Q. How large a tract was that?

A. A quarter block, 132 feet square.

Q. Was it trackage property?

A. No, sir.

Q. You were also asked with respect to a sale of a tract on Third & Vine Street; do you recall that?

A. Yes, sir.

Q. Was that trackage property?

A. Yes, sir.

Q. How large a tract was it?

A. 132 feet square.

Q. Would that be a quarter block?

A. Yes, sir.

Q. Was the tract on Third & Elm to which your attention was called trackage property also?

A. I believe that is the property that I referred to as having been sold cheaply, and I don't know the exact location. I was under the impression it was a small 66 foot tract.

265 Q. With respect to the question of value and the desirability and use, does it make any difference whether the tract is large or a small one in that locality?

A. Yes, sir.

Q. What difference and in what respect?

A. Well, the question of quantity in any real estate, in any body of real estate, has a marked effect upon its value in a location such as this. You can have a quantity that is so small that it cannot be put to its highest available use.

Q. Take it in that locality, and generally in respect to trackage property, what is the fact as to whether there is a demand for small tracts or not?

A. The demand for small tracts is not so great as the demand for large ones. The use of a small tract cannot be put to so many uses as a larger tract.

Q. Is that a shopping district there at all?

A. Not at all.

Q. Are any stores or shops in that locality?

A. None at all.

Q. The demand is then for what sized tracts?

A. The demand would be from a quarter of a block up.

Q. Suppose there was a demand for a tract as large as two blocks or two blocks and a half lying contiguously, would that command a high price?

A. If there was competition among the purchasers for a sufficient number of that size tracts, it would affect the value so markedly that it would be beyond anyone's reach.

Q. Suppose there was a demand for a tract as large as the tract owned by the Des Moines Gas Company within the trackage district, and without going out to remote sections, would that com-

266 mand a relatively high price?

A. Yes, sir.

Q. In a general way, if there was a demand for a tract as large as that owned by the Gas Company, and the problem was to gather it up from individual ownerships and constitute it into one ownership, would that affect the price and value?

A. Very markedly. It might drive the price to double or three

times the figures given here; there is no limit to it. It might go double or three times the figures given here.

—. As I recall it, yesterday you said there were no tracts so large within the trackage district on *w*either side of the river?

A. That are available for purchase for anything like a reasonable figure.

Q. So that you think if the problem was to bring under one ownership so large a tract as that owned by the Gas Company it would materially affect the price?

A. Yes, sir, very materially.

Q. I believe you said it might increase it several times?

A. Yes, sir.

Q. Having in mind now your valuation placed on the Gas Company property, $223,000 and some odd dollars, if the demand was for so large a body as that segregated under one ownership, is it your judgment it would increase the price over that amount?

Objected to on part of defendants as being incompetent and immaterial.

A. Very materially.

Q. Take the same problem on the west side of the river and within the trackage area, and with reference to property that is available for purchase, what would you say as to the relative price of the property?

267 A. I understood your question to refer to both the east and west side. The answer would be the same.

Q. In answer to a question by Mr. Brennan you said that property in the locality of the Gas Company property ten years ago was practically worthless; what did you mean by that?

A. Mr. Brennan asked me previously to that what it was worth. I told him I had no definite idea and figuratively speaking it *it* was comparatively of no value, compared to its existing value.

Q. Property on the east side of the river, inside business property as well as other property has been relatively lower than property on the west side—what is the fact as to that?

A. I think as a general rule it has been.

Q. Now of late years, what is the tendency?

A. Of late years the east side has been picking up, increasing at a very rapid ratio. Certain parts of east Des Moines has increased, the demand has increased more rapidly than some sections in west Des Moines.

Q. I understood you to say that the available trackage property principally was confined to the district described by you in east Des Moines and also in west Des Moines.

A. Yes, sir.

Q. Outside of that is there any trackage property in large quantities, or any quantity?

A. Practically none. There is some trackage on the northwestern road.

Q. So then the problem is to obtain trackage property, you are limited to those two districts?

A. Yes, sir.

Q. The bottom land that is converted into trackage by Mr. Hubbell lays south of the area of the district you referred to?

268 A. Yes.

Q. That has been subject to overflow?

A. Yes, sir.

Q. And it only has such trackage facilities as may be afforded by the construction of the Belt Line or the Des Moines Union Railway?

A. Yes, sir.

Q. As controlled by Mr. Hubbell?

A. Yes, sir.

Recross-examination by Mr. R. O. BRENNAN:

Q. In your judgment, what property in Des Moines lies within the trackage area?

A. Commencing at East Sixth Street, following the lines of the Rock Island and Des Moines Union, and a block south of the Rock, two block- south of the Rock Island on the East side, and narrowing down as you run west to west Seventeenth Street.

Q. In other words, do you limit it to property located on the railroad tracks for switches?

A. Certainly.

Q. There is a considerable area in the northeast portion of the city which can be used for manufacturing purposes?

A. Yes, sir.

Q. For sites of that character?

A. Yes, sir.

Q. And there are large tracts of land in that vicinity, are there not?

A. Yes, sir.

Q. What is the land worth in the northeast portion of the

269 city along the roadway of the Chicago, Great Western and the Des Moines & St. Paul Railway Company?

A. From three hundred to four hundred dollars, up to as high as twelve hundred dollars.

Q. An acre?

A. An acre.

Q. Where is it worth $-,000 to $1,200 an acre?

A. Probably along the roadway of the St. Paul and the Great Western at the intersection of Walnut street and Locust and Grand.

Q. And as, you go north of the fair grounds, north of that district then it becomes cheaper?

A. There is no trackage north of the fair grounds.

Q. I mean north of there?

A. North of Grand Avenue, yes sir.

Q. Do you know where Ford Brothers' factory is located?

A. What do they manufacture?

Q. Engines and threshers?

A. I never heard of them.

Q. Do you know whether there is a line of manufacturing establishments up here as what is called the old stove works?

A. Yes, sir.

Q. What is the name of the firm?

A. There is the Wood Brothers Self Feeder Company.

Q. How large a factory have Wood Brothers at that point?

A. I cannot give you the dimensions.

Q. Do they occupy this building formerly used as the stove works?

A. Yes, sir.

Q. And what is ground worth out there?

A. It is a little bit difficult to answer that question for the reason that there is a certain amount of acreage property over there
270 that has been platted into lots—ordinarily acreage property is platted into lots with the idea of increasing its value, and that the sum total of the lots would be worth more than the acreage. In the case of the large amount of property platted into lots there, it has been depreciated and it is not worth as much as the original acreage, and it is rather difficult to tell.

Q. Well, if you were buying a tract of acreage out there, what do you think it would be reasonably worth on the market in Des Moines, if you were going to locate some factory site on it, what inducements would you offer to prospective manufacturer- as to the price of real estate in that part of the city?

A. Stating it generally, I believe the land occupied by Wood Bros. would be worth about $750 and acre.

Q. Do you know where the R. O. Stuttsman manufacturing establishment is located?

A. Yes, sir.

Q. About where?

A. On the northeast corner of the intersection of the Northwestern railroad and East Grand Avenue.

Q. And there are large tracts of land in that vicinity suitable for factory sites?

A. Yes, sir.

Q. What is the land worth in that immediate vicinity?

A. The land abutting on the railroad tract in that vicinity, is worth, as I have before stated, up to as high as $1,200 an acre, and I presume if the acreage was confined purely to the trackage and not confined to acreage lying in a body, it would run higher than that.

Q. Do you limit or qualify your testimony, to property
271 that is located on the main line of the railroad, in view of the terminal facilities that are afforded.

A. In estimating the value of trackage property I am not considering property not on a railroad track.

Q. Suppose it is accessible to a railroad?

A. *The* that depends upon its distance, and the custom of the railroad company furnishing switching facilities, whether they furnish them free or at the cost of the manufacturer.

Q. Take the property at the west end of the city, out near the

Shannon & Mott mills; there has been a tendency the past year or two to establish factory sights there by the railroads.

A. Yes, sir.

Q. And with switches and turn outs, and having sidings along the buildings?

A. Yes, sir; in some few instances. There has been a very great effort made to convert that property into trackage property, but it met with failure.

Q. Well, they have property some little distance from the main line of the railroad there which is accessible to the railroads by the construction of switches?

A. There are a few properties located in the section referred to that are abutting property, owned by Mr. Hubbell or the Hubbell estate, which is contiguous to the Des Moines Union Railroad. Mr. Hubbell can damage his own property and come through it and serve the people north of Cherry Street, and he has done that in the past in a few instances, but has discontinued the practice.

Q. Mr. Hubbell is president of the Des Moines Terminal Company which looks after the transfer of cars to these sidings?

A. I don't know really what his official title is.

272 Mr. GUERNSEY: I beg your pardon, Mr. Fred C. Hubbell is the president.

Q. It is true, Mr. Kauffman, that over here, say east of Seventeenth or Eighteenth Street in East Des Moines almost the entire length of the city there is a large area, open space of unoccupied property suitable for factory sites?

A. Some of it is suitable for factory sites but there are a great many drawbacks.

Q. And accessible to railroads?

A. There is a body of ground over there that lies contiguous to the railroad, small in area. There is a large body of unoccupied ground that is being rapidly built up in small dwellings, and there are serious disadvantages, particular disadvantages; there is absolutely no sewerage system east of Eighteenth street

Q. They have a ditch in there now that carries some sewerage?

A. No, I think not.

Q. But they are planning on that, and it is being agitated by the improvement leagues of East Des Moines, for the construction of a sewer system in East Des Moines?

A. Oh, it has been agitated for fifteen years.

Q. But it is a fact is it not, that there are large tracts of ground in East Des Moines in the vicinity to which your attention has been called, accessible to railroads and which are suitable for factory sites?

A. I would say, where there are large tracts of ground in East Des Moines in the location you refer to, they are not large tracts suitable for factory use. There are a few immediately adjoining the railroads that have not been sold off. Practically that entire district has been sold off in different lot sales during the past two years and it is now owned in small lots 25 to 50 feet in size.

273 Q. Haven't the commercial clubs of the city and the different organizations interested in bringing capital to Des Moines, held that out as an inducement to manufacturers, that there were plenty of factory sites in East Des Moines, especially in that vicinity to which I call your attention?

A. We are certainly holding out the fact that we have factory sites.

Q. And that they are principally located in that part of the city?

A. When it comes to that acreage, a factory that requires 8, 10, 12 or 15 acres, certainly yes. There are various classes of factories just as there are various classes of retail stores.

Q. If you wanted for a factory a couple of blocks, you would locate in East Des Moines?

A. That depends upon the access to the city of Des Moines.

Q. If you wanted to get them on a railroad and that is all they cared about, you would locate them in East Des Moines?

A. That is impossible for me to answer.

Q. I am assuming a manufacturing institution that would require about two blocks of ground and would want that ground accessible to a railroad.

A. If a manufacturing concern wants approximately two blocks of ground and they have determined that they want trackage then comes up the question what else do they want? Is it necessary that they are within easy hauling distance of the City of Des Moines? Is it necessary that they are within easy access of the postal service of Des Moines, etc.

Q. I am assuming a situation where they want two blocks of ground accessible to the railroads?

A. I couldn't answer that question unless you go further
274 with respect to their product and demands. If I wanted two blocks of ground on the railroad I would go where I could buy it the cheapest, if there was no other consideration.

Q. Is West Des Moines, what you call the flood district, that is the hydraulic addition, as it was called, opened up by Mr. Hubbell?

A. The hydraulic is new, but it is pretty good.

Q. Is that why you called it the flood district because it was in the hydraulic addition?

A. Yes, sir.

Q. As a matter of fact, all of the large warehouses and transfer houses are located in that part of the city?

A. No, sir.

Q. Take the International Harvester Company, where is it located?

A. It is located on Eighth Street, I think just south of the Des Moines Union tracks?

Q. And the Moline Plow Company?

A. I can't give you the exact location. The Moline Plow Company are approximately in the same location as the International, on Seventh.

Q. And the Hawkeye Transfer Company?

A. That is located on Fifth and Walnut.

Q. I mean the warehouse of the Hawkeye Company?

A. On Sixth Street.

Q. Do you know of their building on Seventh & Tuttle?

A. That is the Merchants' Transfer.

Q. Well, the Hawkeye too, on the corner of Seventh and Tuttle streets.

A. Oh, yes; there is a building there.

Q. And the White Line Transfer Company is located where?

A. That is on Fifth Street; all north of the hydraulic
275 district except the Hawkeye Building.

Q. Where are the Schmidt & Henry people located; aren't they in the hydraulic addition?

A. I wouldn't say as to that.

Q. Aren't they down on Eighth Street, between Tuttle and Eighth?

A. I don't know how far down they are.

Q. Do you know where the Globe Machinery & Supply Company's factory is located?

A. No, sir.

Q. Well, now, if the Smith & Henry Manufacturing Company have a large brick building down in the hydraulic addition, near the Hawkeye Transfer Company, that location down there is suitable for factory sites, is it not?

A. There is no question but what a man can go down there and build a factory, but as to the value of the site he has chosen, is the point in question.

Q. There are a lot of factory sites in that part of the city?

A. There is ground in that section of the city that is suitable for factory building, providing it is properly protected from the elements.

Q. Haven't they constructed dikes down there?

A. They have constructed dikes but have never had a test put upon them.

Q. Where the Des Moines Gas Company property is located it is subject to overflow, or was some few years ago, was it not?

A. Not some few years, it wasn't.

Q. Well, they have been filling in there for a series of years?

A. I think they have done some filling there.

Q. Quite considerable?

A. How much, I don't know.

276 Q. Before the filling was put in there it was subject to overflow?

A. I never heard of it being overflowed.

Q. In this so-called hydraulic addition they have constructed dikes to protect the property, and the Des Moines Water Company is located on bottom land, the pumping station.

A. I think the Des Moines Water Company is protected to some extent by dikes.

Q. They have constructed those dikes around its pumping station?

A. Yes, sir.

Q. And from the pumping station of the Des Moines Water Company, clear to the Raccoon river there is an open space, if properly diked and protected would be suitable for factory sites?

A. If raised to the proper level it would be probably suitable for factory district.

Q. Mr. Hubbell is endeavoring to attract persons engaged in manufacturing to that part of the city?

A. Yes, sir, by leasing them on long term leases, but not by the sale of the property.

Redirect examination by Mr. READ:

Q. Mr. Kauffman, your attention has been called to the various factories and warehouses in the trackage district in West Des Moines?

A. Yes, sir.

Q. To what extent is the available ground in that district already appropriated and in use?

A. The ground located similarly to the Moline Plow Company and the International Harvester Company, is practically all taken up, or is in the hands of owners, so that it is not available for purchase.

277 Q. So that if you had a demand or call for a considerable trackage of land, as much as two blocks, in that district, where could you find it?

A. It cannot be obtained. I do not believe it can be obtained at any where near a reasonable price.

Q. With reference to that condition, you speak of the price as being two or three times that which you fixed on the Gas property.

A. Yes, sir.

Q. Now, then if the problem was to obtain a similar tract in the East Des Moines trackage district, where could a tract as large as the Gas Company's tract, even two blocks be obtained in East Des Moines?

A. There isn't a tract similarly located in East Des Moines available at any price for purchase, owing to the existing ownerships.

Q. I wish you would take the map, exhibit 6, and indicate that part of the city to which Mr. Brennan called attention as having trackage property?

A. There is a tract of ground lying in East Des Moines flats, east of the north and south line of the Great Western Railroad, extending from the Des Moines river on the south to the city limits on the north, to a distance of probably four or five miles. The south portion of that property from Mowry Street and from the Wabash Railroad east of Twenty-fourth Street, with the exception of the tracks of the Burlington which are elevated, is all of practically no value for any purpose. There is a section which is cut by the railroads, especially the Rock Island, a portion of which property being good trackage property for factories requiring acreage tracts, rather than lot tracts, right here near the fair ground, but all the property north of the Rock Island as far north as Easton Boulevard has

278 now practically all been sold off in small tracts, lots of from 25 to 50 feet frontage, running from five to ten lots to the

acre, and small homes are being erected, largely residence property. North of Easton Boulevard there are a few acreage tracts still available, the majority of them however lie east of the north and south road, known as Delaware, at Easton Boulevard, about a block east of the tracks and continues about that distance until you get a mile north where the tracks come practically to the street; there is a strip of land lying on the east side of the street, good trackage property but quite low, being in general from two to twelve feet below the railroad tracks and there is a great deal of it wet and swampy land. On the west side of the tracks it is more largely built up as a dwelling house district and scattered dwelling houses throughout the entire district, and it also has a large amount of swamp land lower than the tracks, and the majority of it is lower than the public highway. That in general describes the property referred to in the *w*uestion which I understood Mr. Read to ask.

Q. Now, take that property as compared with the property lying where the Gas Company property is, and to what additional uses is the Gas Company property adapted?

A. It may be especially adapted for its present use. It is certainly adapted for jobbing and warehouse purposes.

Q. And the other property is not?

A. It is not. There are a large number of retailers who must have warehouse capacity within a very reasonable distance from the retail establishment. A jobbing house must be in the heart of the city, because there is a certain transient and retail trade coming in from the country to which they must be easily accessible.

279 Q. So that property so remotely situated as that to which your attention was called by Mr. Brennan is not adapted for warehouse and storage purposes?

Objected to on the part of the defendants as being immaterial.

A. Absolutely not.

Q. If you wanted merely factory ground, you might go out to Berwick or Bondurant?

Objected to on part of defendants as immaterial.

A. Yes, sir.

Recross-examination by Mr. R. O. BRENNAN:

Q. It is not necessary to have the gas works on Walnut Street?

A. I am not familiar with the use of the Gas Company.

Q. Now in stating that there is a great deal of ground in East Des Moines that is of no value, do you include in that area the ground formerly occupied by the Starch Company and the International Distilling Company and Agar Packing Company?

A. I have mentioned the property south of that as being not available.

Q. How far south?

A. South to the Des Moines river.

Q. From what point?

A. From the point you mention, the Agar Packing Company and the Starch Company.

Q. The Agar Packing Company have a large tract of ground there with buildings?

A. Yes, sir.

Q. Did have?

280 A. Yes, sir.

Q. And the National Starch Works occupy a large tract of ground down there with buildings?

A. Yes, sir.

Q. And there were other very good buildings of brick construction in that part of the city four or five stories in height?

A. There were other good factory buildings in that district; I don't know how high.

Q. I say, substantial buildings and plenty of trackage facilities?

A. Yes, sir.

Q. And immediately north of what is called the town of Chesterfield there was laid out at one time an addition known as Manufacturers Addition?

A. I believe so.

Q. And the purpose of opening that addition was to have dwellings contiguous to this factory district, and lots were sold; in other words all that portion of the city down there to which I called your attention was laid out and was used to some extent with the idea of converting it into a manufacturing section of Des Moines.

A. There is no question but what that part of the city you are referring to now, the property of the Starch Works, the Agar Packing Company, and continuing north to the Rock Island line, is the best trackage property in East Des Moines, and is a class of property one would seek requiring a large number of acres for practical use.

Re-redict examination by Mr. BRENNAN:

Q. For factory purposes alone?

A. And for the class of factories that require acreage, several acres rather than blocks or quarter blocks.

281 Witness excused.

Time for attendance three days.

MACK OLSEN, being duly sworn on part of complainant, and examined by W. L. Read, Esq., testified as follows:

Q. What is your name?

A. Mack Olsen.

Q. Where do you reside?

A. In Des Moines.

Q. How long have you lived in Des Moines?

A. Twelve years.

Q. What is your business now?

A. Real estate.

Q. How long have you followed it?

A. Eight years.

Q. What kind of real estate have you handled?
A. Des Moines city property.
Q. Residence or inside or business property?
A. All classes of Des Moines property.
Q. To what extent have you handled Des Moines business property.
A. Why I have been instrumental in selling and negotiating sales of several pieces each year.
Q. Involving considerable amounts of money?
A. Possibly $200,000 a year.

Q. To what extent have you followed the course of prices
282 and values in real estate in Des Moines?

A. As closely as possible.
Q. What efforts have you made?
A. I have been following the transfers of property, newspapers and reports and talking with the parties where possible, and conversations with brother agents in the business, and any available source I could find as to the transfers of the different property.
Q. Do you belong to any organization or association?
A. Yes, sir.
Q. What?
A. Commercial Club and Real Estate Exchange.
Q. What are their agencies?
A. The Commercial Club is a business organization to promote the business interests of Des Moines. The Real Estate Exchange is an organization of the leading real estate men to raise the standards and conduct of the real estate business in Des Moines.
Q. What has been the trend of prices of real estate in Des Moines for a number of years?
A. It has been upward.
Q. To what extent is that true?
A. Real estate in the last five years as a general proposition has increased from fifty to one hundred per cent.
Q. Of course there are exceptions to that?
A. Yes, sir, there has been times when the increase has been four or five hundred per cent and possibly larger.
Q. As compared with the property in West Des Moines, what has been the value and price of real estate in East Des Moines, referring now to business property?

A. I think the increase has been as much proportionally
283 in East as in West Des Moines.

Q. Has anything occurred to bring East Des Moines property into favor, if so, what?
A. There has been several things to bring East Des Moines property to the front, primarily the large increase of sales in residence properties on the east side, which has brought largely an increase in population—people looking for cheaper residence property. This increased the retail demand. Then there has been a great deal of activity by the East Des Moines Commercial League, cleaning up and raising the standards on the east side, raising the grade on East Locust Street, building the city hall on the east bank of the

river, the civic center proposition which is now about two-thirds completed, the new Locust street bridge, the Walnut street bridge, the proposed raise of East Walnut street grade, the agitation for increased grounds around the Capitol and improvements to the State Capitol Building, the building of the State Historical Building, the increased preparations at the state fair grounds, the beautifying of these grounds and increasing of them, the added popularity of the parks on the east side; and there have been a great many others I could possibly mention to raise the standard and increase values on the east side of the river.

Q. You have not referred to the construction of the buildings on the bank of the Des Moines river; has that had any influence in that direction?

A. I referred to that in speaking of the civic center improvements which includes the buildings on the east and west banks of the river, and carrying out by that the beautification scheme and thus practically doing away with the dividing line between the two sides and making it more of a whole city.

284 Q. When were the buildings constructed on the banks of the river?

A. The city hall is just being completed on the east bank, and on the west bank the Coliseum has been built possibly eighteen months. The City Library possibly three years. The Post Office has been completed within a year; the improvements to the Des Moines Electric Light Plant are now under way. The idea of that improvement is to take away the ugliness of that and beautifying the grounds and carry out the beautification scheme of the civic center.

Q. What is the fact as to whether there has been a growth in the commerce and business of Des Moines in the last few years?

A. That has been very marked, especially in the last five years. The smaller factories have doubled and quadrupled; the jobbing houses have all had a treme-dous increase in the volume of their business; the Des Moines banks have grown financially and the business interest- of Des Moines have shown a tremendous increase. The insurance business, one of the largest items, has shown a tremendous increase, so large in fact as to now rank ahead of Hartford, Connecticut.

Q. Do you know where is located the property of the Des Moines Gas Company?

A. Yes, sir.

Q. I wish you would refer to the plat marked Exhibit 5 and describe it.

A. It consists of Lots 3, 4, 5, 6 and 7 in Block T. Lots 1 to 10 inclusive in Block C. Lots 3 and 4 in Block K; Lots 3 to 10 inclusive in Block B, and Lots 9 and 10 in Block M.

Q. What is the general character of that ground and for what purpose and uses is it available?

A. It is particularly adapted for jobbing, warehouse and
285 storage and certain classes of manufacturing purposes.

Q. What classes of manufacturing purposes?

A. Manufacturing establishments who do a jobbing business, or where their output is more or less limited as to bulk, and classes of manufacturers who can afford to pay high rents or high values, to which closeness to the business centers and availability to depots and business houses is desired.

Q. What are the features and characteristics that render this property available for such uses?

A. Its closeness to the business district, the paved streets leading to it, the ample railroad facilities, its location in regard to the river, giving plenty of light space for buildings, in the absence of certain classes of factories such as packing houses, rendering works or things of that class.

Q. What is the fact as to the existence of a demand for properties for such uses in Des Moines?

A. There is a very strong demand for that class of property.

Q. Has such demand been accentuated in the last few years?

A. Yes, sir.

Q. Owing to what?

A. To the activity of the Greater Des Moines Committee and the lines of advertising carried in the papers, and the growth of the knowledge of the manufacturers of this city as a distributing center, being in the heart of the greatest agricultural center in the world, where the per capita wealth is great, excellent railroad facilities, and for numerous other reasons.

Q. In what part of the city are such properties to be found. I refer now to the trackage property suitable for such uses as you have described?

A. There is a small district right where the Gas Company
286 is located, between there and Court Avenue, and then it extends on the west side beyond the south side of Court Avenue from the river west to about West Twelfth and Mulberry, and extending south possibly three blocks.

Q. There is a considerable tract of land south of the ground you have referred to owned by Mr. Hubbell or the Hubbell Estate; what do you say as to that property?

A. That possibly could be made available for a good many of these classes, but the main objection to the property is it is owned by the Hubbell Estate.

Q. What objection is there to that?

A. It is owned for lease and not for sale.

Q. To what extent has such property been already appropriated within this district.

A. It has practically all been taken up for this purpose. There is a few tracts 66 feet or 132 feet square which have come back on the market, the people occupying them, outgrowing them, or something of that kind; but they are very limited.

Q. Are you speaking of the West Des Moines district or East Des Moines district?

A. Both districts.

Q. Suppose there were a demand for say two blocks of ground within this district lying contiguous, is that obtainable in the market?

A. No, sir; not as a market proposition.

Q. What do you mean by that?

A. You said, could it be obtained. Of course it would be possible by paying an exorbitant price, but not in the regular line of business.

Q. That is, as all things are possible by the use of money?

A. Yes, sir.

287 Q. You referred to that to indicate that the prices would be exorbitant and prohibitive?

A. Yes, sir.

Q. In East Des Moines are there any tracts so large as the Des Moines Gas Company's property, or even so large as two blocks within that district?

A. Not with the advantages I have set forth.

Q. I said within that district?

A. No, not within that district.

Q. You referred to a more remote part?

A. Yes, sir.

Q. Have you made an investigation of the property of the Des Moines Gas Company?

A. Yes, sir.

Q. When did you make such investigation?

A. I made two; one in March and I was again down there day before yesterday.

Q. You have made an investigation for what purpose?

A. To arrive at the value of this ground.

Q. How long have you been familiar with the property, in a general way.

A. Possibly ten years.

Q. So that this investigation was a particular investigation, I take it, with the view to fixing an appraisement?

A. Yes, sir.

Q. To what extent have you acted on appraisement boards for appraising real estate, Mr. Olsen, in Des Moines?

A. I have been a witness in court——

Q. I don't care to have you give the particulars.

A. Oh, a great deal.

288 Q. Properties in both east and west Des Moines?

A. It has been confined, outside of residence property, to west Des Moines.

Q. Business property in West Des Moines?

A. Yes, sir.

Q. Do you know what was the fair, reasonable market value of the property of the Des Moines Gas Company, taken as a whole, and exclusive of any buildings or improvements on it, on or about the first of January of this year?

A. Yes, sir.

Q. What was its value in your judgment and opinion?

A. $232,400.00.

Q. What in your judgment and opinion is the fair reasonable market value at this time?

A. The same.

Q. It has not then diminished?
A. No, sir.

Cross-examination by Hon. H. W. Byers:

Q. When Mr. Olsen, was your attention first called to this property for the purpose of appraisement?
A. Along about the first of March.
Q. Who called your attention to it?
A. Mr. Frank Kauffman.
Q. And for what purpose did he call your attention to the property?
A. He asked me to make an appraisement.
Q. Did he tell you what the appraisement was for?
A. Yes, sir.
Q. And what did he tell you it was for?
289 A. He told me he wanted to make an appraisement of this property for the Gas Company.
Q. Did he tell you what the Gas Company wanted with the appraisement?
A. No, sir.
Q. You know, did you not, that it was for use in this gas controversy with the city?
A. Yes, sir.
Q. You knew when you went out to make the appraisement that the appraisement was to be used by the Gas Company for the purpose of supporting the charge that they make in Des Moines against the consumers and general public for the use of gas?
A. I supposed that was the reason.
Q. You knew that and you knew too when you went out to make the appraisement and when you were asked to make it that the rate charged for gas, the reasonable rate charged for gas to the consuming public here would depend some upon the value that they put upon this property?
A. I expect so. I didn't pay any particular attention to it; simply appraised it as a business proposition.
Q. You knew too, did you not, Mr. Olsen, at the time you made the appraisement that this controversy was pending between the Gas Company and the City?
A. Yes, sir.
Q. And you made your appraisement with all that in your mind?
A. I don't know as I took anything of that kind into consideration. I went out and appraised it what I reasonably thought it was worth.
Q. And you told Mr. Read or started to tell him that you were often upon the witness stand in cases where the question of value was involved?
A. Yes, sir.
290 Q. And that has always been in cases and on the side of the case that required a good, stiff valuation?
A. It has only been in one case of that kind.
Q. What was that, this viaduct case?
A. Yes, sir.

Q. And the other cases were cases where the question of value was involved between the city on one side, largely and individuals or corporations on the other side?

A. Just the one case.

Q. That was the viaduct case?

A. Yes, sir.

Q. You are a member of the Booster Committee, so-called?

A. Yes, sir.

Q. And have been an unusually active man*d*?

A. Yes, sir.

Q. And have been so during nearly all this period when you say there has been a very marked increase in values in Des Moines?

A. Yes, sir.

Q. The truth is that much of the increase—and I do not ask this question for the purpose of throwing any bouquets—the truth is a large part, in fact the largest part of the increase in the values in property in Des Moines is due to the activity of a few gentlemen who have been pushing and boosting Des Moines for the last three or four years; that is true, is it not?

A. It is true with qualifications.

Q. Well in a general way it is true?

A. I wouldn't say that. The boosting proposition simply opened the eyes of the residents as well as people coming here as to the actual value.

Q. This increase, however, has grown out of the move-
291 ment of the boosting committee, started and carried on for the last three or four years?

A. Yes, sir.

Q. When that movement began property was at a very low ebb in this city?

A. Yes, sir.

Q. All kinds of property?

A. Yes, sir.

Q. In both East and West Des Moines there was little movement along any line in the way advancing prices; that is true, is it not?

A. Yes, sir.

Q. When was the boosters' committee organized?

A. About five years ago.

Q. It had its origin about five years ago?

A. Yes, sir.

Q. And it has been active ever since?

A. Yes, sir.

Q. Now prior to its organization there was no city hall on the east side?

A. No, sir.

Q. There was no Coliseum on the west side?

A. No, sir.

Q. There was no post office on the west side?

A. No, sir.

Q. There was no ground in preparation for city beautification and so on on the east side?

A. No, sir.

Q. There had been no change made in the Electric Light Plant?
A. No, sir.
Q. And there was no Locust Street bridge except the old one?
292 A. No, sir.
Q. All these things now have grown out of this booster movement in Des Moines, have they not?
A. Yes, sir.
Q. Now, during the four or five years of this booster committee work, what has been the growth along other lines in addition to the increase in value of property?
A. Every line has increased.
Q. And how has it been with respect to the building of residences and other properties in the town, has that kept pace with this other?
A. Yes, sir.
Q. How about the population?
A. The population has increased.
Q. And so during these four or five years growing out of this booster movement there has been a very marked development and growth along every line in the city of Des Moines?
A. Yes, sir.
Q. Now, you told Mr. Read that the increase in value, I suppose you limited it on the east side, had equalled the increase in value on the west side?
A. Yes, sir.
Q. That answer would be subject to some confusion perhaps if not explained. You did not mean of course that the summit of values has anywhere near reached the same on the east side that it has on the west side?
A. No, sir; I said it has proportionally increased.
Q. What you mean, business property on the east side that was worth five thousand dollars, say, prior to the beginning of this booster movement, and was probably not salable even at
293 that, is now worth seven thousand dollars, and if there has been a fifty per cent increase, is now worth seventy-five hundred dollars; that is what you meant that the percentage of increase on the east side was about the same as on the west side?
A. Yes, sir.
Q. When was the Coliseum built?
A. It was completed two years ago.
Q. When was the Locust Street bridge built?
A. It was completed two years ago.
Q. When was the city hall built?
A. It is not completed yet.
Q. When was the ground purchased south of the city hall for civic beautification?
A. Two years ago.
Q. When was the post office completed?
A. About a year ago.
Q. When was the improvement made on the Electric Light Plant?
A. They are not completed yet.

Q. So that substantially all of this river front improvement is now in process of completion?

A. Yes, sir.

Q. What if anything has been done around the gas plant to add to *add to* the general improvement in growth and development and beautification of the city by the Gas Company?

A. I don't know.

Q. Did you see anything down there?

A. I saw everything was painted up in good shape.

Q. Good and red?

A. Yes, sir.

Q. What is located immediately around this Des Moines
294 Gas plant; just tell the Master what is on either side of it, as you remember it now, and the character of the buildings and the character of the streets?

A. The immediate surroundings are quite poor. Little shacks and small residences.

Q. Is there any more dilapidated and broken down, worn out situation anywhere in Des Moines than right around there, that you know of?

A. I couldn't tell. I am not familiar enough with all sections.

Q. Is there another district, Mac, in Des Moines anywhere—take say the three or four or five blocks immediately surrounding the gas plant and the gas plant property—is there another district anywhere in Des Moines that you know of where there has been as little improvement and change made in the last five years?

A. Oh, yes. Those buildings, for instance those north of the Des Moines Boiler and Iron works, while the buildings are more or less hard looking, that business has shown a tremendous increase and they have two extra buildings in there, although they are more or less of a temporary nature. In fact owing to the class of business they do, manufacturing boilers and things of that kind, they have taken quite an amount of additional ground.

Q. Now, of course, I am not speaking about the increase in business; I want the business to be increased just as much as the truth will permit you to increase it, because that is important to this law suit. I am asking now about the improvements to that gas plant and the four or five or six blocks immediately surrounding and the streets—do you know of any other district in Des Moines within the limits now of the business district, where there has been as little improvement in the last four or five years as right there?

A. Yes, sir.

295 Q. Where is it?

A. In the so-called hydraulic district.

Q. That is not in East Des Moines?

A. You spoke about the business district.

Q. I meant East Des Moines?

A. There is just one district there and that is the only district there is that we have without jumping for a long distance.

Q. Is there any part of East Des Moines—then put it that way—say east of Seventeenth street and north of the river, and south

of say Des Moines street and east of the river, where there has been as little improvement as there is in that territory?

A. That is the only district there is within those bounds.

Q. Just tell the court the condition of the streets and buildings surrounding it?

A. Well, the streets—Court Avenue and the streets coming in here are all in good shape, except the one block, the block surrounding it, and the block leading to it. East Court and the streets leading down to Court Avenue are all in very good condition, but the street leading from court to the plant and surrounding the plant are dirt roads, but it is paved up to within a block.

Q. There are then no paved streets adjoining or abutting on this property?

A. No, sir.

Q. They are dirt roads?

A. Yes, sir; or cinders.

Q. Now when you were down there at this plant, what if anything did you notice there in the way of improvements that had been made in that property in the last three or four years while this booster business had been going on?

A. The additional tanks——

296 Q. I don't mean machinery?

A. The fences were all kept up in good shape and everything seemed to be pretty well kept up around the plant itself.

Q. The fences were up and painted?

A. Yes, sir.

Q. When was that done, do you know?

A. No, sir.

Q. I mean any improvement of any substantial quality or character that has been made there within the last three or four years of any kind?

A. I don't know whether that brick building was built there within that period or not.

Q. Now, Mac, you say this increase and growth has continued after it got started right up to this time?

A. Yes, sir.

Q. And it is still on?

A. Yes, sir.

Q. What do you have to say about the prospect of the continued development and growth and increase in population right along?

A. I expect it to continue.

Q. Your committee gets out printed matter and circulars and books setting forth the advantages and all that sort of thing about the city of Des Moines, does it not?

A. The commercial club does not get out much of that; that is in the province of the Greater Des Moines committee.

Q. Are you a member of that?

A. No, sir.

Q. Your Booster Committee have taken part in getting out and preparing material that went into it?

A. Yes, sir.

297 Q. Now, in that material, and you have seen this book called "Wealth" and the other matter that has been gotten out by the committee?

A. Yes, sir.

Q. Now that committee have been advertising Des Moines during this period of three or four years you have talked about, as not only a good town to live in and build homes in, but as a good place for all kinds of industries?

A. Yes, sir.

Q. Manufacturing and all kind of jobbing and wholesaling?

A. Yes, sir.

Q. And they advertised the great facilities for transportation purposes, shipping in and shipping out goods?

A. Yes, sir.

Q. Now, in that circular letter they have included the territory on the east side of the river beginning with the point where the railroads, main line railroads, reach the east side of the river extending east and then north around the east side of the city, clear up above Wood Brothers' factory, as all being available sites for all kinds of industries, haven't they?

A. No, sir; I don't think they have, ever specifically stated any particular locations in any booster literature.

Q. You have seen the east side literature?

A. I don't know that I have seen the east side booklet.

Q. It is true all the territory I mention is available for the different kinds of manufacturing industries?

A. No, sir.

Q. What part of it is not?

A. There is a considerable property lying directly east on the Rock Island and other tracks there that is not available.

298 Q. Why?

A. It is too low.

Q. Directly east?

A. Yes, sir.

Q. The railroad runs through it?

A. Yes, sir, on high embankments; and the expense to try and fill these holes along there and trying to run trackage in precludes their use for many years.

The MASTER:

Q. You used the expression too low. Do you mean liable to flood?

A. Yes, sir, and the ground itself is very low; to bring it up available for trackage is too expensive a proposition to undertake. There are large parts of that that cannot be economically used in any kind of business enterprise I know of.

Q. All you mean, when you say it is not available is, that in your judgment it would be too expensive. It is available all right. There is nothing to hinder a man getting it?

A. No, sir.

Q. To buy it?

A. There is a good deal cannot be bought. A good deal belongs to the railroads; a good deal is owned by the Hubbell Estate which couldn't be bought. And then there is other parts that are in estates and things of that kind; but principally for the *the* first two reasons.

Q. Is it possible then that all this talk for location of factories and industries is without foundation?

A. There is a few along the new Rock Island, formerly called the Short Line and Great Western, a few available sites that can be used. There is along the Belt Line north of Highland Park, outside of the city limits there is some good factory sites.

299 Q. Isn't that a very excellent part of the city for factories of all kinds?

A. Not all kinds, no sir certain classes.

Q. What particular classes?

A. Classes that have large articles such as possibly automobiles, silos or wagons or something that don't come in small packages, where it can be handled in car load quantities in and out.

Q. The kind of manufacture where the buyer and seller does not come together, but where the product is all shipped away or in?

A. Yes, sir.

Q. What railroads are there up in there?

A. Nothing but the Belt Line.

Q. That is this road that you referred to of Mr. Hubbell's.

A. No, sir; that is the street car line.

Q. What roads are in the other part of the district?

A. The Great Western and the Rock Island; also the Belt Line serves part of it.

Q. Give the Master the extreme north limit of the district of the Great Western?

A. I should judge Marshalltown——

Q. I don't mean outside of the city.

A. There are not so many within the city. There is quite a lot of marshy ground along there. I might illustrate: I had a factory which wanted location and forty acres. We went into that north situation carefully. In going in there we took the traffic manager with us who understood the traffic proposition. We found a lot of low land, and the running in of switches determined the availability of the sites. We found along the Great Western there was possibily four available sites of forty acres each where we could get in without cost. In other words, where it was on the level,

300 not necessitating filling.

Q. Is there any factory in this city now that uses forty acres of ground?

A. The Agar Packing Company, I think, are using approximately forty acres.

Q. The Agar Packing Company, that is, they have some pasture land?

A. I think there is 25 acres of stock yards and 15 acres in the plant.

Q. Outside of that sort of a manufacturing, is there any other plant that has any use for forty acres of land that you know of?

A. Yes, sir. I might explain that the tendency of the factories of today is to attach the employé to the factory. I have had several calls where they wanted quite a lot of acreage connected with the factory. The factory would probably use five or seven acres, and the balance of it they wanted to plat in connection with the factory and use it as a factory proposition to attach their employés.

Q. You don't quite answer my question. I want to know if you know of any plant here now using forty acres of land for factory purposes?

A. No, sir.

Q. Take the Des Moines Gas Company, are there some residences down there?

A. Yes, sir.

Q. How many?

A. To the south there are a great many.

Q. I mean on the ground?

A. There is a few little shacks surrounding there that are occupied.

Q. People living in them?

A. Yes, sir.

301 The MASTER: On their own property?

A. No, sir.

Q. I am speaking of the Gas Company's property itself.

A. No, sir; not that I noticed.

Q. If I got the minutes right, one suggestion you made for fixing the value you do on this property, is its close proximity to the business and civic centers?

A. Yes, sir.

Q. And the center of population?

A. Yes, sir.

Q. It is on the extreme limit of the line of population?

A. No, sir.

Q. It is not in the center of population?

A. It is not in the center of population.

Q. What portion of the population of the city would there be north of a line drawn east and west beginning at the west city limits and extending to the east city limits, and running immediately north of this plant?

A. What proportion on the east side?

Q. On both sides, take the whole city, take a line drawn east and west straight by this plant to the west limits of the city and the east city limits, what proportion of the population is north of that line?

A. That question I don't know. I don't know whether the census shows it or not.

Q. Is that map before you fairly correct?

A. Approximately.

Q. Substantially the whole city is north of it?

A. Yes.

Q. What proportion of the population is north of that
302 line as indicated by me?

A. Possibly ninety per cent of it.

Q. Now, I call your attention to a tract of land north and east of the ground in question intersected and crossed by the Chicago Northwestern railway and east of Union Park, what land is that?

A. Well, I don't know who the owners of that property are.

Q. What is it with respect to being open or occupied ground?

A. I think it is open ground.

Q. And high and dry?

A. No, I think not. It is quite marshy in the southwest corner on the west side.

Q. All that ground you have your finger on (referring to the map).

A. On the Fourteenth Street car line here there is a whole piece down here very low and marshy.

Q. The territory just west of the tract I am calling your attention to is part of an addition that has just recently been laid out by some gentleman on the east side—now that tract of land is all high and dry.

A. Lays very nice.

Q. Mr. READ: That is along the Northwestern Track?

Mr. BYERS: Yes.

Q. And that tract of land is nearer the center of population or at least as near the center as the Gas Works?

A. No, sir; Ninth and Park is about the center of population.

Q. Well, there wouldn't be very much difference?

A. A mile.

Q. These circles here are half miles.

A. Yes.

Q. It would be about a mile?

A. About a mile difference.

303 Q. Now, where is the present growth of the city of Des Moines with respect to the map that has been marked Exhibit 6?

A. Towards the west and northwest.

Q. That is on the west side; now on the east side where is the present movement; in what direction is the present growth and development?

A. Towards the east and north and northeast.

Q. Is it not in the direction of the land along the Great Western and the Des Moines Short Line, as they call it, and this tract on the Northwestern road, to which I just called your attention a moment ago?

A. Yes the East Des Moines growth is towards that section.

Q. Has there been any substantial growth at all south of the north line of this Company's property on the east side of the river, either in buildings or increased population or in any other way?

A. Nothing very marked in the last couple of years.

Q. Has there been in the last fifteen or twenty years?

A. It is all filled up pretty well, quite well settled; that was the old part of town.

Q. You don't mean people live down there very much?

A. Yes, down here (indicating).

Q. That down in there is all residence property?

A. Yes, sir.

Q. There has been no improvement there except now and then the repair of a chimney or new roof on the house?

A. Yes.

Q. You take the property immediately surrounding this plant, take a block north, a block east and a block south, has there been any new building built in there that you know of in the last five years?

304 A. There has been some new buildings on Court Avenue. Mr. Yaeger made a very extensive improvement in there.

Q. That is way east of this property about two blocks and a half east?

A. Only a block and a half. It would be a block north and a block east.

Q. This property is on First Street?

A. First to Second.

Q. Anything else in there you know of?

A. There has been some frames on the south side put up there, manufacturing of mill work, and incubator factory has gone in there.

Q. All the cheapest kind of construction?

A. Yes, sir.

Q. Where was the old Mason Automobile factory with respect to this property?

A. It was just north of it.

Q. What kind of a building was that?

A. Frame.

Q. One story?

A. Yes, sir.

Q. Cheap construction?

A. Yes, sir.

Q. Vacant now?

A. Yes, sir.

Q. How long has it been that way?

A. Not very long. After the factory was moved to Waterloo they continued making some parts there and kept it under occupancy.

Q. How much ground does it cover?

A. About a quarter block.

305 Q. About a quarter block, you say?

A. Yes, sir.

Q. Now how much of that territory right around there is in what is called the flood district, in this proposed district of diking and improvement the city has on now?

A. Practically all from the south line of this property to the river.

Q. Well, it extends north of that property?

A. I think not.
Q. The plant itself has been raised five or six feet by filling?
A. Yes, sir.
Q. But in high water the water is both north and south and east of it?
A. I don't think it would go to the north.
Q. I think Mr. Haines stated it had been surrounded—it is all, even north of it, is in the district the city is now contemplating protecting against floods?
A. Yes, if that is so considered, then the whole east and west Des Moines down town district is as high on an average as the east side district.
Q. You don't mean that territory down there is as high as Locust street now?
A. Possibly not since the new grade.
Q. And they are contemplating raising Walnut right now?
A. Yes, sir.
Q. To get it above high water mark?
A. That was not the idea of raising this street.
Q. It is higher at court avenue than at Walnut right now?
A. Then this property is the same height as Court Avenue.
Q. What direction does it slope, both east, west and south?
A. South and east.
306 Q. Then immediately east of it and immediately south of it is in the flood district?
A. Yes, sir.
Q. You are willing to say that?
A. Yes, sir.
Q. There is right now a movement on foot in the city to spend a good deal of money protecting that property against flood?
A. It has a flood scheme.
Q. It extends on to the west side up to the Coon Forks?
A. Yes sir.
Q. I wish you would tell the court about what proportion of this general upward tendency and growth and development in the price of real estate, the general improvement of the city, streets and so on, and buildings, and the increase in population, about what proportion can be credited, say to the last three years?
A. Possibly seventy-five per cent of it.
Q. What proportion of it to the last year, say beginning January 11th and going back to 1909?
A. It has struck more or less of a stationary time right now.
Q. But beginning with the first of January and going back a year?
A. The previous year was quite stationary.
Q. What was the best year in that time?
A. Two years ago.
Q. 1909?
A. 1908 and 1909.

Q. And about seventy-five per cent of this improvement and increase can be credited to those three years?

A. I think so.

Q. In your judgment, does the present condition and what you know of what is going on in the city, by the city itself and
307 by the business interests of the city, and by the organizations in the city, that you know they are doing, what in your judgment will be the development and growth in increase in the population here in the next three or four or five years?

A. The next five years should see fifty per cent increase in population.

Q. What is the present population?

A. About one hundred thousand.

The MASTER: In the last five years?

A. In the next five years. Keeping up the same ratio we ought to have fifty percent, making it from 140,000 to 150,000 population.

Q. What part of that growth and addition do you expect or do you in your judgment believe will take place in East Des Moines?

A. It will grow proportionally.

Q. How far is it, Mac, as you have found it in your busy life the last three or four years, booming Des Moines and handling real estate, how far east now from the west limits of the city, where there is growth and movement and homes, new streets being laid out, and additions laid out, to the village or city of Valley Junction?

A. Our Sixtieth street is Valley Junction's First street.

Q. The western limit now of the homes and residence part goes to Fifty-sixth?

A. It is built pretty well up, it goes waving up through the north; I should say an average to Fiftieth street.

Q. Is it on Fifty-sixth street where Hatch lives and Wilcox?

A. That is the old Fifty-third; it is now Fifty-sixth.

Q. Just recently paving has been ordered on Grand Avenue to Fifty-sixth street?

A. Yes, sir.

Q. When you get to the point where Fifty-sixth street is
308 intersected by Grand Avenue, you are looking right into Valley Junction, are you not?

A. Yes, sir.

Q. The growth out in that direction has been very rapid and very great?

A. Yes, sir.

Q. And it is still growing there?

A. Yes, sir.

Q. Now, just one thing further—is the same thing true with respect to the territory that lies north of the Des Moines river and is included in the part of the city that we call Highland Park; has the same growth and development been going on up there?

A. Not quite to such a large extent, but there is a good growth.

Q. Is it not true that in very recent months a movement has started that is progressing rapidly in the way of new homes, as well as sales of real estate?

A. It is a very good movement.

Q. You don't want your testimony left in a condition that will put you in a position as saying that Des Moines is now without plenty of factory sites and warehouse sites and manufacturing sites and all that sort of thing, do you?

A. We have a good many factory sites that can be leased, and a great deal of the booster effort is to get people on this leased ground; but as to ground to sell we are short.

Q. Now, suppose that there are some, what we would call natural obstacles or limitations upon factory sites, would you call the rivers and the lowlands adjoining the river, as that character of ground where it is not available because it is low land and because the river is a menace to it all the time?

A. Partly.

309 Q. Yes, the city of Des Moines is surrounded on every side by open ground?

A. Yes, sir.

Q. There is nothing to prevent the city from extending its industries in every direction, except the Des Moines river and the Raccoon river; that is true?

A. Yes, as a general proposition.

Q. When you appraised this property were you advised that the Company owned a portion of two of the alleys?

A. Yes, sir. Not that they owned it, but that it had been vacated for their use.

Q. In valuing the plant you included those two pieces of ground, in arriving at the general value of the property?

A. No, sir; excepting in a very general way.

Q. What consideration or value did you give to the fact that they claimed to have the right to occupy those alleys?

A. Practically no consideration. I arrived at my conclusion from a front footage basis, assuming that the alleys were there, like any other quarter block.

Q. Mr. Olsen, take the northwest quarter of the north block—I haven't the description here—take the 132 foot square and assume there were no buildings there, the gas plant was not in existence and that we were burning electricity, no buildings on that property, just as located there now, surrounded as it is, what would that quarter block be worth?

A. Two hundred dollars a foot.

Q. What is the front footage?

A. 132 feet.

Q. It would be worth two hundred dollars a front foot?

A. Yes, sir.

310 Q. That would be the extreme—is there any property over there, have you ever heard of a quarter block selling anywhere in that territory just as it is now for two hundred dollars a front foot?

A. There isn't practically any other property there with the same conditions.

Q. There are a number of quarter blocks for sale there now?

A. I think not.

Q. Isn't there a quarter block for sale now over there that can be bought for half of two hundred dollars a front foot and better located than this is?

A. I don't think so.

Q. Do you know of any quarter block sold in that territory, just located as this is, general surrounding like it, sold in the last five years?

A. No, sir; I am not familiar with any sales in there.

Q. Take the quarter just immediately south of it on the river in the same block, what would that be worth?

A. $150 a foot.

Q. $150 a front foot?

A. Yes, sir.

Q. That would be remote from everything, what trackage has that?

A. Two railroads; the K. D. and the Q.

Q. They don't own clear to the railroads in that quarter block?

A. You said the northwest quarter block—Lots 4, 5 and 6 in Block B; that is the K. & D., the Rock Island that runs north of that property, north of the other block.

Q. I am referring to the same block now; I mean the southwest quarter of the same block?

A. That would be worth two hundred dollars a front foot.

Q. What does it front on?

311 A. East First street.

Q. That is the river front?

A. Yes, sir.

Q. There is nothing between it and the river?

A. Two lots.

Q. But no buildings or industries of any kind?

A. No, sir.

Q. And not on the paved streets?

A. No, sir.

Q. Is that ground worth as much there as the front footage of East Locust street between Fourth and Fifth and Third and Fourth?

A. No, sir.

Q. Is that frontage worth as much as the frontage where the Shaver Wagon factory is?

A. I don't know where it is.

Q. Over here on Locust street, this side of the Northwestern Railroad?

A. Oh, yes. No, it isn't worth as much.

Q. As compared with that, what would be the difference in the frontage value between the Shaver property that abuts Locust Street and this property?

A. The Shaver property would be worth double.

Q. If this was worth $200 a front foot, his would be worth $400?

A. Yes, sir.

Q. Now take it down to the south block or down the river, take the northwest quarter of that block, what would that be worth?

A. Lots 3, 4, 5 and 6 in Block B—$150 a front foot.
Q. And the quarter block south of it, the southwest quarter?
A. There is only one lot there; they don't own clear down.
Q. What would that lot be worth?
A. I couldn't place a price on that; I priced the whole
312 thing together.
Q. I am trying to get it separately.
A. Take the southeast quarter, $150 a foot.
Q. And the little tract down on the southeast there, I don't know how much is in it?
A. Lots 9 and 10 in Block M.
Q. Have the Gas people or any body for them told you what they paid for that ground when they bought it?
A. No, sir.
Q. Did you inquire?
A. No, sir.
Q. Doesn't it make any difference in arriving at the value of the property what it sells for?
A. No, sir.
Q. You measure the value purely by judgment without respect to what it sells for anything else?
A. What I could get for it.
Q. Not what you could get for it, what you asked for it. What you get for it is what it sells for?
A. Yes, sir.
Q. In arriving at the value, you simply consider what you ask for it?
A. Yes, sir.
Q. All right then, take these two lots, 9 and 10, what are they right now on the market over there worth, if I should ask you to sell them within the next fifteen days?
A. From thirteen to fifteen thousand dollars, combined with the railroad facilities. We appraised that $13,200.00.
Q. How much ground is there there?
A. 132 feet square.
313 Q. Isn't it true that there is a quarter block of ground for sale over there now for $7,500.
A. I don't know.
Q. And advertised for sale for $7,500.
A. Not that I know of.
Q. Didn't you make any inquiry?
A. No, sir
Q. Didn't you go into that community when you undertook to fix these values to ascertain what was being paid for property in that vicinity?
A. No, sir.
Q. You paid no attention to any of the things that enter into the question of value, except your judgment as to the location and future prospects?
A. You say any things enter into it—that is a general term. I

took a great many things into consideration I did not ask the price of the surrounding property.

Q. No, nor any selling prices?

A. I didn't know of any recent sales.

Q. Of course all the property in Des Moines has a market price and that market price is determined among you real estate men by the asking price.

A. No, not necessarily.

Q. Suppose here is a property on Walnut street and I want to buy it and come to you and ask you, what do you sell that property for, what is it worth; the price you give to me will be the selling price, that would be your market value of that property?

A. Yes, sir.

Q. Did you try to ascertain over there what that value was in that community.

314 A. No, sir.

Q. Did you try to find out what the owners of property immediately surrounding this held their property at?

A. I knew what they were asking on Court Avenue. I had a couple of properties listed for sale. I knew what the front footage value approximately was on Court Avenue. And then I took the values on that, and the offers I have for factory sites—I have two people now looking for similar locations and what they were willing to pay for a similar proposition. Then I went down *down* and looked this ground over with a view to its availability for my client's use; what he would have to pay on the west side for a similar location and between the two I drew a conclusion as to a just cash value of the property.

Q. Then your value of the property rests entirely upon an estimate that it is for a particular purpose?

A. That is true.

Q. I am not talking about Court Avenue; in some respects at least that is a business street and all occupied by business property?

A. Manufacturing largely.

Q. There is a large amount of business property on Court Avenue between the river and the rise on the hill?

A. Very little; some on Sixth and Seventh.

Q. I am speaking of this property off of any of the main streets like Court Avenue or Walnut or Locust; you didn't try to ascertain the selling prices of any property south of Court Avenue?

A. I didn't make any specific inquiry, just simply used my general knowledge of these conditions.

At this time, 11:30 A. M. an adjournment was taken until 9:30 A. M. July 17th, 1911.

315 Monday Forenoon Session.

JULY 17, 1911—9:30 a. m.

All counsel for respective parties present.
Testimony on part of complainant resumed as follows:

MACK OLSEN re-called for re-direct examination, examined by W. L. Reed, Esq., testified as follows:

Q. Your attention was called to a district north of the city?
A. Yes, sir.
Q. In the vicinity of the Shackleford Brick Company?
A. Yes, sir.
Q. That district is served by what railway facilities?
A. The Belt Line.
Q. You mean the Street Railway?
A. Street railway service, yes, sir.
Q. A switch has been built from the Urbandale junction to the factory?
A. Yes, sir.
Q. Do you know whether it was built by the owners of the factory or the railway company?
A. I don't know.
Q. That is the only factory in that district?
A. Yes, sir.
Q. Then on the bank of the river is the Flint Brick Company, on the east side of the river?
A. Yes, sir.
Q. That is located there because of the availability of shale?
A. Yes, sir.
Q. That is served by the street railway?
A. Yes, sir.

316 Q. As to the factory district lying on the east side along the Great Western, that is how far from the business center, how far out is that; you may look at that map Exhibit 6.
A. Two and a half to three and a half miles.
Q. Along the line of the Northwestern, after you leave Capital Park, is there any factory district out there?
A. No, sir.
Q. Do you know whether the railway company owns any land in there?
A. I know it did buy some, but I don't know just when.
Q. There is no factory district in there?
A. No, sir.
Q. With respect to the availability of such remotely located pieces of trackage property, what do you say in comparison with the inside trackage property such as the Des Moines Gas Company as to the availability and the uses to which it may be put.

Objected to on part of defendants as being incompetent and the witness being incompetent.

A. The outlying factory sites, factory locations are available for factories producing large articles, such as wagons, automobiles, silos and things of that kind; or for factories that do not ship in small quantities where they have to have transfers to make express offices and depots for small shipments, where the shipments are all in larger bulk.

Q. What is the fact as to whether there is and has been a difference in the market value of grounds, those remotely situated, and ground and lands inside?

A. There is a very material difference between the two classes; the purpose and use of each necessarily make that so.

Q. By the way, you were asked on cross examination as to the period covered by the increase in values of real estate in Des Moines. You said something about that period being in the
317 last five years since the organization of the Booster Club. I want to inquire of you whether or not there was any tendency or advance prior to the activities of the Booster Club—I want to get your point of view, whether you claim it was all caused or because of the booster influence, or whether there was a growth before that—what do you mean by that?

A. About twenty-five or twenty-six years ago, I learn from inquiry, there had been a very high scale of prices in Des Moines. Then between that period and up to a very recent period—of course the property right after that went way down, and from that there had been a gradual increase in a way; in another way a great deal of the property had not arrived at the price. We had a panic at that period. But within the last eight years I have been familiar and in the real estate business and I have noticed the particular increase in prices, going back to the value it should have, has been since the formation of the booster organization, although previous to that time I do not speak with any authority.

Q. I want to know whether it was a mere ephemeral advance or a substantial basis for it?

A. I believe there is a very substantial basis. In the comparison of values of real estate all over the United States, I found Des Moines values for similar purposes have been very low, have not been what they should be in a city of its size, its population and its advantages. I think the booster organization have brought this to the attention of the people and it is coming to its real value. I do not think it has reached its heighth yet, or that it is ephemeral, because in comparison with other cities similar locations of property yet
318 is on a very conservative basis in Des Moines.

Q. Did you make your valuation of the Gas Company property independent, based upon your own investigation and examination?

A. Yes, sir.

Recross-examination by Hon. H. W. Byers:

Q. Mr. Olsen, do you know anything that would make this property that the Gas Company is using down here, the real estate I mean now, and of course you are not considering anything else, any more

available to pipe gas to Valley Junction than the location up here, you spoke of at Highland Park?

A. I have no knowledge of that, no sir.

Q. Do you know of anything that would be of particular advantage and in favor of this ground down here between Elm and Vine streets and First and Third, that you would consider it as against a similar property along the Northwestern Railroad, northeast here, or along the Great Western or short Line, as it runs north just east of town, to pipe gas, say to Valley Junction, or any part of the city?

Objected to on part of complainant as not competent and not cross examination.

A. I wouldn't know anything about that.

Q. Since you have been asked to make comparisons, would there be any advantages or any conditions more favorable to this territory up here in Highland Park and out east here up and down the Great Western road, than this down here, say for residences of the employés and all that sort of thing, which place would be the better?

A. The outer sections would be more favorable for employés.

319 Q. In every respect, sanitary and every other way?

A. Yes, sir.

Q. You are pretty well acquainted with East Des Moines—starting at the point where the Northwestern Railroad leaves the river and goes off in a northeasterly direction through the city, isn't it true that you can go right over there to-day and buy block after block of land through which this Northwestern Railroad now runs, and in the residence portion of East Des Moines, and buy it for less than $24,000 a block, right now, houses and all on it.

A. Yes, sir.

Q. Do you know where the property is that George Cosson bought?

A. No, sir.

Q. Do you know the Wilkins Brothers property in East Des Moines?

A. Yes, sir.

Q. Do you know what that property sold for, the home of one of the Wilkins boys, on I think about Twelfth Street?

A. The only property I know of theirs is on Penn Avenue, and then the property they have on Ninth and Washington streets.

Q. That was sold not very long ago; do you know what that sold for?

A. I think somewheres around four thousand dollars.

Q. Yes, sir. There isn't another quarter block you can think of this minute accessible to the Northwestern Railroad in the northeast part of East Des Moines, but what can be bought for less than six thousand dollars?

A. I wouldn't say that.

Q. With the homes and all right on them, good homes on them and improved?

A. I wouldn't say that; less than six thousand dollars.

Q. Do you know of a quarter block for sale there in the
320 best residence part of that northeast Des Moines—

A. This Wilkins property you just mentioned was four thousand dollars for fifty feet.

Q. Isn't there more than fifty feet?

A. No. Then there is other houses there that would bring that quarter block higher than that.

Q. But that property is worth a good deal more than the property on the railroad?

A. Yes.

Q. All that property on both sides of the Northwestern Railroad in Northeast Des Moines is cheap right now?

A. Yes, very low.

Q. Do you know of anything about this property down here that you put a value of $221,000 on, that makes it better for the purpose of manufacturing gas than this property we are talking about which can be bought for $24,000 a block?

A. No, sir.

Q. Did you look around this property pretty carefully down here?

A. Yes, sir.

Q. Did you consider anything about the buildings in fixing your values?

A. No, sir.

Q. Or any other improvements?

A. No, sir.

Q. In other words, you fixed this value upon the land alone without respect to the Gas Company't other property?

A. Yes, sir.

Q. For the purpose for which it was being used?

A. Yes, sir.

Q. Now, the block right straight south of Block L, what is the value of that south half of that block in your judgment; I
321 mean the market value, what it will sell for, not what you think it might be worth, but what it would sell for on the market?

A. Probably ten thousand dollars.

The MASTER: Is that the whole block?

A. The half block.

Q. That would be less than two hundred feet from a main line railroad, north of it, wouldn't it?

A. Yes, sir.

Q. Now what would you say would be the market value, what it would sell for, not what you might think it was worth, all of Block L, the buildings all off of it, nothing but the bare land?

A. The whole block I should say ought to sell for seventy or eighty thousand dollars.

Q. No, not what it ought to.

A. I should say that would sell for approximately seventy thousand dollars.

Q. Do you know what it is held at?

A. No, sir.

Q. What is it worth, that is, the market value?
A. Fifty dollars a foot.
Q. That is high land?
A. Fairly so.
Q. Just the same as the Gas Company's?
A. No.
Q. It is higher than that?
A. I wouldn't think so. Of course it is in the river bank.
Q. Which way does it slope, towards the river or toward the Gas Company's property beginning at the top of the bank?
A. Down hill.
Q. I know; but does it slope towards the Gas Company's
322 property; is it higher at the river than at the Gas Company's property?
A. No, sir about level.
Q. So this is about the same level as the Gas Company's property?
A. Yes, sir.
Q. And you think it is about fifty dollars a front foot?
A. Yes, sir.
Q. The property, when you go east, the land north of the Q, all of it is of the same character and description except where there are already extensive factories. Now beginning with east Sixteenth street and going clear north up along the Great Western and the Des Moines Short line, clear around to Highland Park, extending clear west in Highland Park, say within a mile of the west line of the city, about what is that property all worth a front foot, aside from that which is now occupied by a large manufacturing plant?
A. Approximately ninety-five per cent of that is in acreage, and under acreage it would run from five hundred to two thousand dollars an acre.
Q. What would it be in lots?
A. Five lots to the acre—one hundred to five hundred dollars for a fifty foot lot.
Q. I mean with the houses and all on?
A. The homes vary so I couldn't place any estimate on them.
Q. On an average?
A. There are houses there that are not worth anything, and some are worth ten thousand dollars. There are a few very beautiful suburban homes up there. The average residence would be worth about two thousand dollars.
Q. Now, take all this ground here that is platted in Highland Park and west, say of Sixth Avenue, outside of that part now occu-
323 pied by extensive residences; what is it on the market for right now per front foot?
A. From five to twenty per front foot.
Q. Now, go south of the Coon river, on Seventh street, how far is it to the high ground as distinguished from the river bottom on the south side?
A. The high land starts just as you cross over the river.
Q. What is that ground worth a front foot down there?
A. That is the same kind of an acreage proposition. It has not

been divided into front footage, the average price running around five hundred and seven hundred and fifty an acre.

Q. How far is that at that price from the court house in Des Moines?

A. One mile.

Q. How far is it from the Capitol Building?

A. Two miles.

Q. How far is it from Valley Junction, about?

A. Four miles.

Q. It is two miles nearer than the present location?

A. One mile.

Q. Now is there any part of the city now growing, over on the south side?

A. Yes sir.

Q. Much?

A. Not very decided; some growth.

Q. Any improvements being made? that will make that part more accessible to the business center?

A. The Seventh street viaduct.

Q. That is in process of construction right now?

A. Yes, sir.

Q. Now, how much of a strip of country, Mr. Olsen, begin-
324 ning at the extreme northern point where the land begins to rise, from what you call the low bottom river land, how much territory is there south that would be available for all kinds of industries, by the building of tracks and extensions of switches and so on?

A. If the tracks could be gotten into it, I expect great quantities of land could be used, but there is difficulties there in trackage; the tracks are all considerably lower than the land.

Q. The C., B. & Q. now runs around there?

A. They run at the bottom of the hill—the Great Western.

Q. Don't both run around there?

A. The Q. runs off in the other direction.

Q. I think you are mistaken or I am; they both go around there.

A. Yes, the Q. does also.

Q. And the great western gets over in there too?

A. Yes, sir.

Q. And the Des Moines Union—in fact that Des Moines Union is heading that way all the time?

A. No, the Des Moines Union does not cross the river.

Q. Doesn't go south of the river?

A. No.

The MASTER: Does the Rock Island go over there?

A. That runs off east here.

Q. About how much of a strip of country, open country, is there in there that is now held as acreage, that is to say within every part of it, and within three miles of the post office and the Capitol Building?

A. I expect practically to the city limits south, and east a strip two by three miles, interspersed with hollows, valleys and hills.

Q. Take all of it, every bit of it, of that land, and in addition to that all the land that lies north of where the rise begins,
325 if that were filled up from seven to ten feet, as this ground down here where the plant is, it would be high and dry?

A. Yes, sir.

Q. When you were around there, didn't you notice it was filled up eight or ten feet?

A. Yes, sir; I noticed the fill.

Q. The railroad track just south of it is up on a high grade, filled up eight or ten feet?

A. Yes, sir.

Q. The same is true east of it?

A. Yes, sir.

Q. You noticed a big sink hole with old cottonwood trees growing in it, didn't you?

A. I noticed holes, but didn't notice the trees.

Q. Did you look inside of the yards where you could see places where it was down almost to the old original bottom level?

A. No.

Q. Didn't you notice those two big tanks south of Elm Street?

A. Yes, sir.

Q. Wasn't they built right down in the old river bottom?

A. I don't know whether it is on the old original river bottom or not; whether it was filled land or not.

Q. I don't know how carefully you looked over there, if you remember the surroundings there, you must have noticed in that same block, right south of where these two holders are, the residence on the corner is down low, and if you observed at all you must have noticed it is on the old river bottom. The level of the old bottom above it has a dike, did you notice that?

A. Yes, sir.

Q. Isn't that the old river level?

326 A. I presume so; I don't know.

Q. Anyway, where these buildings are it has been thrown up eight or ten feet high?

A. Yes, sir.

Re-redirect examination by Mr. READ:

Q. Immediately south of the Coon river the ground rises abruptly to a high range of hills?

A. Yes, sir.

Q. The highest about Des Moines?

A. That I don't know.

Q. They are high hills?

A. Yes, sir.

Q. Between the foot of the hill and the Coon river the ground is very low as you go west?

A. Yes, sir; gets lower as you go west.

Q. Subject to overflow?

A. Yes, sir.

Q. And not used for any purpose?

A. No, sir.
Q. On the hills is a large tract of ground devoted to park purposes?
A. Yes, sir.
Q. South Park?
A. Yes, sir.
Q. West of that from the river to the foot of the hill is the track of the Great Western Railroad and yards, and then there is a brick manufacturing yard over there?
A. Yes, sir.
Q. The truth of the matter is, there isn't much available
327 ground in that district.
A. Not in that district.
Q. Immediately south and across the Coon river towards the junction of the Des Moines and Coon, that is residence property exclusively?
A. Yes, sir.
Q. It has been that for a good many years?
A. Yes, sir.

Re-recross-examination by Mr. BYERS:

Q. The hills are no higher than between here and Valley Junction, I suppose?
A. No, sir.

Excused.

(Mac Olsen. Time attendance: four days.)

R. P. BOLTON, being first duly sworn on part of complainant, examined by W. L. Read, Esq., testified as follows:

Q. What is your name?
A. R. P. Bolton.
Q. Where do you reside?
A. Des Moines, 1519 West Eighth.
Q. How long have you lived in Des Moines?
A. More than thirty-seven years.
328 Q. You are a native of Des Moines?
A. Yes.
Q. What occupation have you?
A. I am Secretary of the Greater Des Moines Committee.
Q. What is that committee?
A. A commercial organization for city promotion.
Q. How long have you been secretary of that committee?
A. A little more than four months.
Q. Have you ever been in the real estate business?
A. I have followed the real estate business without being actively engaged in the business.
Q. In what way?
A. Through representing the *woner*.
Q. You are an owner of real estate?

A. Through the family, yes.
Q. Your father's estate is the one you refer to?
A. Yes.
Q. Where is the property of that estate situated generally?
A. Mostly located along East Locust Street from the river to East Seventh.
Q. To what extent have you followed the course of prices and values of real estate in Des Moines?
A. I have kept myself informed on typical sales and kept constantly posted by conversation with people interested in the real estate business.
Q. Have you made a study of the subject?
A. To some extent, yes.
Q. What has been the trend of prices in Des Moines real estate?
A. It has been upwards constantly.
Q. What period has that upward tendency covered?
329 A. To a marked degree, for the past ten years.
Q. Do you know where is located the property of the Des Moines Gas Company?
A. I do.
Q. Where, and in that connection you may describe it referring to the map Exhibit 5, if you care to?
A. The main block they occupy is between Vine and Market and First and Second. They also occupy nearly all of the block between Market and Elm and First and Second. They occupy a quarter block at the southeast corner of Second and Vine; and the quarter block in the southeast corner of Second and Elm.
Q. Can you refer to the map, Exhibit 5, and identify it??
A. I have described it.
Q. You have described it in its general location, but refer to the map.
A. They occupy all of Block C; all of Block B excepting Lots 1 and 2, and Lot- 3 and 4 in Block K and Lots 9 and 10 in M and all of Block T except Lots 1 and 2.
Q. That is located in East Des Moines?
A. Yes, sir.
Q. What uses is that property available and adapted to?
A. Manufacturing and warehouse purposes.
Q. Is that property in the retail district at all?
A. No, not at all.
Q. As compared with West Des Moines inside business property, what have been comparatively the prices in East Des Moines?
A. The prices have been less at all times in East Des Moines for like locations.
Q. Has there been any marked increase in values of real estate in East Des Moines?
A. There has been a marked increase.
330 Q. Within what period?
A. Within the past ten years.
Q. What has there been that in your judgment tended to increase values in East Des Moines?

A. The unification of the two sides of the river and the increase in population.

Q. Has the construction of the improvements on the river front added to that?

A. It has contributed to the unification of the two sides and made one city instead of two.

Q. In a general way, how is the property of the Des Moines Gas Company served by railways and switches?

A. It is served by the C. B. & Q., K. & D. trackage, and the Rock Island trackage.

Q. Where is located principally the trackage property in Des Moines, referring now to inside property?

A. From East Ninth street to West Sixteenth street, south of Court Avenue and Elm street and north, with the exception of West Des Moines, there is a large property that belongs to Mr. Hubbell that lies south of Elm Street, he can serve with his own railroads.

Q. That property has been referred to as not being for sale?

A. It is all trustee property, tied up by a trust deed for some thing more than fifty years.

Q. Available for lease?

A. Leasehold only.

Q. What about the general location of this Hubbell property as to being within the flood district?

A. It has been entirely under water several times.

Q. To what extent is the trackage property within the
331 district you referred to, already appropriated and placed in use.

A. In my opinion seventy-five per cent of it is appropriated and devoted to rather permanent use.

Q. What is the fact as to there having been a growth in the warehouse business and manufacturing business in Des Moines so as to create a demand for such property?

A. It has in my opinion trebled in the last ten years.

Q. What effect has that had upon prices and values of trackage property?

A. It has had a great influence upon the increase of values of trackage property.

The MASTER: Do you mean property has doubled generally?

A. I say manufacturing and jobbing has trebled in the last ten years.

Q. Have you made an examination and study of the property of the Des Moines Gas Company with a view to placing a valuation upon it?

A. I have.

Q. When did you make such examination?

A. Since along in March, I should say.

Q. There are two and three quarter blocks lying contiguously?

A. Approximately two and three quarter blocks.

Q. Is there in Des Moines any tract so large as that that is available for purchase for trackage property?

A. Not in the general trackage district. There isn't a property as large as that owned jointly for sale.
Q. I am referring to inside property?
A. I say there isn't any inside property.
Q. Not referring to the remote manufacturing district?
A. Yes, sir.

332 Q. Do you know what the property of the Des Moines Gas Company as described by you was fairly and reasonably worth in its market value, say last January?

Mr. BYERS: That question in that form is incompetent.

A. Yes.
Q. What in your judgment and opinion was the fair reasonable market value of the Des Moines Gas Company property as described by you, last January?

Objected to as being incompetent.

The MASTER: Without improvements upon it.
Q. Exclusively of improvements of the property?

Defendants interpose the same objection last above made.

A. I estimated it worth $221,160.00.

Defendants move to strike the answer as incompetent and immaterial.

Q. How did you reach your valuation?
A. I appraised it in blocks and then considered the fact that it lays contiguously, adjacent, it had an enhances value of twenty per cent over its value as separate blocks.
Q. Speaking of the present time, Mr. Bolton, what would be the fair, reasonable market value of the property?

Objected to on part of defendants as incompetent and immaterial.

A. It has enhanced some in value, probably one or two per cent. All property in Des Moines is constantly growing. I suppose there is not a month that goes by that the property is not worth more than it was the month before.

Cross-examination by H. W. BYERS, Esq.:

333 Q. You are a considerable holder of real estate on the East side yourself, are you not?
A. I own some; the family owns more.
Q. You have general charge of it?
A. I have charge of it all.
Q. Your own and the family's?
A. Yes.
Q. And you are now president of the commercial club?
A. Secretary of the Greater Des Moines committee.
Q. I wish in a brief way, as briefly as possible, and yet get it all in, you would tell the Master what the purposes of that committee are, what its organization means and what is it for?

A. It has a number of planks, the more principal ones being to give publicity to Des Moines, advertising its advantage as a commercial center, home center; we are organized to assist any one in securing a foothold and location here; we are organized to assist our merchants, jobbers and manufacturers in getting fair and equitable freight rates and service; we are organized to assist any large public improvements, such as the up-building of our university buildings and buildings of a semi-charitable character, such as the Y. M. C. A.; and in general we are organized to be of assistance to the growth and prosperity of Des Moines and its interests.

Q. The general purpose then of your committee is to develop the material interests of Des Moines?

A. It is, yes.

Q. And to advertise the advantages that Des Moines has to offer to the business interests of the state and country?

A. It is.

Q. I suppose in that connection too your committee makes
334 annual statements and reports showing the advancement there has been made along the lines the committee is working.

A. We do.

Q. And among other things that committee has in mind, not only adding to the population of the town or inviting in people, but to increase and enhance the value of the property in Des Moines?

A. The increase of the population, enhancement of business enterprises and property values, yes.

Q. I suppose that that committee, in so far as it can do so and use its influence in that direction, has for its purpose the reduction of the cost of living in Des Moines?

A. We haven't gone very largely into that yet.

Q. That is one of the necessary things that would go with boosting Des Moines?

A. It might be essential; we haven't investigated it yet.

Q. Either as to defective gas or food?

A. No.

Q. How long since your committee was organized?

A. It was organized during the year 1906; I believe it was originally started in March, but the organization was not effected until December, 1906.

Q. When did you really get to moving so that you could see some progress and some movement?

A. I should have said 1907, instead of 1906 it was organized. In December, 1907.

Q. About what time can it be safely said that the public generally could see and feel this movement growing out of the Greater Des Moines Committee organization; give us some point at which you can start?

A. Well, that is all a matter of opinion. The work of
335 a commercial organization is usually exhibited largely by intangible evidence. You cannot definitely point to any one accomplishment of any great value.

Q. I didn't mean exactly that. Of course you can tell when you

get new industries here; some of them I suppose came because of the activity of the committee; give us some point after the organization of the committee.

A. I think they secured results immediately.

Q. You would fix that about 1907?

A. 1907.

Q. Give the Master the names of the committee as they were in 1907?

A. I was not a member at that time; I do not possess in my memory all the names. I know some of the principal ones.

Q. Give us the principal ones.

A. Lafe Young, Jr., Charles Hewitt, Frank Kauffman, F. H. Luthe, T. E. Hurley, Aaron Younker, Frank Jackson, W. E. Crelland and Mr. Paul Sawyer.

Q. Mr. Sawyer is connected with the Des Moines Electric Light Company.

A. Des Moines Electric Company. G. B. Hippe.

Q. Mr. Hippee was connected with the Street Car Company?

A. Yes. H. H. Polk.

Q. He was President of the Interurban?

A. Yes. Charles Denman.

Q. He is President of the Water Company?

A. He is something like that. Mr. F. M. Hubbell and F. C. Hubbell and Mr. A. C. Miller.

Q. Mr. F. C. Hubbell is an officer of the Des Moines Union Railway?

A. Yes, of the Des Moines Union.

Q. And Mr. A. C. Miller——

A. He was at that time president of the Home Savings
336 Bank. Mr. T. F. Shrapneck, a member of the firm of the Hare Stove Manufacturing Company. Mr. Frank Mathis, of Mathis & Son, Real estate people: Mr. Jansen Haines of the Gas Company.

Q. Keffer?

A. No, sir. I think I names pretty close all the members—Robert McCutchen was one, of the firm of Hatten-McCutcheon, real estate people, and John Cownie of the Cownie Glove Company.

Q. Were all of the public utility companies in Des Moines represented on the committee?

A. No, not all of them.

Q. What particular ones were not represented?

A. The two telephone companies.

Q. Any outside of those you can think of?

A. I think that is all.

Q. Who makes up the present directory board?

A. Well, substantially the same men, with the exception of Mr. Crelland, Mr. Luthe, Mr. Hurley, Mr. Jackson and Mr. Younker, who have resigned.

Q. Mr. Jansen Haines is on the present board?

A. Yes.

Q. And Mr. Sawyer of the Electric Light Company?

A. Yes.

Q. Now, how is this organization maintained?

A. By the voluntary contributions of something over three hundred business firms in Des Moines.

Q. Is the Des Moines Gas Company one of the contributors?

A. Yes.

Q. What amount do they contribute?

A. Two thousand dollars a year.

Q. Now, Mr. Bolton, what are some of the improvements
337 in the city that in your judgment have had much to do with the increase in value of property in the immediate surroundings, surrounding territory?

A. The electrolier system of street lighting.

Q. Give the time the electroliers went in?

A. About 1909.

Q. All right.

A. The building of the bridge on Locust street across the river.

Q. When was that?

A. It was begun in 1909. The location of the city hall on the river front; the raising of East Locust Street grade above high water, all had a marked influence.

Q. Those are all recent improvements?

A. Yes.

Q. Most of them are still in an unfinished state, except the bridge?

A. The city hall is the only one still unfinished.

Q. And the Walnut street bridge is now being built?

A. Now being built.

Q. Now in connection with the building of the Walnut street bridge, does that contemplate the raising of the grade on Walnut street?

A. Well, that is something pretty hard to answer; some think it does and some think not; it depends on who you are talking with.

Q. What is it in your judgment, is it a part of the improvement necessary?

A. It should follow, yes sir.

Q. Walnut Street is south down the river from Locust Street?

A. Yes.

Q. The next street south down the river is Court Avenue?

A. Yes, sir.

Q. The next street down the river is Vine Street?
338 A. Yes, sir.

Q. The next one down the river?

A. Market.

Q. The next one south?

A. Elm.

Q. The next one south?

A. Raccoon.

Q. Those streets as you name them are as you proceed down the river?

A. Yes.

Q. And all the property of the Gas Company, the real estate you have been talking about is between Raccoon Street on the south and Vine Street on the north?

A. It lies between the alley just north of Raccoon street on the south and Vine on the North.

The MASTER: Are those streets paved?

A. None of them are paved.

The MASTER: About the Gas Company property?

A. None of them are paved.

Q. Proceeding in the other direction, Mr. Bolton, starting with the Coliseum building, or rather starting with First street on the west side of the river, as you proceed eastward, the first street east is First Street on the east side?

A. First Street on the east side.

Q. That street parallels the river.

A. Approximately.

Q. The next street is Second?

A. Second.

Q. And the next Third?

A. Third, south of Locust is Third.

Q. Now, all of the Gas Company's property which you
339 have been fixing a value on lies between East First street and East Third street?

A. No, it lies between the river and the alley, between Second and Third street- on the East.

Q. Well, they have no property east of Third street.

A. No.

Q. And they have none west of First street?

A. They occupy a pi-ce of property along the river bank.

Q. They occupy some property they don't own?

A. I don't know anything about that; they occupy it.

Q. Where is First street with respect to the main part of that property?

A. First street lies just west of their main buildings and holders.

Q. West of east First Street is what is called Block T?

A. Block T, yes.

Q. Well, all of its main buildings are east of First Street and west of Third?

A. East of First and west of Third, the main buildings.

Q. Who first interviewed you with respect to putting a valuation on this property.

A. Mr. Frank Kauffman.

Q. For whom was the valuation to be made?

A. I was originally asked by Mr. Kauffman what my ideas were of the trend of values in East Des Moines, and so on, trackage property, and what I considered the property down there is worth. Then I was asked afterwards if I would look the property over with the idea of appraising it for the Gas Company.

Q. Of course, you understood, Ralph, the purpose they had in getting these valuations?

A. I did, when I was told, was asked to appraise it for the Gas Company.

340 Q. And they explained it was for the purpose of basing a gas rate in this law suit?

A. I was not told that, but I was naturally in the position of assuming it.

Q. And so when you went down there to fix a value on this property you had a pretty thorough understanding of the purpose for which the appraisement was wanted?

A. I was in a position to assume what it was for, yes.

Q. You say that seventy-five per cent of the trackage in Des Moines is appropriated in the limits——

A. In the limits I described, excepting Mr. Hubbell's property, which is only to be had on lease-hold.

Q. I suppose when you made that answer you give to the term trackage that it is property upon which there is now either a main line abutting the property or a switch running to it?

A. Speaking of trackage, I mean property that can be served by switching service.

Q. Right now without constructing switches?

A. I mean property that can be served.

Q. By tracks already in?

A. I guess practically all of the property is served by tracks. If there should be an isolated piece I would not exclude it, because it could be readily served.

Q. And this upward tendency you say has been going on for ten years?

A. Yes, ten years.

Q. What portion of the increase of it, the value of property, has taken place—what proportion of the ten years had taken place say in the last three years—I am speaking generally now?

A. I believe a forty per cent increase has taken place in the last three years?

341 Q. Forty per cent?

A. Yes.

Q. What per cent in the last five years?

A. I believe fully sixty per cent.

Q. Prior to five years ago the advance and increase was very slow?

A. No, it was quite marked during the five years.

Q. Take the last five years then, Ralph, what has been the increase in value of property, say on the East side, speaking generally now, and of a general average increase?

A. There has been an enhancement—I am going to apply this to the business district or contiguous to it—there has been an advance in the business district and property contiguous to the business district of about two hundred per cent, on an average in the last ten years, I should say.

Q. Take it in the last five years, what has been the increase of the trackage property in the last five years?

A. It has increased from two to three hundred per cent.

Q. Two hundred to three hundred per cent?

A. Yes.

Q. You arrived at that judgment in the same way, I suppose that you fix the value on this property, what you know in a general way of the growth, and not upon any particular sales of property, but in a general way?

A. I base it upon the average sales and the average opinion that is current among people who own real estate.

Q. You think it has increased from two to three hundred per cent in the last five years?

A. I do, in trackage property, yes.

The MASTER:

Q. The trackage property increased from two to three hundred per cent?

342 A. In the last ten years, yes.

The MASTER: That is due to the fact of the railroads being accessible.

A. No; because there has been a vast increase in jobbing, manufacturing and warehouse industries in Des Moines in the last ten years; practically trebled, in my opinion.

The MASTER: You mean available trackage property?

A. I mean trackage property that is available and can be served by switches without great expense.

Q. Now, then, Ralph, and I intended to develop that idea of increase as we went along, you say one thing you took into consideration when you were trying to arrive at the value of this property was typical sales. Do you know of a single sale of trackage property east of the river and west of East Ninth, of two blocks or two blocks and a quarter, in the last ten years?

A. I said typical sales and the average of opinion.

Q. I mean, do you know, if I understood your other answer right, do you now know of a single sale of that kind within the limits spoken of?

A. Yes, I know——

Q. I mean two blocks and three quarters?

A. No, no; there has been — such sale at all.

Q. A single block?

A. No such sales at all.

Q. Did you go over all *over* this property, Ralph?

A. I didn't go over the property, because I had been thrown in that neighborhood for the last twenty years; I know every inch of it.

Q. Right east of this plant, in the open space east of it and south of the Soap Works over there, the ground is about ten feet

343 lower?

A. From ten to twelve feet lower, yes.

Q. In other words, the natural level of all the ground where this plant stands is from seven to ten feet below its present fill.

A. I would not like to say that, because I might assume it was so, but I don't know. In the past twenty years it has not been so.

Q. The old bottom popla*t* trees are growing yet at the plant so

you can see the level just east of the large holders; did you notice that the other day?

A. You mean south of Market street?

Q. I mean south of market and north of Elm, two big cottonwood trees are growing there now.

A. That is very low, that ground is.

Q. Right across, take Elm Street itself, and the Q. track that runs there, is laid upon a fill that is probably ten feet high?

A. Approximately, yes.

Q. Isn't that so?

A. Yes.

Q. Now that level, the grade is built upon the old original bottom level of the Des Moines river?

A. In that district, yes.

Q. Now, south of Elm street the Gas Company has how many lots?

A. Two lots.

Q. What is the description of those two?

A. They are nine and ten in M.

Q. And those two lots the Gas Company has a part of their machinery on.

A. They have an oil tank I believe.

Q. Two large tanks?

A. I believe so.

Q. The ground was excavated there to build those large tanks and thrown up east of it?

344 A. Yes, they did excavate some ground there.

Q. What is the size of Lots nine and ten?

A. 132 feet square, the two together.

Q. It represents a quarter of a block?

A. Quarter of a block.

Q. Who owns the quarter of a block immediately south of Lots nine and ten?

A. I don't know out of my own memory. I think they are owned by probably three different parties.

Q. Did you make any inquiry?

A. I never did.

Q. I mean as to what that property could be bought for?

A. No, I never did.

Q. Who owns the southeast quarter of that block?

A. 4, 5, and 6—there is a Greiser family owns part of that; and there is another block in there that was formerly owned by Stahlgren; they may still have an equity in it.

Q. This Greiser property is that in an estate?

A. No; I think it is owned by the old lady.

Q. Did you inquire what it can be bought for?

A. No.

Q. Do you know what it could be bought for?

A. I haven't any idea.

Q. Do you know what it could be bought for when you put the value on the Company's property?

A. I did not.
Q. Who owns the northeast quarter of that block, Lots 7 and 8.
A. I never actually knew, but I have understood that it belongs to the Q. railroad.
Q. Did you look that up to see when you were fixing the
345 value?
A. No.
Q. Did you make inquiries as to whether it was for sale or could be bought?
A. I did not inquire.
Q. Who owns the northeast quarter block of Block A, the block immediately south of Block B and south of Elm street?
A. I think the Q. owns the north half of it.
Q. Who owns the south half?
A. Out of my own memory, I don't know.
Q. What is it held at?
A. I am not familiar with it.
Q. What was it held at when you put the value of $221,000 on this Company's property?
A. I am not familiar with what it was held at.
Q. Who owns the northwest quarter of Block A.
A. Lots 4, 5 and 6—I think the Q. owns the greater part of it.
Q. Did you look that up?
A. Just from the lay of the land; in fact it had never been occupied for years and that makes me believe the Q. owns it.
Q. Did you make any inquiry as to what that was held at?
A. That is Q. property; it is not for sale.
Q. What value did you put on Lot- 9 and 10?
A. I estimated it worth nine thousand dollars.
The MASTER: In Block M?
A. Yes.
Q. Did you make any investigation as to who owned the southwest quarter block of Block L, Lots 1 and 2?
A. That is railroad property.
Q. One and two, all of it?
346 A. Yes, it is owned by the Q., in my opinion.
Q. And the northwest quarter?
A. That is railroad property.
Q. Three and four?
A. That is railroad property.
Q. And the northeast quarter?
A. That is five and six; that belongs to the railroad.
Q. And the southeast quarter?
A. Seven and eight; that is railroad property.
Q. Did you ascertain anything about the value of that property?
A. There is no way — getting at the value of it, because I have been told a number of times the railroad won't sell it.
Q. Anyway, you didn't make any inquiry at the time you put a value on the Company's property?
A. No.
Q. Who owns the southwest quarter of Block K?

A. It is owned by some eastern man.
Q. Did you ascertain anything about its selling price?
A. It is not for sale.
Q. Did you make any inquiry at the time you put in this value?
A. I did not.
Q. Who owns the southeast quarter of that block?
A. The Prouty Soap Company.
Q. They have a pretty good factory on Lot 8?
A. No, on seven and eight. They occupy virtually all of seven with buildings and tankage.
Q. All that territory around there, Lots seven and eight, and all of Block L is exactly the same character of property?
A. K lays high.
Q. Part of it is high?
347 A. All of it is high.
Q. The south half of K just immediately south of eight, there is a big hole there now, seven or eight feet deep which isn't filled in as you go across the street?
A. On the other side, yes. But K lays but a trifle below street level.
Q. Now what value did you put on three and four in Block K?
A. Fifteen thousand dollars.
Q. Then if lot- 9 and 10 was valued at two thousand dollars in 1908, it has increased about 450%.
A. Yes, in my judgment, if it was valued at two thousand dollars it has.
Q. In the two years there would be over four hundred per cent increase in that valuation.
A. Yes, if that is the case.
Q. What is there there in that part of town that you know of, Ralph, that would increase the value of that property four hundred per cent in three years?
A. The fact that there is a demand for trackage, and trackage every year is getting scarcer.
Q. Well, has there been any sold there in the three years that you know of?
A. There has been one piece sold in M—no, I don't know; the southeast corner of Third and Vine; I don't know the number; Lot Four, I believe it is.
Q. That wouldn't be in Block M at all?
A. No.
Q. I am talking about Block M?
A. I don't know of any sales there.
Q. There isn't any trackage or industries of any kind in
348 that block or in the block east or south of it?
A. There is no trackage available south of it.
Q. That is, there is no present trackage.
A. That is practically the only piece of property, with maybe one exception that can be had for trackage purposes from the river to east Fifteenth Street.

Q. What is to prevent a track going right straight down Second Street clear to the river?

A. There isn't anything to prevent it if you can get permission and are willing to foot the bill.

Q. Isn't that the way to get trackage?

A. No, trackage in the business district is already created.

Q. Suppose there is an industry down there to be served by the railroad, isn't that the way to get trackage, for the railroad company to build a spur?

A. You have to pay the bill and get the right of way for it. Railroads don't build any spurs until the industry is there. The trackage already exists in the business district.

Q. But it exists because there was plants there?

A. No, it existed even prior to the plants in a great many instances.

Q. Wasn't there a track put over here at Brown-Hurley-Camp hardware after they built their building there?

A. It was built there about that time.

Q. They got a railroad to run the spur up there?

A. The city gave permission.

Q. It didn't cost them anything?

A. There was no grading necessary. Let me differentiate. If you are on Mr. Hubbell's trackage, he will lay a switch without expense to you. No other road will do it.

Q. You don't mean, however, to say, as secretary of the
349 Booster Committee that if an industry wants to come here to Des Moines and locate anywhere down here on this bottom, or on this level east of town, that they would have to pay to both the city and the railroad company for getting trackage facilities?

A. It depends upon where it is. If the city can grant a road without damage, it will. But to the Rock Island the Q. or the Northwestern you have to pay. We have the Clark Gravel Company of Columbus, Ohio, contemplating coming to Des Moines on East Twenty-fourth, near the Rock Island tracks. The Rock Island through its engineering department compiled an estimate of $799 to put in a track there long enough to hold three cars near the industry. I have personally agreed without authority of the Committee to pay that myself.

Q. Isn't it your understanding that it is the business of the railroad companies to furnish service for the industries here in Des Moines and that they are compelled to do it?

A. I guess you can compel them, but you have got to pay the bill. The Rock Island informed me that there is no way to get a track free.

Q. There is no way—a shipper in Des Moines who doesn't happen to have his plant on the main line of some of these railroads, no way that he can have transportation service without building a track and paying for it?

A. If he happens to be located on the Des Moines Union or the Des — Terminal and Des Moines & Northwestern, he can get a free

track because those roads are controlled by Mr. Hubbell and he will do it.

Q. You don't mean to say—leave out Hubbell's proposition—that before a company or an individual operating a manufactur-
350 ing establishment of any kind in Des Moines that does not happen to — located on a main line of some of these railroads, before he can have transportation facilities he must build a spur to this plant?

A. The Q. railroad officials tell me the only way you can get a track is to pay a rental of five per cent. The Rock Island tell me the only way you can get a track is to pay for it. The Northwestern people tell me anyway you can get a track is to pay for it, and they won't go to a great amount of trouble either.

Q. You as Secretary of the Booster Committee must know all about this thing. Just give me the name of one industry in Des Moines you know of that is paying for sidetrack service?

A. I have got into the work only in the past six month- and have not been familiar with the location of any of the new industries that required trackage in that time. Now, practically all of these tracks I have referred to are on streets coming through town, main lines, and in every instance practically there is a track along the north and south line. If a man wanted a piece of property he didn't have to worry about the track.

Q. How did Brown-Hurley get their railroad?

A. They got permission from the city, and Mr. Hubbell and the Des Moines Union built it.

Q. How did these people get it on Eighth and Cherry?

A. The Des Moines Union built it.

Q. Did they pay anything for it?

A. Mr. Hubbell is at all times willing to build for them.

Q. The truth is there hasn't been a single plant located in Des Moines in the last ten or twelve years anywhere along these railroads or off the main line that had to pay for their spurs?

A. Those located on the three roads controlled by Mr. Hub-
351 bell have not had to pay; yes. The Des Moines Hosiery Mills had to pay to get trackage on the Rock Island in the last two years. It took them more than two years to get it in, Mr. Rollins told me.

Q. Do you know how much they had to pay, how much it cost to get in?

A. I presume it cost them $1500 or $1800.

Q. Can you think of another instance?

A. That is the one I have in mind at present.

Q. Wasn't there something about that far different from any other place in Des Moines?

A. Yes, they had to——

Q. Cross several tracks?

A. No, none at all. They had to acquire a piece of property in order to get them room to make the turn.

Q. That is the Hosiery Mills?

A. Yes.

Q. Didn't the Rock Island have a couple of switches running off to the fair ground there?

A. No, they used what is called a long track and ran from the main line into the fair ground; ran westward four or five blocks and it was a branch off of this long track that went into the Hosiery Mills.

Q. Let us take the Hosiery Mills—you think it cost about $1500?

A. I should judge so.

Q. We would be perfectly safe in saying it cost $2,000?

A. I imagine that would be approximately correct.

Q. Where is the Hosiery Mills?

A. On 28th and East Dean.

Q. How far is that mill from the Capitol Building?

A. It is a mile and a half.

Q. Can you point it out on Exhibit 6—they own all of the block?

352 A. Between 27th and 28th on the south side of Dean, north of the Rock Island track.

Q. That Hosiery Mills property is almost due east of the Capitol Building?

A. Yes, almost due east.

Q. And it joins or rather abuts on the Rock Island Railway?

A. Yes.

Q. How far is it from the present post office?

A. Two and a half miles approximately.

Q. How far from the court house?

A. About two and three quarter miles.

Q. How many lines of railway are immediately near or accessible to this Hosiery Mill?

A. The Rock Island is the only one available.

Q. Isn't the K. D. south of it?

A. The K. D. and Rock Island is joint.

Q. They operate two separate lines?

A. They have two main line tracks.

Q. How far is it from the Wabash?

A. About four blocks.

Q. What is the property worth right now in that vicinity by the front foot, average property all around there?

A. It's worth $18 a front foot north of the track and it's worth $9 south of the tracks—wait a minute; I will take that back. It is worth about $9 north of the tracks and about $4 south of the tracks.

Q. Those little homes out there, where there are any, do you remember the size of those lots?

A. Fifty foot lots.

Q. How many of them in a block?

353 A. I think there is something like eight in a block. There are several different plats out there.

Q. I am talking about this immediate neighborhood of the Hosiery Mills.

A. I think eight in a block.

Q. That country all around there, around the Hosiery Mills, north and south of it, east and west of it, is high and dry, is it not?

A. It is all about level. It is pretty wet in wet seasons because it has not proper drainage.

Q. How is it just west and north as to being nice and dry?

A. Well, immediately west and north it rises, it is higher.

Q. Starting at the Hosiery Mills and going north, you go across the country immediately west of the fair grounds?

A. Yes, sir.

Q. All that is open space?

A. Yes.

Q. As you go further east you strike the Great Western road and you follow the Great Western road north as far as the west side of Grand View Park on practically the same level?

A. No, there is some of that property very wet.

Q. There is a little slough over at the corner, the northwest corner of the fair ground?

A. There is a draw there; starts at the fair ground and runs clear through east Fourtieth Street.

Q. That is all being drained out right now; there is an improvement in progress right now?

A. I wasn't familiar with it.

Q. Don't that ditch serve that territory now?

A. It would if it had an outlet.

Q. What is the average price of that ground per front foot,
354 take the whole strip of country there?

A. I wouldn't like to take that whole strip of country; it runs into farm land.

Q. I don't want you to go out into the farms.

A. South of Easton Boulevard and north of the Rock Island tracks it is worth from four to nine and ten dollars a front foot.

Q. How far east and west would you extend that?

A. I would go to about Twenty-second street and east of the fair ground.

Q. Twenty-second Street west would bring you what distance from the Capitol Building.

A. Approximately a mile.

Q. Now, Ralph, if this ground, Lots 3 and 4 in Block K, if that ground was valued in 1908 at $2500——

A. It never was valued at that.

Q. That is not the question I asked you, if you will notice the question: If it was valued by the owners of it in 1908 at $2500 according to your judgment it has increased in value in the last three years seven hundred per cent?

A. $2500—six hundred per cent. I called it worth $15000. The increase would be five hundred per cent, but it would be worth six times as much, if it was only worth $2500 in 1908.

Q. What did you take as the basis of the value of property, the asking value or selling value, or what?

A. Why I take into consideration the plots available and the opinion of the owners as to what they are worth?

Q. Well, if the owner was offering to sell to you or a customer of yours, if you were in the real estate business, a piece of ground for

$2500, would you consider that fact as entering into the question at all?

355 A. It would depend a little bit on whether the other property around there was considered worth more money, and if it was, I would think the fellow was very rash.

Q. In other words, you would think he wasn't asking enough?

A. I would think he wasn't posted.

Q. Did you get the selling price of any property down in that country before you fixed this value?

A. Why, yes; I knew at what several pieces of property was held at out there, or were considered worth.

Q. What particular property did you ascertain the asking price for?

A. The Iowa Iron & Metal Company own a quarter block on Third Street between the Union and Rock Island tracks; the building in my opinion is valueless and they ask $20,000 and I assume that wouldn't buy it.

Q. He wants to sell the building and considers it worth something?

A. I don't believe he does. He has not expressed that opinion to me. He said it would pay for tearing it down.

Q. Who owns that property immediately west of the Gas Plant on the west side of the river?

A. The city, I think; and next comes the Kratzer Carriage Company.

Q. I mean the property right south of the Kratzer Carriage Company?

A. I think some member of the firm of Mennig & Slater and some member of C. C. Prouty owns the other part.

Q. What business enterprises if any, are located now on that?

A. The Prouty firm occupy their part of it with stables. Mennig people use their property as an over-flow storage house.

Q. The property I have in mind is a large fallen down old brick building?

A. Prouty is maintaining as much of that building as he requires for a barn and letting the balance go.

356 Q. What is that block worth, do you know?

A. Let's see; it is 132 by 280; I should judge it is worth $40,000.

Q. It can be bought for less?

A. I seriously doubt whether you can buy it at all or not. Neither party have ever shown any disposition to sell any property.

Q. Do you know this property over on the east side of the river, the city just took over a year or two ago, south of Locust and north of Walnut street bridge, the Patterson property?

A. On the corner of First and Walnut?

Q. Yes.

A. Yes, I do.

Q. Do you know what the city paid for that?

A. They paid somewhere close around to $10,000; I think it was $8,700.

Q. How much ground was it?
A. There was a serious question as to how much.
Q. About how much?
A. I think there was something like—well they may have had a fifty foot lot; the depth may have been approximately eighty feet; although they claimed something like 140 feet.
Q. It is a block long and runs from Walnut street up to Locust?
A. Oh, there was a great many other people involved besides Patterson.
Q. Take the Patterson property alone then.
A. Something over $8,000.
Q. How much ground was there?
A. I believe approximately 50 by 80.
Q. The city paid approximately for all that ground about $150 a front foot, didn't it; the McGrew property and Patterson property?
A. Approximately that, yes.
357 Q. That is this ground that lies immediately across the river from the library building, between these two new bridges?
A. Yes.
Q. The new Locust Street bridge was almost completed when they bought it?
A. Yes.
Q. The city hall was already located?
A. Yes.
Q. And the contract for its building let?
A. Yes.
Q. The Coliseum was in process of construction?
A. Yes, sir.
Q. And the post office was being built?
A. Yes.
Q. All in that time now that the city bought that ground?
A. Yes.
Q. Do you know where this little peanut roaster factory is, east of the Capitol Building?
A. On Twentieth and the Great Western tracks.
Q. What is ground worth a front foot in there, the average tract?
A. Immediately along the track?
Q. Yes, and away from the track.
A. Away from the track I should say it was worth about seven dollars a front foot.
Q. Away from the track?
A. Away from the track, yes; it would be $350 a lot.
Q. How far is that from the Capitol Building?
A. It is approximately three quarters of a mile.
Q. And about a mile from the post office?
A. It would be more than that; a mile and a quarter to the post office.
358 Q. That country in there is high and dry and the lots are free from anything that would make them unavailable for most any kind of purpose?

A. They lack drainage, is all.
Q. You mean lack sewerage?
A. Yes, sir.
Q. Now, take the base ball park, that is south of this little factory we are talking about?
A. Yes, sir.
Q. Who owns that tract?
A. It has recently changed hands; I don't happen to know the man's name; he is rumored to be from Minneapolis.
Q. The tracks immediately south of that, who owns that?
A. I assume it is owned by the City Railway, or affiliated interests.
Q. That is the circus ground?
A. Circus ground.
Q. Where the base ball grounds are and on east there is that all high and dry?
A. Yes, that is all high and dry.
Q. Nice, open property?
A. Open property.
Q. Just as accessible to railroads as the Hosiery Mills, by putting in a spur and side tracks?
A. It is, provided you can own the right of way or secure consent from the city. You would have to buy some property and secure the consent of the city.
Q. Where a property abutted a street, the railroad could go down the street if the city granted the right?
A. Yes.
359 Q. Where they are off the street and off the railroad, they would have to buy the right of way or make arrangement to get it, just as the Hosiery Mills?
A. Yes.
Q. Do you know where Wood Brothers factory is?
A. I do.
Q. Is that a large concern?
A. It is a very substantial concern.
Q. Use a great many men?
A. Employ between twenty and thirty in season.
Q. What do they make up there?
A. Band cutters and feeders that they attach on separators; they manufacture a separator and a traction engine.
Q. They put up a complete threshing outfit?
A. Yes.
Q. What is property worth in and about that factory?
A. That is low and it has only recently begun to be subdivided
A. Well it is all trackage property; all available for manufacturing and I would hesitate to place a value on it of more than $600 or $800 an acre, although I believe there is a movement there now which may increase the value pretty soon.
Q. Take all this territory I have just now been talking to you about, east of nineteenth street, and north of say 7 or 8 or 9 block south of the Rock Island main line, clear north to Easton Boulevard, all of that territory in there is much cleaner and more de-

sirable in every other way than possibly this property over here where the Des Moines Gas plant is located, isn't it?

A. Well now that is a question you would have to define your answer. For instance, if it was some one who had no out of town customers or did their business entirely by mail and was shippers and receivers in car loads, it would probably be just as good
360 as this down here. But if they had to be within reach of customers or had to depend upon the government mail service, it would not be anywhere near as desirous.

Q. You take a concern that does its commercial business in an uptown office or building and serves its trade through pipe lines, then, what do you say?

A. In other words, the Gas Company?

Q. Yes, sir.

A. I do not possess the technical knowledge to answer that. I would not say whether it was as available or not. There would be a great many things I would be required to know to answer that question; and I decline to answer.

Q. What is there down around that plant that looks good to you at all?

A. Well the American Linseed Oil Company; the Iowa Iron & Metal Company——

Q. I mean in the surroundings; its location and the people living there and the character of the buildings and the homes?

Mr. READ: I wish you would complete your answer to the last question.

Q. That part of town down there where the Des Moines Gas plant is is about as ragged and dilapidated a part of the city as we have anywhere?

A. It is about as dilapidated from a residence viewpoint as any trackage property; none is desirable from a residence viewpoint.

Q. Right east of it within a stone's throw, if it was thrown by a woman, is a great big hole that fills with water every time there is a heavy flood of water and gets from seven to ten feet deep and covers nearly half a block?

A. You mean east of the gas holders?

361 Q. East of the holders.

A. There is a low piece of ground there, being rapidly filled, more than half filled now.

Q. As it is now it is an unsanitary and ugly place?

A. It is not handsome to look at.

Q. The same is true right south of these two holders, south Elm street?

A. It is very low.

Q. Every time you have high water those two holders are practically surrounded with water?

A. No, not entirely so, because it just so happens there is a piece of ground in there south of Elm street, between Elm and Raccoon and south of Raccoon that has never been overflowed but one time, I believe.

Q. The street and railroad is graded up there about nine or ten feet?

A. Yes, to reach the bridges.

Q. The grade I think on Elm Street as it approaches the East shore is eight or ten feet above the natural bank of the river?

A. Yes, sir.

Q. Take the residences down there, what few there are, what is the character of them?

A. Why some of them are owned by people who have lived there for years, pretty well kept; others have fallen into a bad state of repair and are occupied by rather a low grade of citizenship, a few of them, particularly on the river bank.

Q. And the walks are all dilapidated and out of repair?

A. In some places.

Q. What is this ground in Block T, that you say the Gas Company owns; anything on that?

A. Not on the property that they own; there is nothing but a storage yard.

362 Q. What do you mean by storage yard?

A. A place they pile up barrels and at times pipe and other material used in construction work; and I believe they use it in storing some material they use in the purifying house. I don't know what it is.

Q. They have five lots in that block?

A. Yes.

Q. That is low-land, isn't it?

A. No, it is as high as the street level.

Q. What did you value that at?

A. I valued it at $25,000.

Q. Those five lots at $25,000?

A. I did.

Redirect examination by Mr. READ:

Q. Mr. Bolton, I take it from what you say that the immediate surroundings there on the east side adjacent to the Gas Company are not particularly pleasing to the eye?

A. No.

Q. They are not a thing of beauty?

A. No; vacant lots that are ill kept.

Q. That at one time was a residence district of Des Moines, at least south of that?

A. At one time, yes. It was all a residence district with the exception of the railroad property.

Q. That has given way however to the railroads and to the factories?

A. The railroads and factories have driven them out.

Q. So that the residence buildings are fallen in decay and it is not kept up as a residence district?

363 A. No, it is not a desirable residence district.

Q. What about it as a manufacturing district?

A. It has grown and is becoming more and more desirable and in demand.

Q. What is the fact as to it being desirable for manufacturing and storage purposes.

Mr. Byers: That was all gone over in chief.

A. It is desirable for manufacturing and storage purposes.

Q. Now, after this excursion which Mr. Byers has taken you around on over town, after your attention has been called to these various localities, has your judgment as to the value of the Gas Company property been shaken?

Objected to as being incompetent and improper re-examination.

A. No.

Q. You don't care to modify your judgment on that question?

Same objection as last above.

A. No.

Q. Immediately east of Fifth or Sixth street the ground in Des Moines rises to Capitol hill?

A. Yes.

Q. And it extends out at a high level until you get to Eighteenth or Twentieth street?

A. About Sixteenth street.

Q. Then intervenes what used to be known as the Agency bottom?

A. Yes, sir.

Q. Extending into the bluffs on Four Mile creek?

A. Yes.

Q. To what use has that intervening ground been devoted?

A. To residences for working people.

364 Q. Do you know whether or not that ground in there has been platted into lots?

A. Practically all has been platted into lots.

Q. To what extent are the lots built upon by residences?

A. Oh, I presume the ground is probably fifteen per cent occupied by residences; nearly every block has one, two or three in it.

Q. People have moved out there in order to acquire more ground to occupy in connection with their residences, larger tracts?

A. Yes, sir.

Q. However, as you go south in that district along the Rock Island Railway Company, you find the Hosiery Mills?

A. Yes.

Q. That is the only manufactory out there?

A. Yes, sir; along there.

Q. I wish you would speak a little more definitely your views as to the difference between that remotely situated trackage property and property such as the Gas Company's property, with respect to the uses that may be made of it and the uses to which it may be devoted?

but a man buying property will take into consideration the conveniences of the mails and the problem of delivering parcels of freight less than car load, which is a matter of big consideration. For instance, a plant located like the Hosiery Mills are are at a

very heavy expense in delivering less than car load freight; where, if they were down town they would be able to deliver car loads quicker and get them delivered quicker and cheaper.

Q. According to your opinion accessibility and nearness to the business center is a factor?

365 A. Yes, sir. I would figure what I would have to pay additional out there. The difference of freight and the teaming of men would pay interest on the increased investment.

Q. Then it depends entirely on the character of the business?

A. Entirely on the character of the business.

Q. What is the fact as to whether there is a demand, or has been a demand for inside manufacturing storage and factory purposes?

A. There is a demand for inside property as the city grows and as the business enterprises of the city expand in their business operation, there is a constantly desired and acquired ownership.

Q. You were asked if you knew of a sale of so much as two blocks over on the east side in the vicinity of the Gas Company property; you answered you did not?

A. I did not.

Q. Do you know whether so large a tract as that can be purchased, is it on the market, available for purchase?

A. There is no large plot like that being offered for sale. The question whether you could buy it, is simply whether you could offer more money than it would be considered worth.

Q. Is there any tract as large under one ownership?

A. No, excepting the C. B. & Q. Railroad.

Q. That you say is not for sale?

A. No.

Q. The Rock Island Company owned some property?

A. Yes, but not as large as that.

Q. The railroad property is not on the market for sale, is your understanding?

A. No, I am told it is not for sale.

Q. If you are seeking for so large a tract in West Des Moines district, do you know of a tract under one ownership, for sale, within the trackage district?

366 A. I do not.

Q. Have you investigated that?

A. I have thought of it but not investigated it; but I am pretty familiar with the ownership of all the trackage property. I do not know of any trackage property as large as that for sale.

Q. In other words, if on the east side you were to acquire so much as two blocks even, you would have to assemble from different ownerships?

A. From a great many owners.

Q. What is the fact as to whether that would be an expensive proposition?

A. It would be expensive. You would have to pay more for it proportionally than for small parcels isolated.

Q. You would expect to have to pay more than the normal prices for small lots.

A. Yes, sir.

Q. In that district there are no stores or small shops as I understand it?

A. None along Elm, Vine or Market.

Q. At least it is not a retail district?

A. Not at all.

Q. For what is the demand over there, small or large tracts, I mean 22 foot average or what?

A. Practically every one who wants trackage wants at least a quarter of a block.

Q. So you regard that as the probable unit.

A. As a minimum.

Q. Has there been a demand or is there likely to be a demand for larger tracts even than that, in Des Moines, along the railroad tracks?

367 A. I believe as Des Moines grows there will be a demand for large plots jointly owned?

Q. In the outside districts, manufacturing districts you have referred to is the Des Moines Union Railway tracks serving those pieces?

A. No, not any of that property I have been examined on.

Q. Those districts are served simply by one railway company?

A. They would be served by the Great Western or Rock Island.

Q. Your attention was called to the Patterson property on the corner of East Walnut and First street-; do you know the size of those lots as originally laid out—referring your attention to the Patterson property; do you know the size of those lots?

A. I see on the plat book they are 40 by 47.

Q. And the piece north to which your attention is called?

A. The plat shows the extreme end of the block runs to a depth of 110.

Q. There was in that controversy a question as to whether the lot had been extended into the river by accretion?

A. It was contended that it was filled.

Q. Well, on the other side it was claimed it had been artificially filled?

A. Yes, sir.

Q. Therefore Patterson didn't own beyond the 47 feet?

A. Yes, sir; that question was involved.

Q. Were you one of the appraisers on that?

A. I was not.

The MASTER: It is understood that the witnesses on this question are to be limited to six on both sides.

Q. You were asked your valuation on Lots 3 and 4 in Block K: you thought they were worth fifteen thousand dollars?

368 A. Yes, sir.

Q. You was also asked I believe the valuation of the lots in Block M and you answered——

A. Nine thousand dollars.

Q. You spoke later on having included something, because of the

property being in one body; does this valuation include the twenty per cent added?

A. I priced each block by itself; then arriving in my opinion as to the value of all the property, I added twenty per cent to my figures, on account of contiguous ownership; that would make K jointly owned with other blocks worth fifteen thousand dollars.

The MASTER: You appraised that as nine thousand dollars?

A. As an isolated property; then as a contiguous ownership it would be worth twenty per cent more.

The MASTER: You added twenty per cent to the whole of it?

A. Yes, sir.

Q. Speaking generally, what is your idea about isolated property as compared with property in a contiguous body?

A. The more property you can get under one ownership, the greater its value would be per front square foot, or any other way. Joint ownership in my opinion always enchances the value of any property.

Q. You don't mean joint ownership?

A. Single ownership of joint properties.

Recross-examination by Mr. BYERS:

Q. The two lots in M are off by themselves?

A. There is a street intervening.

369 Q. The same is true with three and four?

A. They are divided by streets.

Q. So, Ralph, if the owners of this property in Block T, the five lots in Block T fixed a value on it of $760, that is that river front ground, then according to your figures it has increased in value about three thousand per cent?

A. They are mistaken about that, in my opinion.

Q. Well, if they fixed that value, you would put it three thousand per cent higher?

A. If that was the actual value at that time, it has increased three thousand per cent.

Q. If it was sold on the market within the last ten years for seven hundred and sixty dollars, then you would say it has increased in value to three thousand per cent?

A. If it had been sold and the man who sold it had not made a mistake.

Q. Oh, well, property sold on the market, you take that as the value?

A. Not always.

Q. Didn't you understand counsel that you were to put a market value on the property—what do you understand by market value?

A. Well, the market value would be the average—one sale would hardly establish a value; one extreme low sale wouldn't.

Q. What does establish the market value?

A. The average value at which property is held and sold.

Q. Now, then, has all this testimony of yours as to this value been based simply upon your judgment as to what it is worth?

A. It has been based upon my judgment as to what it would cost to buy, or is sold for in the hands of competent men.

Q. For instance, if this corner over here on Sixth & Walnut was listed with real estate men in this town for sale at a hundred
370 thousand dollars, and you were asked to state the market value of that property, what would you put it at, if you knew it was listed with all the real estate men for a hundred thousand dollars?

A. I would take into consideration what other people around there considered their property worth.

Q. Then you are not fixing a market value at all, you are fixing a value for these gentlemen that you base upon your judgment as to the growth and development and location and accessibility in that respect, as to what it would sell for?

A. No, I have not. I have taken into consideration what property on an average could be bought and sold for over there.

Q. Then if it sold for seven hundred and sixty dollars, would you consider that?

A. It might be a freak sale; in other words, sold below the average value. It might have been sold by some one who didn't know; he might have been a non-resident.

Q. If it was sold below the average value, the price at which it did sell would be one of the items that would go into your average value?

A. Every price would.

Q. Suppose you were fixing the market value on this property, and not what might be your judgment alone, but a market value; what do you say that property would sell for on the market here tomorrow, if it was put up for sale?

A. I don't know that it could be sold tomorrow; but I think it can be sold for $25,000.

Q. If it can be sold now for $25000 and sold less than ten years ago for $760, what has made that difference in the value of the property?

A. When it was sold for $760, the man either doubted his
371 ownership or else didn't know what the property was worth around there.

Q. You are testifying to your own price and to the price the people who own the property would put on it if they wanted to sell. You are fixing your price without respect to the owners asking or selling price?

A. I am fixing my opinion as to what the average buyer and seller would receive and pay for the property. The average at which people would buy and sell property would be its market value. The fact that one man would sell for less than the average, would not establish the market value.

Q. In other words, if there was ten bushels of potatoes in one wagon down there, priced by the owner at a dollar a bushel, and there was another wagon full of potatoes priced at $1.50 you would say the market price of both wagon loads was the average price of the two?

A. No; I would take into consideration what other potatoes would be worth.
Q. We are talking about these two particular loads.
A. They are not enough to establish a market.
Q. Do you know what Mr. Haines paid for these lots?
A. I never knew.
Q. Didn't you ask him?
A. No.
Q. Why didn't you?
A. I didn't think it entered into it.
Q. You didn't think it made any difference in fixing the value?
A. No, sir.
Q. Didn't you ask what he paid for the lots in M and K?
A. No, I never asked him.

Q. This growth, what per cent of the growth has there
372 been in the population in the last five years in Des Moines?
A. About seventeen per cent.

Q. In round numbers what would that be?
A. About eleven thousand.
Q. Is the growth continuing in the city, still growing?
A. Yes.
Q. What in your judgment will be the growth in the next five years?

Objected to as incompetent, immaterial and not cross examination.

A. I think we will have between ninety-five and 100,000.
Q. All this property will continue to increase in value as it has in the last four or five years?
A. I think it will increase; I don't know whether it will increase quite so rapidly.
Q. What has been the increase in the value of property on Locust Street east of the river and west of say Third Street in the last five years?
A. It has more than doubled.
Q. You mean it has increased then a little over a hundred per cent?
A. A little over a hundred per cent.
Q. That is the main thoroughfare between here and the Capital?
A. Yes.
Q. And just east of the Locust street bridge, between that and Walnut?
A. Yes, sir.

Excused.

Attendance, R. P. Bolton, 3 days.

373 TWO O'CLOCK P. M., MONDAY, *July* 17, 1911.

H. N. PORTER being called on the part of the complainand and sworn and examined in chief by W. L. READ, Esq., testified as follows:

Q. Where do you reside?
A. Des Moines, Iowa.
Q. How long have you resided in Des Moines?
A. About eighteen years.
Q. What is your age?
A. 41.
Q. In what business are you now engaged?
A. Real estate, loaning -oney and fire insurance.
Q. In what way are you engaged in real estate, on your own account or firm or corporation?
A. Both in the purchase and sale of property on our own account and as agent for other people.
Q. How long have you operated in the real estate business in Des Moines?
A. About 12 years.
Q. How long have you been associated with the Percival Porter Company?
A. Well it was a partnership, Percival and Porter about 12 years ago and then was later incorporated in a corporation?
Q. Is that firm engaged in loaning money?
A. Yes, sir.
Q. For others?
A. Yes, sir.
Q. On real estate?
A. Yes, sir.

Q. Who is active manager of the concern now?
374 A. I am.
Q. In conducting the business do you make appraisements and valuation of real estate for the purpose of loans?
A. I do.
Q. To what extent, what volume of business per annum?
A. From one to 300 thousand dollars of loans a year.
Q. What kind of real estate have you or your firm or your corporation handled?
A. We handle principally Des Moines real estate and acreage adjacent to Des Moines.
Q. To what extent have you made a study of the subject of real estate values in Des Moines?
A. Well I have made that business for twelve years, the studying of values in Des Moines, comparing the same with other cities in the country of the same size.
Q. To what extent have you followed prices and values on property in Des Moines?
A. I have watched the values of real estate in Des Moines as evidenced by what they are held for by owners and what they are sold for for twelve years.

Q. Does that apply to business property?
A. Both business and residence and acreage.
Q. Are you familiar with the location of trackage property in Des Moines?
A. Yes, sir.
Q. And have been?
A. Yes, sir.
Q. To what extent have you investigated such properties and the situation with respect to such properties?
A. Well I have been appraiser on different properties lo-
375 cated on trackage and I have sold property on trackage and I have watched the sales that have occurred through others and by others.
Q. Have you served, and if so to what extent, on appraisement boards for the valuation of real estate?
A. Yes, quite extensively in the past ten years.
Q. What has been the general trend of real estate values in Des Moines for the last ten years?
A. The trend has been upward.
Q. To what extent, to what degree?
A. Well to a very marked extent in the last seven or eight years.
Q. Can you indicate by any percentage or other means something of the growth of values?
A. Yes, taking retail—what is known as the retail center of Des Moines, the inside retail district, properties have increased from $1000 a foot to $4000 a foot, that would be an increase of 400 per cent.
Q. That you speak of as the re*ant*-l center?

COURT: Be an increase of 300 wouldn't it?

A. Yes, that is right, an increase of 300 per cent.
Q. Where is the retail center of west Des Moines?
A. I would call the retail center as between—at Walnut street between Fifth and Seventh streets.
Q. Is there where prices have reached their highest level?
A. Yes, sir.
Q. And as high as $400 a front foot?
A. I think some property cannot be bought for less than $5000 a foot.
Q. You are speaking of actual sales then.
A. Yes, sir.
Q. The holding values are as high as $5000 on the properties?
376 A. Yes, sir.
Q. Do the prices on Walnut street decrease as you go east towards the river?
A. Yes, sir.
Q. To what extent, what is the general range in that direction?
A. Well they decrease to about at the river, I would say about $1000 a foot on Walnut stre-t. I spoke a minute ago about 300

per cent. I think that would be 400 per cent increase from $1000 to $4000 a foot.

COURT: 400 per cent would make $5000 wouldn't it? You have $1000 to start with.

A. Yes, I see.

Q. On Locust street what is the general range of prices from Eighth street east to the river?

A. Well the prices on Eighth street, on Locust, I would say would range from 3000 to 800; about $3000 down to $800.

Q. $800 as you go towards the river?

A. Yes, sir.

Q. On Court Avenue what is the range of prices?

A. Between what streets?

Q. Well from the court house east to the river.

A. I would say from $400 to $800 a foot. Some properties, corner properties perhaps might be held as high as 3000.

Q. You know where the property of the Brown-Campt Hardware Company is?

A. Yes, sir.

Q. And the Aarfield Pratt Howell Company?

A. Yes, sir.

Q. What is that property worth?

Objected to as incompetent and immaterial.

377 A. The property in the south side of Court Avenue has trackage and the property on the north side mentioned has trackage, the only property on the north side of Court avenue that does have trackage. That adds value. I think perhaps a thousand dollars a foot would be a fair value on that property.

Q. Are you acquainted with values on the east side of the Des Moines river?

A. Yes, to quite a fair extent.

Q. Where is the business retail center over there?

A. East 5th and Locust.

Q. What is the general range of prices and values in that part?

A. The property ranges in value I would say from $2000 a foot down.

Q. As you go west to the river?

A. Yes, sir.

Q. What is the range of prices on the east Locust street between 4th street and the river say?

A. Well from $250 to $500 a foot.

Q. What is the general range of prices on east Walnut street?

A. On Walnut I would say from $250 to $400 a foot.

Q. On Court Avenue from the river east to Fifth street?

A. About $200 a foot to $350.

Q. Speaking now of course exclusive of all improvements?

A. Yes, of course I understand.

Q. Where is the inside trackage property in Des Moines located?

A. It is located within about I would say about a half mile of the court house would be a fair limit.

Q. Can you refer to any district, take the west Des Moines trackage district?

378 A. It is located from—extending from First street to 10th street and the best trackage is along Vine and Market and Elm and some on Cherr- and Mulberry.

Q. What is the general range of prices on Mulberry and Vine of trackage property?

A. There is very little property to be had under $400 a foot. There is some as low as $300. I would say from 300 to $500 a foot.

Q. Did you comprehend in your answer the property south of Vine street the Hubell estate of F. N. Hubbell property?

A. There is some of the Hubbell estate property that he is leasing on as low a term as a hundred dollars a foot, but that is farther away. There is none of it for sale.

Q. Is there any of that property on the market for sale?

A. No, sir.

Q. Simply leasing the property?

A. Yes, sir.

Q. On the east side of the river where is located the inside trackage property?

A. From First street extending east to 6th or 7th streets and from Court Avenue south including Elm street.

Q. To what extent is property in that east Des Moines district appropriated by railroads?

A. Well the C., B. & Q. and Rock Island and in fact all of the roads have considerable holdings there, holdings are quite large.

Q. Is there trackage property outside of the districts you have mentioned?

A. Yes, sir.

Q. Where?

A. Farther east. Farther east on the ea*sid* side of the

379 river and farther west on the west side.

Q. How far east?

A. You can get trackage property on the Rock Island as far east as the fair grounds, that would be about 35th or 36th streets. You can go north on the Great Western o*n* on the Northwestern as far as the city limits.

Q. For what uses, what kind of factories are such properties adapted the outlying trackage properties?

A. That is used for factories who ship entirely—that have not any small parcels for delivery where it requires quick transfer and is used for the sale outside of the city of what you might call large hardware or goods which are shipped in carload lots.

Q. Is there any difference in the value of the use of outlying properties for trackage purposes and inside trackage property?

A. Yes, sir.

Q. What?

A. There is very great difference in the value of the property because of the fact that property which can be used for trackage or manufacturing in the outlying districts, the manufacturer has a large field to choose from while property which is available for factory or

warehouse usage in what is known as inside trackage the property is scarce, it is pretty well utilized and it is high priced.

Q. To what extent is inside trackage property on the market, to what extent can it be obtained, what sized tracks?

A. There are no tracks that I know of in the inside trackage property larger than half a block and that not in one ownership.

Q. Where is that located?

A. That is located between Sixth and Seventh streets south of Vine.

380 Q. What values obtain there?

A. That property is held about $400 a foot.

Q. Did you say a half a block?

A. Half a block.

Q. Where is that?

A. Well it is 132 feet square. Two adjoining pieces 132 feet square each.

Q. In the same block?

A. In the same block. They are owned by different ownerships though they are held at $40,000 apiece. Pardon me they are held at $50,000 apiece, would be $100,000.

Q. Aside from these two quarter blocks do you know of any others?

A. The Sheurman Brothers Woolen Mills Company has got a quarter block that I think that hold at $48,000 or $50,000.

Q. Where is that located?

A. Located just between Seventh and Eighth streets, about the same location.

Q. If you had an establishment, a problem say to obtain as much as two blocks lying contiguously in the west Des Moines trackage district, do you know of any such lands that could be obtained?

A. No, sir.

Q. Nothing larger than a quarter block in one ownership?

A. That is all.

Q. And half a block in two ownerships?

A. Yes, sir.

Q. How is it on the east side in the district you have mentioned?

A. I don't know anything on the east side, what you might call close in that could be bought that has trackage facilities even as large as a quarter block.

Q. Capitol Hill extends south to the railroads doesn't it,

381 south of the Capitol building?

A. Yes, sir.

Q. Beyond that is located a network of railways?

A. Yes, sir.

Q. That enter the city?

A. Yes, sir.

Q. Beyond that and still farther south what is the character of the ground?

A. It is low, almost what might be termed the river surface level, but little higher.

Q. Going west from the foot of Capitol hill by whom is the prop-

erty owned that lies along Seventh and Eighth streets and Sixth street?

A. You mean south of Court or all through?

Q. South of Court and north of the Raccoon?

A. It is owned very largely by the railroads.

Q. Is that on the market for sale?

A. No, sir.

Q. How far west does the railroad ownership extend?

A. Extends I think outside of their right of way. I think it extends to east Third street.

Q. Referring your attention to the map, Exhibit 5, can you find out in the railroad holding and I inquire particularly as to Block L, is that railroad property or ir it not?

A. I think that all of Block L is owned by the Rock Island, I am not sure about the entire ownership, but it is in railroad ownership all or except one or two lots.

Q. Suffice it to say do you know of any unappropriated land over in that trackage district in large quantities or larger than you have indicated, say a quarter of a block?

382 A. Not without going a considerable distance east. It would not be considered inside trackage property.

Q. How far east do you have in mind?

A. I think you would have to go along about east 20th street.

Q. I refer to the inside district?

A. No, I don't know any that would be termsed inside trackage property.

Q. What are the benefits and advantages as trackage prop-rty say such as you find around the Gas Company's property, that and other property there as compared with the outside trackage property in the uses to which it is adapted?

A. Well it is entirely a different proposition. Inside trackage property goes in as high priced because it is—there is very little of it to be had and i- is used for concerns that have got from the nature of their business to be close in, handle considerable transfer business and want to be close to the retail district where they can handle goods perhaps and get at the retail district quickly and for storage purposes. It becomes very valuable for that purpose. One of the largest storage warehouses in the city now comes pretty close to the retail center, the corner of Ninth and Mulberry simply because of the value of being close to the retail district.

Q. Has there been a growth in the storage and manufacturing business of Des Moines in the last number of years.

A. Yes, there has. Our manufacturing business now is over twenty five million a year. That is about seven or eight millions more than it was ten years ago any way.

Q. To what extent would you say the available trackage property has been appr-priated by manufacturers or storage concerns?

383 A. There are no large tracts larger than a quarter block to be had that I know of close in because property of that character has been pretty well utilized already.

Q. Do you know the property of the Des Moines Gas Company occupied by its plant?

A. Yes, sir.

Q. Will you refer to the map, Exhibit 5, and describe the property?

A. The property consists of all of Block C, Lots 3 and 4, in Block K; Lots 3 to 10, inclusive, in Block D; Lots 3 to 7 inclusive, in Block T, and Lots 9 and 10 in Block M, in Scott & Dean's Addition to the city of Des Moines.

Q. Is there any property on the river bank, have you noted that?

A. That is marked as block T here.

Q. You have given that?

A. Yes, sir.

Q. For what uses is that property adapted?

A. That property is principally adapted for railroad purposes, for storage purposes, warehouse and storage purposes and for manufacturing purposes.

Q. Did you make an examination of that property with a view of placing a value upon it?

A. I did.

Q. When did you make such examination?

A. About the first of last January or about that time.

Q. Do you know what its fair reasonable market value was about the first of January of this year. Answer that by yes or no?

A. Yes, sir.

Q. You may state what it was?

Objected to as incompetent and immaterial.

A. About $235,000 altogether, the whole property.

Q. What do you say as to whether it is more or less valuable now?

384 Same objection.

A. It is not worth any less. It would be problematical as to whether worth more. Property is increasing in the city some every year.

Q. By what methods did you reach that appraicement?

A. On the front foot valuation basis.

Q. My question to you was of the value of the ground exclusive of any buildings.

Q. Yes, sir.

Q. You understood it and answered it in that way didn't you?

A. Yes, sir.

Q. You reached your appraisement by f-ont foot valuation?

A. Yes, sir.

Q. The property as a whole or did you subdivide it?

A. I subdivided it.

Q. I will ask you to tell the Master how you got to the several values that go to make up the aggregate?

A. The highest valued part of this property is the portion that is adjacent to the Rock Island line which is a double line, in my opinion. I changed the plat. I took and made a new plat to get at the value changing the plat as now drawn so as to make the property

front on the railroads and on Vine street, I placed a valuation of $200 a front foot, extending south 140 feet.

Q. You are now referring to the land in Block C and in Block K?

A. Yes, in Block C and Block K.

Q. You refer to frontage on Vine street?

A. Yes, sir.

Q. How much was the next division you made?

385 A. The next division was the portion of the lots fronting on Market street located in Blocks B abd C and extending back from Market street 140 feet. On this I placed a valuation of $175.00 per front foot. My next valuation was on Lots 9 and 10 in Block B taking the frontage on Elm street at $150 a front foot and lots 9 and 10 in Block M fronting on Elm street at $125 a front foot and Lot 3 in Block B fronting on First street at $50 a foot and lots 3 to 7 inclusive in Block T at $25 per front foot.

Q. What was your purpose and reason for making the subdivisions that you have just given?

A. For the reason that the value of trackage property is the trackage on which it abuts.

Q. Dependent upon that you mean?

COURT: Have you got your figures for these?

A. That is the way I figured them.

COURT: Have you got your figures with you?

A. I have not my figures, no. I can figure it in a minute.

Mr. READ: Did your hojor desire a memorandum of the figures?

COURT: Yes, I would like to have a memorandum of the figures.

Mr. GUERNSEY: We can make up a memorandum for you that will show this.

Q. So if I rightly understand you you have platted the several parts as given by you and the aggregate makes up the total price that you have given?

A. Yes, I think the total valuation figures about $235,000 or about that figure.

Q. And that is your valuation is it?

A. Yes, sir.

Q. Suppose Mr. Porter that you were to regard the property as a whole as a sale proposition, is there any advantage or disad-

386 vantage in that.

A. In making my estimate the value I figured is on values if it were subdivided in not less than quarter blocks and taken as a whole I think that it would be worth just as much, perhaps a little bit more.

Q. Is there a demand in that locality and for such purposes for small tracts smaller than quarter blocks?

A. No, sir; quarter blocks is as about as small as one can figure valuation on trackage.

Q. Is such a tract in your judgment the most valuable size for realizing the best price?

A. The larger the tract I think the most valuable it would be. That is my opinion.

Q. Why is that so?

A. Because of the great scarcity of such tracts.

Q. If you wanted two blocks in one body or one block what is the fact in your opinion as to its bringing better prices?

A. It would command a higher price. Of course you would have fewer customers that would want two blocks that for a quarter block, but when you found such a customer he would pay more money for it.

Cross-examination by Hon. H. W. Byers:

Q. I suppose Mr. Porter you understood the purpose of this appraisement at the time you made it?

A. No, I did not. I never have had that explained to me yet.

387 Q. That is did you not know that the gas company was having a controversy with the city and that this appraisement was to be made to be used in that controversy?

A. I understood there was a suit of some kind, but I didn't know whether the suit was brought by the gas company or by the city.

Q. You knew anyhow the appraisement was to be used in the suit between the gas company and the city?

A. Yes, I understood that yes.

Q. You divided up this property for the purpose in the appraisement in the way that you thought would make it the most valuable and make the appraisement the highest?

A. No, I had my division for the purpose of getting at the cash value of the property.

Q. I know, but you have already told counsel it was more valuable where it was trackage property than if it were not?

A. Yes, sir.

Q. You went to work and divided it up so you made it all trackage property?

A. Yes, sir.

Q. You did that of course so your separate parts would all be the most valuable?

A. That is right.

A. Of course in that way you could make the very highest value on the property?

A. It would make its cash value. That is the way anybody buying would figure.

Q. That is what you was trying to do was get it as high as you possibly could?

A. Trying to get it what it was worth.

Q. You were trying to get it the highest possible value?

A. Its present cash value as near as I could get at it.

388 Q. To do that you divided it up in your own way to make it all abut trackage?

A. Yes, sir.

Q. Do you limit trackage property in Des Moines to property that abuts on some of the present railroads?

A. Well no there is property that railroads can be gotten to, but purchasers coming in to buy do not want to buy that kind of prop-
we-ty as a rule.

Q. There are hundreds of acres of trackage property surrounding Des Moines isn't there, inside the city limits?

A. Yes, sir.

Q. Thousands of acres for that matter?

A. Yes, sir.

Q. Are you a member of the Greater Des Moines Committee?

A. No, sir.

Q. Or the Boosters' Committee?

A. No, sir.

Q. Or Commercial Club?

A. Yes, sir.

Q. You say you have been in the real estate business buying and selling in Des Moines for about fifteen years?

A. Between 12 and 15 years.

Q. And I suppose you have sold a great many tracts in that time?

A. A great many.

Q. And bought a great many?

A. Well we have acted as agents more than purchasers.

Q. And you say your company is in the loan business?

A. Yes, sir.

Q. Making real estate loans?

A. Yes, sir.

389 Q. Directly making loans of its own money?

A. Sometimes and sometimes it acts as agent.

Q. Are its loans made upon city property?

A. Yes, sir.

Q. You have loaned in the last few years about $300,000?

A. We loan from $100 to $300,000 a year.

Q. $100,000 to $300,000 a year?

A. Yes, sir.

Q. On city property?

A. Yes, sir.

Q. Now in all twelve years will you give the Master a description of a single piece of property down about the gas works that you sold?

A. I ha*b*ve not sold. I have attended sales.

Q. I just want to know one you have sold yourself?

A. Not any right close there.

Q. Can you give the Master the description of a single tract anywhere within three blocks or four blocks of the gas company's property that you bought in the last twelve years?

A. No.

Q. Can you give the Master a description of a single lot, quarter block or block anywhere within five blocks of the gas company's property south of Court Avenue and east of the river that you have made any loans on?

A. No.

Q. Now can you give the Master the description of a single lot,

quarter block or block anywhere about the gas company's plant say between the river and east to 3d street and from Raccoon river south, north to Vine street that you know of that has been sold in the last 12 years irrespective of buildings now?

390 A. I can give you pieces that offers have been with reference to.

Q. That is not the question. (Question read.)

A. Yes the northeast corner of east Third and Vine street sold within that time.

Q. The northeast corner of Third and Vine street?

A. Yes, sir.

Q. That is business property?

A. No.

Q. What is on that property?

A. An old flour mill.

Q. And when was that sold?

A. About eight years ago.

Q. How much was it sold for?

A. I don't remember the consideration.

Q. How much of the ground?

A. 132 feet square.

Q. You were fixing your values over there, getting at the market value, it was necessary for you to know wasn't it.

A. I know what they have been offered for it.

Q. No, that is not the question. Now what did it sell for at that time?

A. I don't recall. There had been so many changes in eight years I can't keep track, I don't remember what that sold for eight years ago.

Q. What was it used for eight years ago when it was sold?

A. Well it had been used for a flour mill and abandoned for that purpose.

Q. It was an abandoned mill then and is yet isn't it?

A. Yes sir.

391 Q. Then it has not been used since, the last eight years?

A. It has been utilized for iron works and storage purposes.

Q. Cheap storage?

A. Yes sir.

Q. Sort of a junk pile of stuff over there?

A. Yes sir.

Q. That is one tract, quarter block sold eight years ago. Now can you give the Master one more?

A. You are referring to south of Court Avenue?

Q. Yes, south of Court Avenue and west of Third street and east of the river and north of the Raccoon?

A. The Dempster Manufacturing plant sold since that time.

Q. When was it sold?

A. I think about three or four years ago.

Q. Where is it located?

A. Located along Court Avenue between Second and Third.

Q. That is right on Court Avenue isn't it?
A. Yes, sir.
Q. I am speaking south of Court avenue.
A. It abuts on Court, clear south of Court.
Q. It is business property?
A. Yes, it is a wholesale business and manufacturing property.
Q. How much ground was sold?
A. I think 280 or 300 feet along Court Avenue.
Q. That sale included the entire property building and all?
A. The building didn't amount to much.
Q. I didn't ask you that, just let me have an answer and we will get along.
A. That included the building, yes.
392 Q. You say that was three or four years ago?
A. Yes, sir.
Q. And how much ground was there?
A. About 300 feet on Court Avenue.
Q. How deep was it?
A. Running back I think about 140 or 160 feet.
Q. Is the same property there now?
A. Yes, sir.
Q. Same building?
A. Yes, sir.
Q. Been any particular improvement in the property?
A. May have been some, I have not noticed any.
Q. What did it sell for three or four years ago?
A. I don't know.
Q. Didn't you make any inquiry at the time you made up this valuation?
A. I went to see them to see what I could get it for now.
Q. No, I don't mean that. Did you make any inquiries?
A. No. I don't care what it sold for four or five years ago, would not enter into my valuation at all.
Q. I am trying to find out if you did take account of it?
A. No.
Q. Now did you make any inquiry as to the price the property sold on Elm street?
A. That is the price it could be bought for now, yes I made some inquiry.
Q. What particular piece of property did you inquire about south of Elm street?
A. No, I didn't inquire about any—yes I did too, I saw some of the owners of individual houses there, some homes in there
393 where the owners live.
Q. Yes there is a home right on the corner right south of the lots in Block M I think it is, is there not?
A. Yes, sir.
Q. Is that the farthe*r*est south that the gas plant has property?
A. Block M yes.
Q. Right on the corner in the block south of that residence property, the northwest corner of the block south did you inquire what it could be bought for?

A. I don't remember whether I got a price on that piece or not. I made several inquiries in there among the owners where I could find them.

Q. If you did inquire about that one what was the price they stated to you?

A. I don't know what the price was.

Q. Do you know where the Gilcrest block is on this side of the river?

A. Yes, sir.

Q. Is that for sale?

A. No.

Q. How much of it is there?

A. I am not sure, I think there is—there may be a quarter block or little less, I am not positive about that. I know it is not for sale.

Q. It is a good deal more than a quarter block isn't it?

A. I don't know whether they own—I don't know whether they are on all their own land, or on some of the railroad land, if they occupy all the land they have there it would be more than a quarter block.

Q. What was this property worth ten years ago?

A. Which property?

394 Q. This gas company's property?

A. Well I would think probably one fourth of what it is worth now.

Q. About one fourth?

A. $50,000.

Q. What was it worth eight years ago?

A. Probably $75,000.

Q. You think it gained in those two years fifty per cent in the value, that would be eight years ago?

A. I think so.

Q. Has there been anything that you know about the property that has increased its value since then, I mean the property itself, the land itself and immediate surroundings?

A. There has been a good deal of the company's property that has been filled in in the last eight years.

Q. Anything else?

A. Not about the property itself. There have been improvements in the surrounding property.

Q. What surrounding property has been improved down in that territory take it south of Court and east of the river and west of Third?

A. The Advance Thresher people have built in there and Nichols & Shepard.

Q. Where is the Advance Thresher Co.?

A. They are north between Court Avenue and Vine street.

Q. When was that building put up there?

A. I don't know, but it has been built within the last ten years, last eight years.

Q. You think it is within the last eight years?

A. Yes, I think so.

395 Q. What was the other building. Nichols & Shepard?

A. I think it is Nichols & Shepard Company, I may be mistaken about the name. There is a new building put in there within the last eight or nine years.

Q. Been anything else done down there?

A. Been a tanning company built on Block S.

Q. You don't think that added anything to the value of the property down there?

A. I think so, it is a manufacturing concern.

Q. You think this gas plant adds to the value of property down there?

A. I think in its way it does. I think there are other industries which would go on the ground which would increase the value more.

Q. A good deal more I suppose?

A. I think so.

Q. Do you know of anything about the gas plant as you saw it down there and as you know it that requires it to have any particular inside location?

Objected to as not cross examination and this witness has not shown himself competent to tesitfy.

A. I would not have the knowledge to give an intelligent answer on that I don't think. There are things I would say that I would think would make it valuable for a gas plant.

Q. They have their office all up town, general office for business don't they?

A. I think it is.

Q. Transactions with customers and all that sort of business is done up town?

A. I think so.

396 Q. And their gas is all piped to their consumers?

A. Yes, sir.

Q. How far north would you say the available factory and trackage property extends on the east side of the river?

A. It depends entirely for what use it is to be put.

Q. Well for any use that would need trackage, that you have got to have railroad facilities?

A. You can get trackage as far north as the city limits that can be utilized for certain lines of business.

Q. How much territory out on the east side of the city in a general way now, about how wide a strip of country is there north and south from the Q line to the city limits that could all be used for trackage purposes by extending spurs and sidetracks?

A. Well the land in the section you speak of there between the Q tracks and the Raccoon would be limited because of the lowness of the land. If that were all filled up it could be made a very large district.

Q. Where is any land up there as low as this gas plant property?

A. I think a great deal very much lower.

Q. Where is it?

A. Extending to the south as far as the Des Moines river and extending east as far as the fair grounds and south of the tracks.

Q. South of the Q tracks?

A. South of—all the land between east 8th and east 20th *as* very low where all the tracks run, between the tracks and south of them.

Q. I know, but I say north beginning at the south side of the Q track going north?

A. It would be low—it is all good land on 20th street north on the Great Western, but going out on the Northwestern
397 you would have good land, on the other roads you would have low land?

Q. On the Northwestern good all the way out?

A. Yes, sir.

Q. The Great Western good all the way north and east from 20th street?

A. I would say so, fairly good, some low places, mostly good land.

Q. Whatever low places there are are low because of depressions.

A. Natural depressions, yes.

Q. The general level there is higher than where the gas plant is?

A. Yes, sir.

Q. Do you know the tract of land on the east side between the Burlington on east Ninth street and east of Fourth street that was put on the market just a short time ago?

A. On the Burlington track?

Q. Yes? A large tract?

A. No, I never heard of it.

Q. Never heard of it?

A. No, sir.

Q. It didn't come to your knowledge at all while you were valuing this property?

A. No, sir.

Witness excused.

R. R. McCutchen being called on the part of the com-
398 plainant and sworn and examined in chief by W. L. Read, Esq., testified as follows:

Q. Where do you live?

A. Des Moines.

Q. How long have you lived in Des Moines?

A. Twenty seven years.

Q. How long have you been in business?

A. I have been working for about twenty three years.

Q. What have you followed during your business life, give the several different occupations and length of time of each.

A. I worked one year in Fred Field's shoe store and after that I went into the employ of the Central Loan & Trust Company.

Q. In what capacity there?

A. As stenographer.

Q. How long did you stay there?

A. I stayed with them until about a year before they went into the hands of a receiver.

Q. Following stenography all the time?

A. No, sir; worked two months as stenographer, then I became

their bookkeeper and assistant cashier and I was cashier up to the time I left that company.

Q. What was your next work?

A. Secretary of the Vermont Syndicate.

Q. What was that?

A. That was a corporation that platted Kingman Place an addition in the northwestern part of the city.

Q. Engaged in selling out the addition was it?

A. Yes, sir.

Q. What did you have to do with the concern?

399 A. I sold the lots and made their collections, had general charge of its business.

Q. What next?

A. I then went into the employ of Mr. Hatton. Well at the same time I was secretary of the Vermont Secretary. I was in the employ of Mr. Hatton.

Q. What business was he engaged in?

A. In the real estate business, real estate and real estate loans.

Q. What did you do there?

A. I sold real estate and assisted in making loans.

Q. Have anything to do with the appraisement of property?

A. Yes, sir.

Q. What?

A. I quite frequently appraised property for loans.

Q. How extensive a business did Mr. Hatton do?

A. I don't know the volume of it, but it was a very considerable business. He was I think the leading real estate — in Des Moines up to the time of his death or shortly before it.

Q. Mr. Thomas Hatton?

A. Yes, sir.

Q. An old resident here wasn't he?

A. Yes, been in the real estate business for years.

Q. You then continued with Mr. Hattan and then what?

A. We organized a corporation called the Hatton & McCutchen agency the stock of which we owned jointly and that continued up to the time of his death.

Q. That agency carried out the same line of business?

A. Yes, sir.

Q. When did Mr. Hatton die?

A. I can't tell you exactly. I — out seven or eight

400 years ago.

Q. Since his death what have you done?

A. I bought the interest of his estate in the business the first year after his death and since then I have continued it myself alone.

Q. What is the business that you manage and conduct?

A. Real estate and real estate laons.

Q. Generally what is the volume of real estate loans?

A. I never have figured it up.

Q. Well it is considerable?

A. Yes, sir.

Q. Large business?

A. Yes, sir.

Q. Is the real estate upon which loans are made appraised?

A. Yes, sir.

Q. Under your supervision?

A. I appraise it myself.

Q. To what extent have you bought and sold real estate for yourself or others.

A. I have sold it to a very large extent for others and to quite an extent for myself.

Q. To what extent have you followed the course of prices and values of real estate in Des Moines, how much have you made it a study in a general way?

A. I have devoted a great deal of time to it. I had to.

Q. How and why?

A. Well in order to be able to make safe loans I had to know to a very considerable extent the value of real estate and the various kinds of property in this city. We take a sheet called the Dail- Abstract, I think that is the name of it, in which all records
401 deeds and mortgages are shown each day. That is delivered at our office every morning. I look that over every day and make a careful study of it. About six or seven years ago I made a map of the down town district or had one made in an architect's office on a large scale, a scale about four times the size of this plat here.

Q. You are referring to Exhibit 5?

A. Yes, sir.

Q. And I went to the records and got the name of the present owners of each piece of property and put it on the map and the date on which the owner bought it and what the deed stated he paid for it and I also put on the map the amount of existing mortgages and who held them and since that time I have a young man in my office whose business it is to look over that sheet every morning and enter up on that map any transfers of that property and the name of the party who gets it and the date and the consideration.

Q. When that is done do you observe or not the different transfers?

A. Whenever there is a transfer of any property in that district he checks it with a lead pencil so that I will be sure not to overlook seeing it and puts the daily abstract on my desk. He does that the first thing every morning.

Q. Then what do you do?

A. Then I look over the sheet and I am sure to see it. Once in awhile I don't look, I neglect to look at these sheets.

Q. What about following the prices and sales made in the city, do you do that otherwise than by having the record put on your map.

A. O yes, I see this Daily Abstract every day.

402 Q. To what extent have you been familiar with real estate transactions, I mean aside from the information you obtain form this daily sheet?

A. Well I have made a good many sales myself, then I always

noted any articles in the newspapers and I have talked with other real estate men that have made sales.

Q. Have you acted as a member of appraising boards?

A. Yes, I was and I am not sure, but what I am yet member of the appraisal board of the Des Moines Real Estate exchange.

Q. To what extent have you made a comparative study of values of real estate in Des Moines with other cities?

A. I have several text books I guess you would call them giving values of real estate in other cities of various kinds. I have read them over very carefully several times and then I have corresponded with other real estate men in cities of the size of Des Moines in regard to values of various kinds of property in their cities and whenever I have been in any other city the size of Des Moines or larger I have made it a point generally to call at the office of one or more of the leading real estate men in that town and have a little talk with them as to values of property in their city and their manner of doing business.

Q. Then you have attempted at least to make a study of the real estate situation with respect to values in Des Moines and also in other cities as well?

A. Yes, sir.

Q. What has been the general trend or course of prices in Des Moines in real estate.

A. Within the last few years it has been upward very considerably.

Q. How many years?

403 A. Oh there has been a steady growth in value ever since I have been in the business, but it has been most rapid I think within the last four or five years.

Q. Can you give some illustrations of the advance in real estate, some comparison?

A. I can give some illustrations of my own in connection with property I *won* myself.

Q. Very well.

A. I bought a piece of property at the corner of 15th and Grand about two years ago at $100 a foot and sold it within the last year at just double the price. Take the corner where the Fleming building is. I think about twenty years ago that property was bought by the Rothwells for something like $80,000 and it was sold to the Fleming Brothers for I think $175,000 those figures won't be off more than $5,000.

Q. Did that include the building?

A. At the time they bought it?

Q. Yes?

A. I don't know whether the other building was on there at the time they bought it or not, but it included the old building at the time that they sold it, at the time Fleming Brothers bought it.

Q. It was a two or three story building?

A. I think it was a three story building. It was not very much of a building. Then the 44 feet right west of that on the alley was purchased by Mr. J. D. Whisenand for $40,000 I think about—I

won't say definitely, but I think it was about ten years ago, it is not very far from that and he sold it for $125,000 about two years — I think. It was with the same improvements on it as at the
404 time he bought it.

Q. Do you know about the Harris-Emery property at the corner of Seventh and Walnut?

A. The Harris-Emery property, the bulk of it is owned by the Rothwells who live in Brookline, Massachusetts.

Q. What is the general range of prices on Walnut street in the vicinity of Seventh street at this time?

A. You mean the buildings or ground?

Q. The ground exclusive of the buildings.

A. You mean at Seventh and Walnut?

Q. Yes.

A. Approximately about $3,000 I think.

Q. That is per front foot?

A. Yes. I think there is not — of it could be bought for that.

Q. Why do you say that then?

A. I think it could be sold readily for that figure.

Q. Could be sold, but don't think it could be bought for that?

A. No, sir; I don't think it could.

Q. These prices shade off to what extent as you go east?

A. I should say about $700 when you get down close to the river front, get in around Second street.

Q. Going on to the east side, it appears here and I take it to be a fact east Des Moines property has been less comparatively than west Des Moines property, that is true is it not?

A. Yes, sir.

Q. Has there been any tendency of increase of values in east Des Moines?

A. Yes, sir.

Q. What is the general range of that?

A. Well it varies in different portions of east Des Moines.
405 I would say it has been somewhere from I presume as high as 200 per cent in places.

Q. Have there been any improvements that have tended to advance the price of east Des Moines property?

A. Yes, sir.

Q. What are they?

A. The new city hall, the coliseum, the new post office, the Locust street bridge, the new Walnut street bridge that is now being completed, the change of grade on east Locust street and prospective change of grad- on east Walnut street and the eradication of the tenderloin district over there.

Q. Where is located, in what part of the city, the inside trackage property, manufacturing and storage property?

A. It begins with the north side of the Des Moines Union Railway which is just a little bit south of Cherry street. You may say the south side of Cherry street, although th-re are switches that run north of Cherry street which make trackage property out of property which is north of there, but generally speaking it is south of Cherry

street and south of Court Avenue and east of west Seventeenth street, east of what some people call the 20th street viaduct.

Q. How far east does that extend?

A. Well it follows the lines of the railroad almost I would say about out to the fair grounds.

Q. I refer to inside trackage property.

A. Oh inside trackage property, well it goes south to the Coon river and extends east you may say it stops almost over there about east Sixth, Seventh or Eighth street, along in there.

Q. A good deal of ground over there devoted to railroad yards purposes?

406 A. A great deal of it devoted to yard purposes and a great deal of it owned by the railroads that is not used for any purpose.

Q. Is it on the market for sale?

A. No, sir.

Q. In the west Des Moines district, some portion of that is owned by Mr. Hubbell or the Hubbell estate is it not?

A. A very large portion of it.

Q. Is that on the market for sale?

A. No, sir.

Q. How is it available?

A. Ground lease.

Q. Not on the market for sale at all then?

A. Mr. Hubbell says that he will sell property on the Des Moines Union tracks if it is absolutely necessary in order to get a concern located on his tracks. He is interested in the Des Moines Union, but in doing so he always want- a large price for it so that it practically speaking *it* is not on the market.

Q. A prohibited price is your idea?

A. Yes, sir.

Q. What is the range of prices you have in mind now for that district?

A. For the property owned by Mr. Hubbell?

Q. Yes?

A. Well I don't know of but one case where he quoted a price on any of it, but I think he quoted a price then of $200 a foot for ground on lower Fifth street that was about fifteen feet below grade and subject to overflow.

Q. Does it make any difference whether the property is—in its sale value is close in to the business center or not?

A. Trackage property?

407 Q. Yes.

A. Yes, sir.

Q. What difference, in what way?

A. Well here are certain manufacturers and certain jobbing houses—you are speaking particularly of manufacturing property?

Q. Yes, inside manufacturing property, I speak of trackage property assuming that that was the best for that?

A. Well for jobbing purposes it being inside would make very much difference. For manufacturing purposes would not make

so much difference but makes considerable difference with some manufacturers for the reason they want it convenience to the hotels and retail district and the depots, freight and passenger both.

Q. Take it in the west Des Moines district at about Mulberry and Vine about Seventh and Eighth along in there what is the range of values say, there for trackage property?

A. I would say approximately about $500 a foot.

Q. Take it in the east Des Moines district what?

A. It is much lower. I would say that it would range from $200 down.

Q. Now as compared with the outside trackage property going out a mile or so at about the fair ground, or say on the Northwestern or Great Western, what is the difference in value there?

A. Very considerable, yes sir.

Q. Very much cheaper?

A. Yes sir.

Q. To what extent has the inside trackage property been all appropriated?

A. To a great large extent, that is if you call Mr. Hubbell's
408 ownership appropriation.

Q. Well exclude that.

A. You mean in active use?

Q. Yes. Exclude Mr. Hubbell's property. I mean so appropriated it is not on the market for sale because either withdrawn from sale as Mr. Hubell's is or because already devoted to the use that has withdrawn it from the market.

A. There is an unusually large percentage of it that is off the market for a city of this size which has already been taken.

Q. Suppose there were a call for say two blocks contiguously located would you know where to find that in the west Des Moines district?

A. No, sir.

Q. Would you know where to find it in the inside east Des Moines district?

A. No, sir.

Q. Why is that so?

A. Because the plants that are already located here what you might say put out of the running a large percentage of it and the divided ownership of the balance would make it very difficult to get it.

Q. How does the divided ownership affect property?

A. Well the divided ownership generally results in your paying a very large price for some portion of the piece you want to get. You nearly always find someone when trying to buy a large tract of ground of which the ownership is divided up amongst different persons, you find nearly always some person that does not want to sell, generally find at least one third of the owners that don't want to sell, they have no reason to sell and they don't know
409 what they would do with the money if they sold, they are satisfied and you go after them to buy and they say they don't

want to sell and you keep after them and it generally ends in your paying a very exorbitant price for that piece of property.

Q. Are there any factories located in the east Des Moines district, I mean south of the north line of Court Avenue and north of Elm street, west of Sixth street, aside from the gas company plant?

A. Yes, sir.

Q. What ones?

A. Well there is a new concern over there, Locker-Yeager Manufacturing Company, planing mill, make a business of handling inside finish for houses, sash, doors, and things of that kind. Then there is the Des Moines Manufacturing and Supply Company which manufacture furnaces and boilers and the Bair Tanning Company, they make a business of tanning hides and there is the Advance Threshing Machine Company and the Mason Motor Car Company has a building over there that they formerly used there in their plant but they only—there main plant I believe now is Waterloo, but they still keep and use the building.

Q. Linseed Oil Works over there?

A. American Linseed Oil works, yes and there are a number of others, quite a number of others.

Q. Do you know where is located the property of the Des Moines Gas Company that is used in connection with its plant?

A. Yes, sir.

Q. You may look at the map marked Exhibit 5 and tell the Master where the property is located?

A. It is south of Vine street, east of the Des Moines river,
410 extends along the south side of Vine street from the river to half block east of east Second street. It is what is marked in red.

Q. Better give it by the lots and blocks.

A. Legal description?

Q. Yes.

A. Lots 3 to 7, inclusive, in block 7. The entire Block C. Lots 3 and 4 in Block K. Lots 3 to 10 inclusive in Block B lots 9 and 10 in Block N all in Acott & Dean's Addition.

Q. To what various uses is that property adapted aside from its use for the gas company, what other and various usage?

A. Well there are three principal uses that it might be utilized for, manufacturing, jobbing and railroad purposes.

Q. Manufacturing, jobbing and railway purposes?

A. Yes, sir.

Q. That includes storage does it? Does that include storage use?

A. Well I didn't have that in mind particularly but it would be well adapted for that.

Q. What kind of manufacturing purposes would you say?

A. It would be particularly adapted to a factory that wished to be prominently located and needed a large sized piece of ground that was very accessible to the hotels, depots and retail district of the city.

Q. That property is within what distance of the court house.

A. Half a mile.

Q. Within half a mile radius is embraced the business center of west Des Moines?

A. Yes, sir.

Q. Hotels, postoffices and public places.

A. The principal ones, yes.

411 Q. It is also within a short distance of the business center of east Des Moines is it not?

A. Yes, sir.

COURT: The center of east Des Moines is that street here?

A. The business center of east Des Moines is a block east of 5th and Walnut—there is 5th and there is Walnut. The largest office building they have on the east side, business building of any kind is right at the corner of 5th and Locust, that is the Capital City Bank building. You might see the retail business district in east Des Moines follows east Locust and east Walnut street from the river east to about, well it stops on these two streets practically at 6th street and the very choicest east Des Moines business property is on east 5th street from Walnut north to Locust and then east to Locust to Sixth and then north on Sixth.

Q. Have you made an examination of the property of the Gas company as described by you with a view to placing values upon it?

A. Yes, sir.

Q. Making an appraisal of it. When did you do that, about when?

A. It was in March, March 1911.

Q. Do you know what was the fair reasonable market value of that property say in January of this year, the first of January, answer that yes or no?

A. Yes, sir.

Q. What in your judgment and opinion was the fair reasonable market value of the property taken as a whole and exclusive of any buildings upon the property?

A. $225,000 in round figures.

Q. How do you reach that valuation, I mean by dividing

412 it up or taking it as a whole?

A. I went over and looked the whole thing over and then I took it a block at a time. I put a valuation I think of $200 a foot on Block c and $125 per foot on Block T and $150 per foot on blocks K and B and $50 per foot on Block M.

COURT: I don't understand the frontage, this is one front or two fronts?

A. Block T there is just one frontage. In Block k just one frontage.

Q. That is Vine street?

A. No, that is east Second street. Block M there is one frontage and blocks B and C there are two frontages.

COURT: What is the entire frontage B?

A. 192 feet frontage on east First street and 280 feet on Second street in Block B.

COURT: That is $150 a foot?

A. Yes, sir.

COURT: How much frontage in Block C?

A. 560 — total frontage.
Mr. READ: That means both frontages?
A. Yes, sir.
COURT: Block T what is that frontage?
A. 200 feet.
COURT: And K.
A. 140 feet.
COURT: Now M?
A. That is 132 feet.

Cross-examination by Hon. H. W. BYERS:

Q. Then the value that you fix on lots 9 and 10 in Block
413 M would be about $6,500?
A. $6,500.
Q. If I remember Mr. Porter's testimony a moment ago, the ground in Block T he put that at $25 a front foot and you put it $125.
A. Yes, sir.
Q. So there is $100 of difference between you on that?
A. Yes, sir.
Q. If I remember Mr. Bolton's testimony and Mr. Frank Kauffman's did you know that they had appraised it too?
A. I knew Mr. Kauffman had. I didn't know whoe else.
Q. If I remember the testimony of Mr. Bolton correctly he put a value of $100 or more a foot on this lot 9 and 10 in Block M. There would be $50 a foot difference between him and your figures on that?
A. Yes, sir.
Q. Now Mr. McCutchen, the five lots there in Block T are river ends, what are called river ends in lots?
A. They are no full depth.
Q. They abut the river?
A. Yes, they back up to the river.
Q. While there is a continuous depth so far as the plat is concerned, yet as a matter of fact the lot extends out to the river, it may be longer than the description given in the record and may be shorter.
A. I don't know about that General Dyers, I never did know.
Q. And the lots face east First street?
A. Yes, sir.
Q. So that there would be just one of the lots and that would be the one on the south end of the block that abutted on Railroad street?
414 A. That does not abut on Railroadx the one on the north does.
Q. That is the only one that does?
A. Yes, sir.
Q. Now that ground there is located in all respects the same as the other, except that it is on the river bank, that is I mean it is on the same general level along the east side of the Des Moines river and south of Vine street and north of the Rock Island?

A. Well it is with the exception of the level, the level of it is higher than the block on the other property.

Q. That is east, is that higher there than the e-st of the property?

A. Yes, sir.

Q. So at that point the slope is from the river east?

A. I don't know about the slope, it has been filled up. Block T and Block C and I guess a good part of Block B has been filled up very considerably by the gas company.

Q. The general level of the land is lower back from the river that it is on the river bank for a little ways, two or three blocks?

A. The general level of the ground all around the gas company plant I think is lower.

COURT: You mean the natural level?

A. No, I mean the present level of the surface. The gas company has filled this ground up with cinders and stuff very considerably.

Q. Right now, is we were to have an unusual rainfall, something like we had in 1907 or 1903 the gas plant would be surrounded by water wouldn't it?

415 A. I don't remember the year that we had that extraordinarily high water, but I was over there the day that it was up and it was almost into the gas company's plant then and they had men out working around, but it did not quite come over it. The only way I think you could get there was across the railroad bridge that day.

Q. If we were to have an unusual fall of rain now, not a flood, but an unusual rainfall there are a large number of depressions and places that are still unfilled there that would fill up with water all around the gas plant wouldn't there, a big hole right east of it?

A. Yes, there is a big one right east of it.

Q. And right south of the plant too it is very low?

A. Well I don't think that would be affected by anything other than a flood south of it.

Q. A flood would affect that?

A. Yes, unless that new levy of the city's will hold and protect it, I don't know.

Q. You have been unusually active in real estate loans, put in practically all your time at that?

A. Yes, sir.

Q. You have been very active in pushing the real estate business in Des Moines in a general way in addition to your private interests and your own personal business.

A. No, I have not put in very much time in that way, I have put in most on my own business.

Q. You are a member of the committee called the Greater Des Moines Committee?

A. No, sir; I am not. I was but I am not now.

COURT: You quit being a Booster?

416 A. Not that but the bulk of the members of that committee are men of more means than I am and they are better warranted in attending on the committee. I was proud of being on it

but I could not put the amount of time on it I should as a member and give my business the attention I should.

Q. When did you drop out?

A. Almost a year ago I think.

Q. You make quite a good many loans on city property?

A. Yes, sir.

Q. About what would they amount to a year?

A. I have never figured it up. I have not cared anything about the amount I have loaned, it was how much I made out of it and the kind of loans.

Q. Did your business extend into east Des Moines?

A. Yes, loaned money all over the city.

Q. Anywhere in the city where the property would stand a loan you would place it?

A. Yes, sir.

Q. Have you been ten years at that business?

A. I have been in the loan business longer than that. I have been appraising property that long or longer.

Q. How long is it as to the time you have been in the real estate business?

A. Well it is practically—I gradually worked out of it—the Central Loan & Trust Company had got into the real estate business, the Central Loan & Trust Company got a good deal of real estate under foreclosure and part of the duties I had I took charge of their real estate—after I quit work for them as cashier I took charge of their real estate and their rentals and then I began to sell
417 property. I sold that stuff that they had gotten under foreclosure and from that I found I could sell real estate so I just drifted into it.

Q. About when was that?

A. I don't know, Mr. Guernsey could tell us about when that happened. Wasn't it in 1893, something like that?

Mr. GUERNSEY: I think it was after 1893. I know it was after 1893.

Q. We are safe in saying ten years ago?

A. Yes, sir.

Q. That would only take us back to 1901?

A. Yes, anyway that long.

Q. In that time do you remember of having sold any parcel of ground anywhere say within the territory north of the Raccoon river and south of Vine street east of the Des Moines river and west of Fourth street in east Des Moines?

A. I don't recall any.

Q. Do you remember of purchasing any there in that time?

A. No, sir; I did not.

Q. Did you ever make any loans in that territory?

A. Yes, made some loans on the residence property in there south of this property you refer to.

Q. Adjoining in Block L?

A. I don't remember any particular block. I never made very many loans in there, didn't regard it very favorably.

Q. Small loans when you made any at all?

A. Yes, sir.

Q. You thought it was not very desirable there for loans or in the way of security?

A. Not the part that is away from railroad tracks.

Q. You told Mr. Read you had a map that you made of
418 the city some years ago, a large one and you kept sort of a daily record on that map of sales and so on. Did that include this territory?

A. No, sir; it did not.

Q. Why didn't it?

A. Because it is not retail business property and is not likely to become so.

Q. You then did not cover in this tract property in that record?

A. I did not go on the east side of the river at all.

Q. Confined it almost entirely to west side of the river?

A. Yes, property as the business district of the west side.

Q. Block C is the block farthest north of the Gas plant's property?

A. Yes, sir.

Q. That is bounded on the north by Vine street?

A. Yes, sir.

Q. On the south by Market street?

A. Yes, sir.

Q. That property you say you estimated the value of it at how much a front foot?

A. $200 a foot. I don't think I got it exactly at $200 a foot but it was practically $200 a foot.

Q. That was exclusive of any improvements on it at all?

A. Just the ground.

Q. As it laid out there bare?

A. Yes, sir.

Q. What is there about the country over there that makes that property any more — than the ground in Block K or ground in Block B?

A. Well there are several features in connection with Block C — make it more valuable in my opinion than Block K and Block M.

Q. What are some of them?

419 A. Take Blocks C and T together—I suppose I ought to answer the way you asked me and tell you why I put a higher value on Block T?

Q. I will turn you loose and let you say what you want to about it.

A. I consider this Block C and Block T together have considerable value from an advertising standpoint.

Q. How much of the valuation did you include in as advertising?

A. I didn't fix that. I took it as a whole.

Q. But you gave it a larger valuation because you thought it was worth more for advertising purposes?

A. I gave a very considerable portion of that advertising value to Block T.

Q. That is on account of the river front?

A. Yes, sir; because if there was a separate ownership between Block C and Block T the party owning Block T could limit practically the advertising value of Block C by shutting off the view.

Q. You mean by that people from the west side of the river could not see the property on Block C?

A. I mean that any person coming into the city or crossing the Des Moines river on the railroad bridge on any trains coming from the east or going out of the city from the east looking out of the window of the train, which they would be likely to do, going over the bridge could not hardly help seeing any building that was located there and also that strangers in the city going back and forth across the bridges, the traffic bridges Locust, Walnut, Court Avenue and Grand, would be very likely to see a building located there and that would certainly have some value for some lines of business, some manufacturing lines.

420 Q. So then the real values of block T is simply from the fact by owning it they can protect the advertising front of the property located on C?

A. A very considerable portion of it.

Q. The railroads that crosses on the north side of the property is the Rock Island isn't it?

A. Yes, sir.

Q. What road is that on the south side of it, is that the Q?

A. That is commonly called the K. D.?

Q. That is the Rock Island I suppose?

A. It is practically the Rock Island I think.

Q. What is located on the two lots that the gas company don't own there in T?

A. There is a brick building there, I don't know exactly what it is occupied for, I think some kind of an iron workers establishment, machine shop.

Q. Being operated now is it?

A. I don't know.

Q. You don't know about that?

A. No, I don't.

Q. What values did you say you put on 3 and 4 in Block K?

A. $150 a foot.

Q. And what in Block B?

A. $150.

Q. Block B and Block K you put exactly the same value on?

A. Yes, sir.

Q. Why did you when you got down to Block M make that $50 a front foot?

A. Because it is only a quarter block in size and it is considerably below grade, it is quite a little bit further away from the

421 center of business in the city.

Q. If it should turn out it was not below grade—when you say grade do you mean the natural river bottom?

A. I said that, I meant practically it was liable to be overflowed.

Q. It is below the railroad grade and below the filled grade?

A. I don't know about the street grade, but I think you would find it below that, might not be.

Q. The gas company has a *could* of tanks of some kind on that ground?

A. Yes, sir.

Q. On lots 3 and 4 in Block K did you take into consideration in fixing the value anything about the alley there?

A. Yes, I figured that in.

Q. On two sides of the lot?

A. Yes, sir.

Q. You figured that in as part of the gas company's property?

A. Yes, sir.

Q. On the theory that they owned it?

A. Yes, sir.

Redirect examination by W. L. READ, Esq.:

Q. What did you say about the alley?

A. In Block K I figured the value of it in there.

Q. Value of what in?

A. At so much per front foot.

Q. For what?

A. Figured it as belonging to the gas company.

Q. You included it in the frontage?

A. Yes, sir.

422 Q. If it didn't belong it would simply diminish your frontage?

A. Yes, it would make a slight difference in the value.

Q. Affect the value to that extent?

A. Yes, I think make a slight difference in the value. Really would not make a very material difference. Make some difference though.

Recross-examination by Hon. H. W. BYERS:

Q. Do you remember about the sale of the ground where the Nichols & Shepard institution is?

A. I don't remember the exact amount of that sale. I remember that it was made.

Q. You had something to do with it?

A. No, sir; I did not. I was at the time trying to sell them another piece of property.

Q. They bought that because they got it cheaper?

A. I don't know why they bought it.

Q. You remember what they bought it at?

A. I don't exactly no.

Q. How long ago was that?

A. Well I would say it was within a year. I am not very good in remembering dates.

Q. We are safe in saying it was within eighteen months any way?

A. Yes, sir.

Q. These improvements th-t you say have increased the value of this property are all public in their nature are they not?

A. Yes, practically they are.

Q. There have been no special improvements around this property that you know of in the last seven or eight years about the
423 property itself?

A. Yes, the street has been raised to grade.

Q. I mean aside from filling in with cinders there has been nothing else done that you know of?

A. Well of course there has been a few—the amount of business that is being done in that part of the city has been increasing steadily.

Q. I am talking about improvements on the property, nothing in the way of street paving or new buildings like public buildings of any kind or anything of that kind in this immediate vicinity?

A. Right close to it?

Q. Yes.

A. No, not that I know of.

Redirect examination by W. L. READ, Esq.:

Q. I didn't quite understand your explanation about the advertising feature of the lot in Block T. What do you mean by advertising?

A. Well you take the Kratzer Carriage Company for instance, they are located right across the river on the west side of the river. Every implement dealer you might say that comes to the state fair is going to notice that Kratzer Carriage Company plant in coming into the city and crossing the river. That calls their attention to it and results in their going down there to see it and looking over their plant and get some business, it is advertising.

COURT: You don't mean to use it as bill boards?

A. Oh no.

424 COURT: It means that they can see the factory itself?

A. Yes, that is what I mean.

Q. I understood you to say you have in your valuation you had placed most of that value on the property in Block T?

A. I did largely because if that was owned by a different party and they put up another building there, for instance if there was a soap factory or some building that could get along with that sized piece of ground would come in there that would get practically all that advertising value?

Q. For that reason you put it there?

A. Yes, sir.

Q. It enhances the value of the property as a whole?

A. It does as a whole.

Q. Using Block- C and D and all the other property connected with Block T in one plant would you get all of the value of it apportioned to all of the plant?

A. Yes, sir.

Q. Because of the assumption of possible separate ownership you have in your valuation limited it to T?

A. Yes, sir.

Q. It belongs to some place in the property does it?

A. Yes, sir. That advertising value is worth more to the property as a whole than it is to Block T alone.

Q. Considering the size of that tract as a whole, the property in Block C, B, T, K and M, is it worth more or less because of that fact, I mean is the fact of a large tract an element of value?

A. It would be a very considerable element of value to anybody that wanted a large tract.

Q. But you have valued it in the smaller tracts?

A. I have taken it just in a general way. When I say that
425 I mean this, if you went out to buy a piece of ground like that, as big a section of ground like that located like that is in this town you could not get it, there is not another piece to be had like it. If on the other hand you had that piece of property vacant to sell you might have difficulty finding some one customer that wanted the whole thing. The supply and demand both is very limited but the supply is more limited than the demand.

Recross-examination by Hon. H. W. Byers:

Q. All you mean by that is that there is no other such piece of property that you know of in that vicinity now on the market but you can go out on the Northwestern road in east Des Moines and buy just as many blocks of ground abutting on the Northwestern as it goes out as you have money to pay for?

A. Yes, sir.

Q. And buy them for less than $25,000?

A. Yes, but they are not like this.

Q. They are better aren't they?

A. No, not nearly so good.

Q. Why?

A. Because there is only one piece of this kind in Des Moines you might say.

Q. Why is it better, higher, dryer and h-althier?

A. This is accessible—they are but—they are too long a distance from the hotels and they haven't got the advertising value that this has and they haven't got the trackage facilities that this *have* and they haven't got the convenience to street cars and freight
426 depots and the passenger depots and the retail district and the other manufacturing and jobbing concerns in Des Moines.

Q. What has manufacturing got to do with the retail district?

A. Got a good deal in some instances. The Prouty-Bowler Soap Company, their location is very convenient to the wholesale grocers, also to the buying district through retail grocers. It is convenient to the hotels and there are some factories where that is a very considerable element and others it don't cut so much figure.

Q. How much farther is it to the hotels from this property in northeast Des Moines we are talking about on the Northwestern railroad?

A. Well it is so much farther that if a stranger comes into Des Moines and wants to know where this property is it is so the hotel clerk can direct him. If you go out on the Northwestern tracks or

Great Western tracks or some other tracks, he is going to have more difficulty, got to find the place for himself and it takes more time.

Redirect examination by W. L. READ, Esq.:

Q. That is just one of the features you are calling attention to that is not the chief one, you mentioned the fact the hotel clerk could not tell him where to go?

A. Oh no. There are a number of features that enter into that.

Q. You mentioned them a moment ago, the main ones?

A. Yes, sir.

Q. Back of all that, how do these features express themselves in prices and values?

427 A. Well it is supply and demand of anything to a considerable extent that regulates values. The supply of the kind of trackage General Byers speaks of is practically unlimited. The supply of this kind of trackage is very limited.

Q. Therefore the kind he speaks about is cheap, but this is not so cheap?

A. Certainly.

Witness excused.

W. F. BRODNAX being called on the part of the complainants and sworn and examined in chief by Hon. George H. Carr, testified as follows:

428

Q. You may state your name, place of residence and occupation?

A. W. F. Brodnax, gas engineer in the employ of the J. G. White Company Incorporated of New York, contractors.

Q. What is your age?

A. 43 years old sir.

Q. What if any preliminary education did you have to fit you for the performance of the duties of a gas engineer?

A. I took a special course in the University of North Carolina and latterly graduated in the Knight School of Technology at Richmond, Virginia.

Q. In about what year?

A. My course was taken in 1887 in the University and 1889 and I think probably 1891 or 92 would probably cover the course at the Knight School of Technology in Richmond.

Q. After graduation what work did you enter upon and in whose employ?

A. I was in the employ of the Southern Railroad from practically 1890 or 91 until 1896 or 7.

Q. In what line of work?

A. I fired locomotive, run for two years and afterwards went in the shops and served my apprenticeship as a machinist.

Q. In the machine shops?

A. Yes, sir.

Q. Aside from your work as an engineer have you had any experience as a draughtsman or is that connected with your work?

A. Yes, drafting was a part of my railroad training and I have

had quite a little experience in drafting since I came with the
429 United Gas Improvement Company.

Q. Now you may go on and tell the court, not going too much into detail the experience you have had as gas engineer and draftsman?

A. I came with the United Gas Improvement Company in 1900 in the construction department and had considerable experience in constructing buildings and apparatus and the purchase for gas works and also quite considerable experience in electrical installation, high tension which included building and construction generally and continued in that work until 1907. After which time I went into the operating on both manufacture and distribution, that covered a period of something over two years and since that time with the exception of the two months that I have been an employé of the J. G. White Company, I have been on replacement and valuation work.

Q. What if any special experience have you had in making inventories of gas properties, making details of inventories?

A. That would cover a period of very near three years probably and that is my business now.

Q. How extensively have you been engaged in that work during the past three years?

A. Well up to within a year ago my work was practically confined to the field. I simply gathered the information and sent it in to the Philadelphia office and there it was compiled, but for the year past I have been doing practically the same thing, but I have been bringing my corps into the field, doing the work in the field.

Q. Are you acquainted with the property of the Des Moines Gas Company in the city of Des Moines?

A. Yes, sir.

Q. When did you first become acquainted with the prop-
430 erty?

A. The 4th day of November 1910.

Q. From where did you come to Des Moines?

A. I came to Des Moines from Jacksonville, Florida.

Q. For what purpose did you come to Des Moines at that time?

A. To make an inventory of the properties of the Des Moines Gas Company.

Q. Did you upon your arrival or shortly after your arrival set about the work of making an inventory?

A. Yes, sir.

Q. Did you have any assistance in doing that work?

A. Yes, I had five additional men in the field besides myself.

Q. Did you undertake making an inventory of all the property of the Des Moines Gas Company in Des Moines or only portions of it?

A. My work was confined to the manufacturing plant.

Q. What was included in that, what did you include in the manufacturing plant of which you made an inventory?

A. The various buildings and apparatus, both inside of the building and out which were used in the manufacture of gas.

Q. Did you make an inventory of anything else at the plant other

that what you have spoken of such as the works' tools or tools at the works?

A. Yes, the works' tools and everything pertaining to the works.

Q. Made an inventory of everything that pertains to the works?

A. Yes, sir.

Q. Did you make an inventory of any other portions of the plant?

A. No, sir.

Q. To refresh your recollection did you make an inventory of the office contents?

A. Oh yes, the office contents.

431 Q. Furniture and fixtures contained in the office?

A. Yes, sir.

Q. Then if I understand you correctly the portions of the plant of which you made an inventory was the manufacturing plant?

A. Yes, sir.

Q. Including the building and contents, the tools and implements used in connection with the manufacture?

A. Yes, sir.

Q. Which you speak of as works' tools?

A. Yes, sir.

Q. And of the office furniture?

A. Furniture and fixtures.

COURT: Which office do you mean, at the plant or up town?

A. Both, the one up town and at the plant.

Q. At the time you were doing that work was there any inventory being made of the distribution system of the plant?

A. Yes, there was.

Q. Under whose supervision and charge was that work being done?

A. Mr. Walter had charge of that department.

Q. Did you prepare an inventory of that portion of the plant of which you made an inventory?

A. Yes, sir.

Q. In how many volumes was the inventory that you prepared bound?

A. I bound it in two volumes.

Q. I first show you Exhibit No. 15 and will ask you if that is one of the volumes of the inventory a portion of which you prepared?

A. Yes, sir.

Q. I now show you Exhibit No. 16 and will ask you if that is second volume of the inventory a portion of which you pre-

432 pared.

A. Yes, sir.

Q. These two volumes include, as I understand your statement not only the inventory of so much of the property, as you have stated you made an inventory, but also includes the portion of the property which Mr. Walter prepared an inventory of?

A. Yes, sir.

Q. Referring to Exhibit 15 is there an index of this inventory?

A. There is.

Here the further hearing was adjourned until 9:30 A. M., tomorrow.

433 Tuesday Forenoon Session.

JULY 18, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

W. F. BRODNAX, re-called for further direct examination, examined by Judge Carr, testified as follows:

Judge CARR: I will withdraw the last question asked on yesterday.

Q. When did you begin gathering the data from which so much of this inventory which is contained in Exhibits 15 and 16 was prepared by you?

A. I began the work, sir, on November 4th.

Q. And when did you complete the gathering or obtaining of the data from which this inventory was prepared and the accompanying sketches?

A. On the 23rd day of December of the same year.

Q. In 1910?

A. Yes, sir.

Q. Then after you had obtained the data you prepared the inventory, that is, so much as you did prepare, and the accompanying sketches?

A. Yes, sir.

Q. Is so much of this inventory as was prepared by you a correct and true inventory of the Des Moines Gas Company's buildings and machinery, works, tools and office fixtures, furniture and supplies, located here in Des Moines?

Mr. BYERS: Does that just refer to the itemized statements, itemized description of the property?

Judge CARR: The question is whether this inventory and
434 these exhibits is a true inventory.

A. It was as far as care and attention would make it.

Q. I wish you would take Exhibit 15 and 16 and explain to the Master fully and in your own way this inventory, what it shows, how it is arranged and all about it?

A. I think I had better explain to the Master just how the work proceeded. Would you like to have me go over our procedure, the way we did this work.

The MASTER: All right, proceed.

A. Our first work was to make field sketches. These field sketches are drawn without scale, and the outside of the buildings were given; that is, what we consider plane elevations. Then the buildings were cut either in transverse or longitudinal sections, so that we could show the interior to the best advantage. After the work of the sketch was completed, we then went over it with the measurements and took off all the measurements necessary for the reproduction of the building in drawing form, and these dimensions were entered

on the sketches. After the sketches were complete we simply took those sketches into the drawing room and made drawings by scale. Then we took an inventory of the apparatus and machinery, etc., with this foundation, and in cases of machinery that we were not in touch with through the manufacturers, we made special drawings. So you find in some cases we have made drawings, and in others we have not. In other words, if the apparatus was standard, we didn't make a drawing of it; if it was not standard, we simply made a drawing to identify it.

The MASTER: In other words, you drew the buildings so as to show the entire situation?

A. Yes, we have in the beginning of this inventory, Ex-
435 hibit 16, we have what is known as a symbol diagram; that symbol diagram which is practically the first and second exhibits in 16, has letters and numbers to designate the different buildings and apparatus, such as holders, etc. Where a building was of the same general design throughout and had partitions, there are divisions in the building, we designate those divisions by symbols and letters and added its regular number, which was a serial number, with the other building.

Q. You better refer to where it is found.

A. If the Master will look to sketch #3, taking this plot that is bounded by say Second and Vine streets, you will see on the right hand lower corner of that plot a building designated and known as the purifying house, bearing the symbol number one with the subdivision A. Now just above that building and adjoining to it you will see the subdivision B, known as the oxide elevator. Just to the right of that you will see subdivision C, which is an oxide shed. And building No. 2, which is really a separate building is the oxide conveyor shed. So really these buildings there, while one or two are of different construction, they bear different numbers. The purifying house, A, B and C practically being the same construction and are simply known by the symbols A, B and C.

Now, take that building just to the left of that, known as the Meter room exhauster room, pumping room, etc., that bears #3, subdivision A, B, C and D. Still further to the left you will find the retort house generator house and exhauster and blower rooms under #4, with subdivisions A, B and C. There is an engine blower and store room retort house all under #4. Still further to the left we have a coal shed, condensed and scrubber rooms, #5, with subdivision A and B. Just above #3 we have boiler house con-
436 denser and engine room, and boiler house again, which are included under #6, under subdivision A, B and C. Just above this we have generator house under #7, with no subdivisions. Just to the north of that we have coal shed, which is known as #8; that has no subdivision. Now, just above that we have the coal rack, a frame coal rack and coke rack, with subdivisions A and B. Just above that we have buildings representing the store room, carpenter shop and gas room and the smith and machine shop department room, known as #10, with subdivisions A, B, C and D. Just to the right we have barrel oil store house #11. Just to the right of

the generator house, #7, we have the pump house, #12, which has no subdivision. It has subdivisions but it is not noted here because it is not necessary. Just between #22 and #23, oil tanks, we have the pump house, the oil pump house known as #13, without subdivision.

Q. You have one known as 12?

A. Yes, one is the oil unloading and the other is for the circulating system, also for the oil for the gas sets.

The MASTER: There is two oil tanks?

A. Yes, it is situated between two oil tanks. Looking over on the other plot, the lower left hand corner, we have the meter house, #14; that has no subdivision. On the opposite corner on the lower side of that same plot, we have a stable #15, which has subdivisions A *b* and C. Just above that we have the boiler house, #16, without subdivision. Just above that the storage holder #19 and we have a fire brick store house, #17, without subdivision.

I think that takes in all the buildings of the two plots. Now we have up in this separate section, up to the left, we have a frame coke shed, 53-*a* and 53-*b* and *c*; that is the three subdivisions that
437 is not included in these two plots; it is above to the left.

Now, sir, in the first plot with which we began, we have a large circle there, known as the relief holder #18; the largest circle is the relief holder. On the opposite plot we have a storage holder, #19 and #20. Coming back to the first plot we have oil tanks 21, 22 and 23. Now the plot by itself over in this corner, in the southeast portion of the map, we have oil tanks 24 and 25. There is quite a lot of miscellaneous material, tar basins and small items that you probably wouldn't be very much interested in. So you can see just how it is located.

The MASTER: Those are on different blocks?

A. Yes, sir.

Q. Mr. Brodnax, in that connection what is sketch #1?

A. Sketch #1 is the plot of the real estate.

Q. On which these buildings you have been describing are located?

A. Yes, sir; on which the various buildings are located. Now, sir, if we turn over to the beginning of the book to the inventory index, you will find the sketches are assigned certain numbers.

Q. May I suggest that you might begin with the first volume and explain the arrangement of that so that we may get it into the record.

A. Now, sir, turning to the table of contents, there is the description of the buildings, which are as follows: Now under page 1, table of contents, we have a summary: General, Detail, Manufacturing and Distribution. Real Estate. Purifying House—description, building, contents. Fire Brick Shed—description, building. Meter, Governor, Exhauster and Wash Room—description, building, contents. Retort, Generator, Engine and Blower House—description, building, contents. Coal Shed, Scrubber and Condenser Room—description, building, contents. Boiler and Engine
438 Room—description, building and contents. Boiler House Extension—description, building and contents. Generator

House—description, building and contents. Coal or Coke Shed—description, building and contents. Runway for Coal or Coke Shed—description, building and contents. Smith, Carpenter Shops and Store Room—description, building and contents. Barrel Oil Store House—description, building. Pump House—description, building and contents. Meter House—description, building and contents. Stable—description, building. Boiler House—description, building and contents. Fire Brick Storage—description, building. Fire Hose House—description, building. Coke Shed—description, building. Relief Holder #18—description, holder. Storage Holder #19—description, holder. Storage Holder #20—description, holder. Oil Storage Tank #21—description tank. Oil Storage Tank #22—description tank. Tar Tank and Evaporator #23—description, tank. Oil Storage Tanks #24 and #25—description, tanks. Old Holder Oil Tank #36—description, tank. Coke Rack—description, rack. Lumber in Yard. Gauges. Wells, Valve Boxes, Tar Separator, etc.—description, wells and boxes, works' yard, wells and boxes, holder yard. Outside Apparatus—description outside apparatus. Paving—description, paving Fences and Gates—description, fences. Piping—water, circulating, steam, exhaust, oil, gas, tar, drain, sewer, oil unloading device, gas mains in works' yard. Electric Wiring. Work Tools. Fire Protection. Improvements on Leased Property—office furniture. West Side Office—description contents. Fixture and Fitting in #50. Oil Barrel Store House—description, building. Holder Oil Tank—description, tank. Rubbish Kiln—description, kiln. Pipe
439 Coating Tank—description tank. Fences and Gates. Piping—gas, steam, water.

Q. Then comes the distribution system?

The MASTER: You have got an index with the items in it which are on Exhibit 15. That index shows on what pages the items are found?

A. Yes, sir.

Q. On the last page of this index there is some portion of the index that relates to the manufacturing plant; isn't there an inventory of the manufacturing plant?

—. Yes, sir.

Q. Just explain that?

A. That is of the loose property.

Q. No.

A. Under tools, stable equipment—those things relate to the distribution system.

Q. Now office furniture?

A. Office furniture, Exhibit #1, on page 239.

Q. You made an inventory of the office furniture?

A. Yes, sir.

Q. On page 239 that will be found?

A. Yes, sir.

Q. And the Works' tools?

A. Exhibit 2 is on page 245.

Q. That is where that will be found?

A. Yes, sir. The distribution of tools, Exhibit 3 will be found on page 253.

Q. You didn't take an inventory of that?

A. No, I did not.

Q. I find a supplemental inventory of November 31, 1910, to December 31, 1910; what does that refer to; right the last item there?

440 A. That probably was taken afterwards. I don't know about that.

Q. Now, Mr. Brodnax, beginning on page 12, volume 1, you have a statement of the real estate.

A. Yes, sir.

Q. And on page 16 you begin with the purifying house?

A. Yes, sir.

Q. You have a statement there as to the house and contents?

A. Yes, sir.

Q. And on page 17?

A. Yes.

Q. And when you get to page 18, I wish you would explain to the Master, that he may get a clear idea of that, just what those various figures they used there mean, and give him a clear understanding just what this inventory shows?

A. We have what is known as grade diagram, that relates to the excavation. We find the first item on here is excavation, of which there is 189 cubic yards. Building and foundations on page 18. Of course, we know the dimensions of the building and the depth to which the foundations were dug, and by that means we figure the amount of excavation necessary to place the foundation for the building, and in all cases we begin the estimation of the building by its foundation. Now, under the head Foundations of Concrete.

Q. The word opposite the word foundation indicates the material of which the foundation is made?

A. Yes, sir.

Q. In this instance it is concrete?

A. Yes, sir. The foundations in this case are of concrete, as you see, and by taking two dimensions of any portion of it and multiplying these together, we get what is known as the cross

441 section area and we multiply by the length in feet will give us the amount of feet that occur in that particular section. Of course we divide that by the number of feet in a yard, which will give us the number of yards on which we have based this. That work is done under the head of foundations. We have two separate sections—forms. We make up that foundation and those two added together will give us the cross section area, which multiplied by the length gives us the total yardage of the foundation.

Q. Now the word foundation, your figure following 2′ 7″—one dash or dot, and following the figure 2′ 3″, what do those dots mean?

A. Feet or inches; a single dot is the feet and two dots, inches.

The MASTER: Why not take up each one of these items and let him make the explanation and take the value all at once?

JUDGE CARR: This witness is not offered as a witness on values. The only purpose was to explain the inventory so that you fully understood it.

Q. You may go on.

A. Right below under foundation comes up the question of forms. Forms are merely boards placed in a trench in order to keep the concrete in form. Foundations of brick. Certain parts of that is represented by sketch- 4 and 5 and 6. That does show the fact that we have brick foundations as well as concrete.

Q. What does the letters B. M. mean under the word forms?

A. Board measure; that is, board feet. We have a sectional foundation 5′ high and the wall 13″ thick; another section 2″ thick by 17″, together will give us what is known as a cross sectional area. That 12′ 4″ just below that, multiplied by 2′ by 5.60 shows we have two walls multiplied by the figure of the cross section area, and gives a certain number of feet. 9′ 1″ by 5.64 again gives 51 cubic
442 feet, which gives 190 cubic feet in the cross section. We have then 190 cubic feet multiplied by 21 bricks, gives us 3990 bricks. Our back filling is the amount of filling that goes in after the walls are up and the trenches filled on the opposite side. We have here the number of brick. In order to ascertain the number of bricks in the building, we simply determine the heighth and length of the wall which gives the square feet surface area; that multiplied by a certain number of bricks gives the total number of bricks in the wall. Here we have a north wall 13″ thick. That of course is governed by this total brick shown on the bottom of the last page. That wall is 30′ 1″ by 31′ 6″ high; and being a 13″ wall, we have 22 1/2 brick per square foot. The total number of brick is 21319. Now where there is any difference in the east and west wall due to the openings, we enumerate those separately. Where the walls are similar, we sometimes say east and west wall and figure twice that number. The north wall is 13″ thick, 22 1/2 bricks, 30′ 1″ by 31′ 6″, which gives us multiplied by 22 1/2, the number of bricks in that particular wall. Our water table is the extension or rather the thickening of the wall. We keep that separate, as we do fancy trimmings, such as pilasters, etc. We have a water table there 31′ 9″ by 1′ by 7 1/2. Now the gable is 17″ thick. The dimensions of that gable are 30′ 1″ by 8′ 4″; but as it is triangular in shape, we are only entitled to half of that, divided by 2, which gives us the total area. As it is a 17″ wall, we are entitled to 30 bricks, which gives us a total of 3750 bricks. The water table again on the inside of the building, which is really probably a misnomer—it is a thickening of the wall; but it
443 is a water table just the same. Now the cornice below, that is 4″ thick, of which we are entitled to 2″. 30′ 9″ by 2′ 4″ which is the thickness of the cornice——

Q. Where you say entitled, what do you mean?

A. There is that many brick there. I thought probably it might create some confusion from the fact that the water table was inside, just merely a thickening of the wall, just the same as on the outside.

The cornice there is 30′ 9″ by 2′ 4″ by 7 1/2 bricks. We have another cornice 30′ 9″ by 1′ 4″, also entitled to 7 1/2 bricks; then we have two cornices there which are 18′ by 1′ 4″ the same thickness, and consequently are entitled to the same bricks.

Pilasters. Pilasters for this particular wall are 17′ by 2′ 5″ wide. Two of those are 4″ thick which entitles us in that case to 616 bricks. Now, we did not go into the detail of the wall opening- because it entails a tremendous amount of work. All those openings are worked out and deducted from the total number of brick in the wall.

Q. Less openings, 4284, means what?

A. It means it is deducted from the total number of brick in the wall.

Q. That is from the total number of brick which would be in the wall if colid?

A. Yes. Now the south wall which is 13″ thick is the same as the north wall. You see it represents the same number of bricks; but the number of openings represents a different number of brick and consequently the total number of brick in the south wall is slightly different from what it would be in the north wall. The east wall is 13″ thick—97′ 10″ by 31′ 6″. Being a 13″ wall, we are entitled to 22 1/2 bricks. We have a water table, both inside and out, as shown there, 4″ thick. Now on the next page
444 we come to east wall continued. The cornice again is treated as we see it here. The pilasters are treated almost as they were in the wall just described. The number of openings are estimated and deducted from the total number of bricks. Now the walls, division B, are 4″ thick. That of course is based upon the same number of brick that we had for cornice and pilasters, only this is merely a little light shed attached to the building.

The MASTER: These final figures, 233, 932 is the total number of brick used in the construction of the purifying house?

A. Yes, sir. Again referring to sketches 4 and 5 of building 1, by referring to those drawings we see that the length of that roof is 102′ 10″; multiplied by its width 38′ gives us 3908 square feet.

The MASTER: Slate roof?

A. Yes, sir. As we have to figure the roof for the monitor, which is a ventilating and lighting arrangement, usually on the top of the building, we deduct the monitor opening which gives us the net amount of slate we have in the roof on the building alone, because, we treat the monitor roof later on. We have 3396 square feet for that roof, and under roof slate continued, we have this same figure, 3396, divided by 100, which gives us what is known as 33.96 squares.

The MASTER: 10′ squares?

A. Yes. Now, we have roof slate division B, 13′ by 12′ 9″ which gives 166 square feet. That divided by 100 gives us 1.66 squares, total 35.62 squares. Now again referring to sketches 4 and 5 of which there is a detailed drawing of the roof and roof sup-
445 ports, roof trusses, etc., we get a total of 2090 feet board measure; we also get 5061 of board measure. We have iron in the way of supporting rods, etc., at 451 pounds. We have the roof

sheathing on which the slate rests, 3562 square feet. That of course might be specified as board measure, but as long as it is sheathing we know it is boards.

Now, we take up the question of the monitor slate; that is the roof and the slate, and as the monitor roof projects a little over the opening of the main roof of the building, the amount of slate shown for the monitor of the roof is little in excess of the amount of the opening in the main roof. Now we have the roof supports which represents the rafters, studdings, etc., we have a certain amount of iron, and that gives us 892 feet, board measure, and of iron we have 134 pounds; sheathing we have 622 square feet.

Flashing. Flashing forms the joint between the roof and abutting wall. Tin 144 square feet. Floors of concrete 6″ thick, gives 2753 square feet. We have certain wood that enters into the floor, the operating or filling floor, and the amount is 1169 square feet; that is flooring, running longitudinally with the building is a partition for dividing the basement of the building so that it is rather more or less curbed for the use of the oxide mixer, etc. The forms for that are 498 feet board measure. Certain teimbers used to support the operating and filling floor, 26932 board feet. The doors are of the battem construction form. We classify the doors so that we can classify them according to the form of construction of the sills. We have four batten doors representing 155 square feet. One panel door which represents 54 square feet. We have windows,
446 plain, 70, which represents 325 square feet.

The Master: Does that include the window frames?

A. Sashes, yes sir.

The Master: The whole thing?

A. Yes, sir.

Windows continued on the next page—we have 5 windows of the biggest frame type, 510 square feet. The sills are of cut stone. We have 34 cubic feet. The lintels of cut stones, 72 cubic feet. We have iron lintels at 2555 pounds.

Painting—west and south walls 3435 square feet.

Painting woodwork, windows and doors—895 square feet; and two sides would equal 1760 square feet.

Pit for piping. 180 bricks. Driveway, just on the outside of the building leading to the building, represents 587 bricks. Also flooring in connection with this, which is 2″ plank which represents 18′ board measure, and 56 square feet of brick laid on edge.

We have stairs, common, three treads; these we have finished, including hand rail, 16 treads. Platform is 160 feet, B. M. The brick steps is 189 brick.

The apparatus for this building, on page 25, one steel hydraulic elevator platform 8′ by 8′ installed in 1893. Four purifying boxes 7′ by 20″ by 20′ including hoist and center seal. One bricket oxide conveyor. One bricket manufactured by Link Belt Engineering Company, with 1-5 horse power, 5″ by 6″ vertical engine installed in 1905. Piping we have 327 feet 6″ pipe. 2-6″ valves.

Q. I want to ask a few general questions now. Mr. Broadnax, you

have given the pounds of iron in some of the structures, how did you arrive at that?

447 A. In detail per foot.

Q. You didn't of course weigh it?

A. No, sir.

Q. You have given a large number of dimensions; how did you get those dimensions?

A. By the most accurate measure available, sir, with a steel tape.

The MASTER: By actual measurement?

A. Actual measurement, yes, sir.

Q. You have given the number of brick in various parts of the building, and in the building as a whole; how did you ascertain the number of brick, by actual count?

A. No, sir; we took it by the actual dimensions of the building wall. We simply took the heighth and length and multiplied the two together, which gives us the superficial area of the wall in square feet. Then there are certain authorities that furnish the number of brick per square foot, for the different thicknesses of the wall.

Q. What do you mean by certain authorities?

A. That is rather a mooted question in different parts of the country, as to just how many brick enter into a certain wall of a certain thickness.

Q. You say authority? Between whom is it a mooted question?

A. Generally among the contractors.

Q. You took a standard measurement did you?

A. We took what we considered the nearest we could get.

Q. What did you take; have you any way of designating it?

A. There was a work gotten out by the building department of the city of Minneapolis, Minnesota; they have gotten out one of the most complete works we know of in that line.

Q. As to the slate and roof and the tin work and wood

448 work, etc. How was that gotton at?

A. That was gotten at by actual measurement of quantities.

Q. Mr. Brodnax, have you treated each of the buildings in this inventory in the same manner that you have explained to the master you have treated the purifying house?

A. Yes, sir.

Q. Your inventory shows in detail the building and its contents just as the inventory of the purifying house shows the building and contents, and in the same manner?

A. Yes, sir.

Q. Now, you may turn to your sketch book, Exhibit 16, the book containing the sketches, and give the Master *a* somewhat more fully than you have already done what the sketches show of this building.

A. Sketch #4, Building 1. That part of the drawing shown in the northeast corner of the exhibit represents the building as if it were cut through the upper line of the windows and the top removed, looking down. The black shows the brick work so cut in the removal of this section. The sketch immediately below that shows the elevation of the building as if it were taken in a photograph, showing the windows the pilasters, cornice, water table, roof and monitor; also the stairs on the outside of the building. Just

south of that section we first referred to, we have a view of the building looking north, which shows also the elevation of the building as if it were photographed, and the cornice and pilasters, water table, monitor, doors and window openings. Immediately below that we have what is known as a transverse section. The building is cut through the elevator shaft on the line AA and that part of the building next to us as we view it, and the black lines in
449 that case show the sections so cut.

Q. I wish you would explain some of that dotted work on the bottom.

A. The dotted work at the bottom here merely represents the earth lines; for instance, the hatch work running this way indicates concrete floor is resting on earth. It also shows the earth surrounds the foundation pier walls. This hatching here, or dotted work, represents concrete. The black represents brick work; both of which are in this case cut in sections. Referring again to the section above here of the plant, the section we first noticed, we noticed some squares there that are shown in the building. These squares or rectangles are the purifying boxes referred to in the inventory.

Q. What are those boxes, what material?

A. They are cast iron with steel lids. And between the boxes and just at this point here is what is known as the center seal, used to deflect the change of current or flow through the various boxes. The section down in the southwest corner is an enlarged section of the walls of the building, so that the figures can be given more in detail than if we used the smaller section shown above. We turn to sketch 5, the same building, only instead of looking at the building we have a plan or section there cut lower down. That is cut through a line lower than the first section. The view of the building is taken from the opposite side from which the other views are taken in order that we may be able to get four views of the building and in order to figure correctly the openings in the wall. That also shows the end view of that which is on the northwest corner of the paper, and shows the outside stairway leading up into the building, the operating floor. The section immediately below the elevation given here shows the purifying boxes, and that is a section cut
450 immediately through the middle so that we can see the interior of the building, shows the boxes in elevation and also their column of supports and structural steel supports. Immediately above that is a section of the roof trusses and of the framing of the monitor.

Turning over to sketch #6, building 1, we have a separate drawing of the foundation of the building. It is a little hard to distinguish sometimes the actual building from the foundations. So we adopted the plan of using a separate foundation drawing. Practically the figures are the same on that as on the original drawing, only more figures, because the scale is larger and we have a better opportunity to write them.

In section #7, we have the piping for these boxes we have spoken of. The pipe is given in detail and all the connections of specials or fittings are given in detail. Also we show the center seal by

means of which we deflect the gas and change the current for flow. Those pipes are 16 inch cast iron.

Now in section #8 we have a one-fourth section hoist, being symmetrical, we used one-fourth. It is for lifting the covers of the purifying boxes. They are too heavy to lift by hand and consequently the mechanical device for that purpose.

Sketch #9 is a shed lean-to in connection with that same building, known as sub-division C. The main foundation and the amount of structural steel and the amount of corrugated iron covering is there, so that all the quantities are shown.

Q. Do the sketches contained in this inventory show all of the buildings which you have described, in the same manner that you have explained the sketches of the purifying house to be shown?

A. Yes, the work is carried on in the same general order.

Q. Now, are there any of those sketches that need any
451 special explanation, so that the court will understand them; if there is you may refer to them.

A. No, sir. We might turn over to the other holders.

Q. Where would we find that?

A. Sketch #56.

The MASTER: What do you mean by holder?

A. Holder for storing gas. The holders are practically divided into two classes, known as the steel tank and brick tank. The steel tank is usually built above ground and contains the water necessary for sealing the holder; and the others are built underground with a brick tank, which has the same general functions as the steel tank. The holders now before you in section 56, #18 and #19 are of the brick tank type. Now we have here in #19, is on the left, and the holders themselves are only represented in dotted lines, because they are more or less standard than the tanks themselves. The tank is the black line you see there on the right or left hand lower side of the sketch, and the black line you see connecting those two at the bottom is the concrete floor. That tank must be water tight. Consequently the class of brick and method of laying is the very best obtainable. Right above the tank you see these columns which rise up which are guides for the holders or lifts, as the gas pushes them out of the water and rises up, and are inflated or filled. The work you see around the top here—lattice, is simply to keep them in place. Their inlet and outlet pipes you see here. The gas is put into the holder through one of those pipes and the holder rises as the gas is admitted underneath and continues to rise until the holder becomes full.

The MASTER: It is a sort of an inverted tub?

A. Yes, sir, that is just what it is. So both of these holders
452 are of the same general type. The framing you see on both is simply to support the holder when it is down in its lowest position. Those walls are very thick and heavy; have to be so, of the very best material, to make them water tight.

The next page is sketch 57, which is our large storage holder of 1,132,000 capacity, but there is nothing shown there except the steel tank which I stated is above ground in this case, instead of being bricked below the ground as in the other case. The drawing

also shows the housing around the tank of this particular holder in order to prevent excessive colds affecting the water inside of the tank.

We turn to sketch #58, we find the oil storage tanks. Those are merely steel tanks for the storage of oil and are placed in these brick implacements, so in case of accident or damage to the tank the oil will be corralled and cannot escape. The brick walls are of heavy construction and concrete foundation for the tank as you see.

Q. What is the capacity of these tanks Mr. Brodnax?

A. We have one of 100,000 gallon capacity; we have one of 64,000 gallons, and we have two of 321,200 gallons each.

We have here sketch #68, a detail of the fences and gates; the fences surrounding the property and the gates in the openings, giving a general idea of the detail of that work.

Q. Mr. Brodnax, there are some features, I think, of sketch #13 and also of sketch #15, it would be well for you to explain.

A. Sketch #13. This pipe in sketch 13 is in connection with the exhausters and station meters and other apparatus. The general idea of its complication and its intricacy can be gotten from that.

Q. What is building #3?

453 —. Building 3 is the meter governor, exhauster and wash rooms.

Q. Can you give a further explanation to the Master as to just what that shows, sketch 13?

A. That simply shows the detail of the piping necessary to connect the various pieces of apparatus, such as meters and exhausters and safety seals, etc. And you can see very readily how the pipe is cut up and we have here the certain symbols that represent the specials entering into that pipe, and also the valves. You can see of course the number of valves that enter into it. The plan immediately below the upper left hand corner shows the elevation as if looking from the level from a horizontal plane. Still further down to the left hand corner is represented another point or section showing the complication, and if you turn and look to the end of the sheet, you will also see how this pipe would appear if it were cut on certain sections or lines.

Q. I notice figures on the sketch, please explain what they are and how they are obtained?

A. Those figures are obtained by actual measurements, determined first by the size of the heighth, and then we take our actual measurements—simply a question of taking the measurements.

Q. You have a few times spoken of estimates in referring to measurements; I want to ask you whether your figures appearing on these sketches as giving the dimensions are all obtained by actual measurements?

A. Absolutely so. We have relied entirely on dimensions and not *ny* estimates. I have used that term from habit perhaps. Now we will take sketch 15, the plan is shown in the left hand corner here and is the plan of the foundations for the various apparatus installed in that building.

Q. What building is that you are speaking of?

454 A. That is again the meter governor, exhauster and wash rooms.

Q. It is the same building you were explaining the pipes in?

A. Yes, sir; that shows the plan of the foundations, of course the apparatus removed, looking down on them. Immediately below that at these points here we have sections which show these foundations cut through different lines; that is, of course, the section is cut and the part removed next to us, which shows the material. Of course that opening there signifies nothing. That black represents brick and this spotted or hatched represents concrete. Underneath each section we give a letter at which this point was cut.

Q. Did you show what represents the brick work?

A. Yes, sir.

Q. Have you any further explanation to make of that sketch?

A. No, sir, I think that is clear to the Master.

Q. Now, you might explain briefly sketch 16, which is a little different class of sketches.

A. 16 represents the street main governor and its piping; its by-pass connections and piping.

Q. Here again the figures that are bare upon the sketch show the dimensions of the pipe?

A. Yes, sir.

Q. And taken from actual measurements?

A. Actual measurements.

Q. Now, Mr. Brodnax you may tell the Master whether each of the buildings over at the works and all of the apparatus in those buildings is shown in these sketches with the same completeness, the same care that the buildings that you have refered to in your testimony specially are shown?

A. They are, sir. This is a fair type of the work that was
455 done when the inventory was made.

Q. In Exhibit 16, in addition to these sketches, we find photographs; were you present when those were taken?

A. Yes, sir.

Q. And do you know the position from which those various views were taken?

A. I do because I pointed them out and adjusted them for the photographer.

Q. Are those photographs correct photographic representations of what they purport to show?

A. Yes.

Q. Take plate 1 and tell the Master what that is, what it shows and the point from which the picture was taken?

A. The picture is taken from the northwest of the works, on the west side of the Des Moines river looking southeast.

Q. Now in the foreground is the river and the bridges across the river?

A. Yes, sir.

Q. Now, confining your answer to such buildings as are shown in the photograph and as are a part of the buildings of the company, just state what they are.

A. We have the storage holder first on the right. Immediately below that we have the second storage holder.

Q. The large storage holder, when that picture was taken was pretty well filled, was it?

A. Pretty well filled, yes sir.

Q. And the other one was not so well filled?

A. Not so well filled. Immediately to the left of that is the purifying house, known as building- #1 and #2, which we have already described. Immediately to the left of that is the
456 office exhauster and meter room, extending down—it is a little hard to describe—it really embraces part of building- 3 and 4, the ends of which we can see.

Q. Now, pass to plate 2. From what position was that picture taken, and what does it show?

A. That picture was taken from the southeast, directly southeast from the works.

Q. Looking northwest?

A. Looking northwest, yes sir. And shows on the extreme left purifying house- #1 and 2 which we have described. And also shows the gable there and end of the engine and blower room. Then we come to what is known as the relief holder. To the right of that we have a very slight view of the coke shed, and to the right of that we have the carpenter, smith and machine shop.

Q. Plate #3 is what, and taken from what position?

A. Plate #3 is the office exhauster and engine room of building #3. It also includes a part, as I said, of building #4 and #5.

Q. And that is taken from what point?

A. That is taken slightly south of west.

Q. Looking in what direction?

A. Looking northeast.

Q. Taken from what street?

A. It is taken from First street.

Q. What is the street that is shown in the picture?

A. That is First street.

Q. What is the light mark that is shown at the bottom of the picture?

A. That is concrete curbing.

Q. On the inside of that is what?

A. Sidewalk and curbing.

Q. What is that sidewalk?

457 A. Concrete.

Q. Now plate 5, explain that?

A. That is the smith carpenter shop and store room, looking southwest.

Q. Do you find anything else in the picture?

A. The coke shed is to the right.

Q. There seems to be some railroad tracks there?

A. Yes, sir.

Q. What street is that, on which street are they laid?

A. That is Vine.

Q. Do you know what tracks those are?

A. The Rock Island.

Q. Plate #6, explain that?

A. That is the same building smith and carpenter shop and store room, looking northwest. The little building there which partly projects through the fence is the oil store house, and the line immediately below that is the brick paving.

Q. What street is that shown in the foreground?

A. That is Second street.

Q. Plate #7 is what?

A. Plate #7 is the purifying house, building #1, looking northeast.

Q. Plate #8?

A. That is the building I have described. The purifying house again, building #1, looking west, the same building from an opposite side.

Q. What is this in the foreground?

A. We have an oil pump house and a small portion of the relief holder. To the right we have the end of the generator house.

Q. Now I notice a projection on this building; you have spoken of a monitor, as you term it?

A. Yes, sir.

Q. Is the projection we see there about the roof the monitor?

458 A. Yes, sir.

Q. What is that; what office does it perform?

A. It is simply for the use of light and air—ventilation principally.

Q. Take plate #9.

A. That is the other view of the purifying house building #1 already described.

Q. What is the building we see in the right hand side corner?

A. That is the generator house.

Q. That seems to be of a broken steel and corrugated construction; I wish you would tell the Master about that.

A. That is intended for future extension. In case the building is to be extended any time, they simply build an abutting wall on to it, and these grooves or recesses keep the alignment.

Q. What is the object of corrugated iron?

A. It is placed in the building so it can be removed without much *much* cost.

Q. When was that building constructed that you see?

A. I think it was built in 1909.

Q. It is of recent construction?

A. Yes.

Q. And it was left, as I understand you, in such a way that if future extensions were made they could extend the building in an economical way?

A. Yes, sir.

Q. What is the little building in the foreground?

A. Circulating pump house and also the oil pump house for the gas.

Q. What is the structure in the left hand corner?

A. That is a portion of the relief holder.

Q. The holder there is down pretty well—collapsed?
459 A. Yes, sir.
Q. I notice in this relief holder, the picture of it a column with a guide or something of that sort going up, that is a part of the structure, is it?
A. Yes, sir.
Q. Now, when that relief holder is full, where would the top be?
A. The guide wheel would be very near the top—at the cross lattice work.
Q. Did you explain how those holders are constructed?
A. I have the Master's explanation of the tub, but we did not get the double tubs.
Q. Unless that is clear, I wish you would make it clear, how those holders operate?
A. The holders are of such height that if we had our lift in one piece, our tanks would have to be correspondingly deep. In order to avoid that they have divided that tank into a series of sections ranging from one, 2, 3 and 4 sections. Now, just as soon as the first section comes up—it has a grip something like my hand here, this part of the end is filled with water, and the first comes up and that engages the second and the second comes up and that engages the third, and the third comes up and that engages the fourth. It is very much like the old time field-glass telescope. The number of tubs are in proportion to the number of lifts, if we have one lift, we have one tub, and if we have two lifts, we have that tub engaging another and so on. The gas does not escape between the sections, because this section is filled with water.
Q. What does plate #10 show?
A. The upper figure there is the relief holder referred to. Immediately below that is the other side of that circulating end oil
460 pump house, and to the right of that is the fire hose house, and further over beyond that behind the lamp post is the device for unloading oil from oil cars.
Q. And those tanks in the distance are what?
A. Tanks of oil—tank cars.
Q. Standing there to be unloaded?
A. Yes, sir; in the foreground we have the paving—of course brick on edge.
Q. Take plate #2.
A. Hose house building #33 and the generator house, that is looking north immediately below. To the right is the coal shed.
Q. Take plate #12.
A. The generator house, building #7, looking west. The building immediately in view is the generating house.
Q. That is the building the corner of which showed in one of the previous photographs you explained?
A. Yes, sir.
Q. What is the extreme right of the picture?
A. That is a coal shed.
Q. And what is this material piled up here in the picture?
A. Coal.

Q. Take plate 13.

A. Immediately to the front and above is the runway that connects the operating floor with the elevator in the coal shed. Just below that is the boiler house extension; I believe it is known as division C in building 4. To the left is the north portion of the generator house. On the right is the coal shed referred to in the other photograph.

Q. Now go to plate 14?

A. This is the interior view of the generator house, build-
461 ing No. 7 ground floor.

Q. What are the things shown in the pictures, the principal objects?

A. The principal objects is the blower or the fan for supplying the air for blasting the fires up to the required heat for making gas.

Q. What else?

A. Blast pipe which leads from the blower to the various shells of the set. Immediately below that and to the right is one of the minor shells in connection with one of the gas sets.

Q. Take plate 15.

A. Plate 15 is to the left and to the right are the generators of one of the shells, of the generator set known as the generator.

Q. Now the one to the right of the picture is what?

A. Is the generator.

Q. And what is the diameter of that generator?

A. I think that is the 8 foot 6.

Q. What is the distance from the bottom, or the distance of the plates as shown in the picture, from the bottom up to the first row of brick?

A. I don't remember Judge what the lengths of those plates are—probably six or eight feet.

Q. What is the pipe shown that appears to enter or leaves the shell on the opposite side?

A. That is a blast pipe that led from that blower referred to, supplies air to the fire, heating the generator preparatory to making gas.

Q. Now take plate 16.

A. That is the interior view of the generator house, building #7, on the operating floor.

Q. That simply shows the valves and elevators and gauges and that necessary part of the equipment for making gas.

A. Well, it would be the part of the equipment handled
462 by the operator for making gas.

Q. Where is that room located with reference to the generating houses?

A. It is practically the second floor of the generator house.

Q. And how high is it?

A. I think that is about 14 feet. That is all cast iron plates on steel structure, this operating floor you refer to.

Q. Take plate 17, shows what?

A. 17 shows the boiler and engine house, A and B subdivisions looking north.

Q. Take #18 shows what.

A. No. 18 is the interior view of the engine condenser room, building 6-A and shows the piping, valves and specials, and the connection with the piping from the condensers; also shows the high speed engines for driving the blowers.

Q. What is the diameter of those pipes shown there?

A. I think they are 20 inch, if I remember correctly.

Q. Take plate # 19, shows what?

A. Shows the oil storage house. I think it is known as #11, looking northeast, of reinforced concrete construction.

Q. Take 20 shows what?

A. 20 shows the oil tank and evaporator #23, oil pump house building #13. That is one of the tanks in brick implacements I referred to.

Q. With the holders in the background?

A. Yes, sir, the large storage holder and the second storage holder; also the small pump house for unloading oil.

Q. What does plate 21 show?

A. Shows the oil tank #21 and gas holder #18, according to our diagram there. That tank is shown with a submerged head, has a water covering at all times for prevention against fire.

463 Q. What holder is that #18.

A. That is the relief holder.

Q. Plate #23 shows what?

A. Shows the oil tanks 21 and 22 and the gas holder #18, looking southeast.

Q. Take 23?

A. That is the station meter house #14, looking southeast.

Q. What is the street that is shown, if that is a street shown in the foreground?

A. First street.

Q. How many meters are there in that house?

A. One.

Q. How large is it?

A. 14 feet, I think.

Q. 14 feet in diametor?

A. The size designates both, the diameter and the length; I forget whether it is 14 or 16.

Q. Well approximately that?

A. Yes.

Q. The house was built to hold the meter?

A. Yes, sir.

Q. And the meter practically fills the house?

A. Yes.

Q. What is the object shown in the foreground near the building that looks as though it might be a track.

A. Yes, sir it is.

Q. What track is it?

A. The railroad track.

Q. Do you know which one of the roads that belongs to?

A. No. sir, I don't, Judge. It is a track of one of the

464 railroads.

Q. Which street is it, Vine or First?

A. First is the one looking along the line of the fence to the right.

Q. Is that Market street?

A. The one to the right?

Q. Where the switch stand is, the one in the immediate foreground, is that Market street?

A. East First and Market, yes.

Q. Which is Market, the one that has the track on it?

A. Yes, sir, that is Market.

Q. Then the one along the fence we see is First street?

A. First Street, yes sir.

Q. Take plate #24 and describe what that shows?

A. Plate 24 has the stable in the immediate foreground. Further to the right we have the larger holder.

Q. In what condition was the holder when that was taken?

A. It was very near filled; nearly fully inflated.

Q. Is there anything there that indicates those sections you have described to the Master?

A. No, sir; it seems to be behind the lattice.

Q. What street is that that appears in the foreground?

A. That is on First street.

Q. Take plate 25, what is that?

A. That is the large storage holder referred to.

Q. How many of the sections of the holders can you see in that photograph?

A. There are three sections already out. The lower section has not been lifted, only a very short distance.

Q. The lattice work you see in the photograph, does that show where the section is?

A. No, sir, I think the shadow of the lattice catches that
465 and blurs it.

Q. That is about the location.

A. That is about the location of it.

Q. At the bottom of that photograph appears to be a fence, what is that which appears there with windows in it?

A. That is the brick enclosure.

Q. That is the brick work, is it?

A. Yes. By the way, Judge, let me go back to that again. I see that lower lift now. Strike out my answer relative to that life. I wanted the Master to see that. That lift appears here. (Shows same to Master.)

Q. Take plate 26, what is that?

A. That is the second storage holder known as #19.

Q. That is partly filled?

A. That is partly filled.

Q. Take 27.

A. Shows the boiler #16 and stable #15 looking southwest.

Q. Does that show the street?

A. That is all within the limits of the yard.

Q. Take plate 28.

A. That shows the oil tanks, storage tanks 25 and 24 looking southwest.

Q. Well, does it show anything else?

A. Shows the railroad tracks here.

Q. What street are those tracks on?

A. I think they are on Elm.

Q. Do you know what road they belong to?

A. I believe it is the Wabash.

Q. Isn't it the Q., the Burlington?

466 A. The Burlington.

Q. Where will the inventory of the works' tools be found?

A. On page 245, sir.

Q. And where does it stop, at what page?

A. At the bottom of pages 250.

Q. 250 or 252?

A. It goes down to the bottom of page 252.

Q. Then beginning on page 245 and ending on page 252 inclusive is an inventory of what you speak of as the works' tools?

A. Yes, sir.

Q. What do you mean by the expression works' tools?

A. They are the tools necessary to carry on the operation of the gas works.

Q. At what point?

A. In this case it is the tools necessary to carry on the operation of the company at the works.

Q. In other words, the tools used at the works.

A. Yes, sir.

Q. Not including the tools used in connection with the distribution system?

A. Yes, sir.

Q. Is that a correct detailed statement of the tools of the company had at the time at the works at the time this inventory was taken?

A. Yes, sir.

Q. Where will the inventory of the office furniture and supplies be found?

A. On page 239.

Q. It begins on page 239 and ends where?

A. It extends to page 244.

Q. Is that a correct detailed inventory of the property of

467 the Des — Gas Company in the office at the time the inventory was taken?

A. It is, sir.

Q. Is that the contents of the furniture and fixtures and supplies in the main office solely, or does it also include the furniture and fixtures and supplies in the office at the works?

A. It includes the whole.

Q. Is there anything in the inventory that designates which is the office at the works and the main office—I call your attention to the word- main office on page 239, and the words works office on page 243?

A. Yes, sir.

Q. Beginning on page 239, that is the inventory of the furni-

ture etc., in the main office, down to the words "Works Office" on page 243?

A. Yes, sir.

Q. What follows then is the furniture, etc., at the works office?

A. Yes, sir, that is correct.

At this time, 12: M. an adjournment was taken until 1:30 P. M.

468 Two o'clock p. m., TUESDAY, *July* 18, 1911.

W. F. BRODNAX, being continued on direct examination by Hon. George H. Carr, testified as follows:

Q. Among the apparatus of the company is there a machine used for the purpose of ascertaining the candle power of the gas?

A. Yes, sir.

Q. What is that called?

A. It is known as a photometer.

Q. In what building is it installed?

A. It is installed in building No. 3.

Q. I wish you would refer to the inventory and explain to the Master how it works and its mechanism generally and the purpose for which it is used?

A. May it please your honor, will you refer to page 41 You will note there under the head of apparatus the first item appears as one Goodwin bar photometer. This was originally installed in 1900. The use of a photometer is by means of a standard light to determine the value of the light that is to be standardized. The standard light in this particular case is made directly from the gas that is being tested and due to the form of the lamp and the portion of the flame that is shown we reach a standard. Now that so called standardized lamp is in turn standardized by a separate lamp known as the Harcourt pentaine, that is a separate lamp and burns a very light volatil oil. It is oftentimes used to standarize the standard from which the ordinary consumer's gas, gas consumed by the ordinary consumer is standardized.

469 We have two lights equidistant with a bar which is 60 inches long which is five feet, and between those two lights we have a traveling carriage that the operator looks through and when that carriage is just right the point at which the lights bear the same relationship to each other, become practically the same intensity then by reading the figure on the bar we can see the value of the light to be tested by the light that has already been standardized.

Q. Whereabouts in the inventory do you deal with that apparatus?

A. That appears on page 41 of Exhibit 15. And again the room is to be found in building 3, sketch No. 11. In the southeast corner of the building shown in sections, in the corner here we have a room marked off there, known as the photometer room. That room is made dark so that the action of light will not affect the photometer, on the outside.

Q. The natural light is excluded from the room?

A. The natural light is excluded from the room in order that the full benefit of the artificial light may be gotten.

Cross-examination by R. O. BRENNAN, Esq.:

Q. Mr. Brodnax, where is your home?

A. Well my wife is at the present time in Bethany, Pennsylvania. At this time or two or three weeks prior to this I was in California in connection with the J. G. White Company.

Q. When you came to Des Moines in November 1910, was that your first visit to this city?

A. Yes, sir.

Q. You came here at the instance and request of whom?

A. Of the construction department of the United Gas Improvement of Philadelphia.

470 Q. Had you any acquaintance with the local officers of the Des Moines Gas Company up to that time?

A. Yes, I knew both Mr. Haines and Mr. Vincent.

Q. You had met them somewheres else outside of Des Moines?

A. Yes, sir.

Q. What do you call your position, that is what is its technical name.

A. Engineer I judge sir, gas enginee-.

Q. Your duties during the past three years as I understand you have been devoted chiefly in making inventories of gas plants?

A. Yes, sir.

Q. Did you make an inventory of the gas works of Minneapolis?

A. Yes, sir.

Q. Of the apparatus and manufacturing p*mant*?

A. Yes, sir.

Q. Paid no attention as I take it or did not engage in the work of making inventories of the distribution system?

A. No, sir.

Q. And did not in this case?

A. No, sir.

Q. You are employed by the United Gas Improvement Company directly?

A. Not at the present time, no sir.

Q. You received your instructions to come to Des Moines from Philadelphia?

A. No, I received it from the western office of the J. G. White Company whom I am now an employé of.

Q. Do they do work for the United Gas Improvement Co.?

A. Do I at the present time?

Q. Does this White company?

A. No, sir; they have no connection.

471 Q. They have no connection with the United Gas Improvement Co.?

A. No.

Q. What is the general character of the business conducted by the White Company?

A. General contracting, ga- and electrical both.

Q. How long have you been associated with that company?

A. About two months and a half.

Q. Prior to that time with whom -ere you associated?

A. For ten years prior to that time with the United Gas Improvement Company of Philadelphia.

Q. And in what capacity?

A. First, as constructing engineer probably for six years, or five years, I don't know just the time exactly, and then was in operating both manufacturing and distribution for say three years. The rest of the time has been in connection with inventory work.

Q. Where have you made inventories during the past three years?

A. I made an inventory for Syracuse, New York, Allentown, Pennsylvania, Reading, Pennsylvania, and Minneapolis as stated and Des Moines.

Q. Have you performed any work in Omaha?

A. Do you mean in connection with inventory work?

Q. Yes.

A. No, sir.

Q. When did you first come to Des Moines for the purpose of making an inventory of the property of the Des Moines Gas Company?

A. I think I arrived here on the 4th day of November, 1910.

Q. When were you here prepared to go forward with your work?

A. November 4, 1910.

Q. How many assistants did you have in connection with your work?

A. Five.

472 Q. Did you work continuously from the 4th day of November 1910 until the completion of the work?

A. We did, yes.

Q. Of course excluding Sundays?

A. We didn't exclude Sundays in one or two instances we worked through, kept it up pretty continuously.

Q. Were you furnished by the Des Moines Gas Company any data or information from the books or records in connection with the inventory?

A. In some cases, yes sir.

Q. And what part of your inventory represents information and data from that source?

A. Well there is quite a good deal of it. We had some drawings that we took notes from and then checked against the drawings not relying of course on the existing drawings but rather basing our own judgment and own measurements on our own drawings. It was on our own finished product.

Q. In the inventory Exhibit No. 15 I note you give what purports to be a history of the buildings some of them mentioned there, that is as to the time of their construction?

A. Yes, sir.

Q. From what source did you derive that information?

A. Wher- it could be obtained and where the buildings were constructed by the United Gas Company and any records of those buildings were obtainable we took those dates and where such information was not available we sometimes got the information from the old employés of the company as best we could.

Q. Some of this information you secured from the records at the *of the* office of the Des Moines Company?

A. Yes, sir.

473 Q. You say you personally superintended the measurement- that were made in every instance?

A. I did, yes. Now just wait a minute, you mean at the time the measurement was taken was I with the men in every case?

Q. Yes?

A. No; that was impossible. I simply checked over the measurements in a great many instances, checked through after they were completed. It would be impossible with three corps of men in the field to see every measurement that every man took of course.

Q. Were you present at any time when measurements were actually taken?

A. Yes, and took some of the measurements myself in some buildings that I sketched or drew.

Q. Exhibit No. 15, did you personally make any of the drawings that are contained therein?

A. Yes, I did.

Q. How many of them?

A. I platted building 15, that is made the drawing of that and platted it, but principally confined myself more or less to the outside work such as—dealt more in generalities.

Q. The work which you did for this company was confined to the manufacturing plant and the apparatus together with the works tools and office fixtures and furniture.

A. Yes, sir.

Q. Now in what manner did you secure the number of specials and valves that are shown in this inventory?

A. By actual measurement and by sketches taking off the pipe with its valves and specials in the order in which they came. Do you mean large or small pipe, we have that classified under

474 two heads.

Q. Well in either instance?

A. That will apply to both.

Q. Did you make an estimate of the number of specials in any instance or is the number of quantity shown in the inventory from an actual count made by you?

A. It was taken by the actual count.

Q. In every instance?

A. Yes, sir.

Q. When did you complete your work in connection with this inventory?

A. We secured all of the field data by the 23d of December of the same year.

Q. You secured all the data by the 23d of December 1910.

A. Yes, sir.

Q. And when did you complete the inventory as shown by Exhibit 15?

A. That was some time in the month of January, I forget now just when we did complete some of the drawings and some of the

field sketches we completed some of the drawings after we got to the Philadelphia office.

Q. Did the Des Moines Gas Company to your knowledge have any record or book in its possession which purported to be an inventory of its gas works or any part of the same for any period preceding the month of November 1910?

A. If so I never saw it.

Q. You were not furnished with any document or record purporting to be an inventory?

A. No, sir.

Q. As far as you know the company never had one in
475 its possession?

A. As far as I know.

Q. Or under its control. And when you entered upon your work in Des Moines what was the general nature of the instructions which you received in connection with your work?

A. Simply that I should make an inventory of the manufacturing plant of the Des Moines Gas Company. Having done that work before I knew of course what was expected and went right ahead with the work.

Q. Did anyone direct your work?

A. No, sir.

Q. Here in Des Moines?

A. No, sir.

Q. To whom did you report if anyone the results of your investigations from time to time?

A. I kept in touch with Mr. John Klumpp.

Q. Who is Mr. Klumpp?

A. He is engineer of the United Gas Improvement Company.

Q. Where does he reside?

A. Philadelphia.

Q. Has his office at the main office of the United Gas Improvement Company?

A. Yes, sir.

Q. In a general way what are his duties, if you know?

A. Mr. Klumpp is inspecting engineer.

Q. Do you know personally Mr. Brodnax how many gas works are either operated or controlled by the United Gas Improvement Company in the United States?

Objected to as immaterial and not proper cross-examination.

A. No, sir; I do not.

476 Q. You say you don't know?

Same objection.

A. No, sir.

Q. Was your employment in Minneapolis from the United Gas Improvement Company?

Same objection.

A. Yes, sir.

Q. And your employment in Pennsylvania, the several towns which you have enumerated?

Same objection.

A. Yes, sir.

Q. What part of your work during the past three years, Mr. Brodnax in making inventories of gas works has been for companies other that those owned or controlled by the United Gas Improvement Company?

Same objection.

A. I can't give you that sir, from the fact I don't know what companies are controlled by the United Gas Improvement Company.

Q. Have you in mind any person whom you served where your employment was not at the instance and request of the United Gas Improvement Company.

Same objection.

A. No, sir.

Q. In each and every instance during at least the past three years your employment has come from the United Gas Improvement Co.?

Same objections.

A. Yes, sir.

Q. And you have engagements in the future outside of Des Moines for that Company?

477 Same objection.

A. No.

Q. Have you any engagements made to go to Omaha or other cities after you have finished your work in Des Moines?

Same objection.

A. No, sir.

Q. You were not asked nor did you expect to place any valuation on the respective items shown in the inventory, Exhibit 15?

A. No, sir.

Q. Personally you know nothing about the time the buildings in question were constructed or when the machinery and apparatus was installed?

A. As shown in the inventory?

Q. Yes?

A. Yes, I have an idea as to when certain pieces of machinery not to my certain knowledge but from conversation showing their date of installation.

Q. Of your own personal knowledge I say you know nothing about when the buildings were constructed?

A. No.

Q. Or when the machinery was installed?

A. No.

Q. Or the other apparatus pertaining to the gas works?

A. No.

Q. You say you were assisted by five others in connection with this work?

A. Yes, sir.

Q. What duties did those other men perform with respect to this inventory?

A. Simply make sketches and took the dimensions of the
478 various buildings under my supervision?

Q. Can you give the Master an idea of the expense involved in making an inventory such as you have produced here, Exhibit 15 and the sketches and drawings shown in Exhibit 16?

Objected to as immaterial and not cross examination.

A. No, sir; I cannot.

Q. You have no idea how much. Are you paid a salary for your work?

Objected to as not proper cross examination and as immaterial.

A. Yes, a salary.

Q. By the year, an annual salary?

Same objection.

A. Yes, sir.

Q. And the five men who assisted you, are they upon salary, annual salary?

Same objection.

A. Yes, sir.

Q. The six of you were and have been in the employ of the United Gas Improvement Company?

Same objection.

A. Yes, sir.

Q. And received your salaries from that company?

Same objection.

A. Yes, sir.

Q. Did you send reports to Philadelphia, make up an inventory from day to day showing the amount of work which you did.

Same objection.

A. Yes, sir.

Q. What record is kept of that time which you put in?

479 Same objection.

A. We kept our own records, that is as far as the work goes.

Q. What is done with that record?

Same objection.

A. It is carried to the Philadelphia office and this work in that case was completed there.

Q. It was completed at the Philadelphia office?

A. Yes, sir.

Q. A copy left with the main office?

Same objection.

A. I don't know that.
Q. How many copies were you prepared, if you know?
A. I don't know that.
Q. You were only concerned in the original.
A. I was only concerned in the original.
Q. Is the original here Exhibit 15?
A. I don't know whether it is the original or not.
Q. Can you tell whether Exhibit 15 is the one which was compiled by you or is it a copy of the inventory?
A. A great many of these were made after I left Philadelphia, you see I have been away from there two months and a half nearly three months.
Q. The work was finally completed there was it not in connection with these inventories?
A. That is what I can't say sir.
Q. The sketches and drawings?
A. The drawings were.
Q. By whom were the photographs taken shown in Exhibit 16?
A. They were taken by a firm in Des Moines, Wilson & Someone, I forgot the other man's name.
480 Q. The imprint is on the photographs?
A. I think so.
Q. Did I understand you to say you used the Minneapolis building guide in mak-ng your computations of the buildings?
A. Only in that that pertained to the number of brick per superficial foot.

Redirect examination by Hon. GEORGE H. CARR:

Q. Was there anybody else that was present and taking part in making this inventory except you and your assistants?
A. There was an engineer from the City Engineer's department of Des Moines that came over probably two weeks after we began work, I don't just remember the date.
Q. From the time that he came state whethe- or not he continued to work with you until you completed taking the data?
A. Yes, sir. He had access to all of the sketches and drawings as we completed them and spent a great deal of his time over the works checking up our measurements and conferred with me very nicely on the question of differences which we found which we corrected as soon after as possible.
Q. Did he go over the work that had been done?
A. Yes, sir.
Q. Prior to the time he came upon it?
A. He did.
Q. In what manner did he go over that?
A. He went over that with steel tape and measuring rod in order to see whether our measurements were correct on the drawings that had been completed prior to the time of his coming with us.
Q. You spoke of checking up on the sketches. Just what
481 did you mean by that?
A. Check up with actual measurements. If you make

measurements and a man comes on behind and makes the same measurements he checks you on your measurements or dimensions as we call it.

Q. Checks you in what way?

A. Checks you for the possibility of error.

Q. That is the purpose?

A. That is the purpose for which checking is done.

Q. You say checked the drawings, what did he check the drawings with?

A. Checked the drawings against my own measurements on the plat in many cases and combined the figures that goes to make our totals. That represents checking.

Q. You speak of the exhibits 15 and 16 being copies of the inventory. Do I understand -hat a number of copies of the original inventory was made out and prepared?

A. I don't just know how many copies were made.

Q. There was a number made?

A. A number made.

Q. Have you examined that inventory carefully that you have before you being Exhibits 15 and 16 to know whether that is a correct inventory?

A. It is a correct inventory.

Q. You have so examined it you know it to be correct?

A. Yes, sir.

Recross-examination by R. O. BRENNAN, ESQ.:

Q. Have you checked it over with the original which you made?

A. This specific copy do you mean? No, sir; but I know
482 the work well enough to know if any change would be made in it from the original?

Q. The field notes which you took of course I presume you preserved them?

A. Preserved them yes.

Q. And have you made any comparisons between the Exhibit 15 and the field notes?

A. No, but I of course in the original, that is the original inventory which was gotten up from the field notes we were very careful in that to check back and forth.

Q. As I understand you, you had been engaged in the work of making this inventory some two weeks before a representative from the city engineer's office worked with you?

A. I think probably it was that long sir, I don't remember just the exact date.

Q. Do you remember how much data or information you had -eceived prior to the time and up to the time Mr. Maxwell came to your office?

A. That I had received what source?

Q. From investigation you had made a- the work had progressed?

A. I think probably we had the field sketches for two or three buildings. I think I know the buildings then the men were working on at the time Mr. Maxwell came with us.

Q. Is it your und-rstanding Mr. Maxwell went over the work which you had completed up to that point?

A. I had every reason to believe it. I saw him on the work and he afterwards stated to me he had gone over this work and checked it up.

Q. Did you know to what extent he had gone over it.

A. Fully I judge.

483 Q. Did you see him go over the work?

A. I did.

Q. How frequently?

A. I should say all the time, spent most of his time on the outside going over the work.

Q. With you?

A. No, sir.

Q. With whom?

A. With someone else he had gotten from the city engineer's office to hold the tape for him.

Q. Did you let him have your field notes?

A. Let him have the blue prints and he had access to the individual sketches.

Q. When were these blue prints made?

A. These blue prints made almost simultaneous with the sketches, as soon as we finished a field sketch we made a drawing of it.

Q. Sketches made in Des Moines?

A. Yes, sir.

Q. At the gas office?

A. No, sir; made at the works. A field sketch is a crude sketch from which to take the information before making it in the form of a drawing.

Q. You had been at work then about two weeks when Mr. Maxwell came there?

A. I will say two weeks.

Q. At the time Mr. Maxwell came there was it at about the time of this correspondence to which reference has been made between Mr. Haines and Mr. MacVicar?

A. I don't remember the date of that correspondence in connection with Mr. Maxwell's coming.

484 Q. Don't you know if it *is* was about that time or not?

A. No, I do not.

Q. Mr. Haines told you he had corresponded with Mr. MacVicar on the subject?

A. The papers did.

Q. Mr. Haines told you?

A. No, sir.

Q. Did you get any information from any other source than what you saw in the newspaper?

A. No, sir.

Q. It was about that time Mr. Maxwell came to the office wasn't it?

A. I don't know that sir, what stage of the correspondence he came in the office.

Q. About the first of December was it?

A. No, it must have been earlier than that. If I came here the 4th of November two weeks after would not be the first of December.

Q. Which was it? The 4th or 14th of the Month of November you entered on the work in Des Moines?

A. That was the 4th of November.

Q. Be about the 18th Mr. Maxwell came to your office?

A. Yes, sir.

Q. Looked over those sketches and you say you gave him a copy of the blue prints?

A. Gave him a copy of the blue prints, yes.

Q. It is a fact is it not that prior to your coming here as far as you know, the company had made no effort, at least had not in its possession as far as you know, or under its control anything which savored of an inventory of the gas plant or works of the Des
485 Moines Gas Company.

Objected to as a mere repetition.

Q. And do you know whether or not any one else had at any time prior to your coming here made an inventory?

Objected to as immaterial and not cross-examination.

A. To my certain knowledge no.

Q. Did you state the date upon which you completed your investigations here in Des Moines?

A. Yes, sir, the 23d of December of the same year I think was the date that I gave.

Witness excused.

486 E. P. WALTER being called on the part of the complainant and sworn and examined in chief by Hon. George H. Carr testified as follows:

Q. Please state your name, age, place of residence and occupation?

A. My name is E. P. Walter, reside Philadelphia, Pennsylvania, Thirty seven years old and I am an engineer of the United Gas & Improvement Company in the employ of the United Gas & Improvement Company.

Q. Did you have any -relimina*ty* training, any prelim*anry* course of study to fit yourself for the occupation of engineer?

A. Graduate of Lafayette Colleg*e* of Pennsylvania in civil engineering.

Q. When did you graduate?

A. 1895.

Q. Subject to graduation in a general way what business have you been engaged in?

A. In the gas business for about eight years and in the lumber business for about three years.

Q. In the gas business along what particular lines were you engaged?

A. In the distribution department of the Philadelphia gas works in Philadelphia.

Q. Have you had during that period any experience in making inventories of the dist-ibution system of gas plants?

A. Within the last two years I have.

Q. To what extent have you had experience during that period in that kind of work?

A. I have made an inventory of the distribution system of the Harrisburg Gas Works at Harrisburg, Pennsylvania, also inventory of the distribution system of Reading Pennsylvania and I
487 have assisted in working up several inventories that have been made in some other towns, Allentown and West Chester, Pennsylvania, and Syracuse, New York.

Q. Are you acquainted with the Des Moines Gas Works, that is the works of the Des Moines Gas Company in Des Moines?

A. In the distribution system.

Q. When did you first have to do with the distribution system of the Des Moines Gas Works in Des Moines?

A. About the 16th of November 1910.

Q. I now call your attention to an inventory found in Exhibits 15 and 16, and ask you whether you prepared any part of that inventory or whether you made any part of that inventory?

A. Yes, sir. I was in charge of the inventory as far as the distribution of the gas company is concerned.

Q. Did you make the part of that inventory which p-rtains to the distribution system?

A. Yes, sir.

Q. From what source did you obtain the data for the making of that inventory?

A. From the records of the Des Moines Gas Company.

Q. Anything else?

A. Also from a canvass, partial canvass of the town in relation to the services and let-ers.

Q. When did you come to Des Moines for the purpose of obtaining information for the purpose of making that inventory?

A. I came to Des Moines on the 14th of November.

Q. Of what year?

A. 1910.

Q. And did you immediately set about the work of making the inventory?

A. No, sir; I started on the inventory November 16th.
488 Q. November 16, 1910.
A. 1810.

Q. When did you complete, on what date did you complete the gathering of the data for the purpose of making the inventory?

A. January 21, 1911.

Q. Did you continue after you began getting this data for the purpose of making this inventory, did you continue at it steadily until you completed it?

A. Yes, sir.

Q. Did you have any assistance in doing the work?

A. Yes, I had twelve assistants part of the time, not all of the time.

Q. Aside from your assistants was there anybody else that was present part of the time or all of the time while you were taking this inventory, taking part in it?

A. I don't quite understand the question.

Q. Do you know Mr. Maxwell of the engineering depart-ent of the city of Des Moines?

A. Yes, I met him while I was here.

Q. Did he work with you or with you and your assistants during the time you were making this inventory?

A. He came and went over our work some time previous to—before we finished it altogether.

Q. Do you remember about the time when he came?

A. I think it was a few days before the Christmas holidays.

Q. To what extent did he go over the work which you had done?

A. He checked over the meter records that we had checked and he went over the service records, checked them up and after I left town I think he checked over the street main maps.

Q. That you don't personally know about?

489 A. No, sir.

Q. You speak of the distribution system. Will you please tell the Master what is included in that term as you use it?

A. In the distribution system is included all the mains of the gas company outside of the works year, all the service for supplying gas to the houses and all the meters and the work in connection with setting gas stoves, putting up lamps and in other words the work in connection with the company outside of the manufacturing plant.

COURT: Commencing at the tank?

A. Yes, from the outlet what you might call the outlet of the tank.

Q. How about tools used in connection with the distribution system?

A. I had an inventory made of all tools used by the distribution system.

Q. Is there anything else comprehended within the term like wagons or carts and horses?

A. Stable equipment might go in the distribution system, teams and wagons, bicycles and motor cars.

Q. You spoke of stoves and lamps, you didn't make any inventory of those things did you?

A. No, sir.

COURT: The stoves and lamps in th- sales room you refer to?

A. No in the distribution department. That department takes in the labor and material in the setting of the stoves and lamps and attending to the complaints of consumers.

Q. Are there lamps or lanterns that are used as part of the tools used in the distribution system, lamps like lamps that are

490 hung up in the street to give warning of excavations and all that sort of thing?

A. Yes, sir.

Q. Did you make an inventory of those things?

A. Yes, sir.

Q. Those are the lamps to which you refer then?
A. Yes, sir.
Q. But you made no inventory of the stoves and fixtures, things of that character that are kept in the stove for sale?
A. No, sir.
Q. After obtaining data for the purpose of making this inventory what did you then do, I mean with respect to preparing the inventory?
A. In starting we started with the meter route books which the company has—
Q. (Question read.) Did you then put this data together in the form of an inventory, prepare this inventory that is presented here?
A. Yes, sir.
Q. Exhibits 15 and 16.
A. Yes, sir.
Q. Now you speak of obtaining data from the records of the company. You may give that a little more fully what data or records you investigated and examined or how you did it?
A. The company had meter route books from which the meters of the consumers are read monthly. Two sets of books, one is the ordinary meter book, the other is a book of the pre payment meters and these books are routed by street and house number so as to make the reading of the meters as simple as possible. From these books we made up lists of the locations of the various meters
491 by street and by house number on the street. From these lists we compared the records that the company has of their services installed in the houses and the n-mbers on these service cards we compared with the number of the houses for which we had meters and in all cases where there was no record of the service card for a house, property for which we had a meter we made a special visit to that house to ascertain if there was service there and to get the size of the service in that house. After compl-ting these lists and getting all the data as to the service these lists were counted up to get the total number of services in the city of Des Moines. The meters were gotten from the meter books which the company keep-. which is an individual record of each meter and the number of meters was gotten by making ac-ount from these meter books.
Q. After you had prepared your inventory from the data that you obtained did you then do anything to check back or to verify your inventory by personal examination and investigation of the property on the ground?
A. In some cases, yes. I went over the town pretty thoroughly to see that the street lamps that are up various streets in different sections of the town, to see tha- they had gas in them, to see there was gas in the various parts of the town. Also I examined some of the drip rods which are at the ends of mains in various parts of town to see that there was gas in those locations. Also by going in different parts of the town in the evening I could see from the corner stores, etc., whether there was gas being used in the different parts of the town and in some few cases made a visit to the cellars to see that there was a service and a meter in the house.

Q. Did you examine any excavations over these connections?

A. I did see a few in the contral part of the town.

492 Q. Now as to the mains, where did you get your data for the purpose of making an inventory of the mains?

A. The gas company has maps showing the different size mains on all the streets in the town of Des Moines. After making our inventory of the services these maps were sealed in order to get the length of mains on the various streets and the services as we had gotten them in the various blocks were compared with the street main map to see that there was a main in the various blocks where the services were located.

COURT: Did you make a personal examination of the mains?

A. You mean in digging them up?

COURT: No I don't mean that, personal examination of the streets.

A. I said I have made a personal examination in trying street lamps and some of the rods from the drips, and so forth, to see that there was gas at those locations.

Q. Is that part of the inventory which is contained in Exhibits 15 and 16 which was prepared by you and which relates to the distribution system an accurate, true and detailed inventory of that part of the property of the comp-ainant company in Des Moines?

Objected to as incompetent.

A. Yes, sir.

Q. Turning now to Volume 1, being Exhibit 15, where does the inventory of the distribution system begin?

A. The inventory of the distribution system begins on page 208.

Q. On page 209 I note some figures. Will you explain what these are?

A. On page 209 is the summary of the different sizes of gas mains giving of the total length of main in feet.

Q. For example the two and a half inch, and under there

493 how many feet?

A. There are 33,947 feet.

Q. And the next shows the three inch mains?

A. 23,301.

Q. Four inch and six inch and so on down there as shown on that page?

A. Yes, sir.

Q. And that is a correct summary of the length of the mains of the various sizes as indicated by the figures opposite the length of it?

A. Yes, sir.

Q. Just below that is the river mains. Explain to the master what you mean by river mains?

A. By river mains is meant the mains across the Des Moines river. These mains are laid underneath the bed of the river.

Q. That is from the works over to the west side is it?

A. Yes, sir. From the west side of west First street across.

Q. There are a certain number of eight inch mains as shown in the inventory?

A. There are 673 feet of eight inch main, 1,300 feet of sixteen inch main and 639 feet of 24 inch main.

COURT: They are not included in those above.

A. No, sir; they are not included in the ones above.

Q. Now does your inventory show accurately where there is paving on the streets in which you have mains and the character of the paving?

A. Yes, sir.

Q. Where does that appear. I call your attention to page 210 is that where is a summary of that?

494 A. The summary is on page 210.

Q. The words character of paving, that shows the kind of paving on the street does it?

A. Yes sir.

Q. And the figures opposite show what?

A. The total number of square yards of paving of that character.

Q. On the street?

A. That is over the mains.

Q. On the street over the mains?

A. Yes, sir.

Q. Taking what width?

A. The widths vary according to the size of main. The widths are not the same over all street mains.

Q. Explain what that variation is?

A. On page 211 is a detailed statement of the paving, the asphalt paving and concrete base over the mains according to the size of paving on mains 2 and one half inches and under is 24 inches wide, the paving over ten inch mains is 28 inches, 12 inch main is 28 inches, 16 inch main 32 inches and 20 inch main is 36 inches.

COURT: I don't understand just what you mean by square yards on page 210?

A. The total number of square yards is gotten by taking the width of the t-ench over a certain sized main, multiplying that by the length in feet of the paving which the main is under and dividing by nine to reduce it to square yards.

COURT: What width do you have?

A. On a main two inches and a half and under up to eight inches, the width of paving is 24 inches.

Q. That is shown on page 211?

495 A. That is shown on page 211. On ten inch and twelve inch mains the width of paving is 28 inches. On 16 inch mains the width of paving is 32 inches, on 20 inch mains the width of paving is 36 inches. And then the next column is the total length in feet of these mains by size which are under asphalt paving. And the last column is the number of square yards of each size of main, the paving over each sized main.

Q. Is there any variation in the width of the strip that you have calculated here where the pavement is of a different character than asphalt pavement?

A. Yes.

Q. Explain that.

A. On page 211 there is wood block and concrete base. The paving over the main for wood blocks on two and a half inch main and under up to eight inch main is 32 inches wide. Ten inch main the paving is 36 inches wide, 12 inch main 36 inches wide 20 inch main 40 inches wide 24 inch main 44 inches wide.

Q. Then on page 212 it shows the same thing with respect to brick on concrete base does it?

A. Yes; the width of these trenches are the same as the width of trenches on the wood block paving.

Q. And brick on sand base on the same page?

A. That is the same as the wood block paving.

Q. Then Macadam, concrete or cement on page 213?

A. Macadam is the same as the asphalt paving and the concrete is the same as asphalt paving.

Q. Page 214 there is a summary of the character of paving, what does that show, what do the figures under the total length indicate??

A. That shows the total length in feet of the paving, the various kind over the mains irrespective of the size of the mains.

496 Q. On page 215 under the words "Line pot drips"—I wish you would first explain to the Master what you mean by line pot drips?

A. In laying gas mains or service they must, all the mains must drop towards a low point. At each one of these low points we put in what we call a drip pot, or large tub that is so made that any condensation that forms in the gas main will go to this low point in this tub and from this tub it is pumped out, the condensation.

COURT: That is drainage?

A. Drainage yes.

Q. Does there appear on this page 215 the number of those and the respective sizes?

A. Yes, sir.

Q. Under the word "number" is shown the number of the various sizes?

A. The number of the various sizes of drips on the distribution system.

Q. I find also on that page under the word valves, number and size. Will you explain to the master what you mean or what those valves are?

A. The valves are put into the distribution system to be used in case of emergency, if a main should become broken from some cause the gas can be shut off at that point?

COURT: In case of fire or something of that sort?

A. Or if the streets should become washed out, something of that kind and have a broken main, the gas can be turned off at various points without turning the gas off the whole system.

Q. There is shown in that table the number and sizes of those valves?

A. Yes, sir.

497 Q. Turning to page 216 we have street mains under steam railroads 191 crossings. What does that show or what is the fact with regard to those?

A. That 191 crossings are the number of places in Des Moines in which the gas mains are run under railroad crossings, railroad tracks.

Q. That is steam railroads?

A. Steam railroad tracks.

Q. On the same page gas mains under street car tracks?

A. There are two items, one 227 single track crossings. There are 277 locations in Des Moines where the gas mains pass under single trolley tracks. The 109 double track crossings are 109 locations where the gas mains cross under double trolley tracks.

Q. On page 217 we find the words average length for seven years 80 feet, 17,170 services. Explain what that item is?

A. The 17,170 services are the number of services we find by making an inventory in the city of Des Moines. The average length as taken from the records of the Des Moines Gas Company for a period of seven years shows the service to be 80 feet long or the distance from the main in the street to the end of the service which is a few inches within the cellar wall of the house is eighty feet long.

Q. In going over and examining the property on the ground did you make some investigation and examination for the purpose of seeing whether that was accurate as to the length of these services?

A. Yes, sir.

498 Q. And what did you find the fact to be?

A. That that was practically correct.

Q. I notice further down the page the figures 19,742 meters. What does that show?

A. That is the total number of meters owned by the Des Moines Gas Company at the time the inventory was made.

Q. Are those meters all in service?

A. No, sir. Part of them are in store room available for service.

Q. Do you remember how many?

A. I think the inventory shows it. I am mistaken there Judge, the total number of meters in use is 19,742.

Q. Then in addition to that there are some meters that were not in use that you have inventoried some place else?

A. Yes, sir.

Q. These 19,742 meters were actually in service, in use at the time you made the inventory?

A. Yes, sir.

COURT: How does it come there are more meters than there is service?

A. In a great many buildings there are anywhere from two or three to twelve, fifteen and twenty, sometimes thirty meters in large office buildings. A great many apartment houses with two or three or four meters with one service.

COURT: Services then are simply in relation to buildings and not to the persons?

A. Yes, sir.

COURT: In an office building or apartment building where there is more than — occupant taking gas, is there ordinarily but one service pipe, that is one pipe from the main to the building?

499 A. Ordinarily there is but one service pipe.

Q. That one pipe serves all occupants of the building?

A. Yes, sir.

Q. But each consumer has his own particular meter?

A. Yes, sir.

COURT: The pipe you run into the building that is owned by the company?

A. Yes, sir.

COURT: The balance of the pipe is owned by the owner of the house?

A. Yes, sir; the balance of the pipe in most cases is put in at the time the building is being built, that is put in by the owner of the building.

Q. Isn't it true in all cases the owner of the building puts them in?

A. Some cases it is not. All houses are not piped, they are as a rule, but pipes in the house always belong to the consumer or owner of the building.

Q. Explaining a little further as to the question of meters, I will ask you what part of the pipe does the company own as it enters the building, that is up to the meter, and the meter, to whom does that belong or by whom is it furnished?

Objected to as incompetent, the witness not showing himself competent.

A. The house riser in the building is supposed to come down to the front wall or wall nearest the street on which there is a gas main. The company runs the service to the house and connects up the meter to the house riser and all pipe from the bottom of the house riser back to the street belong to the gas company.

Q. Then if I understand you the company owns the pipe to the meter and the meter?

500 A. Yes, sir.

Q. And then the householder furnishes and owns the pipe from the meter that distributes the gas over the house?

A. Yes, sir.

Q. Now I will ask you to explain these items on page 218 of the inventory service, lamps and posts?

A. On 218, the average length of the lamp service is 18 feet. The average length computed from one half the main the width of the paved streets containing lamp service, plus two feet the distance the posts stand back from the curbing. In other words the lamp service only runs from the main to the curb and would not necessarily be as long as the house service and the average width of the streets in Des Moines is sixteen feet plus the two feet that the lamp post sits back from the curb makes the average length of service or eighteen feet for the lamp service.

COURT: How do you get at the average?

A. In getting the paving, the different kinds of paving on the streets in the city of Des Moines that we got from the city engineer's office and at the same time we got the width of the streets between curbs from the city engineer's office and we averaged the distance up.

COURT: The streets average thirty six feet between curbs?

A. The street would average 32 feet between the curbs. The average length of the service would be the half of the width of the street plus the two feet that the lamp post is back from the curb line.

COURT: The mains run in the center of the street?

A. The mains in a majority of cases run on the side of the street but in two services one service run on the short side of the
501 street and one service to the long side of the street the average of the two would be half the width of the street.

Q. That is to the lot line you mean?

A. No, to the curb line. This is lamp service which only goes to the curb line.

Q. The figure 1137 shows the number of that kind of services?

A. Shows the number of lamp services in use at tha ttime.

Q. And the number three there?

A. Show the number of services which have been in use and which are out of use at that time.

COURT: This is service to the city?

A. This was lamp service, street lamps only.

Q. On page 219 there is a summary, just what do those figures mean?

A. Page 219 shows the summary of the paving over the service.

Q. Of the various kinds?

A. Shows the various kind- of paving and the number of square yards of each kind of paving.

Q. Is that *at* ascertained by the same method of calculation as the paving over mains was ascertained?

A. No, sir. On page 220 is a short description In running services on paved streets trench is not dug across the street. One hole five feet long by two feet wide is dug from the main in all cases. This being the only opening made for a short service. For one across the street a second hole five feet by two feet made midway between the main and curbing. This makes three openings five feet by two feet for every two services, assuming that — each service one service goes to the short side of the street and the other service to the long side of the street or an average of one openeaing
502 seven and a half feet by two feet for each service run.

Mr. BRENNAN: The witness is just quoting from the inventory?

A. Yes, this is on page 220.

Q. On page 221 character of pavement, what do those figures in these several columns represent?

A. Page 221 is a detailed list of the service under asphalt paving with concrete base showing the number of services of the various widths of street, the lineal feet of service, that is of paving over the service and the total linear feet.

Q. On page 222 what does that show?

A. It shows the detail of the number of services on streets with wood block, paved with wood block on concrete base, macadam and concrete paving.

Q. On page 223.

A. Is a detail of the service on streets paved with brick with sand base.

Q. Page 224?

A. Page 224 and 225 shows the detailed statement of the service on streets paved with brick with concrete base.

Q. What is shown on 226?

A. Page 226 shows a summary of the paving that would be cut over the service on the different kinds of paving.

Q. 227 has to do with the meters has it?

A. Yes, sir.

Q. You might explain, I see the word "light" used there. Go on and explain what these figures indicate?

A. Under the heading "ordinary meters" is three light, five light ten light, twenty light, etc. They denote the different size meters.

503 —. In what way or what regulates the size of the meters, how does that word light, what does the word "light" have to do with the size of the meters?

A. I don't know that really that has anything to do otherwise than it is a gas term, applies to a meter just a three light meter. The different sized meters, the difference in the sizes depends on the capacity. It is just a gas term used in connection with the meter.

Q. What governs the size of the meters or de-ermines the size of the meters.

COURT: In other words, I suppo-e he means how do you tell what sized meter to put in?

A. Each different size meter has a different capacity, the three light meter I think h-s a capacity of passing about forty five feet of gas an hour.

Q. Let me ask you this, in putting in a meter for a customer do you use the size of meter with some respect to the number of burners he wants to be served?

A. Yes, sir.

Q. Whether he wants a meter for three burners or whether he wants to use ten burners.

A. Yes, sir. It is decided entirely upon what he is going to use, the n-mber of burners, whether he is going to have a gas stove or water heater or something of that kind.

Q. In other words, you put a meter in there and you use that size of meter which will take care of the gas which a particular customer expects to use?

A. Yes, sir.

Q. What is a meter for?

A. Measuring gas consumed.

Q. Prepayment meters I see down the page there. What

504 are prepayment meters?

A. A prepayment meter has an attachment on the outside of the meter by which a quarter is dropped in it and moves a small dial on the inside of the meter so that you can get 25 cents' worth of gas. In other words, the consumer has to pay for the gas before he gets it.

COURT: Nick*le* in the slot is it?

A. Yes, nick*le* in the slot.

Q. Those figures opposite show the number of each of the respective kind of meters in use as I understand it?

A. Yes, sir.

Q. On page 228 you seem to have some more d-tail- as to meters, what is that?

A. On page 288 are the meters in the store room which are available for use.

Q. Which were not in use at the time you took this inventory?

A. Yes, sir.

COURT: 853 all told not in use.

A. Yes, sir; not in use.

Q. And at the bottom of the page is a summary of the meters in use and meters out of use and the total number of meters owned by the company.

A. Yes, sir.

Q. On page 229 the first item——

A. Page 229 is merely a summary of the inventory further on On page 253. This is merely a summary.

Q. On page 230?

A. On page 230 is a summary of the horses, wagons, automobiles motorcycles or in other words, stable equipment.

Q. Is there a detail of that summary?

505 A. There is a detail of that back farther, page 253.

Q. You may explain that?

A. Page 253 is an inventory of the rolling stock tools in the distribution department. By that is meant the carts of various kinds and bicycles used in the distribution department.

Q. The various tools specified there are tools that were used by the company at the time you took this inventory in connection with the distribution system?

A. Yes, sir.

Q. I didn't -ean to inquire if that was all the tools but those were tools as I understand?

A. Those were part of the tools.

Q. On page 254, explain that list?

A. On page 254 beginning on 254 is the detail list of the tools used in the distribution department in the caying of mains and services, also setting meters, tools of all descriptions.

COURT: These are for tapping mains?

A. The first tools on page 254 are for tapping mains. The last few items are plugs for putting in the ends of the mains for stopping off the gas. On page 255 that is stoppers which are used for stopping the flow of gas in the main and making repairs joining bands and used in laying mains, a band is put around the pipe so that running hot lead it will run into the joint. And the rest are the tools of various kinds used in the laying of mains and laying of the services.

Q. And that list closes on page 258?

A. Page 258. Is the end of the list for the tools used in the main and service work.

Q. That entire list of tools were of the tools that the company had for the use and necessary to be used in connectio/ with its
506 distribution system?

A. Yes, sir.

Q. The mains and service?

A. Main and service work.

Q. On page 259?

A. On page 259 is a detailed list of the tools used in the fitting and meter repaid shop. Fitting shop and meter repair shop and for the setting of meters.

Q. That list continues on till page 262?

A. To page 264.

Q. Those were tools that the company had and were using and were necessary to be used in connection with the fitting and meter repair?

A. Yes, sir.

Q. On page 265, stable equipment?

A. On page 265 is a detailed inventory of stable equipment showing number of horses, number of wagons of different kinds, sleighs dump carts, number of sets of harness.

Q. Those were owned by the company and used and necessary to be used in connection with the work connected with the distribution system?

A. Distribution department, yes.

Q. Did you prepare or cause to be prepared some maps in connection with the inventory of the distribution system?

A. Yes, sir.

Q. I first call your attention to plate 29 I think it is in volume 2 of the inventory. Please explain to the Master what that is.

A. Plate 29 in volume two is a photographic map of a map of the city of Des Moines on which is shown in colors the various kinds of paving on the different streets of the city.

507 Q. Is there a key that shows what these various colors indicate and represent?

A. Yes, sir. In the upper right hand corner is a key explanatory of the different colors in regard to the different kinds of paving.

Q. And to what scale is that map drawn?

A. The scale of this map is approximately 300 feet to the inch.

Q. Did you have prepared a map that showed the condition of the mains, gas mains as they were in 1886?

A. Yes, sir.

Q. What is that?

A. Plate 30 is a map showing the location of the gas mains in the city of Des Moines in 1886. This map shows merely the location of the mains not the size of the mains.

Q. Is that as accurate as it could be made on a map of so small a scale?

A. Yes, sir. It is as accurate as can be made and as accurate as

it could be gotten from the records in the possession of the company at that time.

Objected to as incompetent and move to strike out the answer as stating a conclusion of the witness.

Q. Plate 31, what does that show?

A. Plate 31 is a map showing the location of the gas mains in the city of Des Moines at the time the inventory was taken irrespective of the size of the mains, just showing the streets on which the mains are.

Q. On that map I see a round heavy black character, what is that?

A. That indicated the location of the manufacturing plant.

Q. What is plate 32?

A. Plate 32 is a map indicating the soil in the various
508 sections of the city of Des Moines.

Q. By whom was that map prepared?

A. I prepared this map from information furnished to me principally by Mr. Henry Maule.

Q. Who is Henry Maule?

A. Henry Maule is main foreman in the Des Moines Gas Company.

Q. Do you know how long he has been in the s-rvice of the company?

A. Not exactly. I would say about twenty five or six years.

Q. Has he been the main foreman as you understand it during that time?

Objected to as incompetent, irrelevant and immaterial.

A. I believe he has.

Q. Is there a key to this map that shows or indicates the kind of soil as shown on the map?

A. Yes, sir. In the upper right hand corner is a key, the various colors shown on the map and opposite of them is a description of the kind of soil.

Q. I will ask you Mr. Walter, whether this inventory exhibits 15 and 16 or rather that part of it which was prepared by you to show the distribution system of the Des Moines Gas Company is a true and accurate inventory of that system showing accurately and correctly the number of miles of main, the sizes of the various mains, the location of the mains, the parts of the system that is laid under pavement and the kind of pavement, the number and character of services and the number and character of meters and of the distribution tools of the company and of the various other matters to which the inventory relates.

Objected to as incompetent and for the further reason that it asks for a conclusion of the witness.

509 A. Yes, sir.

Q. Did you prepare or have prepared under your supervision a large map of the city of Des Moines of sufficiently large scale to show the size of the mains of the system, so that coulr be shown on the map?

A. Yes, sir.

Q. Is that map prepared in two sections?

A. Yes, sir.

Q. What are those?

A. One section of it shows the eastern side of Des Moines and the other is the western half, west of the Des Moines river and the other side east of the Des Moines river.

Q. I now hand you a map marked Exhibit No. 17 and ask you to state what that is?

A. This is a map of the eastern half of the city of Des Moines.

Q. I also hand you a map marked Exhibit No. 18 and ask you to state what that is?

A. This is a map of the western half of Des Moines. Exhibit 17 is wholly on the east side with a little bit south of the Des Moines river and south of the Raccoon river.

Q. I think you have stated these maps were prepared by you?

A. Under my supervision, yes.

Q. Are these maps which we produce here the original copies or are they photographic reproductions of the original tracings?

A. This is a photographic reproduction of the original tracing.

Q. At the bottom of this map *I* think appears your signature?

A. Yes, sir.

Q. That was on the original tracing and reproduced on this photograph?

A. Yes, sir.

510 Q. Is this an exact photographic reproduction of the original tracing as prepared by you?

A. Yes, sir.

Q. I wish you would state whether that map shows the main system of the Des Moines Gas Company in Des Moines, showing the various sizes of mains as laid in the city at the time you took this inventory?

A. Yes, it does.

Q. Explain how those sizes are indicated upon the maps?

A. All mains as there drawn or indicated by the figures on the mains or on the line of the main. In the case of a four inch main is a four inch broken line with a four on this line at various places. For a six inch main is a dot and a dash with a six along the line of the main. A three inch main is a solid line with three on the line of the main and each sized main is designated with a figure upon the main.

Q. Then do I understand that the size of each main is indicated not only by figures, but by the character of the line?

A. Yes, sir.

Q. And is there a key on this map that shows that?

A. Yes, on the bottom of the map is a key indicating the various sizes of the mains, showing the character of the line and the size of the main is in front of that line on the key.

Q. I notice in your key Mr. Walters, you have the same kind of a line do you not indicating different sizes of mains, for example your key seems to show an unbroken line to three, 8 and 16.

A. Yes, sir.

Q. Explain that will you.

A. The line of this map is the same, but the figure on the
511 lines indicate the size of the main in each case.

Q. Then it is not exactly correct to state that lines in all cases indicate the size of the main?

A. The lines by themselves will not indicate the size of the main in all cases.

Q. Was that because of the difficulty of showing that by a line showing so many different sizes?

A. On the tracing the mains are shown in colors, the different sizes are in colors. On the photographic reproduction the colors will not reproduce so we have to use the figures on them as well as the different character of the line.

Q. Now as I understand what you have said with respect to what is shown on these maps, Exhibits 17 and 18 relate to both of them.

A. Yes, sir.

Q. These maps are not maps of the entire city as I understand it, but only of the parts of the city which is covered by mains?

A. Yes, sir.

Q. Or to which the mains extend?

A. Yes, sir.

Cross-examination by R. G. BRENNAN, Esq.:

Q. Mr. Walter, you were in the lumber business you say for about three years?

A. Yes, sir.

Q. During what three years were you engaged in the lumber business?

A. 1904, '5 and '6.

Q. What years were the eight years which you have been in the gas business?

512 A. From the spring of 1898 until January 31, 1904, and from the first of October 1909, up to the present time.

Q. There was an interruption of three years in your career devoted to other lines of business?

A. Yes, sir.

Q. About how many inventories of these di-tribution systems have you prepared?

A. I have had charge of making up two complete inventories outside of the city of Des Moines.

Q. One of these was Reading Pennsylvania?

A. Yes, sir.

Q. How large a plant has Reading?

A. Reading has a population of about 85,000 people, about 16,000 meters.

Q. About how many miles of mains?

A. I am not sure I think it is about ninety.

Q. Have they more than one maunfacturing plant or is it a central station the same as Des Moines?

A. The same as Des Moines.

Q. The other town was Harrisburg?
A. Yes, sir.
Q. How large a plant is in Harrisburg, or was at the time you made the inventory?
A. Harrisburg is about the same size as Reading.
Q. About the same sized plant?
A. About the same sized plant.
Q. Same number of miles of main?
A. I think so.
Q. When did you prepare the inventory for the Reading plant?
A. In April and May 1910.
513 Q. And when did you prepare the inventory of the Harrisburg plant?
A. March and April of 1910.
Q. So that prior to the year 1910 you had not personally supervised the compilation of the inventory of a gas works?
A. No, sir.
Q. Of the distribution system?
A. No, sir.
Q. You are in the employ of the United Gas I-provement Company?
A. Yes, sir.
Q. And have been for how long ?
A. For practically -wo years now and previous to that time six.
Q. Eight years in all?
A. Eight years in all.
Q. You are now working at an annual salary as compensation for your services?

Objected to as immaterial.

A. Yes, sir.
Q. When you came to Des Moines you may state at whose instance and r*quest you came here?

Objected to as immaterial.

A. I received instructions from Philadelphia to report to Mr. Haines in Des Moines.
Q. Where were you when you received instructions to come to Des Moines?

Same objection.

A. Hammond, Indiana.
Q. About what time was it you received your instructions to come to Des Moines?
A. The 11th of November I think it was 1910.
514 Q. You spoke of some 12 assistants, were they upon the ground when you got here?
A. No, sir.
Q. They came after you did?
A. Yes, sir.

Q. Had anyone prepared any record or data for you prior to your arrival in Des Moines so far as you know?

A. No, sir.

Q. Have you been in the city of Des Moines prior to the month of November 1910.

A. No, sir.

Q. It was your first visit to the city?

A. My first visit.

Q. And you came here at the instance and request of the United Gas Improvement Company your employer?

A. Yes, sir.

Q. And the general nature of your instructions was to prepare an inventory of the distribution system of the Des Moines Gas Company wasn't it?

A. My instructions were merely to report to Mr. Haines.

Q. Just to report to Mr. Haines?

A. Yes, sir.

Q. Did the letter indicate anything of the nature of your interview with Mr. Haines or what would be expected of you in Des Moines?

A. No, sir.

Q. When you reported to Mr. Haines what instructions did you receive from him.

A. I received instructions that he wished me to make an examination of his fitting shop.

515 Q. Of his fitting shop?

A. Yes, sir.

Q. Anything else?

A. No, sir.

Q. And just what part of the distribution system is the fitting shop?

A. The fitting shop or fitting department is the department that sets the meters, puts in and sets gas stoves, tends to consumers' complaints, does all the work in the house.

Q. Well did you act within the scope of Mr. Haines' request?

A. Yes, sir.

Q. And when was it that you took up the general work of the general distribution system?

A. The inventory work you mean?

Q. Yes.

A. Two days after that.

Q. And at whose request?

A. Mr. Haines'.

Q. Did you report to anyone the extent or result of your investigation in Des Moines and if so to whom, do you recall?

Objected to as immaterial.

A. Reported to Mr. Haines.

Q. Did you report to anyone else?

Same objection.

A. Reported to Mr. Klumpp.
Q. Of Philadelphia?
A. Philadelphia.
Q. Are you under his general directions?

Objected to as immaterial.

516 A. No, sir.
Q. And to whom are you subject in the matter of where you shall go and the character of the work that you shall perform?
A. To Mr. H. S. Battin.
Q. Where does he reside?
A. Philadelphia.
Q. Is he connected with the United Gas Improvement Company?
A. Yes, sir.
Q. In what capacity?
A. I don't know just what his title is, he is in the engineer of works' department.
Q. Did you receive any directions or instructions from him before you came here or after you arrived in Des Moines to enter upon your work?
A. No, sir; except I received instructions from him to report to Mr. Haines in Des Moines.
Q. And after you entered upon your work here you sent reports to him in Philadelphia from time to time?
A. No, sir.
Q. You sent him no reports?
A. No, sir.
Q. You did send reports to the Philadelphia office didn't you?
A. No, sir; I didn't send any reports in to the Philadelphia office.
Q. Had no correspondence with the Philadelphia office concerning your work here or character of the work?
A. I don't think I corresponded with the Philadelphia office at all after I arrived here.
Q. Did they correspond with you?
A. No, sir; Mr. Klumpp was on the ground at various times.
Q. Here in Des Moines?
517 A. Yes, sir.
Q. Directing the work?
A. Yes, sir.
Q. Making suggestions?
A. Yes, sir.
Q. You followed the suggestions that he made?
A. Yes, sir.
Q. You were furnished I take it by Mr. Haines with some records and data of the distribution system?
A. The records as they are in the office.
Q. Do they have in the office a record showing the number of miles of main laid in the year in which they purport to have been laid?
A. Yes, sir.

Q. And the data when laid?
A. Yes, sir.
Q. You saw those records?
A. Yes, sir.
Q. Do you recollect now Mr. Walter how far back those records go?
A. I think those records go back, I don't recollect exactly somewheres in the '80's I think, '89 or '88 somewhere.
Q. You have described and identified as part of Exhibit 16 a map of the distribution system or a part of it for the year 1886? Did you make that map personally?
A. Yes, sir.
Q. From which that was photographed?
A. Yes, sir.
Q. You made the original tracing?
A. I did.

518 Q. I wish you would tell the Master from what source you received the information or data from which you made the map referred to in Exhibit 16?

A. I took this copy of one of these maps and from the records of the gas company marked off all the mains that had been laid by the gas company back to that time.
Q. Then you had in your possession and for your inspection the record in the gas office showing the names that were laid as far back as 1886?
A. Yes, I think it was.
Q. Do you recall having seen a record of mains laid prior to 1886?
A. No, sir.
Q. And from 1886 down to November 1910 you recall having inspected the records showing the mains and pipes laid in the streets of the city covering that series of years?
A. Yes, sir.
Q. And services?
A. Yes, sir.
Q. Number of meters?
A. I did.
Q. Covering that period, the time to which your attention has been called from 1886 to November 1910?
A. The services I could not say when they were put in whether prior to 1886 or since then.
Q. Did you see a record showing services prior to the year 1886?
A. No, sir.
Q. Did you see a record showing the number of meters installed in the city of Des Moines prior to 1886?
A. No, sir.

519 Q. Were you furnished with any information, records or data of the distribution system of the Capital City Gas Light Company or Des Moines Gas Company or any of its predecessors prior to the year 1886?

A. No, sir.

Q. And the inventory or so much of it as you supervised or compiled was made up from the records furnished you at the gas office for the years subsequent to or including 1886?

A. Yes, sir.

Q. Were you furnished by the gas company or by Mr. Haines any records showing the years in which the pavements referred to were laid?

A. No, sir.

Q. Did you attempt to ascertain when they were laid?

A. No, sir.

Q. So that you have no knowledge on that subject?

A. No, sir.

Q. In making an inventory of the distribution system of the gas works are there any specials used in connection with the mains and pipes and service connection?

A. Yes, sir.

Q. And what in a general way is the character of such specials?

A. As the ones that are shown in the inventory?

Q. Yes.

A. The valves and the drips.

Q. Anything else?

A. There are other specials used in the laying of mains, but they are not taken into the inventory.

Q. They are not referred to in the inventory?

A. No, sir.

Q. And the quantities or list of specials shown in the in-
520 ventory Exhibit 16, are they based upon actual count or upon estimate?

A. They are based upon the records of the gas company.

Q. So that so far as the inventory shows specials they are merely copies of what the records show in the gas company's office?

A. Yes, sir.

Q. And that is true as to the number of miles of mains is it not? So far as you are concerned, you have no personal knowledge of the existence of the mains in the streets?

A. Yes, I have.

Q. You have?

A. Yes, sir.

Q. What investigation did you make?

A. I went over the town pretty thoroughly, tried lighting up lamp posts in various sections of the town, went to the drips on the ends of the lines of gas mains and opened them to see there was gas in them, also went around the town in the evening to some extent to see where——

Q. You have been over that. I want to know if you had made any investigations in addition to those which you have told Judge Carr about?

A. No, sir.

Q. You don't claim in other words, you personally visited every street in the city indicated by the map and satisfied yourself that

the main as shown upon that map existed in the street and that the main was of the size and character as shown on the map?

A. No, sir.

Q. You don't mean that?

A. No, sir.

Q. But you do mean you went over the city at different
521 points and made some experiments and some tests?

A. Yes, sir.

Q. As to whether the gas was ready for use at certain points in the city?

A. Yes, sir.

Q. That is what you mean? But in making up this map and this inventory you of course relied upon the data and information which you secured in the gas company's office?

A. Yes, sir.

Q. In showing upon this inventory the number of services did you visit the different houses in the city and verify that or did you simply adopt the information and records which were turned over to you by the gas company?

A. Some of my assistants I expected visited about from forty to fifty per cent of the houses in Des Moines.

Q. To verify what?

A. Services, see that the services were there in the house and the meters?

Q. And the other fifty per cent you took for granted?

A. Took them from the records of the company.

Q. Took it for granted that the records were correct?

A. Yes, sir.

Q. Was there any particular reason why you should make a personal investigation either by yourself or by your assistants to ascertain the number of service connections, any special reason.

A. For the percentage that we did go into.

Q. Yes.

A. Yes.

Q. What was the reason?

522 A. We had no record for the service at that particular location.

Q. Where was that particular location?

A. As I have described in getting up the inventory we made a list of the houses by number on the streets in which we had a meter and locations where we had no record of the service we made a visit to that house and got the size of the service and saw that it was using gas.

Q. Was that distributed all over the city or was it in one particular section of the city where you found conditions of that kind?

A. No particular section, it was all over the city.

Q. In investigating the records in the gas company's office you discovered that they had record of meters, but in some instances where there was no record of the service, is that correct?

A. Yes, sir.

Q. And where you found conditions of that kind to exist you attempted to trace the residence and to ascertain if a service was there?

A. Yes, sir.

Q. And you did that in about 50 per cent of the services as shown upon your inventory?

A. I would say about that, yes.

Q. Did you personally go in all cases or did you trust to someone else?

A. I had six assistants doing that work.

Q. You trusted to them to go as you directed them did you?

A. Well I had one assistant who was taking care of it and seeing that they were doing the work.

Q. Did you supervise it in any way personally?

A. I was not out to see that they did the work, no sir.

523 Q. Did you go to any of these houses yourself to ascertain if service connections were made to the house?

A. I did in a few houses, yes sir.

Q. You had some twelve assistants did you in all?

A. Yes, twelve in all.

Q. All twelve came from Philadelphia?

A. No, sir; two of them were from Philadelphia, ten of them were from Des Moines.

Q. All in the employ of the United Gas & Improvement Company were they?

A. At the time that they were doing the work, yes. In the employ of the Des Moines Gas Company.

Q. Yes; but you worked for the United Gas & Improvement Company in connection with the Des Moines Gas company's property, isn't that true?

A. Yes, sir.

Q. What is the average size of service connections?

A. I would say inch and a quarter.

Q. Prior to about seven years ago have you any knowledge on the subject as to what would be the average size of service pipes?

A. You mean in the city of Des Moines.

Q. Yes, or generally?

A. From an inch to inch and a quarter. I think the average would be inch and a quarter.

Q. Inch and a quarter seven years ago?

A. In the larger towns.

Q. What do you mean by the larger towns?

A. A town the size of this or larger.

Q. Do you know what they were seven years ago?

524 A. I don't know actually no sir.

Q. The service pipe in use seven years ago or prior thereto is the city of Des Moines, did you know what they were?

A. No, sir; I do not.

Q. Do the records in the gas company's office show what they were?

A. They do.

Q You don't recollect now?

A. I don't recollect it no.

Q. Now Mr. Walter, how much on Exhibit 15 and 16 represents original information secured by you from personal investigation and inspection and how much of it is represented by records and data secured in the Des Moines Gas Company's office, tell us in a general way?

Objected to as improper cross examination, calling for a conclusion of the witness.

A. It is practically all of the distributing inventory is from records of the gas company in their office.

Q. When Mr. Maxwell came over to the gas company's office you had practically finished your investigations hadn't you?

A. Yes, sir.

Q. And you were then reducing the result of your investigations to writing?

A. Yes, sir.

Q. Compiling the inventory in other words?

A. Yes, sir.

Q. Was the clerical work performed in Des Moines or in Philadelphia?

A. Merely the inventory, the data for the inventory was gotten in Des Moines.

Q. The balance of the work completed in Philadelphia?

A. Completed in Philadelphia.

525 Q. All your field notes were taken here of course?

A. Yes, sir.

Q. Did you send them to Philadelphia in advance of your going or have them with you when you went there?

A. Had most of them with me.

Q. Did you send any in advance of your going?

A. Some of them.

Q. About how much?

A. I don't remember exactly. I sent one of my assistants from Philadelphia back with some of the information before I was ready to go with the data.

Q. Was there some work performed on your data before you arrived there, some maps and charts prepared, do you remember that?

A. No, sir.

Q. Was there any tabulations made in Philadelphia before you arrived there with respect to the quantities?

A. Our rough field notes were being worked up.

Q. Did they have the number of miles of mains tabulated when you got there?

A. I don't remember.

Q. Do you know where your notes are from which this inventory was made?

A. Yes, sir.

Q. Where are they?

A. In Des Moines.

Q. Des Moines Gas Company's office?

A. Yes, sir.

Q. When were they brought here?
A. I don't know just when they got here.
Q. Since you have arrived in the city?
526 A. They were here before I arrived.
Q. I understand you, you finished up your work here in about the months of January?
A. Yes, sir.
Q. When was the inventory, so far as you were concerned, when was it completed and put in book form?
A. Some time in February.
Q. The latter part of February?
A. Latter part of February.
Q. Did you finish with your part of the work first or was it all completed together?
A. It was practically all completed together at one time.
Q. And by whom was it verified?
A. How do you mean verified?
Q. After you went to Philadelphia and after the data and information furnished by you was worked out in this form was there any attempt made by any one to verify it?
A. All the report was checked back on the original data from which we had taken that in Des Moines?
Q. No one came from Philadelphia to go over your work and attempt to verify the inventory which you made and which you submitted?
A. No, sir.
Q. You say they did not?
A. I don't think so.
Q. Are you the author of the matter which appears on page 208 of Exhibit No. 15?
A. Yes, sir.
Q. You are the author of anything that appears in the inventory from page 208 to 230 covering the distribution system were you?
A. Yes, sir.
527 Q. You had no former connection with this plant in Des Moines?
A. No, sir.
Q. The soil man to which you have called attention and which is part of Exhibit 16, did you personally make any tests as to the formations in the city of Des Moines to verify that map?
A. No, sir.
Q. Do you know anything about it except that which you were told or which was told to you?
A. No, sir.
Q. And that is true as to the map in its entirety?
A. Yes, sir.
Q. Now you speak about the lamp service of the Des Moines Gas Company, it renders no service for street lighting does it in the city of Des Moines as you understand it?
A. There are something like 1,100 street lamps in the city of Des Moines I think.
Q. What I mean, the Des Moines Gas Company is not furnish-

ing to the city of Des Moines lamp lights are they for street lighting purposes?

A. There are street lights in the city of Des Moines and those lights are gas lights.

Q. In making up your inventory just how have you treated the lamps and equipment and the service connections to the public lights?

A. On page 218 of Exhibit 15 is given the number of services, lamp services and lamp posts in use as 1,137.

Q. So that you have included in this inventory the lamp posts which you found have you?

A. Yes, sir.

528 Q. And the service connections made thereto?

A. Yes, sir.

Q. And it is shown here, page 218 a sum total of 1,140, that represents services and posts in use does it?

A. There were three of those service posts were not being used at that time. They had been in use at some previous time, but had been discontinued for some reason.

Q. I see you have shown 1,137, is that it?

A. Yes, as being in use.

Q. You have used the same average size of service pipes for the lamps as you have to the houses?

A. I merely give the average length of the lamp service, not size at all.

Q. Does the map show the size you used or adopted?

A. I don't think the maps show anything about the size.

Q. You treated the service there, used the same length which you did the other service, so it would make no difference there in your computations or compilations?

A. Merely giving the length of the service, the average length of the service and the number of the services irrespective of size.

Q. What average length did you use?

A. Eighteen feet.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

529 Wednesday Forenoon Session.

JULY 19, 1911, at 9:30 a. m.

All counsel for the respective parties present.

Testimony on part of complainant resumed as follows:

E. P. WALTER, re-called for further cross examination, examined by R. O. Brennan, Esq., testified as follows:

Q. In making up your inventory of the distribution system, did you attempt to record therein the dates upon which the mains and pipes and services were installed?

A. No, sir.

Q. Did you have any record or memoranda furnished you by the

company by which you could determine just when the mains and pipes were laid?

A. I think we could determine it from the Company's records.

Q. You were simply then concerned in making a list of the properties?

A. Detailed inventory.

Q. And the greater portion of it consisted in making an abstract of the Company's books?

A. Yes, sir.

Q. Are you able to tell us in what part of the system you found the oldest services?

A. The oldest services would be found in the oldest part of the system as shown on the map of mains in the ground in 1886.

Q. Can you tell us in a general way what part of the city that would be in?

A. That would be in the business section of the city as it is today.

Q. In East or West Des Moines?

530 A. In both. Plate 30 in Exhibit 16 would show it.

Q. Do you know how many miles of mains are shown in plate 30 of Exhibit 16?

A. About 16.

Q. About 16?

A. Yes, sir.

Q. And all of these mains shown upon this plate were installed prior to 1887?

A. Yes, sir.

The MASTER: How many miles did you say?

A. About 16.

Q. This plate 30 shown in Exhibit 16 shows the major portion of the distribution system too in West Des Moines; are you able to tell from an inspection of this plate just how many miles were in East Des Moines?

A. No, sir; I couldn't.

Q. You can't approximate that, can you?

A. It would be merely a guess, that would be all it would be; approximately three to four miles; that is merely an approximate answer to that question.

Q. Did you have a record furnished you by the Des Moines Gas Company showing the condition of its distribution system and the extent of the same in the year 1894?

A. No, sir.

Q. Have you any way of knowing now about what their distribution system was in that year, the extent of it?

A. No, sir, I have not.

Q. And all of that information was available in the office of the Gas Company?

A. Yes, sir; I should think that could be gotten at at the present time.

531 Q. How much of this distribution system extends into what is known as South Des Moines?

A. I don't know how much it would be in miles.

Q. I mean that district of the city lying south of the Raccoon River and the portion of it lying south of the Des Moines River?

Judge CARR: If I might suggest, Mr. Brennan, the maps and plates show what portion of it is there. You can determine that from the map. Exhibits 17 and 18 show the mains that are south of the river.

A. I don't know how much in feet that would be.

Q. Can you scale the map and tell us?

A. Yes, sir; but it takes time.

Q. I would like to know approximately how many miles there are on the south side of the river?

A. I don't know.

Q. I thought you had done that—does your inventory show it?

A. It shows it, but not divided off into sections.

Q. Is there any way you can take the inventory together with the map and tell us by scaling the map?

A. By scaling the map you could get it exactly.

Q. Does that take very long?

A. I should think it would take two or three hours—couple of hours.

Q. Mr. Walter, will you secure for us the extent of the distribution system of the Des Moines Gas Company in the year 1894?

A. December 31st, 1894?

Q. Yes.

Mr. GUERNSEY: I think if they want to get that information they ought to get it themselves. We offered them the facilities for it.

Mr. BRENNAN: You have these witnesses here for the pur-
532 pose of showing all these things; he has his field notes and made these investigations.

Mr. GUERNSEY: Not on this question.

The MASTER: The only point it may be material on is on the age of the mains.

Judge CARR: Our thought is, on cross examination they ought not to put the witness in the position of bringing in records to which they have access. It seems to me if they want the records, it is not the proper way of getting at it.

The MASTER: I am not sure about that. The age of the mains is material or may be material. Consequently it is information I am rather inclined to think you ought to furnish. Besides all that, all this information obtained from these records they have a right to have them produced, all of them.

Judge CARR: We do not question that. Here is the proposition: Our records are open to them. They want to put our witness in the position of hunting up what they want, doing all the work they ought to do themselves. The records are open for the-. They are now investigating the records and getting such information as they want. Our thought is that it is not proper or fair cross examination to ask the witness won't you bring me the record. If it was the only way they have of getting at it, it would be a different proposition. But the records are there. If they want to know what the main system was in a given year, the records are there. We don't think they

ought to put our witness in the position of hunting up the information for them when the source is open to them.

The MASTER: All this evidence with reference to the records, unless those records are produced and produced by you, in my
533 judgment, it is incompetent. I suggest that to you now.

Judge CARR: Do you mean the inventory in so far as the man making the inventory as made up as gotten from the record, that the inventory or list of property is incompetent, unless we bring the records referred to in every instance?

The MASTER: I am inclined to think so. An expert on the examination of the books is all proper enough, but those books must either be verified or proved, before the evidence of the expert would be competent.

Judge CARR: Take an ordinary case, a man making an inventory of a stock of goods. He brings it into court and has a list of the property. Surely you would not say that the list, if it is a correct list, is not admissible, unless he brings all the information from which he makes up that list.

The MASTER: I am talking about this record. That being true, of course you are not bound to produce those books unless you want to.

Judge CARR: We can go through all these details and bring our whole records here. We have been accused in the public press of doing a whole lot of unnecessary work and piling up costs in this case. Of course, if the city attorney had this list, as the evidence shows, for months and having had it, and at our invitation they have had men taking notes of what we were doing; all done in the hope that we could agree upon this inventory, or that we could perhaps agree upon any inaccuracies that might exist. Of course, if the attitude is that this inventory must be proved and that every item or detail from which it was prepared must be proven, we can do it.

Mr. BRENNAN: We are asking for information here that is not shown in the inventory. It shows the extent of the distribu-
534 tion system in 1886. They have seen fit to make that important. We are simply requesting them to furnish the same information with reference to the year 1894.

Judge CARR: Why not every other year?

Mr. READ: We have put a witness on the stand. That witness possesses certain information which he has disclosed and produced. The witness has prepared what we believe to be sufficient for our purpose and the purposes of this case. Now the proposition is that the witness shall go out and prepare other information that he does not now possess. The limit of the requirement of the witness is to disclose what information and knowledge he possesses. He is under no obligation and it is improper to send him out to acquire other information and make other compilations. As the Judge has said, the information which the witness would compile is open to the other side and it is certainly not required of our witnesses that they should enter upon the task of preparing what the other side may want.

Mr. BYERS: May I suggest this in that connection: this witness

in his examination in chief, when he was being qualified by counsel, stated, as I remember it, that he made those inventories, and that he was here a certain number of days and had access to all the books and records of the Gas Company and used them in preparing the several exhibits. What Mr. Brennan is asking for is exactly the same as if some witness, some expert witness or accountant was on the witness stand and was testifying to the condition of the books at a certain time, and stating that he had made a complete examination of the books and had reduced his examination to writing, and we had a part of his examination reduced to writing, and we were
535 asking for the rest of it. They say they selected such portion of the facts upon which this testimony must rest and from which you must draw your inferences, as they think they need. When we get all, at least all this witness had before him, when he made this inventory and formed his conclusion, then we will be able to say whether what he does produce is worthy of credit and is entitled to be considered of some weight in this case. For counsel to say that an expert witness who is simply going to produce his conclusions as they may appear upon the maps and inventories on direct examination, of the record, for counsel to say that they may rest upon just such portions of the record, and that we must take it whether we are satisfied with it or not, I don't think that is the rule. The witness says these other facts are where we can get them and all we ask is that he furnish them, so that we can say after we have had an opportunity, whether it is all we want to have or not.

Mr. GUERNSEY: I started some of these objections—now this witness is on the stand merely for the purpose of identifying or testifying to the accuracy of certain written evidence. The question that is presented here is not a question as to the competency of the testimony, because he is not asked to testify to anything. But the question presented here is whether this witness shall at the request of the other side undertake an examination of records which are now accessible to the other side, for the purpose of furnishing them some information which does not in any way touch the correctness of these writings he is identifying, but which they think they may desire for use at some time in the progress in this case.

536 It is not a question of whether or not we shall furnish them access to our books, because all of this week, at least, their men have been at work upon the books which contain this information and are at work there now, and we are *are* furnishing a man to help them do the work. It has occurred to me, if counsel wanted to know how many miles a map would scale south of the river, it was entirely proper for them to allow their engineers to scale it. The question presented to your honor is not whether we shall furnish them all the information they want, but whether we are bound to compile from our books the specific things they may regard as material, not for the purpose of showing whether or not this map is true, because this map don't purport to show the mains in 1894; it purports to show them to-day. We say we are not bound to do this work for them, any more than we are bound to go to

work and make a map showing exactly the condition of the paving in 1894 in Des Moines. We might say we regard that as material and make use of that map; it may cost us two or three hundred dollars. They would say to us, those records are open to you, if you want that map, go and make it. That is the question we have here; not whether they have a right to get this information, but the question is, whenever they want to get some information they don't want to take the trouble to compile it, but we shall perform the labor and compile it for them. The question I am making is that we are not bound, where we have offered them the sources of information, to go to work and compile that stuff that we do not regard material, so that they may determine whether it is material or not.

Mr. BYERS: Why shouldn't you do it in this kind of a law suit?

537 Mr. GUERNSEY: For just the same reason, if I wanted to know in what line and on what page Mr. Brodnax wanted to testify to in this record, I should say, Mr. Byers, will you look it up for me? The answer is just the same as if Gen. Byers asked me why I shouldn't pay his taxes—because I don't owe them.

The MASTER: Let me be understood. There are two questions involved in this. This witness was basing his testimony, as I understand the situation, on the size and character of the mains largely, if not entirely, collected from the records of the office——

Judge CARR: May I just say there, that the witness says he made the inventory from the records of the office, and then his testimony shows, having made the inventory—that don't mean the whole inventory—having made the inventory, then he inspected the property on the ground for the purpose of verification, so that his information did not depend entirely upon the records.

The MASTER: It did not depend entirely upon the records, but the record now is primary evidence of all these matters collected from it, and that is the best evidence, that record is the original evidence also. They have a right to have that record produced.

Mr. GUERNSEY: We are willing to produce it.

The MASTER: And identified by the witness, because he gets the length of the mains and the time they were laid and all those things from them. He has a right to have them produced. It is another proposition as to whether or not he is required to go to that record and make out a statement from it of what the condition was in 1894. But the record itself, he has a right to have produced. In

538 fact I doubt very much whether this evidence is competent without its production.

Mr. GUERNSEY: We are perfectly willing to produce it.

The MASTER: Let me go a little further and be understood. I understand an expert on books and papers, and all that, where they are not public records, but where they are private records, is simply to aid the court in reaching the facts, instead of having to go over a great many things. That is held in the case of the State vs. Brady. A compilation where the books are produced is competent. I know I have had that in the state courts before me a good many times. An expert is perfectly competent, he may make up a table

and that is competent. But the books are not here and produced; they have no opportunity to examine with reference to the books. I am speaking a little fully, because I don't want to be put in the attitude of rejecting evidence you are claiming to be competent. So I think that the record should be properly here and properly identified. He has a right to cross examine in reference to the whole of that record, because he has a right to know whether or not this information given here is correct and that it is derived from the record.

Judge CARR: You readily see that a set of records covering many years and many miles of mains—182—all laid since 1886, except about sixteen miles, your honor will readily comprehend how voluminous those records are. With the very thought your honor has in mind, we tried to conduct matters in such a way as to avoid making a vast record in this case. Therefore I again advert to the fact that as long ago as March we furnished at the request of Mr.
539 Brennan a list of our property and invited them and continually invited them to inspect the record. It has seemed to us that we could obviate the difficulty your honor has in mind, if they had access to the property and inventory, that we might be able in the end to cut down a great deal of the record in this case. That has been our attitude all through.

The MASTER: I understand that.

Mr. GUERNSEY: We don't want that statement on the record here to remain there without being explained, that we have been in possession of the records since the first of last March. We have had the inventory, Exhibit 15, but the plates and maps referred to in Exhibit 16, we did not have. We were furnished a copy of what purports to be Exhibit 17 some two or three days ago.

The MASTER: I doubt very much whether you can require the witness to go to work for two or three days and do those things. But you do have the right to have that record produced; you have the right to ask the witness to produce the *the* record.

Judge CARR: We stand ready at any time to do that.

Mr. BRENNAN: We want an opportunity to cross examine this witness with reference to the records which he has attempted to identify in this court. If he has among other things seen fit to incorporate a map showing the distribution in 1886, we think it material to inquire of him with respect to the system in 1894. We would like to have the witness tabulate that. If it takes two or three days, let him bring in the books. It occurs to us surely, that the amount of extensions made in 1894 could not have been so great, but what they could readily furnish us that informa-
540 tion.

The MASTER: You bring me the authority requiring a witness to go to work and look up a lot of things. But those records are here and you have a right to cross examine this witness.

Mr. BRENNAN: What we are asking for is information with respect to the extent of the distribution in 1894.

Mr. GUERNSEY: I suppose Mr. Walter is probably the only man who knows just what books he used; so that we had better send

him over to the office with somebody now and let him bring over all the books he used as to this inventory.

Mr. BYERS: We stand on the record. They can bring what they please. We will stand on the record.

Judge CARR: We think in view of the attitude and in view of this situation we can get along better if we will just send and get those records and bring them up. We are willing to have this witness go and get them in view of the whole situation here.

The MASTER: Can't we go on with the witness?

Mr. GUERNSEY: It will be claimed they ought to have been here while he was on the stand.

The MASTER: Well, if the witness is willing to do it. Let him answer the last question.

(The last question put to the witness was as follows:)

Q. Mr. Walter, will you secure for us the extent of the distribution system of the Des Moines Gas Company in the year 1894?

A. I can produce the records of the Gas Company for the mains in use by the Company, December 31, 1894.

Q. The same records which you had at the time you made up the inventory Exhibits 15 and 16?

A. Yes, sir; the records from which they were made.

Q. At whose instance and request did you incorporate in
541 the inventory the map of the distribution system for the year 1886?

Objected to on part of complainant as immaterial.

A. I don't know that I know. I don't think I can say at any special person's request.

Q. Did you receive that direction from any one with reference to that year?

A. My understanding is the United Gas & Improvement Company first had possession of the gas works in the city of Des Moines in 1886.

Q. You were instructed to show in your inventory the extent of the distribution in that year?

A. Previous and about that time the Des Moines Gas Company took possession.

Q. You say they came into possession in 1886, that is your understanding?

—. ——.

A. You were instructed by some one in authority to show in your inventory the extent of the distribution system in the year '86?

A. Yes, sir.

Q. And you have obeyed those instructions?

A. As far as possible.

Q. And have illustrated that by this plat, number 30 in Exhibit 16?

A. Yes, sir.

Judge CARR: Now, if the court, please, it seems to me we cannot

conduct this orderly and better than to let this witness get these records.

The MASTER: I don't want to take up a lot of time here. Have you any other witness you can use?

Judge CARR: We have other witnesses, but we cannot very well go on until we get through with this witness.

The MASTER: Have you any further cross examination?

542 Mr. BRENNAN: I might further cross examine the witness with reference to the record of 1894.

The MASTER: How long will it take you to produce the records?

Judge CARR: Possibly about an hour.

The MASTER: That is an hour wasted.

(Witness excused pending the production of the records).

HENRY MOUL, being first duly sworn on part of complain-

543 ant, examined in chief by Judge Geo. H. Carr, testified as follows:

Q. State your name, age, place of residence and occupation.

A. Henry Moul; residence 515 East Fifth Street, Des Moines, Iowa; I am in my fifty-ninth year; I am foreman of the distribution department of the Des Moines Gas Company.

Q. How long have you resided in Des Moines?

A. I have been in Des Moines since 1885.

Q. How long have you been in the employ of the Des Moines Gas Company and its predecessor, the Capital City Gas & Light Company?

A. I commenced my connection with the Gas Company in the fall of 1886; the 25th of October.

Q. In what capacity?

A. Well, I was a common laborer.

Q. And how long did you continue to work for the Company in that capacity?

A. About three years, I believe; no four years.

Q. What particular line of work were you doing?

A. Construction work, the extension of mains and new service work.

Q. And after the three years then what position did you take in *in* the employ of the Company?

A. I was promoted to the foremanship of the department.

Q. Explain to the court what your duties were as such foreman.

A. My duties was to see that all mains were laid properly and all new service connections were made from the street to the consumers, and all complaints taken care of, and all outside work pertaining to the Gas Company.

Q. Then it was in about 1889 that you became such foreman and assumed the duties you have described?

544 A. I think it was on the 5th day of May 1889, and it might have been possibly 1890; I ain't positive about the year.

Q. Now since that time have you continuously held the position and performed the duties of foreman?

A. Yes, sir.

Q. To what extent has your time been devoted without interruption to the performance of your duties?

A. The first fifteen years I was with this Company, I was not outside of the city limits. My attention was wholly and solely both day and night and Sundays given to the work. Since that time I have possibly been off in the neighborhood of ten weeks different years.

Q. You say off, taking rest?

A. A short time.

Q. On how many occasions have you been away from the work; you say it aggregates about ten weeks?

A. I can tell you exactly, just give me a minute to think now. In the year 1904 I was off five weeks; in 1905 I was off three weeks; in 1907 I was off two weeks; in 1910 I was off one week.

Q. Now, have you been off of work from sickness or any other cause than the ones, the periods you have mentioned?

A. Once.

Q. How long was that?

A. Well, I didn't attend to very much business for four days. I was out on the work every day.

Q. You was a little off of feed for about four days, but still supervising the work?

A. I was crippled up a little bit.

Q. Have you now given all the time that you have been away from the work since you assumed the duty of foreman as you
545 have stated?

A. Practically, yes.

Q. When you were away from the work for a week or ten days, these different intervals you have spoken of, was the work of laying mains and extensions and services going on?

A. Yes, sir.

Q. During your absence?

A. Yes, sir.

Q. When you returned, what if anything did you do for the purpose of advising yourself of just what had been done during your absence?

A. I went over the work thoroughly, made a sketch of it, what was completed I turned into the office, and what was uncompleted I finished after my return.

Q. Did you advise yourself on an inspection of the work done during your absence, so that you have a personal knowledge what mains were laid, the size of the mains and where they were laid during those short intervals you were away?

A. Yes, sir.

Q. During the balance of this long period, has there been any mains laid or any work done on the mains in the city of Des Moines with which you are not familiar from personal knowledge?

A. No, sir.

Q. I wish you would tell the court in a general way to what extent you are familiar with the main or distribution system of the company, including services and the mains laid in the streets and stating and covering by your answer whether you are familiar with the streets upon which the mains are laid and the size of the mains on the various streets?

A. I don't know whether I can use language to fit in there or not. It is my duty—when I was first promoted foreman, it
546 was my duty to see all the mains taken care of and all new services and house connections, and my attention was given to that invariably. I have made it a habit to keep an accurate record of everything being done, new work or repairs. When I commenced here the system was very small and I had an opportunity to repair all the mains that were in the system at my beginning, and I have had supervision over all new mains that has been laid since that time; that applies practically to the new service work, with the exception of possibly one year, I had but very little to do with that work for one year, 1909; but outside of that I gave my personal attention to the extensions and new service work and repairs.

The MASTER: Do you know about the service, all of it now?

A. Practically, yes sir.

Q. I will call your attention to a map which is found in Exhibit #16, and which is designated as plate 30, location of gas mains in 1886, and ask you to examine that. (Witness examines map.) Have you now made an examination of that map or plate?

A. Yes, sir.

Q. State to the court whether that plate or map is a substantially accurate map of the main system in Des Moines at the close of the year 1886, in so far as it can be shown on a map of that size?

Objected to on part of defendants as incompetent, immaterial and not the best evidence of what the witness has already said.

A. Well, it is practically correct. There might be a few small corrections, but it is practically correct.

Q. Let me ask you if you could from memory, without the aid of a map, state just what streets in the city of Des Moines the
547 mains were laid on at the close of the year 1886?

A. I think so.

Q. Well, now, in view of the objection made, you may go on and state to the Master from recollection the mains on the streets as they were in 1886, giving the size of the main, if you remember, and just where on the streets they were laid.

Defendants interpose the same objection as last above.

Q. You may confine your answer first to one side of the river, either side you may desire to take up first.

A. On the east side of the river, starting at the present works, there was a 14" line going to Court Avenue; east on Court Avenue it was 8 inch as far as Fifth; 3 inches as far as Sixth; 3 inch south on Fifth street as far as the Rock Island Railroad; north on Fifth

street was 8 inch and east on Walnut was 6 inch, as far as the Capitol or Eleventh street. Now we will take Locust street from First to Ninth, 4 inch, part way, and then part way 3 inch.

The MASTER: Where is that with reference to the Capitol.

A. Ninth street is west of the Capitol. On Grand Avenue there was at that time a 3 inch from East First Street to Fourteenth.

The MASTER: Did you give Walnut?

A. Yes, Walnut west from Fifth to First was 4 inch; there was a 2 inch on Second street between Court Avenue and Walnut, and East First Street from Court Avenue to Locust 4 inch; from Locust to Grand 3 inch. I am giving the size of these as they were at that time, not at present.

Q. Now, how far east did you say the main was laid on Walnut street?

A. Right south of the Capitol, Eleventh street; finishing with that year we ran to Fourteenth at the last end of '86.

Q. Was there anything north of Grand Avenue on the east side?

548 A. On Fifth street.

Q. You gave that.

A. No, I hadn't got to it. That is a 3 inch from Grand Avenue to Maple; that is, it was at that time. Now, in the latter part of that year, the beginning of my time, we laid a piece on Court Avenue from Sixth street to Twelfth street; in connection with that they laid some spurs of small pipe south from Court Avenue on Sixth, Seventh, Eighth, Ninth, Tenth and Eleventh. Then there was a little piece in on Seventh street from Walnut to Locust. There was a piece in on East Sixth Street from Walnut to Grand. There was a piece of 6 inch on Sixth street from Walnut to Locust. That is all on the east side.

Q. Now, let me ask you, after the mains were laid at the close of the year 1886, on Court Avenue, do you remember distinctly where the main was laid out on Court Avenue as far as Fourteenth Street during the year 1886?

A. No, sir, on Twelfth.

Q. Was it laid as far as Twelfth?

A. Yes, sir; at the close of that year; it was froze up when they were putting in the last end of it.

Q. Do you recall distinctly whether that was before or after the first of January the work was completed?

A. I couldn't say, it was right in the beginning of my time; I know it was cold weather.

Q. The works at that time was on the same general location they are now?

A. Yes, sir.

Q. Beginning with the works and going to the west side, describe what mains there were at the close of the year '86?

A. Two 10 inch lines, one beginning on east First Street,

549 right south of the Wabash Railway; there was another one from the Court Avenue bridge to First street. Then there is an 8 inch line going north from First street from south of the

Wabash to Locust. There was a 6 inch on Court Avenue from First Street to Fifth. Then on Walnut street there was a 3 inch from First to Second; an 8 inch from Second to Eighth. On Locust street there was an 8 inch from First to Second, and 3 inch from Second to Fourth, and 4 inch from Fourth—I think that 4 inch goes as far as Twelfth street; and then there was a piece of 3 inch in up to where Clarkson used to live, this side of Fifteenth street. On Grand Avenue was a part of a three inch between Fourth and Fifth; and then from Seventh to Ninth was a six; from Seventh to—well Hubbell's place it is now—it was B. F. Allen's—was a 3 inch. Now on Center street there was a 6 inch from Second to—well it is Fourteenth now, they called it, just a little bit from Fourteenth.

Q. What is now Fourteenth?

A. I believe they call it Fourteenth now; I think it is.

Q. To what point?

A. It was just a little bit beyond there. On Crocker street there was a piece of 3 inch in between Third and Fourth. Now we go back to the north and south streets. On Second street, starting at the Wabash with an 8 inch, up as far as Walnut. And start again at Locust with a 6 inch goes to Center, and then a 4 inch—well it only went about a couple hundred feet north of center. Now Third street, I guess it is the old K. D. Market street, begins at Market street on Third and runs 3 inch up to Walnut; then there is a 4 to Grand; then a 3 up to Center, pretty close to Center, not quite.

There is a great deal of this that I am talking about is not
550 in the ground at present; this was at that particular time when I commenced. Now 4th street, a 6 inch right north of the Rock Island to Walnut; then a 4 inch from Walnut to Center, just a little bit beyond Center a couple hundred feet, I think. Then Fifth street from Chestnut to south of School, 3 inch; and there is a little strip on Chestnut from Fourth to Fifth a little beyond Fifth. Now Sixth street, there is a 2 inch from Cherry half way to Mulberry, and then 3 inch to Mulberry, just a little north of Mulberry. Then it starts at Walnut again and went to School, 4 inch. Seventh street is a 3 inch with the exceptions of a couple half blocks, all the way from Mulberry. There is a half block from Mulberry that is not there. Then there is 3 inch to School. There is a piece on Ninth street between Mulberry and Walnut, 4 inch. Cherry street was 3 inch from Fifth street, I think, to Eleventh. Then 2 inch over to Mulberry. On Mulberry there was 3 inch from Fifth Street to Eleventh. I believe that is just about all that was in.

Q. Now, was there some changes or extensions made in '86 after you went to work?

A. Well, they were making changes all the time.

Q. You had nothing to do with the main system or laying of mains until you went to work for the Company; you had no special information with regard to it?

A. Not a thing.

Q. In what way have you learned as to the size of the mains,

particularly in the system as it was in 1886? How have you got that information about that?

A. Well by seeing and repairing, locating everything in the ground, and all new work. I took a record of everything which went into the ground, and practically after it was in the
551 ground before it was covered up.

Q. How much of the system as it was in '86 have you personally relaid?

A. Quite a bit of it; practically all of it. There is three or four streets possibly I have not relaid, that is enlarged.

Q. In relaying you sometimes at least use a different size pipe from what you took out?

A. Yes, sir.

Q. So that the size of the pipes in that part of the system is not the same now in many instances as it was in 1886?

A. No, sir.

Q. Well, now, such parts of the system as it was in '86 that you did not relay and replace with new pipes, what personal knowledge have you of that?

A. All the knowledge anybody could possibly have, being there in person.

Q. I am speaking now, if there are any of those mains that you have not relaid, what do you know about that?

A. There is no main in town, I don't suppose, a foot in town I have not dug up and visited personally.

Q. You had occasion to repair and uncover all parts of them?

A. Yes, sir.

Q. In that way you got your information as to such mains as you have not relaid?

A. Yes, sir.

Q. Do you know the streets of Des Moines that are paved?

A. Well, a good many of them, yes; especially if there is a gas main under the pavement.

Q. You know all of the streets of Des Moines that are paved that have gas mains under them?

A. Yes, sir.

552 Q. I wish you would examine plate #29. (Witness refers to plate.) Now, you will observe that plate purports to be a map of the city showing the paving, and you will notice the key showing the different kinds of paving in different colored inks. Have you examined that map?

A. I am doing that right now.

Q. State whether that is substantially a correct map of the paving system of Des Moines, as you know it.

A. It is practically correct, it is not exact.

Q. Have you mains under all of the paving of Des Moines, that is to say, have you mains on all streets of Des Moines which are paved?

A. No, sir.

Q. Will you refer to plate 31, please, and examine that plate and tell the Master whether that represents the main system of the Com-

pany as it was in Des Moines the first of this year, and showing with substantial accuracy and correctness the location of the mains on the various streets of the city?

A. I will say this map is absolutely correct. There might be a slight variation in some small portion. I would say it is absolutely correct.

Q. Now I will ask you if you could from memory describe or state to the court the main system of Des Moines, showing the streets of the city upon which those mains are located?

A. Yes, sir.

Q. And could you also from memory and your personal knowledge state to the court the size of the mains of the various streets?

A. Invariably so.

Q. I wish you would examine plate 32, which is marked "Soil Map." And you will observe in the right hand corner of
553 the map a key to the map, which is in colors, indicating the different kind of soils. Now let me ask you, Mr. Moul, whether you are familiar with the kind of soil with which you have to deal in laying mains over the city of Des Moines?

A. Yes, sir.

Q. Does the character of the soil differ in different localities of the city of Des Moines?

A. Yes, sir.

Q. Of course, saying the city of Des Moines, I mean that portion where your mains have been laid.

A. Yes, sir.

Q. Tell the Master what kind of soil you have to deal with in laying mains.

A. We have a very white sand soil; then we have a sandy soil; we have a hard clay, and we have got what they term water clay. They term another one gumbo—hard, black dirt. We have got considerable stone in different portions of the town, it is pretty stony. But clay practically speaking will cover the largest portion of the town; clay and sandy soil mixes together and is the largest portion of the soil we have got in town.

Q. Now, I notice on this map what is indicated under the key as water near the surface; what do you understand by that?

A. Well, that is in low places, take a place like on the south side, a kind of sandy loam; the conditions of the river brought the water nearer the surface. Then we have localities—take it out towards Grand View that the ground is full of water and no way for it to get away whatever.

Q. Water near the surface, in speaking of soil, indicates the kind of ground where you have water to deal with in the ordinary season laying your mains.

A. No, it does not indicate the ground; I would say it in-
554 dicated the season more than anything else.

Q. Does it indicate the ground which in ordinary reasons in digging down to lay your main you have water to contend with?

A. Yes, sir.

Q. Wet, low places?

A. Yes, sir. We sometimes strike water on the top of the hill, and quick sand together.

Q. I wish you would examine this plate called Soil Map and state whether that with substantial accuracy shows the different kinds of soil with which you have to deal in laying mains in the city of Des Moines.

A. It will in different localities. As I said before, I don't know exactly what those different colors would take in. Soil will change. We will say for instance you are going up Second street, and you will strike the first thing a loamy sandy soil. Then as you go up the hill you will strike water clay. Then softer clay, and then finally get into a bed of quick sand. Further on up you strike a bed of sand stone, they lay within a short space of one another; they ain't over 35 or 40 feet apart. I would say those colors takes in that territory in which those conditions exist.

Q. What do you say as to whether this does with substantial accuracy indicate the different kinds of soil with which you have to deal?

A. I would say it is practically right.

Q. Do you have rock in places in Des Moines to cut into or deal with? in laying your mains?

A. Yes, sir.

Q. Where are those places?

A. You will strike one over on East Court Avenue east to
555 Ninth street.

Q. How large a place is that?

A. Well, it varies, practically from Ninth to Tenth, before we get out of it in our depth.

Q. Now, if you will refer to the map, what if anything is there on the map that indicates that rocky place you have spoken of?

A. You can see a dot colored red.

Q. That round red mark?

A. Yes, sir.

Q. Is there any other place you have to contend with rock?

A. Take Second street from this side of, I guess it is Ascension or Division, I don't know which, up until you get past Fourth street or University.

Q. Now that is on the west side?

A. Yes, sir.

Q. What is there on the map that indicates that rocky condition?

A. There is a red kind of an oblong mark here.

Q. Now, is there any other places?

A. We have got a place out on Twentieth and Francis, from just south of Francis to north—I can't name that street now; about a block long anyhow on Twentieth street.

Q. Is that indicated? in some manner on this map?

A. Yes, sir.

Q. What?

A. That has got a round mark colored red.

Q. Are there still other places that have rock?

A. I can't see the names on those streets.

Q. What I am getting at in this question Mr. Moul, is to call for your personal knowledge; then we will see if your personal knowledge corresponds to the map?

A. You have stone to contend with on College Avenue or
556 State Street, practically from Bluff to Fifth.

Q. What on the map indicates that?

A. I can't see the names of the street- on there. I suppose that is supposed to be marked here; I don't know whether it is in that particular locality or not.

Q. Judging from the map?

A. I would judge that is where it will be. It is a kind of an L shaped mark here. It may not be exactly that position or that place.

Q. There is still another place where you found stone to interfere with you?

A. Well down around Prospect Boulevard, I believe it is called down there, around Lincoln Avenue, Eighth street, right in that locality we get stone.

Q. Where do you get your sandy soil mostly?

A. Down on the river. Either side of the river and out towards the fair grounds.

Q. Now, the part of the map colored brown, I should call it, does that show substantially and accurately the sandy regions you have referred to?

The MASTER: Does it mean sand or sandy soil?

A. It takes in practically both of them. Of course there is a part going through down, a street than runs diagonally across the town, that is very light sand, and both sides of that there is more sandy soil, more dirt mixed; but there is a street going through here, 60 or 70 feet wide, that has white sand pretty difficult to handle.

The MASTER: Fine sand?

A. Yes, sir; seems like the river run through there.

Q. By what color do you find that indicated?

557 A. I suppose that is in the yellow.

Q. Where is the region of hard clay?

A. That varies; it is practically in any part of town, you will strike more or less.

Q. You have two kinds of clay, if I understood you?

A. Yes, sir.

Q. How would you designate that?

A. One is what they term water clay and the other is a kind of, well soft clay, more moisture in it; that is, it mixes up better.

Q. Looking at the map again, the portions of the map colored what I would call light green, the first color at the top of the key, is that the kind of clay you speak of of which you have a great deal?

A. Yes, that is what we call ordinary clay.

Q. Now, does the coloring on the map substantially represent with substantial accuracy the correctness of the regions where that kind of clay prevails?

A. Well, I would say yes.

Q. Now, hard clay, where do you find that?

A. Well that is scattered mostly up in Highland Park.

Q. The green portion up in Highland Park shown on the map, does that indicate substantially the region of the hard clay?

A. Well, practically the territory.

Q. Have you any of that kind of soil any place else in Des Moines?

A. Not particularly that kind.

Q. I will call your attention to the region marked with a dark green on the plate in west Des Moines?

A. Well, that is what we term a sort of gumbo.

Q. You call that gumbo?

558 A. Well we call it that.

Q. It is a clay soil?

A. Yes, it is a very hard clay soil.

Q. It is different from the other clay formations?

A. Altogether different.

The MASTER: Kind of rubber like?

A. One is; the other is kind of hard, clumpy, won't mix.

Q. Does that dark green coloring on the map at the point indicated show with substantial accuracy where that kind of clay prevails?

A. That kind of clay prevails around University in that locality. As I said before, I cannot see the names on this map.

Q. Can you tell by examining the map whether that shows substantially the location of that formation?

A. I would say it would.

Q. Take the street running north of that, marked University Avenue, and then to diagonal street running through it, Cottage Grove Avenue, and the street east of it Nineteenth, and west Twenty-eighth, and the street at the extreme south point extending south about midway to Woodland Cemetery on the west side, I wish you would tell the court whether this substantially represents the region of that hard clay?

A. Yes, as I said before, there is little streaks of this that you will strike in between the ordinary range.

Q. Now, the portion of the soil which is here marked water near the surface, examine the map with special reference to that that being a blue color?

A. It is a light blue.

Q. State whether that shows with substantial accuracy the regions of the place where the water is near the surface?

A. I want to say the seasons change those conditions.

559 Q. You have expained that. But do the places on the map indicated by this blue coloring show the location of the part, or the location of the ground you have spoken of where the water at times bothers in laying mains.

A. Yes, sir; these are the portions you most likely strike water, if at all close to the surface.

Q. You may go on and explain to the Master what you have in mind in speaking of the seasons changing?

A. The reference I had—you take lots of this ground where we have a good deal of rain the water will lay practically on top of our main; we have it to contend with and we have to bale it out. Take dry seasons like this it doesn't prevail. There is portions of town you strike water that has been drained.

The MASTER: The drainage system of the city affects that?

A. Yes, sir, to a large extent.

Q. You may examine the large map now shown you which is marked Exhibit 17 and state to the court fully and in detail what that shows with reference to the main system as it was the first of this year, first of January.

A. This shows all the mains and sizes of all the mains belonging to the Des Moines Gas Company, that is now under ground in Des Moines.

Q. Does it show the location of the mains with reference to the particular streets upon which the mains are laid?

A. Yes, sir, it does.

Q. Does it show in any way the size of the respective mains as laid in the streets?

A. Yes, sir.

Q. And by what symbol or in what way does it show the mains, what marking?

560 A. An inch and a quarter is a broken line with a quarter inch mark; an inch and a half, the same way; a two inch with a broken line, with a 2 in it; three inch is a broken line with a 3 in it. four inch is a broken line with a 4 in it; six is a dash and a dot with a 6 in it; eight is a straight line solid with an 8 in it; there isn't very much ten inch on the east side.

The MASTER: That line there indicates a four inch main?

A. Yes, sir, a broken line with a 4 in it.

Q. The MASTER: This broken line indicates what?

A. That is not a main. The ten inch is a broken line with a 10 in it; twelve is the same; fourteen is a line and two dots; sixteen I think is an unbroken line with a 16 in it.

Q. Let me ask you now whether where the figures appear on the map in connection with the main system, whether those figures indicate the size of the main on the streets in the locality where the figures appear?

A. Yes, sir.

Q. Have you examined that map in detail and with care for the purpose of determining whether it shows with accuracy and correctness the main system as it is on the east side of the river, showing where the mains are laid, the streets on which they are laid, the length of the mains and the size?

A. Yes, sir; as far as the sizes and locations are concerned.

Q. Basing your answer upon your personal knowledge of this main system, acquired in the way you have told the Master, I will ask you whether that map is a correct map of the mains, showing where they are laid and the size of the mains?

A. I would say that map is absolutely correct.

Q. I now call your attention to exhibit #18, purporting to be a map of the main system on the west side of the river. What
561 does that show with respect to the main system on the west side of the river, and south side if it shows anything on the south side, and north of the river?

A. I would say that shows everything pertaining to the main extensions of the west side and north; I think the north side is on here.

The MASTER: At what time?

A. At the present year. The southwest and north.

Q. Now, does that map show the location of the mains as they are at the present time, as they were about the first of January, in the territory that it embraces, showing the location of the mains in the streets and the size of the respective mains as laid in the streets?

A. That shows the sizes and the streets in which they are laying; but it does not show the location of the main.

Q. What do you mean by that?

A. It does not give you any distance, which side of the street it is on.

Q. That is to say, it don't show the location in the street?

A. Yes, sir.

Q. The place in the streets where it is laid, but shows the streets upon which the mains are laid?

A. Yes, sir.

Q. In what way does this map show the size, or indicate the size of the mains—in the same way that the map of the east side shows them?

A. Yes, sir.

Q. So that on this map, like the other, where the figures appear, it indicates the size of the main at the place where the figures are placed, does it?

A. Yes sir.

562 Q. Basing your answer upon your personal knowledge of the main system of Des Moines, obtained in the manner you have stated, I ask you whether this map, Exhibit 18, is a correct and accurate map of the main system of the Des Moines Gas Company, as it was on the first of January of this year, showing the streets upon which the mains are laid and the size of the mains?

A. I would say that may is absolutely correct.

Cross-examination by R. O. BRENNAN, Esq.:

Q. Mr. Moul, in the month of October, this year, you will have completed about twenty-five years of active service for the Gas Company?

A. Yes, sir.

Q. And during all of these years, with the exception of three, you have been foreman of the construction department of the distribution system?

A. Yes, sir.

Q. And you have acquainted yourself with all of the details in connection with the distribution system of the Company?

A. Yes, sir.

Q. And your were quite familiar and are quite familiar with the extent of the distribution system of the Gas Company in the year 1886?

A. Yes, sir.

Q. You knew the location of the mains at that time and the sizes of the mains?

A. Not at that time I didn't.

Q. You do now?

A. Yes, sir.

563 Q. And you have testified to their location and to their various sizes?

A. Yes, sir.

Q. I understand you that other mains have been substituted for those which were in the ground in 1886?

A. In some instances.

Q. Now to what extent were other pipes or mains substituted in a general way?

A. Pretty largely.

Q. About how many miles of mains were in existence in 1886?

A. That I couldn't tell you.

Q. At the end of the year?

A. I couldn't tell you.

Q. Could you tell us approximately?

A. I could make a rough guess.

Q. Well, I wanted to get the benefit of your estimate.

A. Well, I would say somewhere along about 16 to 20, just making a rough guess.

Q. And that was confined largely to that portion of the city lying west of the Des Moines river?

A. Well, largely, yes.

Q. There weren't very many gas mains in East Des Moines in the year 1886?

A. Not very many.

Q. About how many miles would you say existed in East Des Moines?

A. Well, let's see; well I would say about four miles.

Q. Now in 1888, the territory known, as University Place, North Des Moines and Highland Park, Capital Park and Sevastopol were all separate and independent corporations?

A. Yes, sir.

564 Q. So that the territory of the city of Des Moines was much smaller in area than it is now?

A. Yes, sir.

Q. About the year 1891 it was that this territory to which I have called your attention was annexed to the city?

A. I think North Des Moines was at that time.

Q. Yes, and Capital Park?

A. That was later.

Q. Weren't all the suburban towns annexed to the city of Des Moines in or about the year '91?

A. Well about that time or later.

Q. Well, weren't they all annexed at or about the same time?

A. Yes, pretty close to it; I disremember the year.

Q. In or about the mont- of March '91, isn't that your recollection?

A. Well, it was in the spring of the year.

Q. So that your memory is pretty good on the number of miles of mains in this distribution system and their location, etc.?

A. Yes, sir.

Q. Your acquaintance with the system extends over the period from the first?

A. Yes.

Q. You can tell the Master, I take it, about the extent of the distribution system in 1894, approximately?

A. I didn't keep it year by year.

Q. But in or about that year you could tell the Master, could you not, approximately, the extent of the distribution system in miles?

A. I couldn't tell you the amount we laid per year, in miles or feet, that is in the ground, but I can tell you every size on every street that has got a gas main in it.

565 Q. You were able to tell us approximately, that is, give us your estimate of the number of miles of mains in 1886, which you estimate to be somewhere between 16 and 20 miles?

A. I would have to make a guess.

Q. Now, could you give us an estimate of the year 1894, covering that period?

A. I could make a guess, but I couldn't base it on facts.

The MASTER: Give your best judgment?

A. I could go back and figure each year about what we laid and add to what we had to that result.

Q. Can you do that?

A. Yes, I can do that in a very short space of time.

Q. All right, I would be glad to have you do that.

A. We had about that time 50 miles. Now that is only a guess, bear that in mind.

Q. You have kept a record, have you, Mr. Moul, of the extensions made by you and where the mains were substituted?

A. Yes, sir.

Q. And you make reports to the Company every day or week?

A. Yes, sir.

Q. And you keep an account of the cost of labor and where the mains were laid and file these reports with the Company?

Objected to as improper cross examination.

A. Yes.

Q. And you keep and furnish the company as its foreman with an itmized statement of all of the expenses in connection with the work in your department?

Same objection as last above.

A. No, sir.

Q. Just what record do you keep and have you kept during the period of time that you have been foreman in the distribution department?

566 Same objection as last above made.

A. The only record I keep is pertaining to the new extension or repairs or new service works and those I turn into the office.

Q. What is the nature of the records which you keep of those extensions?

Same objection as last above made.

A. The main extensions, the size of the main, the location on the side of the street and the distance laid.

Q. And the amount of labor employed?

A. No, sir.

Q. Do you keep any account of the labor?

A. That does not go into the sketch at all; the labor is charged into the organization pertaining to that certain expense.

Judge CARR: I wish it to be understood that all the examination on this subject goes in over our objection as not proper cross examination. We make that general objection to all this class of testimony.

The MASTER: I will take the answer. I am inclined to think it is cross examination.

Q. Is the labor account divided?

A. It is divided between new service work, extensions or repairs.

Q. But you do keep a record of the labor in connection with your duties as foreman?

A. In certain conditions, yes.

Q. Explain the conditions under which this record of labor is kept?

A. As far as I am concerned I turn into the office, as far as the expenses are concerned the amount of labor of each man per hour, the rate per hour. I have no access to the expense otherwise except the labor particularized.

Q. Do you specify the character of the work which is performed?

567 A. Yes, sir.

Q. And the kind of excavation?

A. No, sir. Well in a sense, on extensions but not on new services.

Q. You keep a record of the character of the excavation or new services?

A. Not more than the location.

Q. Just the location?

A. Yes.

Q. That is to say, you make a report to the company of the amount of labor used and the character of the work performed and the region of the city in which it was performed.

A. Well, the report on the labor is not for each particular job. We may be putting in several services on the same day, and the labor is charged to new service for that day and the number of the men occupied.

Q. Well, that is shown in the character of the work, whether it pertains to services or extensions?

A. Yes, sir.

Q. And you have made those reports since you have been foreman of the company?

A. Invariably.

Q. Every day?

A. Constantly.

Q. How frequently are those reports made?

A. At the present time at the end of a job of new work, extensions, I turn in my reports as near as I can at the finish of it. The new work is taken care of as far as labor is concerned twice a month.

Q. In order to make your report after the completion of the work of extensions, you keep a daily report, do you not?

568 A. In some senses.

Q. For your own use, and to enable you to make this report after the completion of the job?

A. I make, itemize it until I can complete the job.

Q. In other words, you have kept a careful account and record of all of the transactions with respect to the extension of mains in the city?

A. I have tried to keep a correct account.

Q. And you turn those reports into the company?

A. Yes, sir.

Q. And the location is the only way by which you could determine the character of the excavations; that is, the reports upon the face do not show the character of the excavation, as I take it?

A. I do not believe I understand your question.

Q. What I want to get at, in these reports, do you state the character of the excavation necessary to be made to perform the work?

A. No.

Q. Whether it is through rock or gumbo?

A. In my returns I designate the nature of the soil; that is when I complete the job.

Q. That is in your report?

A. Yes, there is a blank space in that report specifying it; if it is a different kind of soil I mark it.

The MASTER: Daily or monthly?

A. Whenever I complete an extension.

Q. Do you have one of those blank reports in your possession now?

A. Yes, it isn't quite blank.
Q. One that shows generally the nature of the report which you make?
A. Yes, sir.
Q. May I look at it please? (Witness produces it)

—. ——.

569 Q. Is this the form of report you use in connection with your duties?
A. That is the form of extension work, the present form.
Q. How long has this form been in use?
A. That particular form has been in use for the last four or five years.
Q. Do you have in your possession a copy of the form or one of the original forms which were used prior to four or five years ago?
A. I have not.
Q. What difference was there between the former reports and the one which you now show?
A. Very little.
Q. Can you tell us in a general way?
A. Well, if you will give me that I will show you the difference. I can show you better than I can tell you. The other forms didn't have this in (indicates).
Q. Didn't have the location of drips and pumping points?
A. Yes.
Q. And didn't have the reference to the sketch book that is entered in the sketch book showing the book and page where entered?
A. Yes. You will find that is the same form, singly and was not double.
Q. In 1886, Mr. Moul, there were very few streets that were paved in the city of Des Moines, isn't that true?
A. Yes, sir.
Q. Do you know about how many streets were paved at that time?
A. I don't believe I could tell that.
Q. There has been considerable pavement constructed since that time?
A. Yes, sir.
570 Q. And your mains were all laid before the pavements were laid?
A. No, sir.
Q. Or at or about the time that the pavements were being reconstructed or replaced?
A. Not all of them.
Q. About what proportion were laid after the pavements were in?
A. The relaying of the mains was practically done on the time of repaving. Now there has a great many of them been laid since the pavement is in. I would say it is a pretty hard matter just to get at.
Q. Well, take all the mains in the business section of the city, both east and west Des Moines, they were all laid either before the pavements were constructed or at a time when the street was being repaved?

A. Not all of them. We took up the paving on East Court Avenue after it was paved.

Q. When was that?

A. Three or four years ago.

Q. Was that for the purpose of repairing the main?

A. No, putting in a larger main.

Q. What was the size of the main on East Court Avenue at the time you took it up?

A. Well, it was 8 inch and we put in a 16.

Q. Between what points on East Court Avenue?

A. Between First, and the pavement ends at Twelfth.

Q. Did you go to Twelfth street?

A. Yes, sir; that is with the 16 inch.

At this time an adjournment was taken until 1:30 p. m.

571 1:30 o'clock p. m., WEDNESDAY, *July* 19, 1911.

HENRY MOUL being continued in cross examination by R. O. Brennan, Esq., testified as follows:

Q. I was asking you before the adjournment about the main which you laid on East Court Avenue. You say that you took up one of the old mains and substituted a larger main?

A. No, sir.

Q. Just what did you say?

A. I said we took up the pavement and laid a sixteen inch line. I didn't say anything about removing the eight inch.

Q. Didn't you have a main in there in Court Avenue?

A. Had an eight inch as far as Sixth street.

Q. From the river?

A. Yes, from First street.

Q. From First street to Fifth street there was in existence a five inch main?

A. Eight inch.

Q. Did you disturb that main?

A. No, sir.

Q. Then you put in a main from Fifth street east to Twelfth did you?

A. Well it started at First street.

Q. Then you did take up part of the old main?

A. No, sir; I didn't remove the old main at all. I put the 16 inch line new independent from the old one.

Q. You left the old main in there?

A. Yes, sir.

572 Q. So that from First street to Fifth street on east Court Avenue you have two mains running parallel to each other?

A. Yes, sir.

Q. Have you in the city of Des Moines as a part of this distribution system any other mains in duplicate?

A. Yes, sir.

Q. In what other parts of the city?

A. Take it on Court Avenue we have two lines.

Q. Just what portion of Court Avenue?

A. From First street to Fifth. We have three lines on Fifth street from Court Avenue to Mulberry. We have three lines on Mulberry from Fifth to Thirteenth. We have two lines on Grand Avenue from Fourteenth to Nineteenth. We have two lines on Nineteenth from Pleasant to Crocker. We have two lines on Grand Avenue from Seventh to Ninth. There is two lines on First street on the west side of the river for a short distance from the Wabash up to Court Avenue, there is two lines, in fact three.

Q. Could you tell us Mr. Moul in feet or in miles the number of mains that are in duplicate or in triplicate serving the same territory?

A. Well I could put it into blocks and you might do the figuring yourself.

Q. All right. You may do that if you prefer, give us the number of blocks.

A. Well from First to Fifth on Court Avenue that is four blocks, well you might make that five because it goes to Sixth street, there is a small main in there too. Then there is a block and a half on First street.

Q. On east First?

A. No, west. Now take east Fifth street from Grand to Maple is one I omitted, there is two lines there, that is three blocks.

573 Now take Mulberry from First to Fifth, within a half block on Fifth.

Q. That is four and a half blocks?

A. Yes, sir. Now that double line runs to Thirteenth street, as far west as Thirteenth.

Q. Then there is eight blocks from Fifth to Thirteenth to be added to this four and a half?

A. Yes, sir. Then on Grand Avenue from Fifteenth to Nineteenth. Then take Grand Avenue from the river to the alley west of Second street that has two lines, that would be practically a block and a half. Now there is two blocks on Grand Avenue between Seventh and Ninth. On Ninth street from Cherry just a little bit south of the Rock Island railroad.

Q. That is south of Vine street?

A. Yes, just a little bit, possibly fifty feet maybe.

Q. Probably a block and a quarter?

A. Just about. Ingersoll Avenue from Nineteenth to practically Fourteenth, excepting a half block, omitting a half a block.

Q. That would be about twenty blocks, twenty and a half to be accurate?

A. Yes, just about. Then on Nineteenth street you have got two blocks.

Q. Nineteenth between what points?

A. Between Pleasant and Crocker, Cottage Grove where they come together there. Then one block on Crocker street between Eighteenth and Nineteenth and Crocker street between Third and Fourth. West Fifth street from just a little bit north of Park to about a hundred feet south of School.

Q. That would be approximately two and a half blocks?

A. Be just about two blocks, two and a half blocks.

Q. You say a little north of Park, the next street is Cen-
574 ter, then Crocker and School?

A. Yes, sir.

Q. How far north of Park is it?

A. Oh I would say about fifty feet I guess catches the la-t lot.

Q. That would be three blocks and a half wouldn't it, that would be Park, Center, Crocker and School?

A. No, it would not make three blocks, two and a half. Then we have got a little piece on Center street between 4th and 5th a full block there in duplicate. I guess you have got it all.

Q. On east Court Avenue from the river to Fifth street the old main was eight inches?

A. Yes, sir.

Q. And what is the size of the duplicate main?

A. Sixteen.

Q. And when was it put in?

A. The sixteenth?

Q. Yes.

A. I think about four years ago, four or five, I don't know just exactly the date.

Q. How far east did the mains of the gas company extent on Court Avenue?

A. At the pres-nt time.

Q. At the time the duplicate main was laid?

A. The old main?

Q. Yes; how far did it extend?

A. Well about fifty feet east of 13th street—no let's see the four inch ran up to 15th, the old main was laid when the 16 was put in there up as far as 16th street.

Q. Then do I understand prior to four or five years ago the company had a main in east Court Avenue from the river to east
575 15th street?

A. Yes, sir. Well they had it farther than that on Court Avenue.

Q. How far east did the old main go?

A. I guess they call it James street or Astor I think now, I forget which.

Q. Out to 15th street or beyond that?

A. It is east of that, a block east, the next block east.

Q. It would be about the same as 16th street produced south from Walnut?

A. No there is a block in between 15th and 16th, I think they call it Astor if I remember rightly.

Q. Is it that street that runs south from Capitol Avenue from Franklin square, would it be about that street produced south, or east or west of that point?

A. It is east of that.

Q. How far east?

A. One block.

Q. That was the terminus of the main on east Court Avenue at that time?

A. Yes, sir.

Q. Was that an eight inch from the river to this point which you have described?

A. Yes, there was an eight inch in there then up as far as Fifth street.

Q. What was the size of the main from 5th street east?

A. Three inch to six and four inch from there out.

Q. There was not a uniform size then of main between those points.

A. No, sir.

Q. You had eight inch and five inch and three inch and four inch?

576 A. Didn't have any five inch, don't have such a thing.

Q. You had four inch?

A. Yes, sir.

Q. Three inch?

A. Yes, sir.

Q. And what other size?

A. Eight inch. Eight, three and four.

Q. When you laid this duplicate main in Court Avenue four or five years ago, how extensive was that main, that is to say how far did it run f-om Fifth street?

A. Ran from First to 15th street.

Q. And paralleled this other main?

A. Practically so.

Q. And the old main was left in there?

A. Yes, sir.

Q. And the service connections left just as they were?

A. Yes, sir.

Q. And they are still in that condition?

A. Yes, sir.

Q. Now you spoke of a main on west First street. What was the size of the main on west First street?

A. At that time four or five years ago or the present time?

Q. Four or five years ago.

A. I don't know just how long ago we put in that twenty four, the old main has been there quite awhile, the eight inch?

Q. What is the size of the old main?

A. Eight inch and we put in a twenty four and a six I would say about four years ago.

Q. Where was the new main constructed with reference to the old main?

577 A. On the east side of the street and the old main was on the west side.

Q. That is a block and a half in extent, the duplicate main?

A. Yes, sir.

COURT: The same size?

A. No, sir. The old one is eight inch and the new one is a 24.

Q. Now you have three blocks of new main as I call it on east 5th street from Grand to Maple. When was that new main put in?

A. That was 1896 I think it was.

Q. Of course that was put in before the street was repaved.

A. The paving that is on there now, but it was paved with cedar blocks when that ten inch was put in.

Q. But when the original main was put in, the first main?

A. You are ahead of me now, it was ahead of my time the old main on Fifth street.

Q. You don't know whether that was put in before the Cedar Block pavement was put in or not?

A. No, sir; I don't know anything about it.

Q. But you did put in this additional main or duplicate main on east Fifth street from Grand Avenue to Maple street?

A. Yes, sir.

Q. Where was that placed in the street?

A. It is about seven feet west of the east curb line.

Q. Where was the old main?

A. Well it is awful close to right under the east curb line.

Q. Close to right under the east curb of the street?

A. Yes, sir.

Q. So you put the new main a little bit west of that point?

A. Yes, sir.

Q. These mains parallel each other to Maple street from
578 Grand Avenue?

A. Yes, sir.

Q. You say on Mulberry street from First to Fifth street you put in a double main?

A. Yes, sir.

Q. Do you recollect when it was put in?

A. Well that was put in the same year the 24, I would not be certain as to the time.

Q. Some four or five years ago?

A. Something like that.

Q. Can you tell us what the size of the original main was in Mulberry?

A. The original main is six inch.

Q. Upon which side of the street is it?

A. Well it is very close to the center.

Q. Where was this new main put in.

A. The first additional was put in right west of it between it and the west curb a 12 inch line. That was put in in 1888 I think it was 1888 or spring of '89 and then later four or five years ago we put in a twenty inch on the east side of the street.

Q. I don't know whether I got your answer correctly, I understood you as saying that this main was put in on Mulberry street from First to Fifth?

A. On Mulberry from Fifth to 13th. On Court Avenue it was from First to Fifth.

Q. Mulberry street from 5th to 13th?

A. Yes, sir.

Q. So that you covered eight blocks that the mains were duplicated?

A. Well partially. The first time we put in the 12 inch
579 we cut out a portion of the three inch and put in the 12. Then later, oh I would say six or seven years later we put in a 20 inch parallel with the 12.

Q. You have at the present time in Mulberry street from 5th to 13th two leads of pipe or mains?

A. Well we have three practically. We have the high pressure system going to Valley Junction.

Q. Does that serve any customers in Des Moines, the *gigh* pressure system?

A. No, sir.

Q. But the other two mains serve the customers along Mulberry street between these points?

A. Yes, sir.

Q. And they are both on the same side of the street?

A. Yes, sir.

Q. On Grand Avenue, you mention west Grand Avenue, Fifth to Ninth street there was some change made in the distribution system?

A. From Seventh to Ninth. The original six inch was in there and we put in parallel a 12 on the opposite side of the street.

Q. I understood you to say some change was made in the distribution system on Grand Avenue between 5th and 9th?

A. No, it was 7th.

Q. You spoke of 5th and 9th and 7th to 9th?

A. I didn't understand you then.

Q. What is the fact on Grand Avenue from 5th to 9th?

A. We haven't anything parallel except 7th to 9th.

Q. You have parallel lines just on two blocks?

580 A. Yes, sir.

Q. When was the second line put in?

A. Well it has been quite awhile ago, I would hate to specify the year, but I would say that was put in there in 1892 or '93, possibly 1890. A portion of it was put in in 1890 and the balance of it was put in at different times after that.

Q. And the original main, you don't know when it was put in?

A. Oh no.

Q. You spoke of a duplicate line on 9th street from Cherry street to a point a few feet south of Vine street where you have parallel lines?

A. Yes, sir.

Q. And when was the new main put in on that street?

A. The last one we put in is a six inch line, I think that was—well I would say about three years ago.

Q. You have three lines of pipe in 9th street between these points?

A. No, sir.

Q. Just two?

A. Yes, a six and a three.

Q. And the old line is still serving customers?

A. No, I think not. I don't think there is anything being used off of it.

Q. Were the service connections left when you put down the new main?

A. Yes, sir.

Q. They were not disconnected?

A. No, sir.

Q. Now on Ingersoll Avenue from 19th to 40th street with the exception of perhaps a half block you say you have two lines
581 of mains?

A. Yes, sir. But one is high pressure going to Valley Junction. It is not connected to anything in town.

Q. That has nothing to do with the distribution system of the city of Des Moines proper?

A. No, sir.

Q. And don't serve any customers within the city of Des Moines?

A. No, sir.

Q. Nonservice connections made to it?

A. Well might be possible it had between 40th and 41st, there might be one or two consumers on it. I think there is.

Q. Is the main which you refer to as being the high pressure system Valley Junction is that shown upon the map Exhibit 17, as forming a part of the distribution system of the Des Moines Company?

A. I could not say.

Q. Can you tell by an examination of the map?

A. The six inch shows here.

COURT: What is the answer?

A. It shows on this map yes.

Q. Are you able to tell us about how many service connections are made to that main?

A. I can tell you just exactly in about a minute. You want the total amount all the way through or in this particular district?

A. What I would like to know if you can tell us how many service connections are made in the city of Des Moines to this so called high pressure main which serves Valley Junction.

A. I can't tell you that.

582 Q. About how many?

A. Well that is a pretty hard question to answer.

Q. Are there so many?

A. No there is not so many, but then I have not any knowledge particularly of just how many and to make a guess on it I might be considerably mistaken.

Judge CARR: You mean the services that connect directly with the main, not services connected with branch mains if there are any?

Mr. BRENNAN: He has spoken here of this main which is placed in Ingersoll Avenue, high pressure system which serves Valley Junction. Now I want to know if that main serves any customers within the corporate limits of the city of Des Moines, and if so how many?

A. Well it serves some, but I don't know how many, not very many. Not many services.

Q. Where does service commence on that main?

A. I think the first one tapped is Kurtz just this side of 41st street and one across the street from him and about three or four on 43d street. Oh I would say making a rough guess possibly 25.

Q. Does it serve the territory lying west of 41st street?

A. Well not all of it.

Q. And north and south of Ingersoll Avenue to any extent?

A. Not north.

Q. Does it south?

A. Well partially.

Q. How far south are consumers served from this Ingersoll Avenue main?

A. Well whatever there is on 43d street and Grand, but
583 nothing south of Grand nor nothing east of 44th.

Q. Well west of 44th?

A. All that is furnished is furnished off of that main west of 44th on Grand Avenue on the road to Valley Junction.

Q. In addition to this high pressure main you have how many other mains in Ingersoll Avenue?

A. One.

Q. Upon which side of the street is it?

A. Well it would be the north side.

Q. Where is this high pressure main?

A. Right along side of it.

Q. What is the size of the old main?

A. 12 inch.

Q. What is the size of the high pressure main?

A. Six inch.

Q. 19th street you say between Pleasant and Crocker streets, you say that you have duplicate mains?

A. Yes, sir.

Q. When was the last main put in?

A. About four or five years ago.

Q. And is it upon the same side of the street as the other main?

A. No, sir; on the opposite side.

Q. What is the size of the last main which was put in?

A. 12 inch.

Q. What is the size of the old Main?

A. 4.

Q. The 4 inch main was left there and the service connections left as they were?

A. Well a great many of them. The reason that possibly we did not remove that main was because it was right under the street.

584 Q. Well you left it there?

A. Yes, sir.

Q. Service connections are made to that main, were made to it and are being used?

A. Some of them are yes.

Q. On Crocker street from 18th to 19th street just what changes were made in the distribution system there?

A. There was not any changes made except to put in a larger main on the opposite side of the street and connect it to a large one that we had on Crocker and 18th.

Q. What size main did you put in on Crocker street?

A. Put in a ten inch.

Q. What size was left?

A. Six inch.

Q. On Crocker between Third and Fourth streets?

A. There is a 10 inch and a three inch.

Q. When was the ten inch main put in?

A. Well that was put in when we had that awful hot spell here eight or ten years ago.

Q. Ten years ago this summer?

A. I guess it is about ten.

Q. 1901?

A. Something about that time.

Q. On west Fifth street, commencing at a point north of Park what change was made there?

A. We put in a six inch.

Q. Between what points?

A. Between Park and School.

Q. What was the size of the main which was in the street at that time.

585 A. Three inch.

Q. That was left in the street?

A. Yes, sir; but they were all connected up, everybody was connected up off of the six inch.

Q. Are there any service connections to the three inch main in 5th street?

A. Some of them and still they are connected to the six inch too. Nearly everybody on Fifth street is on two services.

Q. On two lines of main?

A. That was put in there under the fu*le* gas system.

Q. When was the fuel gas system adopted?

A. 1890.

Q. Did you have two lines of mains?

A. Did at these points that I speak of.

Q. Was the company serving consumers with fuel gas different than they are now?

A. They undertook it.

Q. In what manner?

A. They undertook to furnish gas for fuel at a different price than they did illuminating. It was necessary for them then to have two lines.

Q. When was that?

A. 1890.

Q. How long did they serv*ing* consumers in that manner?

A. I can't tell you that.

Q. Was it more than a year?

A. I don't think it was, I don't think it was more than two or three months.

Q. The only change made in the distribution system was up Fifth street?

586 A. It was the center point, it was a test.

Q. On Center street between 4th and 5th that was in that same region?

A. Yes, sir.

Q. And the change was made there about the same time?

A. For the same purpose.

Q. Now aside from east Court Avenue which you have mentioned, what other streets were paved at the time that the service pipes and mains were laid?

A. Well that, I could not answer that exactly. Some of that has been laid quite a while ago and took up and relaid the pavement pretty hard for me to tell just what streets it was on.

Q. I understood you to say practically all of the mains were laid *eighter* before the pavement was put down in the street or at a time when the streets were being repaved?

A. The majority of them, yes.

Q. Would you be able to tell us about what per cent of the distribution system was put in at the time the streets were being repaved or at a time when there was no paving in the streets?

A. Oh I would say that about 75 per cent of them.

Q. At least 75?

A. Well about that.

Q. You have always taken advantage where you could of a street that was being repaved to make alterations in the distribution system?

A. As far as repairs are concerned, yes.

Q. Where you contemplate extensions of mains on streets which were to be paved or repaved, you sought to take advantage of conditions did you not of the street?

A. No, that was out of my jurisdiction.

587 Q. Well what was the fact as to how much repairing and extension work you did at a time when streets were being repaved?

A. Well we generally repaired it all, went over it all thoroughly, both mains and services and renewed it ahead of pavement.

Q. What are the dimensions of the services?

A. You mean as a total or at the present time or what portion?

Q. Yes, at the present time.

A. Inch and a quarter is standard.

Q. How long have you used inch and a quarter?

A. I think they made inch and a quarter standard in 1896 I believe it was.

Q. Prior to 1896 what was standard?

A. No standard at all. Wasn't any standard.

Q. What was the average size?

A. Well the majority was an inch then.

Q. What would you say would be the average length of the service?

A. Take the business section and the residence section combined?

Q. You can state it separately, what would be the average length of service in the business section?

A. Take them as a total they will average about seventy five feet.

Q. In the residence section?

A. I took that as a total of them.

COURT: You say 75 feet?

A. Seventy five feet on the average, yes, take business and residence districts combined.

COURT: You mean the length of the service pipe is seventy five feet?

A. Yes, on the average.

COURT: That is to say now the distance from where the main is tapped in the street to where the gas reaches the meter?

588 A. Inside of the wall.

Q. You think that the average distance would be seventy five feet?

A. Yes, sir.

Q. And that is taking into account the business section as well as the residence section?

A. Yes, sir.

Q. Can you tell us what would be the average length of service in the business section of the city?

A. About 40 feet I think. That depends of course on the width of the street largely.

Q. And depends on the location of your main in the street?

A. Well on an average take both sides the average width would be even to the width of the street, makes the same division.

Q. Now what portion of the service connection or connections is paid for by the property owners or consumer?

A. Well I can't tell you that.

Q. Do you know whether any of it is paid by the consumer?

A. No, sir; I do not.

Q. When the streets are paved or before they are paved rather, do you make any connections with the main up to the curb line for the property owners?

A. In some instances.

Q. And how frequently is that done?

A. Well some years we make it very frequently. Take the downtown district before Walnut and Locust street was paved the second time we made a thorough going over and connected up every twenty two feet and the last time it was paved we went to work and cut about two third of those off and plugged them up put them out of commission. They were not being used and wasn't any probability of it.

589 Q. You have followed that practice along streets expected to be paved?

A. At the present time we do not make any connections unless

requested by the owner of the lots with some expectation of his using it in the near future.

Q. When did you adopt the latter method?

A. Well it has been going on for several years.

COURT: Do I understand you right, you only go to the curb or lot line?

A. Curb.

COURT: And the owner pays from that on?

A. No don't pay anything when we make these connections ahead of the paving so we could not have to remove the paving when he comes to improve the vacant lot.

Q. Then you put it to the lot line?

A. Just run from the main to the curbline in front of whatever lot it was.

COURT: What do you mean by curb line?

A. That is our side of the paving.

Q. So that your practice now is and has been for several years last past to not make these connections on streets which are about to be paved unless requested so to do by the property owner or consumer?

A. Yes, or from some source or information where they are going to be used in the near future.

Q. Prior to several years ago your practice was to make these service connections on all streets where pavements were about to go in?

A. Not our practice, but by order of the city council.

Q. Well you did it whether by order of the city council

590 or to your own advantage?

A. Yes, sir. It is not any advantage to us.

Q. Now at what pressure is the gas carried through this Valley Junction main, the high pressure main?

A. I can't tell you that.

Q. You are not familiar with that branch of the service?

A. No, sir.

Q. What is the length of this high pressure main from the gas works to the city limits, do you know?

A. The west city limits, I will have to guess at that a little bit. Somewheres about four miles.

Q. What is your estimate of the average length of service pipes to the houses?

A. I gave you that a little bit ago.

Q. Or from the curb line to the house?

A. Well that depends. Unfortunately when we begin to connect a stub and know just where we want it, we have got to run up or down the curb line nearly every case that lengthens the service from the curb line, have to put that aditional pipe inside the curb line.

Q. How many house services are there that are 75 feet in length?

A. Well that is a pretty hard question for me to answer. I can read you a list of them off and you can strike your own average.

Q. You have said the average would be about 75 feet. I want to know how many house service would come within that average?

A. About ninety five per cent would come within the limit of seventy five feet.

Q. How many street lamp services are there?

591 A. I can't tell you how many street lamp services there is at the present time, I have not had anything to do with street lamps for the last four or five years.

Q. You don't have anything to do with those? That is keep a record of them at all?

A. Nothing to do with them. I run all the services as far as the posts, but I don't keep any account of them.

Q. Make any repairs?

A. Yes, I make the repairs.

Q. This map, Exhibit 17, shows these services for street lights?

A. I could not say.

Q. Look at this Exhibit 17?

A. That don't show any services at all.

Q. Just shows the mains?

A. That is all.

Q. What is the size of the street lamp services?

A. Well at the present time and has been for several years, is an inch and a quarter standard, we don't cover up anything smaller than an inch and a quarter.

Q. Prior to that time about an inch?

A. An inch, yes sir. If I remember right we started in 1896.

Q. Then adopted a standard of an inch and a quarter?

A. Yes, sir.

Q. Do you know about the average length of the street light service?

A. Well now I can guess at that pretty close, the curb is 36 feet or 32 feet, runs thirty to 32 feet so between 15 and 1 feet because it sits right inside of your curb.

Q. In excavating for the purpose of laying mains in the street, to that depth are you required to go ordinarily or what depth do you go?

592 A. Four feet on the average. Depends on the size of the main and grade but that is the standard depth.

Q. You usually put in a main where you can after the street is brought to grade do you not?

A. We don't pay any attention to that at all. We put it wherever the demand calls for it regardless of the grades.

Q. You usually go down to a depth of four feet?

A. That is the standard, nothing less than that.

Q. You have not encountered any rock have you at the depth of four feet in Des Moines?

A. Yes, sir.

Q. Where is this rock?

A. One place is on Court Avenue from 9th up to just this side of 11th.

Q. About two blocks in there that there is rock formation?

A. Yes, sir.
Q. What is the character of the rock?
A. I could not name it, some would term it kind of a bastard sandstone.
Q. Sandstone or soap stone?
A. More lime than sand, sort of a mixture between limestone and sand stone.
Q. Solid or in pockets or how?
A. Solid.
Q. Regular formation, run across any boulders up there or anything of that kind?
A. No, sir; not in that line.
Q. Did the rock extend for the entire two blocks?
A. Well practically, yes.
Q. Where else have you encountered rock in digging trenches?
A. You will find rock going up Second street.
593 Q. Where on Second street?
A. Well I think it is about, I don't know whether it is division or Ascencion, it is up this side, right on the hill this side or University.
Q. That is up along the river there?
A. On the hill west of the river.
Q. Immediately west of the Des Moines river?
A. Yes, sir.
Q. And University Avenue is what they formerly called North street in that part of the city?
A. Yes, sir.
Q. That is the old corporation line?
A. Used to be, yes.
Q. How much rock did you encounter up there?
A. Well we struck that to begin with it started in the bottom of our ditch and eventually came to the top of it and filled out the full depth of our ditch for quite a distance, two or three hundred feet and the- began to run out and we run through the rock.
Q. You were about down to the bottom of the ditch before you encountered rock?
A. To begin with. It laid in kind of an uphill position.
Q. You were going up hill were you?
A. Yes, sir.
Q. Did you have to do any b*asl*ting?
A. No, sir.
Q. Do any b*asl*ting in Court Avenue?
A. No, sir.
Q. Where else have you seen rock in making excavations?
A. You will find some on University right at the head of 4th street.
594 Q. That is about two blocks west of this point you have been describing?
A. Yes, sir. That starts in in the formation of slate and virtually goes into sand stone.
Q. Have to do any blasting up there?

A. No, sir.

Q. Outside of the three cases you have mentioned, have you encountered any other rock in portions of the city?

A. Found rock out on 20th and Francis.

Q. Did you encounter rock in digging trenches at that part of the city?

A. Yes, sir.

Q. Do any blasting?

A. No, sir.

Q. What kind of rock was it?

A. Kind of a sand and limestone mixed.

Q. At what depth did you encounter the rock?

A. We started in there on that rock, in made something in the shape of a hill and we struck it at the bottom of the ditch and it followed us then for possibly about six or 700 feet and we cut through the rock.

Q. Which is the most satisfactory soil or formation in excavating for your gas mains?

A. Well I would say that a soft clay was the most satisfactory to us.

Q. Have you the map before you, plate 32? I note that the first color referred to in the soil key is a light green indicating clay. It is shown on this soil map that practically all the territory served in west Des Moines is of that character of soil.

595 Objected to as a misstatement of what the map shows.

Q. Isn't that true?

Same objection.

A. No, sir; that is not true.

Q. Let me ask you this, I notice the green shading extends north to a point on this map where Hickman Avenue is shown. I *with* you would tell the court just where Hickman Avenue is located, how far north from the court house?

A. I don't find Hickman Avenue.

Q. Up near St. Joseph and Francis Avenue you were telling about. Immediately west of that point.

A. Court Avenue up to that point is pretty close to two and a half miles I would judge.

Q. Wouldn't you think it was more than that to Hickman Avenue?

A. From the court house?

Q. Yes?

Judge CARR: You include the distance north and then the distance west?

Q. No, I want him to tell the distance north from the court house. You know of course where Union Park is in east Des Moines?

A. Yes, sir.

Q. If Hickman Avenue were produced east to Union Park it would correspond with about the north end of Union Park would it not?

A. Just about.

Q. The map shows outside of the four red blotches indicating rock formation and aside from the plot in the dark green and a little spot where it indicates water near surface, all of that original territory acording to this map indicates hard clay?

596 A. Practically the west side with these few exceptions.

Q. Now take the hard clay that is indicated in this soil key by the dark green square isn't it?

A. Yes, sir.

COURT: You mean by that hard pan?

A. It is joint clay, hard.

Q. This hard clay, is that what you call gumbo, that what you have referred to?

A. No, sir.

Q. Where is any gumbo indicated on this plate key or on the plate irself?

A. There is not any. That is my term for it sir.

Q. Well this dark green shaded on this soil map extending from the south side of University Avenue down to Crocker street and in an irregular manner down as far as Woodland cemetery, that is hard clay?

A. Yes, sir.

Q. Just west of the point to which I called your attention on University Avenue, commencing with the south side of University Avenue south of Kingman Boulevard and from about 33d street to 38th street is shown on the plate to indicate water near this surface, is that right?

A. Yes, sir.

Q. Well, didn't you say that that would depend upon the character of the weather and the season of the year.

A. Largely so.

Q. You don't mean to say that by going out there as shown on this map and excavating three or four feet that you will always encounter water.

A. Not always, because your drainage system will change that.

597 Q. The city has installed a system of sewers in that part of the city in the last four or five years?

A. Some parts of it.

Q. A sewer in Kingman Boulevard that was constructed about three years ago and a number of lateral or branch sewers out in that part of the city?

A. A good many of them.

Q. A change of the surface waters and practically all of them drained into this system of sewers.

A. At present.

Q. So you would not encounter any difficulty with water in the vicinity shown upon this map would you at this time on account of these low conditions?

A. Not at this particular time you would not, that is in that locality.

Q. East Des Moines aside from the green shading indicating hard clay in the vicinity of the capitol is practically all sandy loam isn't it?

A. There is quite a portion of it is sandy loam.

Q. Well aside from some shading shown on the map near the east end of the district of fine sand and the shading from this red spot indicating rock near the capitol building the balance of it is supposed to indicate sandy loam isn't it?

A. Yes, sir.

Q. There is no difficulty encountered is there in excavating in that kind of soil?

A. Sometimes there is.

Q. What is the nature of the difficulty?

A. The nature of the difficulty is because it requires a good deal more protection to keep your ditch from caving in and
598 you have got to use considerable more precautions in your thoroughfare and hauling in material and everything of that sort.

Q. Have you very much of this distribution system in south Des Moines?

A. Well, we have some, yes.

Q. How much?

A. What do you call south Des Moines.

Q. Well I call that territory all that part of the city of Des Moines lying south of the Raccoon river and including that part which lies south of the Des Moines river in southeast Des Moines formerly Sevastopol?

A. And how far south?

Q. To the city limits, I would call that south Des Moines.

A. We have practically over there I would say making a rough guess at it possibly about four or five miles, that includes Clifton Heights.

Q. Yes, Clifton Heights. Is the rock which you have described in these three or four different sections of the city, is it loose rock or is it in a lodge?

A. Portions of it you might say is shale and other portions pretty solid.

Q. And in what manner is it removed from the trenches?

A. We use picks, sledges, wedges and bars.

Redirect examination by Hon. GEORGE H. CARR:

Q. You have been asked with regard to the services in Des Moines. Do you know how many services the Company has in the city of Des Moines?

A. Since I have been connected with this company I have
599 laid and relaid 17,786 services.

Q. You say have laid and relaid, what do you mean by relaying?

A. Where there is a record of the service we never take another record but that service has been enlarged. Therefore we do not take the record of it. The record shows for itself and we do not make a new one in a great many instances.

Q. Where you have relaid services were those services that had been laid before your time?

A. Yes, sir.

Q. So that you have actually laid this number of services that you have given although some of them was relaying services that had been laid before your time, is that correct?

A. Yes, sir. I don't think there is but very few services in town but what have been relaid.

Q. You have been interrogated with regard to extra mains on Court Avenue. Do you know the reason for laying the additional or extra mains on Court Avenue?

A. Yes, sir.

Q. You may explain to the Master the reason for it.

A. It was absolutely necessary to get more pressure out towards the fairgrounds and Grandview additional to the system and it was necessary to lay mains to get to the extreme far point so that they could increase their pressure at the low points. As I said before that main did not intersect with anything until it got to 15th street.

Q. The main I think you said was an eight inch main part of the way.

A. Yes, sir.

Q. Part of the way three inch.

A. Yes, sir.

600 Q. Part of the way four inch.

A. Yes, sir.

Q. That main was not of sufficient capacity to carry gas on beyond the locality where it was laid, is that it?

A. Yes, sir.

Q. It was sufficient to serve the customers along the line of the main?

A. In a sense, yes.

Q. But not sufficient to do that and carry the additional amount of gas that was necessary to serve persons beyond and furnish sufficient pressure?

A. No, sir; it was not.

Q. That is why it became necessary to lay this additional main?

A. Yes, sir.

Q. Now aside from the one instance which I think you have spoken of as a main being under the street car track, aside from that instance is your answer true as to all these duplications of mains that they were laid on account of and for the purpose of getting additional pressure?

A. Yes; it had to be done, no use talking they was compelled by lack of pressure.

COURT: If I understand you correctly these mains were laid in order to furnish sufficient capacity to carry gas where it was wanted for use?

A. Yes, in order to help out the small mains in supplying the demand that was called for on them. The smaller mains could not fill the demand. These larger ones were run around so as to feed the smaller ones so they could take care of the consumption.

Q. With regard to the high pressure main going to Val-
601 ley Junction you have spoken of some service connected with that main. Is there any mains tapping or connecting with the high pressure mains in Des Moines?

A. Not to my knowledge.

Q. Let me call your attention to 51st street and ask you whether there is not a side main or branch main on 51st street?

A. That is under the same system. That is under the high pressure system. I understood you to ask me if that was connected with any mains in the inside of the limits.

Q. I asked you whether there are branch mains leading off this high pressure main in Des Moines?

A. One.

Q. And where is that located?

A. 51st street south of Grand.

Q. What is the fact as to that branch main serving customers in Des Moines?

A. It does.

Q. Do you know about how many?

A. I would judge somewhere about 15.

Q. From 42d street west on the high pressure main on Grand Avenue and south on 56th street isn't it true that practically every customer in there is served from service connecting with the high pressure main?

A. Not from 42d, from 43. There is no consumption off of the high pressure system until you get to Greenwood park, then west from there it takes care af all consumers, but nothing east of there.

Q. You speak of Greenwood Park, what street is that?

A. On Grand Avenue.

602 Q. But the north and south street?

A. Well that would be I think about 46th, possibly 48th.

Q. You spoke of 43d street.

A. That is where the low goes, and we have a low pressure main on Grand Avenue west of 43d, which takes care of all consumption on Grand Avenue west of that point until you strike 46th or 48th of Polk Avenue, whatever it is, Polk Boulevard.

COURT: Is that where Greenwood Park is?

A. Yes, that is the entrance.

COURT: That is 46th street?

A. I think it is, 46th or 48th. Then the high pressure system takes care of the consumption from there west.

Q. To get the matt-r clear I wish you would state just what customers in Des Moines receive gas which comes through the works for a distance at least through the high pressure main that you have spoken of, that is jus*y* how many, I don't -ean name them, but how many of them there are and if you can't give the number give

the territory fully a comprehensive statement that is served by this high pressure main?

A. There is three served on Ingersoll Avenue, then on 43d street between Ingersoll and Grand I judge about six or seven then the waiting room at Greenwood Park or where the car turns, one in Greenwood Park, in fact the majority of the houses from there along the line to 53d street including 51st and 56th.

Q. Does this high pressure main serve a low pressure main on 63d street?

A. No, sir; it does not. Let me answer that again a little different from that. You wanted to know if this high pressure served
603 a low pressure main on 63d. Well it does and does not. It first goes to the governor controlling Valley Junction and then comes back on 63d for a short distance only that if south along the city limits between the Junction and Des Moines.

Q. So it is true that the gas that goes from the works through this high pressure system reaches in the way you have described the consumers in Des Moines on 63d street.

A. Yes, in Des Moines.

Q. Is there any advantage to the consujer in receiving his gas in this way through the high pressure system? By that I mean would *be he* served as well if he simply received his gas off of the low pressure system.

Objected to as incompetent and th- witness is not competent.

A. There is -ractically no dif-erence that I know of that is to the consujer.

Q. How about the pressure, will the pressure be the same?

A. Well no, because they check that pressure with the governor so they make it under a low standard.

Q. Could the consumers which you have spoken of as being served by this high pressure system, could they be served by the low pressure system?

A. Not in the locality in which the low pressure mains are and they live.

Q. Could you serve these customers, give them as good service as they are getting now, by extending your low pressure mains into the loaclity on account of the distance?

A. Well you could under certain conditions but I doubt whether you could und-r the present conditions as they exist. If
604 you could extend your mains und-r the low pressure system at the present time, I doubt whether they would be served as well as they are under high pressure.

Q. You were asked about the service, the size of service before the standard adopted in 1896 which I think you said was one and one fourth inch pipe. Now what is the fact with regard to these old service being still in use or have they been replaced by the standard service?

A. Well in nearly every instance they have been replaced. I doubt that there is very few old services in use today. If there is I don't know of them.

Q. You were asked concerning the depth of the trenach which was the standard in laying mains. I wish you would explain to the court how you figure the measure of four feet, whether that is from the top of the main or how it is?

A. That is from the top of the surface, surface of the ground to the bottom of the ditch or bottom of the pipe. My instruction are I must have three and a half feet of covering on all mains. The mains vary in size and necessary to vary the depth of the trenches, but I am governed from the fact that I am requested to have a certain amount of filling or covering on yop of the mains. Therefore we make a standard of four feet because we lay principally four and six inch pipe; a four foot trench will make you practically three and one half feet of covering.

Q. When you have larger size like the ten or twelve or sixteen or twenty four inch main, then what is the depth of your trench?

A. You have got to excavate proportionately to the size of your pipe. You are governed from the top of your pipe in regard to its cover. The size of the pipe will govern the depth of your
605 trench.

Q. Then from the top of the pipe to the surface of the gtound is how much?

A. Practically three and a half feet. We make that as a standard.

Q. Then the depth of the trench depends of course on whether six inches is enough to lay in your pipe.

A. On the size of your pipe.

Q. When more than six inch you have to go deeper than four feet?

A. Yes, accordingly.

COURT: Is that true when you go through rock?

A. Yes, or anything else, water or anything. We aim to keep that as a standard. Oh we might vary from it in some instances but not very much.

Q. You were asked as to the average length of the services and stated that it was your judgment the length that they would average about seventy five feet. Now did you include in that estimate the length of the service inside the building between the service T or tie and the meter?

A. I didn't go any farther than inside of the wall up to the meter, that is as far as I go and as far as these measurements have any jurisdiction over. Then beyond the meter I know nothing of whatever.

Q. Did you include in your seventy five foot estimate the pipe that you put up inside of the building that takes the service to the meter?

A. No, sir; I only included the length of the service from the inside of the wall to the main.

Q. In laying mains do you have to give any attention to the quesyion of drainage? What I mean to ask you is do you have to lay your main to a given grade?

A. Yes, sir. Well not exactly to a given grade. That is
606 one thing that governs the laying of mains and one of the most principal points in laying mains is to get your fall, your levels correctly so that the low portions can take care of condensation or mishaps that might come over the main where water might accumulate.

Q. Is or is not it true that in laying mains you cannot in all instances follow the line of the surface of the ground.

A. Don't make any pretention on that.

Q. As you cannot do that what is the result with respect to the depth at which you have to go at times?

A. Well we have to go largely, in order to get our fall properly, in a great many instances, there is not any extension practically speaking, I don't think I can name one now where we run except the fair ground where you could run on an average direct for the full extension let it be long or short.

Q. To make that clear if you were laying a main beginning at a given point to another *fiven* point as I understand it at no place do you make your main less than four feet deep or whatever is necessary to give you three and a half feet over the pipe.

A. Oh that might vary from that a slight item only we aim to follow and keep in mind very strongly the question of covering have that in mind. We vary of course in getting our fill, don't limit exactly to three feet and a half the cover, but very closely.

Q. Suppose in the case you speak of you came to a rise in the surface of the ground between two points. What would you do in that case, came to a little knoll or little hill or little rise.

607 A. That depends on circumstances, if low on the other side of that knoll and *the* necessary to make a low point there, we would follow the elevation of the surface, but if that low was not there we aim to cross the hill and establish another low, then we would go through on a level so as to have out flow back to the starting point.

Q. Is it true in laying mains you have frequently points that because of the inequalities of the surface that you are required to go considerably deeper than the depth that you want to get the proper covering for your pipe?

A. That happens on almost every extension more or less.

COURT: As I understand you it is necessary to provide drainage points for your pipe.

A. Yes, sir.

COURT: Water will accumulate?

A. Yes, a certain amount of condensation or in case your main breaks to let in surface water you have to have some place to ger it out.

COURT: Water accumulates outside or inside?

A. Inside. Condensation will accumulate, not largely, but sometimes necessary to use that.

Judge CARR: If the court please I shall probably want to further examine this witness a little later on on a matter that I don't know

he has investigated. But for the present, that is all I wish to ask him.

Recross examination by R. O. BRENNA-, Esq.:

Q. I understood you to say that you were not familiar with the Qressure at which the gas was furnished?

608 A. Not as a whole, no sir.

Q. When I asked you about the pressure at which the gas was furnished to Valley Junction through this high pressure main you were not able to tell me?

A. No, sir; I don't know a thing about that.

Q. You say now that the purpose in duplicating the mains in the places where you have described was to supplement the pressure from the works. Now that you are simply stating from something that has been told to you by someone else, isn't th-t true?

A. No, sir.

Q. You are not a gas engineer?

A. Well but it does not take a gas engineer to -ind out these things.

Q. Are you a gas engineer?

A. No, sir.

Q. Are you familiar with the pressure at which gas must be furnished?

A. I am familiar with the pressure that is necessary to furnish consumers with a reasonable amount of convenience.

Q. Now what is the pressure used in the six inch main?

A. A six inch would carry the same pressure practically, might carry the same pressure all the time in any of the mains.

Q. Well what is that pressure?

A. I think now they are carrying what they term—I don't know whether they are carrying thirty six or forty tenths.

Q. In the entire system?

A. In all of their low pressure systems. That is in the down town. Bear in mind that same pressure does not travel out to the extreme ends, especially in these extreme ends be lower

609 than the works here.

Q. There would be some loss in the pressure as it reached the end of the distribution system?

A. Considerable and the amount of consumption that is between there.

Q. This main on east Court Avenue extended at least to 12th or 13th street did it not?

A. 15th street. That is the 16 you mean.

Q. No I mean the first main, original main?

A. Yes, sir.

Q. I understood you to say it went out as far as 12th or 13th street?

A. Yes, sir.

Q. When you put in this second main it extended up to substantiall- east 16th street?

A. Yes, sir.

Q. How many dead services are there in this system, are you able to tell us?

A. I could not tell you that.

Q. About how many?

A. I could not tell you, could not say at all, don't know the amount of meters in.

Q. Have you any record of it?

A. No, sir; I have not. That is out of my jurisdiction.

Q. You told Judge Carr did you not that since you have been connected with the company as its foreman that you have either installed or replaced some 17,786 services.

A. That is exactly what I did.

Q. You did that without any hesitation, you knew the num-er?

A. Yes, sir.

610 Q. Well now what is there about the dead service that causes you to hesitate and say you can't tell us?

A. Well I will tell you, I don't know anything about the consumer on the other end. I end as soon as I get inside the building. I can't say to you positively from my own knowledge that there is any other live one except the one I use myself. I have no access, it is beyond my station.

Q. So when you stated to Judge Carr you had installed or replaced 17,786 services you did not mean to be understood as saying there were that many services in use in the city of Des Moines?

A. No, sir; I didn't say that.

Q. You didn't want to be understood as saying that?

A. No, sir. I didn't say they were in use.

Q. It is a fact is it not that on this high pressure main that there is ser*b*ed thereby some fifteen consumers up to between Forty First and Fifty First street?

A. I can't say how many there is. All the consumers there is on 43d street between Grand and Ingersoll and all that is beyond Forty Sixth street is taken care of off of the high pressure.

Q. And there is a branch main that is served on 51st street from this high pressure main?

A. Yes, going south.

Q. Now can you tell the court say within the past five years, that is from 1905 up to 1910 about how many blocks of mains were laid by you or under your supervision in the way of extension work?

A. No.

Q. In round numbers?

611 A. No, I could not tell you.

Q. Can you tell us approximately?

A. No, sir; I could not.

Q. Have you looked that up at all?

A. No, sir; I don't keep a record of that at all, it is kept in the office.

Q. You make up the original record do you not?

A. Yes, piece by piece.

Q. I u*b*derstood you to say this morning when you were engaged in station work you kept track of the labor and material and then when the job was completed you made a report to the company?

A. I did.

Q. You have been doing that since your connection with the company?

A. Yes, sir.

Q. Now I wanted to know if you could tell us approximately the amount of extension work which you did, say five years preceding 1910?

A. No, I could not because I have not paid any attention to it particularly, I don't know how fast they have increased. I could tell you possibly some years where I took particular pains in nothing it down.

Q. Take the year 1910 and in what portion of the city were you engaged principally in making extensions?

A. Well we was all over the city. I don't think any portion of the city we didn't cover by some extension.

Q. You were not in the business section of the city were you?

A. No, sir.

Q. You were not in the older residence sections of the city were you?

612 A. We keep branching out.

Q. You were in the outskirts of the city were you not, more or less during the year 1910?

A. I don't know of any downtown work we done at all in 1910.

Q. Take for instance out in Highland Park Addition, out in that section of the city and about 44th street north of Ingersoll, Avenue and up as far as University and up as far as Kingman did you do considerable work in that section of the city in the way of extension in the year 1910?

A. We did considerable up there, I don't know whether we did all in 1910 or 1909.

Q. You did considerable work in extensions in that section of the city.

A. Yes, sir.

Q. Now what other portions of the city did you work in during those years?

A. I think it was in 1910 we went over southwest Ninth street, either 1909 or '10 I would not be positive of the years, right lately anyhow.

Q. How many blocks of main did you put in there?

A. Well there are of that extension I think there was somewhere about two and a half miles, something like that.

Q. That was 1909?

A. Either 1909 or '10 I would not be positive which year, around that.

Q. Do you have in mind any other parts of the city in which you made extensions?

A. Oh we made extensions practically in all parts, We was out towards the fair grounds, we was up in Grandview, on some out in Highland Park, out in the northwestern part of town on

613 some and some in between here and there.

Q. Does your mains extend as far south as the Army Post?

A. No, sir.

Q. Do they go as far south as the city limits?
A. No, sir.
Q. How far south do your mains extend on southwest Ninth street?
A. The next block south of Park Lane or Park Avenue. One block south of that.
Q. You would not be able to tell us the number of miles of main you constructed within the five years?
A. Oh no, I would have to guess at it year by year practically, I don't keep any record of that.
Q. All extensions you have made on behalf of the company a record was kept of the same?
A. Yes, sir.
Q. And that record was made by you?
A. As I showed you this morning this sketch was turned over by me.
Q. Did you bring that copy of the sketch?
A. No, I did not.

Mr. BRENNAN: As part of the cross examination of this witness the defendant will offer in evidence defendant's exhibit No. 2.

Judge Carr asked you about digging your trenches for your mains ans as I understood you to say you endeavored to have about three feet and a half from the surface of the ground to the top of your main or covering?
A. Yes, sir.
Q. And that in some instances you were required to *fo* a little lower than that perhaps depending upon the topography of
614 the country.
A. Yes, sir.
Q. The water which you speak of, you don't mean to be understood that any water from the outside of the main reaches the inside of it?
A. Well in certain conditions, yes.
Q. Aren't the mains thoroughly caulked?
A. Yes; but then accidents might overtake a main, it might break or a service pull out and a service fill with water and then the water fill up the main and we would not have any access to remove that stoppage.
Q. You have these drainage points established along the line of the distribution system do you?
A. Yes, sir.
Q. Is there any uniformity about the location of these stations, or do you use your own judgment in putting in mains?
A. The condition of the territory in which we are in governs the amount and distance between them.
Q. If you are placing a main in 19th street for instance from Woodland Avenue north to Cpttage Grove Avenue, you follow the slope of the hill there and aim to keep the bottom of your t-ench about four feet below the surface?
A. Yes, sir.

Q. That is the idea?
A. Yes, sir.
COURT: Do you do your own leveling or the engineer?
A. I do.
Q. What do you mean with respect to the placing of your main in the trench about having it on a slope?
615 A. Well it has got to have a fall, we term a low place, got to have drainage back to that low place, raise our pipe from that low place until it gets a certain depth or thereabouts and then tip over into another low place.
Q. That is one of the drainage stations you speak of?
A. That is what we call a pumping point, set a drip well there.
Q. Now for instance you have got a main out Woodland Avenue to 19th street, suppose you wanted to extend up 19th street to Cottage Grove this drip station would be 19th and Woodland?
A. No, sir; not necessarily, Woodland draining back. As long as you drain it back, we prevent as much as possible all these low points.
Q. In forming one of these places you may have to go below the natural depth of your t-ench?
A. Yes, sir.
Q. The t-ench proper you aim to keep that as uniform as possible about four feet below the surface?
A. Yes, sir.

Redirect examination by Hon. George H. CARR:

Q. What is a main drip pot?
A. It is a piece of cast iron, I suppose it is cast on a mould. It is a hollow piece of cast iron of various sizes, some of them pretty large and some of them very small.
Q. What regulates the size?
A. The size of the line in which it is in.
Q. Size of the main?
—. Yes, sir.
Q. What are those used for, why are they placed?
616 A. Where are they placed, they are placed in the low point that is necessary to be formed so as to take care of the condensation that might arise inside of the main or accidents occur where the water might get into the main so that we will have access pumping them out without tearing up the main or streets.
Q. How are they attached to the main?
A. They are formed the same as a double hub fitting. They are set in the main, have a deep hole and set them below the main and attach them to the main the same as you do one joint fitting the other, only a double hub you have got to have the spigot both ends. Cut the bell off the pipe because a bell — already on the box or well. On the other end you can start right off of that, that spigot piece and go ahead again with the main.
Q. What is the bell on the pipe?
A. That is where they join together, larger so the small pipe go into the large one so you can make a joint.

Q. Drip pots are made of what material?

A. Cast iron.

Q. Are these placed whereever there is a point to which the drainage comes?

A. As far as in the center of the line is concerned. If the drainage comes to a dead end or where the pipe stops we don't set them until we continue that line to a place where it is a raise again.

Q. You have said something about the pumping station, pumping apparatus. Do you have a pump wherever you have one of these drip pots?

A. No, sir; not altogether, have it prepared for a pump so in case there is trouble in certain localities which might possibly
617 be in the drip, then we can pump out as I said before without disturbing the streets. We connect a pump point with these dri- boxes, run it through the curb and leave it above ground so to be accessible at any time.

Q. You speak of trouble, what kind of trouble?

A. There is a good deal of trouble in the gas business, various troubles.

Q. This particular kind of trouble?

A. This particular kind, as I stated before condensation may form and it will run back to this low place and stop the flow of gas on that particular line or a service may pull out by expansion or contraction, the main may crack, be some connection cause it to have a little crack and should the point be in water it will naturally run back to the low point and it will fill the main and shut off the consumption beyond that.

Q. When the main at this low point fills with water the gas of course won't pass there.

A. No, sir.

Q. And that shuts off the supply of gas beyond there?

A. Yes, sir.

Q. And if partly filled it interferes with the flow of the gas?

A. Breaks the pressure, interfers largely with the pressure.

Q. That is the trouble and the experience makes it necessary to pump out the fluid or water from the pipe, that is correct is it?

A. Yes, sir.

COURT: You have a regular pump in there or do you insert a pump.

A. We insert a pump.

COURT: Take off a cap.

A. Yes, sir.

618 Q. Do you now have in mind the number of these drip pots that you have on the system?

A. Very close.

Q. Well would you undertake to give an approximation of the number?

A. Well my best recollection right now we have got somewhere about 160 of them in various parts of town. I don't mean that. I mean we have about 160 of 165 pumping points, but they are not all drip holes.

Q. There is about one hundred and something pumping points?
A. About 160 or 165, somewheres about that neighborhood. I would judge outside of that there is somewheres about close on to 80 or 85 holes.
Q. You personally know where all of these are located do you?
A. Yes, sir.
Q. Is there more then one kind of drip pot?
A. There is several different kinds.
Q. In use by you?
A. Yes, sir.
Q. I wish you would explain briefly the different kinds that you use?
A. Well there is one kind in use where it sits in the main, the main goes direct through the pot, in a sense the main does not but connects as I said before to the bell each side the drip well. Then there is what is called the side pot, that is set off to one side, a small pipe connects with a little place in the main and that pipe then back to a point there with the pot. Then another one what we call a home manufacture where we take a special and turn it upside down and
form that by putting a piece of pipe below so it forms the
619 same thing as a drip well.
Q. Do you have in mind the different sizes of line drip pots that you have in use?
A. Yes, sir.
Q. I wish you would state to the Master what sizes?
A. We have four inch, six inch, eight inch, ten inch, 12 inch 16 20 and 24.
COURT: In other words have them corresponding with the size of your pipe?
A. Yes, sir; always.
Q. Do you recollect whether you have some three inch drip pots on three inch mains?
A. Not to my knowledge. The three inch is what we term a side pot as explained before, the main is tapped under the low point and the water run into that and then pumped out of that. It is not a line drip.
Q. You make a distinction there on the three inch?
A. Yes, sir.

Recross-examination by H. O. BRENNAN, Esq.:

Q. What are the weights of these line drip pots?
A. They vary. A four inch, a standard drip box will weigh about 260, pounds, some of them be heavier tha- that.
Q. Cast iron?
A. Yes, sir.
Q. Average about 260 pounds, four inch?
A. Yes, sir.
Q. Take a six inch?
A. Six inch weights about 360 *ro* 400.
620 Q. Eight inch?
A. Eight inch runs about 500.

Q. Ten inch?
A. Ten inch runs about 650.
Q. 12 inch?
A. 12 inch weighs about 700 pounds.
Q. 16 inch?
A. Sixteen I think weighs about 1300 and some pounds.
Q. Twenty inch?
A. Twenty inch weighs about 14 to 1500.
Q. Twenty four inch?
A. Weigh just about a ton.
COURT: Old fashioned ton.
Q. Are some of these mains of wrought iron that are used in the system?
A. Very little.
Q. All of your three inch mains are principally wrought iron?
A. No, all three inch is cast iron. No three inch wrought iron except service connection.
Q. Do you have any wrought iron in the distribution system proper?
A. I don't know whether you term it wrought iron or not, we term it tissue paper, you can call it wrought iron if you want to, supposed to be manufactured of steel of some description pretty thin.
Q. Rolled steel?
A. Yes, sir.
Q. It is not cast iron?
A. No, sir.
621 Q. In what size do cast iron mains come?
A. Two, three, four six, eight, ten, twelve, fourteen, sixteen, twenty and twenty four is all we have.
Q. How much wrought iron pipes or mains are in use in this system of you know?
A. We have got a piece on Second street from Court Avenue to that alley or street where the Belt Line turns down?
Q. Commercial street?
A. Commercial street. Then we have got a little piece across southwest Ninth street, eight inch. This other is six down here.
Q. How much of this pipe or main is what you term tissue paper?
A. This six inch down on Second street.
Q. And this on west Ninth?
A. This is better quality.
Q. Wrought iron?
A. No, it is steel I think, rolled steel.
Q. The balance of the system is principally of cast iron.
A. Yes, sir.

Redirect examination by Hon. GEORGE H. CARR:

Q. You say the balance of the system, it is all cast iron isn't it?
A. No, sir.
Q. Except what you have spoken of?

A. Some inch and a quarter, inch and a half and two inch that is wrought iron?

Q. Did you state what material these drip pots were made of?

A. Cast iron.

622 E. P. WALTER being recalled for further cross examination by R. O. Brennan, Esq., testified as follows:

Q. Since you were on the witness stand this morning, have you investigated the records of the gas company to ascertain the number of miles of mains it had in its distribution system in the year 1874?

A. No, sir.

Q. You say you have not?

A. No, sir.

Q. Have you made any investigation along that line?

A. No, sir. I have the records that will show that data.

Q. Have you looked over the records since they have been produced in court for the purpose of ascertaining the number of miles of mains?

A. I have looked over the records to see that they were the records, the originals or copies of the records which I originally saw from which the report was made up.

Q. Have you a record there for the year 1904 showing the distribution system of the Des Moines Gas Company?

A. Yes; have a record of the authorizations for the year 1904 fo the street mains to be laid.

Q. You mean by that the street mains extensions?

A. Yes, sir.

Q. 1894?

A. Yes, sir.

Q. What does that record show as to the number of miles?

Objected to as incompetent, the record is the best evidence.

623 A. These records are authorizations issued in Philadelphia to the Des Moines Gas Company to lay mains on certain streets giving the size of the main and the length of the main.

Q. They have a record have they not of the amount of mains in existence say up to the first day of January 1894, or up to the 31st day of January, 1893, that is the aggregate number of miles of mains in existence at that time?

A. I don't think the company has any such record.

Q. Didn't you find it in making up this inventory?

A. No, sir. My inventory is made up from records of the office as given by years.

Q. You could tell by going over the year 1894, couldn't you, how many miles of mains were constructed in that year?

A. By going over these records, yes.

Q. Was there any account kept, any regular construction account or otherwise showing the number of miles of main each year in existence?

A. I am not sure, I don't know about that.

Q. Now what records did you examine in making up this inventory for the purpose of ascertaining the number of miles of mains that this company had up to and including the last date shown on your inventory?

A. I examined the maps of the Des Moines Gas Company which they have prepared and post as a main is laid on a street they mark it on this map. Also the sketches of these mains are made for work as completed and also these authorizations that I speak of, orignal authorizations for laying the main?

Q. Did you verify the map which you took as standard for making your inventory?

A. Yes, sir.

Q. And in what way did you verify the information shown on the map.

A. I verified it from the sketch books and also from these
624 authorizations.

Q. Do you mean to say that in order to make this inventory and in order to tell the court the number of miles of mains that the company had in 1894 that it is necessary to go through all of these sketches?

A. To get the miles of mains laid in the year 1894, no sir.

Q. How would you get it?

A. I would go to the authorizations and take the authorizations that were issued in 1894 or time previous to that and see when they were laid and take the sum total of those.

Q. Haven't you any composite record of the number of mains in existence, say January 1, 1894, to which you could turn and find out just the number of miles that were in existence at that time?

A. No, sir; I have not.

Q. Has the company to your knowledge?

A. I don't think so.

Q. Did you inquire for such record in making your investigations?

A. No, sir.

Q. In placing upon the inventory the number of miles of main which you show there how far back did you go into the records?

A. Through all the records which the company has.

Q. How far back did that extend?

A. Goes back as far as 1886 beginning with January 1887.

Q. That was your place of beginning, January 1, 1887?

A. Yes, sir.

Q. Right at that point, how do you know the number of miles of mains that the company had at that time, what record was there to show that?

A. We have an old record prepared in the 90s I think
625 some time, by Henry Moul of the mains in the ground as he knows them, or knew them to be.

Q. That was made in 1890, you say?

A. In the early 90s I would say, 1890, might have been '92 or '93.

Q. That is not exactly an answer to my former question. The

question was, when you started on the first day of January 1887, you gave the company credit for having so many miles of mains did you not?

A. Yes, sir.

Q. Where did you get the information that they have that number of miles of mains to place the same in your inventory?

A. I used the map as exhibits 17 and 18, and from these maps I deducted all the mains laid since January 1, 1887, that left the mains as there shown in plate 30 I think it is.

Q. This map, Exhibit 17, was made up after or during the time that you were making your inventory was it not?

A. This plate 30 is an exact copy of the map we used at that time.

Q. You started out on the first day of January 1887.

A. Yes, sir.

Q. You say you had a record up to that point of the number of miles of mains in the distribution system of the Des Moines Gas Company?

A. No, sir; I have not.

Q. Didn't you give them credit for that amount somewhere?

A. Yes, sir.

Q. Where did you get that information that they had that number of miles of main?

A. I stated I got it by deduction from the total number of miles of main in at the present time, I deducted the miles of main
626 that had been laid since January 1887.

Q. That included 1894?

A. Yes, sir; included all the intervening years from 1887 up to the present time.

COURT: You went over each year and got the amount that was laid each year since that time?

A. Yes, sir.

COURT: And where laid?

A. Yes, sir.

COURT: And after getting that then you found certain mains in the list that were not laid during those years?

A. Yes, sir.

COURT: You assumed that these mains were laid before?

A. Were laid previous to that time?

Q. So you can take the year 1894 and by the same process you can tell us the number of miles of main in existence at that time can you not?

A. Yes, sir.

Q. That won't take very long will it?

A. Take quite a little while.

Q. How long?

A. Several hours. I have several books to go over here.

Q. How many books will you have to look over?

A. About three I think it is or four, four of them.

Q. Now Mr. Walter, we would like to have you furnish to us or to the Master, as part of your cross examination a tabulated statement showing the number of miles of mains in the distribution sys-

tem of the Gas company on the first day of January 1895, that includes the year, 1894.

COURT: In making up this tabulated statement show the
627 size of the main and where laid for each year and the length?

A. That is going to take considerable more than a few hours.

COURT: You need not take the streets and the size and length and the year it was laid in.

Judge CARR: If it shows the mains, where laid and size, and the total we would like to have the statement cover that. It will save time while he — doing that and we would like to have him make it up in that way.

COURT: Yes, it will save time.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

628 Thursday Forenoon Session.

JULY 20, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

HENRY MOUL, recalled for further re-direct examination, examined by Judge George H. Carr, testified as follows:

Q. When you do the work of laying mains, after the work is completed, you make a return to the office showing the amount of pipe you have laid and the length of the pipe, all the details with regard to it?

A. Yes sir.

Q. Do you know whether there is any other record of the Company that shows those things except the record that is made from the data furnished by you?

A. No, sir.

Q. You don't know or there is not?

A. I know there is not.

Q. Are you familiar with the records of the office and have you gone over them and compared them with the records of the data as furnished by you?

A. Yes, sir.

Q. Now, in furnishing this data for the record, the data furnished by you are true and correct?

A. Yes, sir.

Q. Are the records made from that data to your personal knowledge a correct record?

Mr. BYERS: I don't know whether the witness is competent to state that or not.

629 A. Yes, sir.

Q. Now where you use the drip pots, is the same thing true, that you make a return to the office of the drip pots that you use?

A. Yes, sir.

Q. And are the records of the office made up from your return in respect to those matters?

A. Yes, sir.

Q. And have you gone over those records and are you familiar with them?

A. Yes, sir.

Q. Now, in making your returns as to those drip pots you use in the system, those returns made by you, were they correct and true according to the facts?

A. Yes, sir I think so.

Q. Were these records as compiled from your returns, are they correct records of the fact?

Objected to on the ground that the witness is not qualified upon that proposition and is incompetent to testify with respect to it.

A. Yes, sir.

Q. In speaking of drip pots, you said yesterday something about some kind of pots that was different from others; some you spoke of as line pots, and some where they were put to the side; what term do you use to designate those?

A. No other term, except I call one side pot and the other line pot.

Q. On what size mains are those side pots used most generally, if on any particular size main?

A. On the three inch.

Q. Are all the pots, or drip pots on the three inch mains placed at the side instead of under the line?

630 A. In our system yes, sir.

Q. And on the other sizes, how is it?

A. We have two on six inch lines, on side pots, and all the rest of them are on line pots, practically speaking.

Q. Now, in the Company's records, do you know whether side pots, as you speak of them, are classified and designated as line pots?

A. I couldn't say how they are specified; I think they are all called drips.

Q. Mr. Moul, I will ask you to take Exhibit No. 15 and turn to page 209, under the head of Mains in Ground. You find there the various sizes of mains indicated in the first column, and the length of the several kind of mains indicated in the second column. Do you know Mr. Moul the length, basing your answer now on your personal knowledge, from having these mains; do you know and are you now able to state the number of feet of each of those several kinds of mains which the company has in its system here in Des Moines.

A. Yes, sir.

Q. Starting at the bottom of the page, the largest size main shown there is a 24 inch main; we find in the inventory 1,180 feet; do you know how that length is ascertained; how the measurements were made for the purpose of getting that length?

A. Yes, sir.

Q. How?

A. I took the number of pipe laid and pieces of lengths—all lengths of pipe are 12 feet. Then I take the pieces of pipe and in-

clude that in my return. I show how many feet of pipe I have laid. After a line is laid I take an over-all measure, measuring, and including the drips, specials of any kind, T's or crosses, and I show both the number of feet in the pipe and trench.

631 Q. Is this 1,180 feet an over-all measurement?

A. Yes, sir.

The MASTER: How is that measured now; does that include the cup at the end?

A. The over-all measurement includes all from the beginning point to the end.

Q. Do you know from your personal knowledge how many feet of main, measuring the pipes separately now, and not as an over-all measurement, how many feet of 24 inch main the company has in its system in Des Moines?

A. Yes, sir.

Q. You may state to the court how many feet?

A. 1,172.

Q. Now, do you know whether the difference between the 1,180 feet, as shown in the inventory, and 1,172 feet, is accounted for by the difference in the over-all measurements and the measurements of the pipes separately and totaled.

A. Yes, sir.

Q. How many, if you remember of these specials have you in these 24 inch mains?

A. Three specials.

Q. And how large are they and where are they?

A. What space do you mean they take up in the line?

Q. Yes.

A. Two feet.

Q. Each takes up two feet?

A. Yes.

Q. Where are those specials?

A. One of them is on Court Avenue between First and Second: one at the intersection of Court Avenue and First; and the

632 other in the intersection of the river pipe on First street.

Q. Can you tell the court where these 24 inch mains are laid?

A. Yes, sir.

Q. I wish you would do that in detail.

A. There is a 24 inch on the south side of Court Avenue from Second to First. On First Street from the south side of Court Avenue to the river pipe, south to the Rock Island Railway and across the river to intersect to the main leading from the governor of the works.

The MASTER: Is it laid under water across the river?

A. Under the water about 6 feet.

The MASTER: What is the length of that across the river?

A. 640 feet.

Q. I wish in that connection you would explain to the Master how those 24 inch pipes are laid in the river and in that connection also how the 16 inch pipes and 8 inch pipes are laid. Go on and give

him in your own way a full statement of just how that work was done.

A. The 24 inch is laid between two rows of piling, six feet apart each way. In between the piling we put a coffer dam and we run a trench about nine feet from the top of the water. On this piling there is timber bolted on to the level of the bottom of the pipe. After the pipe is laid on that the piling is sawed off and a cap put across the top of the piling and bolted to the piling, and that includes the entire distance of the river from bank to bank Every six feet there is two piling and in between those pilings we lay the mains.

Q. How far below the bed of the river are the mains laid if they are laid below?

A. Supposed to be three feet in the lowest pipes. Now
633 that location was given to us by the City Engineer, the depth.

Q. Do you mean three feet from the top of the pipe to the surface of the bed of the river?

A. Yes, sir.

Q. And not from the bottom?

A. No, sir; that is in the lowest point, according to the City Engineer's direction.

Q. So that you have three feet of covering?

A. Yes, sir; in the bed of the river.

Q. Then where you have you- 24 inch mains, you have to go of course two feet lower in the trench?

A. The 24 inch line, that was between nine and ten feet from the top of the water, to the bottom of the trench.

Q. Is what you have said as to the manner in which these pipes were laid, does it only relate to the 24 inch mains?

A. That includes the 24 inch only. Now the 16 inch is laid on the upper side between a row of piling. One line of that piling is supposed to be three foot apart.

Q. What do you mean by the upper side?

A. The up-stream side of the river. It is bolted to the piling twice in every length, with a stirrup around the pipe; the stirrup blocked about that piling, according to the City Engineer's figures it is the same depth as the 24 inch. The one up here at Grand Avenue is not as deep. It is laid in the same manner, excepting that it has timber bolted to the piling underneath the piling, where it only had one row of piling.

The MASTER: Then you have two different lines across the river?

A. Three different lines. There is one 16 inch; one 24 inch, and 8 inch.

The MASTER: All laid in the same trench?

634 A. No, sir; different localities of the river. The 8 inch is laid practically the same as the 16 inch.

Q. Now these places where the pipes were laid and the manner of laying, I mean with regard to their level, was under instructions furnished by the city engineer?

A. That is the depth he gave me, marked it on the piers of the bridge; I was to keep so deep from that mark, and he was there

when the 24 inch was laid several different times to measure the depth himself.

The MASTER: Are these the same lengths all of them?

A. Practically. They vary a little bit. I can give you the lengths, the 8 inch is 673 feet and the two 16 inch lines 1,300 feet; that includes both lines.

The MASTER: You speak about the size of the pipes, what is that measure, within or without?

A. It is the inside measurement.

Q. Can you refer to Exhibit 18 and show the Master on this map if it does show it, the location of these river mains?

A. (Referring to map.) We have a 16 inch just south of the Grand Avenue bridge. Another line of the 16 inch south of the Wabash. Then we have an 8 inch a short distance south of the Rock Island and the 24 inch about 25 feet south of the 8 inch. It shows on there. The 8 inch is about 20 feet from the 24 inch.

The MASTER: There is none across the Coon?

A. Well, the one across the Coon goes across the Ninth street bridge.

Q. While you are there with that map before you, is there a main that crosses the river to Highland Park, on Sixth Avenue, can you point that out?

A. There is a ten inch going over the bridge, under the east foot walk of the bridge.

635 Q. That is a Nelan Arch bridge?

A. That is this Sixth Avenue bridge.

Q. Have you made it clear, just the location of that pipe?

A. It is under the east foot walk.

Q. Is it laid under the bridge?

A. No, sir; on top of the bridge, under the foot walk.

Q. Under the foot walk of the bridge?

A. Yes, sir.

Q. Is there anything peculiar in the method of constructing?

A. Peculiar?

Q. Yes.

A. How do you mean?

Q. You may describe in a general way the construction?

A. It is not out of the ordinary usage; except the fill bothered; the fill bothered us considerably; it went down a time or two and we had to go up there to protect it several times.

The MASTER: I never saw that Grand Avenue bridge.

A. This is the Sixth Avenue bridge. It is something similar as that put over on Walnut now.

Q. Is it street wide?

A. No, I don't think it is. I think it is narrower than the street; I would judge it is.

Q. It is a very wide bridge—two car tracks on it?

A. Well, let me see; I would judge about 40 feet. Yes two car tracks on it.

Q. A drive way on each side of the car track?

A. Yes, sir.

Q. A foot-walk outside of that?

A. Yes, sir.

The MASTER: A public bridge?

636 A. Yes, the one that goes to Highland Park.

Q. Now, Mr. Moul, you take Exhibit 16, turn to sketch 112. Will you first refer to the bottom of that sketch on that page to the words "Pipin- Over Sixth Avenue Bridge." I will ask you if that is a sketch of this Sixth Avenue bridge to which you have referred?

A. The bridge is all right.

Q. You recognize that as a sketch of the bridge?

A. It is considerable like the Sixth Avenue bridge, yes.

Q. Now, is there anything on that sketch that shows where the main is laid?

A. I don't see it.

Q. I call your attention, Mr. Moul, to the cross section shown at the right of the main sketch, that little sketch down there in the corner. State whether that shows the location of the pipe, as you understand it, as it crosses that bridge?

A. What is that sketch supposed to represent; the abutment looking from the south?

The MASTER: Is this concrete?

A. Yes, sir; it is surrounded by concrete.

Q. That appears to be looking south along the bridge?

A. That is looking towards the end of the pipe, yes. The right hand side is supposed to represent the foot-walks.

Q. The broken line represents the foot-walk, doesn't it, and the inside surface of the bridge or drive-way?

A. Well, I wouldn't say. If I look at that sketch right; you are looking at that pipe from the south looking north.

Q. From the north looking south—well it would be substantially the same, wouldn't it now, so far as the general location of the pipe is concerned; does that show it correctly, the longitudinal sketch there.

637 A. I don't understand this sketch exactly. Is that broken line supposed to be the driveway; that broken line supposed to be the drive-way, or top of the bridge or arches?

Q. Assuming that broken line to be the first walk; then where it drops down, the oval shape being the passage way for teams, cars and vehicles, and then where it raises again is the walk on the opposite side?

A. Yes, sir.

Q. Assuming that line to represent the top surface of the bridge where the traffic is, including the sidewalks and the driveway between the sidewalk, and assuming the round mark up there to represent the end of the pipe from the north looking south; does that show correctly the pipe?

A. Practically so if you are looking from the north to the south. If that is the view and you are on the north side of the bridge itself.

The MASTER: Is the foot and guard rail on the outside?

A. Yes, sir. The walk is protected with a curb. It is above the

pavement. Then the outside of that walk is guarded by a hand-rail. That applies to both sides of the bridge. As I said before, if this is looking from the north to the south, it is practically correct; and if it is from the south to the north, it should have been on the other side of the bridge.

Q. The pipe then is on which side of the bridge?

A. East side.

Q. The bridge practically crosses the river north and south?

A. Yes, sir.

Q. And the pipe is under the east walk or the walk on the east side of the bridge?

638 A. Yes, sir.

Q. Is the walk a concrete walk?

A. Yes, sir; concrete, cement walk.

Q. Now take the sketch above that, the 8 inch main under the river, do you recognize in that object the main; what is there to represent that main in the sketch?

A. Yes.

Q. Do you recognize what is made to represent the surface of the ground, of the river bed?

A. Yes.

Q. Those upright objects by the mains, those up and down pieces, what do they represent?

A. I suppose that is to represent the piling.

Q. You may state if you know whether that sketch shows the 8 inch main as it is laid under the river bed?

A. Yes, sir; it does.

Q. Now, notice the sketch above that, the 24 inch main, do you recognize in that sketch the main?

A. Yes, sir.

Q. And the lines of the river bed?

A. Yes, sir.

Q. I wish you would tell the Master whether that sketch represents accurately the way in which the main is laid under the river?

A. It represents it, I presume, as correctly as it can be got on the sketch.

Q. Now take the sketch above that—piping under the river Grand Avenue bridge—do you there again recognize in that sketch the pipe?

A. Yes, sir.

Q. How is that shown there?

A. The piling is represented here by marks below the pipe.

639 It shows the distance between them, the river bed, the length of the piling and the number of piling and how the pipe is connected to the piling.

Q. I wish you would point out just the lines there, what represents the pipe on that sketch, what the pipe is.

The MASTER: That is the straight line here?

A. Yes, sir; that is the pipe.

Q. Does the sketch show correctly the piping under the river at Grand Avenue bridge?

A. Yes, sir.

Q. What is the size of that main?

A. 16 inch at Grand Avenue.

Q. Now the top sketch, being the piping under the river, the Wabash Railroad bridge; does that show the piping as it passes under the river at the Wabash Railroad bridge?

A. Yes, sir.

Q. The same character of line indicates the piping as is shown in the other sketches?

A. Yes, sir.

Q. Now does that sketch also show the surface line of the ground of the river bed, reaching to the banks on either side, as you know it?

A. Yes, sir .

Q. What is the size of the main under the Wabash river bridge?

A. Sixteen inch.

Q. What kind of iron is that?

A. Cast iron.

Q. Is that true of all of the mains under the bridges?

A. No, sir; the other 8 inch is steel pipe.

Q. But the balance of them are cast iron?

640 A. Yes, sir.

Q. Now, while we are on the subject of piping under the bridge, is there any difference between the way cast iron mains are jointed or joined together, and the way in which steel mains are joined together?

A. Yes, sir.

Q. Please explain the difference?

A. What particular main do you want me to explain the difference on?

Q. Well, this main we are speaking of.

A. The 8 inch wrought iron is threaded with a double connection, and it has got what is termed a Dresser patent rubber clamp connected to the sleeve so it makes it practically a double threaded joint.

Q. And how does that differ from the way the iron pipes are?

A. The cast iron pipe is cast*ed* with a bell end, that is the larger portion of the pipe, large enough to receive the small end of the pipe, with a vacancy of possibly a half an inch; that vacancy is filled up with different material to form an airtight joint. In that particular job is placed a load filling with the Dresser clamp after the lead filling is in.

Q. What do you say was the length of the cup?

A. Four inches.

Q. What kind of ground did you have in excavating under the river; what kind of clay or gravel?

A. We have principally quicksand to contend with. There is a portion of it pretty thickly bedded with bowlders and when you remove the bowlders you strike the quicksand two-thirds of the way across the river from the west side.

Q. What is the difficulty with the quicksand?

A. The difficulty with the quicksand is it takes consider-
641 able more attention, housing it up and keeping it away. You have to sink your coffer dam a good deal deeper; you have got to go about four feet deeper with the coffer dam than in any other material.

Q. What is the peculiarity of the quicksand?

A. It is considerably like water; hard to house up and hard to handle; the more you handle it the more you get.

Q. You have spoken of bowlders, I wish you would give the Master a little clearer idea as to just the extent to which you were interfered with in doing the work, by these bowlders?

A. It seems to me at some early day, or rather some fellow had an enormous lot of stones and dumped them all in the bed of the river here; they are laid there loosely; some the size of a fist and some seven or eight feet through. Going across with that trench, fortunately or unfortunately we hit just about where those stones were in there. That does not apply, except the two lines, the 8 and 24 inch. There wasn't as much stone in the 16 inch line as in the 8 and 24.

The MASTER: That I suppose is the ordinary river bowlder?

A. Yes, sir.

The MASTER: It seems to you that the stones were thrown in there?

A. It seemed that way to me when I was getting them out of there.

Q. While we are on the subject of pipes, I wish you would turn to the next sketch in that exhibit, which is sketch 113; have you a pipe over the Raccoon river?

A. Two of them.

Q. And where are the pipes over the Raccoon river?

A. One on the south Fifth Street bridge and one the southwest Ninth Street.

Q. How are those mains that cross the Raccoon river constructed with reference to whether they are on the bridges or whether
642 they pass under the river?

A. On the bridges.

Q. Both on the bridges?

A. Yes, sir.

Q. Do you recognize sketch 113 as being a sketch of one of the mains crossing the Raccoon river, a sketch of the bridge over which it passes?

A. From what side am I looking at this.

Q. You are looking up streams, that is up towards the west up the river.

A. Well, this represents a line of pipe going across the river.

Q. And referring to the little sketch at the right of the large sketch, and also to the detail sketch below that, do you recognize the location of the pipe from those sketches, and do they correctly show the location of the pipe?

A. If I am looking at this up stream, why it appears to be one

of them, but the other one seems to be on the opposite of the bridge, the way I look at it.

The MASTER: Are there two which cross the same bridge?

A. No, sir.

The MASTER:

Q. One is on the down stream side and the other on the up stream side?

A. Yes, sir.

Q. Now this little sketch is a cross section of the bridge, just as though it was out off, and looking at the end of a pipe, does that show the location of the main as it is on the bridge?

A. Which one of the bridges.

Q. Don't you recognize which of the bridges this is?

643 A. I would say that is the southwest Ninth Street bridge.

Q. Southwest Ninth street bridge, looking up stream?

A. You are looking at the north end of that now, looking south.

Q. That shows correctly the location of the pipe?

A. Yes, sir.

Q. Now, the sketch below that, as I understand it, is a representation of the bridge as though you were looking down on it, down to where the main is laid, and that shows, those dotted lines show the location of the main correctly?

A. If that is the same bridge and looking down on the bridge, it is on the wrong side of the bridge, that is all.

Q. Let us see, the main is on which side of the bridge?

A. On the down stream, east side.

Q. What is the size of that main?

A. 8 inch.

Q. Of what material?

A. Which bridge are you talking about?

Q. Southwest Ninth?

A. Wrought iron steel pipe.

Q. Now, there is still another bridge over the Raccoon?

A. Yes, sir.

Q. What bridge is that?

A. They call it south Fifth Street bridge.

Q. What is the size of the main over that bridge?

A. Eight inch.

Q. And what is that?

A. Cast iron.

Q. Now, if you will again go back to page 209 of the first volume of the inventory—I haven't asked you yet whether you know the length of the 24 inch main across the river?

644 A. Yes, sir; I did give that.

The MASTER: He gave that; the 8 inch main 673 feet, and the 16 inch main 1300 feet, and the 24 inch main 640 feet. They have it in the diagram as 639.

Q. There are in the system some 20 inch main, as I understand it, Mr. Moul?

A. Yes, sir.

Q. Can you tell the court where the 20 inch main is located?

A. Yes, sir.

Q. You may do so?

A. It is on Court Avenue, starting on west Second street, runs west to Fifth street; north on Fifth street to Mulberry; on Mulberry west to Thirteenth street; north on Thirteenth street to the alley north of Walnut; west in the alley from Thirteenth to Fifteenth; north on Fifteenth street from the alley north of Walnut to intersect with the main on Grand Avenue.

Q. Do you know how many feet of 20 inch main the Company has?

A. Yes, sir.

Q. How many feet of 20 inch main are there laid in the ground?

A. 6,000 feet.

Q. Now, in giving this 6,000 feet, what do you take into consideration?

A. I took into consideration the pipe individually, that is, the number of feet of pipe.

Q. In making over-all measures, that would increase that figure some?

A. It would increase all the specials.

Q. And if you take an over-all measure, including specials, what would be the length?

A. Well, let me see; that would increase it, one, two, three, four five, six, seven—that would increase it about seven or eight feet, over-all measurement.

Q. You mean if each special or the specials taken together,
645 that would increase the over-all measurement?

A. It would read something like possibly 6015, or 6018 feet, over-all measurement.

Q. You wouldn't undertake to say just exactly what it would be?

A. No, sir; unless I had time enough to count the specials. This measurement I gave is the total length of pipe without specials, crosses, 2's or drips.

Q. Are there any 16 inch pipes in the system?

A. Yes, sir.

Q. Do you know where they are located?

A. Yes, sir.

Q. Can you from memory state to the court where the 16 inch pipe are located?

A. Yes, sir.

Q. You may proceed to do so.

A. On East First street, starting at the outlet of the governor going north to Grand Avenue, west on Grand Avenue to the alley west of Second street; north from the alley west of Second street from Grand Avenue to School; east on School street to Second, north on Second street on School to University; east on University to Bluff; north on Bluff to College Avenue. There is a 16 inch line on East Court Avenue from East First Street east to East Eighteenth Street. There is a 16 inch line on Grand Avenue from Fourteenth street to

Nineteenth street; on Nineteenth street from Grand Avenue north to Woodland; on Woodland Avenue west to Twenty-fifth street; north on Twenty-fifth street to Pleasant; west on Pleasant street to Twenty eighth; on Twenty-eighth from Pleasant to Center. On Second street from the Wabash railroad to Grand Avenue, along the side of the Wabash connecting with the river pipe to Second
646 street. I believe that is all of the 16 inch.

Q. In giving that answer, Mr. Moul, do you rely entirely on your memory without the aid of any memorandum?

A. No, sir.

Q. Have you before you in giving that answer any memoranda, or do you rely on your memory entirely.

A. Memory practically; I had a little note that I referred to occasionally to keep my memory up in shape.

Q. I did not see you refer to any memoranda.

A. I didn't at this particular time.

Q. I mean whether you gave this answer without referring to any memoranda?

A. I made this answer wholly and solely from memory at the present time.

Q. Do you recall whether on Center street near Thirty-fourth there is a short piece of 16 inch pipe?

A. Yes, on Thirtieth street, on Center west of Thirtieth street and the intersection after Thirty-fifth street of 16.

Q. Do you know how many feet of 16 inch pipe the Company has in its system in Des Moines?

The MASTER: Including the river pipe?

Judge CARR: Yes, excluding it.

A. No, I have the total including the river, 27,190 feet.

Q. That includes or takes out the river?

A. That includes it.

Q. That is inclusive of the mains in the river?

A. No, the river pipe wants to be added to that; this 27,190, plus 1,300.

647 Q. So that in giving the 27,190, that does not include the 1,300 feet of river main?

A. No, sir; it includes all underground, not under water.

Q. Now, is that figure arrived at in the same way you explain that you arrived at the measure or length of the 20 foot mains and not by over-all measurement?

A. That is derived from the main feet used in each extension at the time used. The over-all measurement is always turned into the office in connection with the number of feet of pipe used.

Q. So when you get an over-all measure, that would slightly increase the measurement.

A. In all cases.

Q. What do you say, basing your answer upon your personal knowledge, as to whether when you come to take an over-all measurement, the inventory measurement, 27,706 feet would be correct?

A. Very near it, as near as it can be got at.

The MASTER: What is the length of the pipe?

A. 12 feet; 12 feet 4 from end to end. It takes up 4 inches in the bell and therefore it lays 12 feet.

Q. Now, in giving these measurements, do you base your conclusion upon the actual measurements of the pipe, or upon the pipe as it lays in the ditch when it is jointed up?

A. The measurement of the pipe, outside of the pieces, all specials the amount of pipe on the job, so many feet laid, keep a number of the accurate length laid, adding to that any pieces. Then the over-all measurement takes in the specials and gives it the length of that trench.

The MASTER: As I understand that, the over-all measure gives the length of the main, includes all specials, such as drip pots, T's or crosses and that is the length of the main as it is laid, you measure it, and you get the over-all measure?

648 Yes, sir.

Q. I don't know whether the record shows quite clearly. Let me ask one or two further questions. Where the pipes are jointed a portion of one pipe enters a portion of another pipe?

A. Yes, sir.

Q. Of the pipe to which it is joined?

A. Yes, sir.

Q. Now, how much of the one pipe enters the other pipe?

A. Four inches; that is, that applies to cast iron pipe.

Q. On the one end of each pipe is a bell?

A. Yes, sir.

Q. What is that?

A. That is enlarged, so as to receive the spigot of the other pipe entering it.

Q. And that spigot, the part that is received by that bell is the four inches you speak of?

A. No, the loss is the bell end of it, but as the spigot comes to the back of the bell, that forms a continuous pipe on the inside and we term that the bell four inches is the part that is lost. If you measure from the end of one to the end of the second one, you have 24 feet and 4 inches, because they are both 12 foot 4. You are taking up four inches of one, but you haven't of the other.

Q. Now, in making your measurements you measure the pipe allowing for that four inches?

A. Always do that.

Q. In other words, the measurement is four inches shorter than the pipe actually is?

A. Yes, sir; we never figure pipe longer than 12 feet when it is naturally 12 feet 4.

649 Q. Have you in your system any 14 inch pipe?

A. Yes, sir.

Q. Can you tell the court where the 14 inch pipe is located?

A. Yes, sir.

Q. You may do so.

A. It is on East First street, starting from the inlet of the governor west, and as it strikes a radius of a foot west of the east line, runs

direct north to intersect Court Avenue and what used to be the Wabash line.

Q. Before going further, let me ask you whether the 27,206 of 16 inch main in the inventory is a correct measurement of the 16 inch mains by the over-all process?

A. No, it wouldn't be over-all process, because I didn't have it.

Q. You have given the measurement as 27,190. Now I am asking you about the figure in the inventory which you have before you there, of 27206, which is 16 feet difference.

A. That would take in all the over-all measurements.

Q. I am asking you whether 37,206 in your judgment is a correct over-all measurement of the 16 inch pipe?

A. I would say it was.

Q. Now, take up the subject of the 14 inch pipe again, and state all the streets on which 14 inch pipe is laid.

A. I have to my knowledge.

Q. And you are giving your answers now from your recollection, unaided by any memoranda before you?

A. Yes, sir.

Q. Do you know how many feet of the 14 inch pipe there are?

A. I only know that from the measurement of the street. It is a piece of pipe I didn't lay myself. It measures up over-all measures, as near as I could get at it, from beginning to end, 650 650 feet.

Q. Now, the figure in the inventory is 622 of 14 inch pipe. Can you say from your personal knowledge that there is at least 622 feet of 14 inch pipe?

A. Yes, sir.

Q. Your understanding is there is some more than that?

A. Yes, sir.

Q. Have you any 12 inch mains in your system?

A. Yes, sir.

Q. Can you tell the court where those 12 inch mains are laid?

A. We have a line of 12 inch main on east Fifteenth street, starting on Court Avenue, and north to Polk Avenue, west on Polk Avenue to East Fourteenth street, north on East Fourteenth street to Washington. We have a 12 inch line on East Eighteenth street, starting at east Court Avenue, going north to intersect with the main on Easton Boulevard. On the west side of the river we have a 12 inch line on Grand Avenue, starting on the west side of the river, running west to half way between Twelfth and Thirteenth street. We have a 12 inch line on Ingersoll Avenue starting at Nineteenth street and running west to Thirty-ninth. Then there is a break in there, we have two little pieces running from Forty-first east to the alley. We have a 12 inch line on College Avenue, intersection with the Bluff street main; it runs west to Tenth; starts again at Thirteenth and goes part of a block; starts again at Sixteenth and goes east part of a block, and it goes east on Seventeenth to Nineteenth. We have a 12 inch main along the Wabash Railroad starting on Second street and goes west to Fifth; north on Fifth to Mulberry;

west on Mulberry to Eighth. I don't draw to mind any more
651 just now.

Q. Do you know Mr. Moul, whether there is some 12 inch main on Nineteenth street?

A. Yes, sir; from Woodland Avenue to Cottage Grove.

Q. I think you didn't mention that?

A. No, I did not.

Q. Now, in giving this answer, I want to inquire whether you are relying solely on your memory, without the aid of memoranda before you?

A. Altogether.

Q. Now, do you know the total length of the 12 inch pipe?

A. Yes, sir.

Q. If you know that from your personal knowledge you may state to the court what is the total length of the 12 inch pipe?

A. 31300 feet.

Q. I notice in the inventory the figure is given 31349, and I will ask you whether in your opinion the 31349 in the inventory is a correct measure, taking over-all measurement, including specials?

A. I would say it was.

Q. Have you any 10 inch main?

A. Yes, sir.

Q. Can you tell the court where that is located?

A. I can tell quite a portion, but I don't know whether I can get it all or not.

Q. You are speaking now from memory, as I understand it?

A. Yes.

Q. You may tell the court all of the 10 inch main you now recall.

A. We have got a ten inch on East Grand Avenue, starting on the side of Grand Avenue and going to the north side of Grand
652 and east on Grand to Fifth and north on Fifth to Maple. Then we have a ten inch line on Crocker street, starting at Second street and running north to intersect with Nineteenth street. Then we have a 10 inch line on University Avenue beginning at Second street and going to between the cross connections at Twenty-eighth. Then we begin at Thirty-fifth and go to Thirty-seventh. Then we break again and begin at Fortieth and go out to that Park out there. I suppose it is Forty-eighth or Forty-sixth street. We have got a ten inch main on Twenty-eighth street from Center to Kingdom Avenue. There is a ten inch line along the Wabash from the river to Second street. There is a piece of ten inch out on East Thirteenth street from a point north of Hubbell to a point north of Polk Avenue. There is a ten inch on Sixth Avenue from College Avenue north to Corning Avenue. That is all I have in mind at present.

Q. Let me call your attention, Mr. Moul, to the pipe on Grand Avenue between Fourteenth and Fifteenth?

A. That is a ten inch pipe; it starts a little the other side of Twelfth street and goes to Fifteenth.

656 A. Yes, sir.

Q. Your attention was called yesterday to the map in two sections of the east and west side of the river, marked Exhibits 17 and 18 and you stated that you had examined those maps and that they were correct?

A. Yes, sir.

Q. Now do those maps show correctly the location of the six inch mains and the length of the mains, that is where they extend along the street, and the streets upon which they are laid, the length of each particular street; in other words do these maps show correctly and accurately the six inch main in the system in Des Moines?

A. Yes, sir; as near as it can be got at.

Q. I asked you if you know that from your personal knowledge?

A. Yes, sir.

Q. Do you know from your own personal knowledge how many feet in all there are of the six inch mains?

A. Yes, sir.

Q. You may state to the Master how many feet in all there are of the six inch mains?

A. You have got 161,986 feet.

Q. Now will you refer to the inventory, page 209 of Exhibit 15, I will call your attention to the statement in the inventory of six inch mains 162,004 feet, and ask you whether that is in your judgment a correct statement of the length of the six inch mains measuring specials as you have heretofore described?

A. Yes, sir.

Q. You say that is a correct statement?

A. I would say that is correct.

Q. Have you four inch mains in the system?

657 A. Yes, sir.

Q. Do Exhibits 17 and 18 correctly show the location of the 4 inch mains in the system?

A. Well the location; what do you mean, location in the street?

Q. Does it correctly show the streets upon which the four inch mains are laid, and the length of the four inch mains on the streets, the four inch mains as it is laid in the street?

A. Yes, sir.

Q. Do you know how many feet there are of the four inch mains in the system?

A. Yes, sir, I do.

Q. Of your own personal knowledge?

A. Yes, sir.

Q. How many are there?

A. 574,000 feet.

Q. Now referring again to the inventory on page 209, you will note that the inventory shows there are 573,724; I will ask you to state whether from your personal knowledge you know that there is that many feet of four inch mains.

A. Yes, sir.

Q. Now, you have some three inch mains, have you?

A. Yes, sir.

Q. Do the maps Exhibits 17 and 18, correctly show the three inch

mains, showing the streets upon which they are laid and where they are laid upon the streets?

A. Yes, sir.

Q. Do you know the total lengths of three inch mains which there are in the system?

A. Yes, sir.

Q. And do you know that of your personal knowledge?

658 A. Yes, sir.

Q. You may state.

A. 34,989 feet.

Q. Now I call your attention to the three inch mains as shown in the exhibit 15 at page 209, showing 35,301 feet and will ask you whether in your opinion that is a correct statement of the length of the three inch main when measured by the over-all system of measurement, including specials.

A. Yes, sir.

Q. You have some two and a half inch mains, have you in the system?

A. There is no two and a half; there is two inch and less; there is no two and a half inch to my knowledge.

Q. You have some mains then under two and a half inches?

A. Yes, sir.

Q. Now does the maps, Exhibit 17 and 18, show correctly the streets on which mains of that size are laid and the places on the streets where laid?

A. Yes, sir.

Q. You know that of your personal knowledge too?

A. Yes, sir.

Q. Do you know of your personal knowledge how many feet there are of the mains that are under two and a half inches?

A. No, sir.

Q. Have you made any calculation based on your knowledge within your own possession, for the purpose of arriving at the number of feet there is under two and a half inches?

A. I have made a calculation to arrive at a conclusion; yes, I did.

Q. Now what information have you as to the number of feet of these small mains, and in that connection if you have any explanations to make, you may make them.

659 A. The reason I didn't give the total feet of the two inch, the Company years ago ran what was termed then a long service, and it went on record as a new service, but in later days they determined all the pipe laid parallel in the main should be termed main. I have gone over all of this and my best memory is—I have never made an exact measure, from the fact that I deemed them small pipe, and these changes disables me to give the total amount except I would scale the map or go over these places myself to arrive at any particular amount of feet.

Q. Can you approximate from the knowledge you have, from scaling the map, which you state you know to be correct, can you state whether the number of feet given in the inventory 33,947,

taking over-all measurements, is a substantially correct measurement?

A. Scaling the map it proves that.

Q. By scaling the map you find that a substantially correct statement?

A. As shown on the map.

Q. You have already stated the map shows correctly the streets upon which these small mains are laid?

A. Yes, sir.

Q. And where they are laid?

A. Yes, sir.

Q. You know that fact from your personal knowledge?

A. Yes, sir.

Q. And in scaling the map you have scaled the map with respect to these mains at the places where you know of your own personal knowledge the mains are?

A. I know that, yes sir.

Q. So that you have scaled the map only to arrive at the
660 result in figures?

A. Yes, sir; and as to the small mains only, I didn't scale the map at all in any of these conclusions.

Q. Tur-ing to page 211 of the inventory Exhibit 15, what do you know about the paving in the city of Des Moines that is laid over mains?

A. I know all there is to be known.

Q. You know from your personal knowledge, in each instance where there is pavement over the mains, do you?

A. Yes, sir.

Q. And do you know in each instance the kind of paving that is laid over the mains?

A. Yes, sir.

Q. Now, these tables in the inventory, did you have to do with making these tables up?

A. Yes sir.

Q. And who furnished the information from which those lists or figures were made up?

A. I did.

Q. And did you correctly from your personal knowledge, furnish the information from which those figures were taken?

A. Practically all of them, I don't know but what all of them.

Q. And you were present when this work was being done?

A. I was.

Q. What do you say as to whether the inventory in that respect in respect to those figures is correct?

A. I would say they were correct.

Q. In what you have stated you have referred to the inventory beginning on page 211; state whether what you say is true as appears also on page 212 and page 213?

661 A. I would say this is correct as far as the pavement is concerned. Now the totaling of these figures I did not do.

Q. You did not make the calculations?

A. No, sir, but I gave the dimensions and the kind of pavements,

and I would say those footings are correct. They have been gone over by two or three different people, in my presence; that is the conclusion that wound it up.

Q. Now, going to page 215 of the inventory, you will find a list or inventory of line drip pots; do you know of your personal knowledge how many 20 inch line pot drips there are?

A. Yes, sir.

Q. How many?

A. One.

Q. Do you know how many 16 inch, of your personal knowledge, there are?

A. I don't believe I can state that correctly without studying it out.

Q. Just look over the figures as shown in the inventory, and the total, and having in mind that the three inch drips are the side drips you spoke of as side drips, and considering them as included in this number, I will ask you to state to the court whether that is a correct inventory of the drips or drip pots of the Company in actual use?

A. Well, it is correct as far as it goes; doesn't go far enough.

Q. You may explain?

A. It doesn't represent all there is.

Q. How many more is there than appears in that list?

A. I can call to mind one readily; this 24 inch, that doesn't show in this inventory.

Q. What others, if any?

662 A. Well, that is practically correct; that is, one four inch isn't here. It represents 107 and there is 108. The side pots is correct with one exception only; the 17 representing three inch should be 15 in place of 17. On the six inch it should be 32 in place of 30; and then one 24 inch.

The MASTER: The balance is correct?

A. Yes.

Q. Except it omits one 24 inch?

A. Yes.

Q. Where is that?

A. On Court Avenue between the alley west of First and First street.

Q. You said yesterday on cross examination that that pot weighed substantially two tons?

A. One ton.

The MASTER: You say there should be, instead of seven 8 inch there should be 32?

A. No, that is six inch. In place of 30, they should be 32.

The MASTER: How is the 8 inch?

A. That is correct. The three inch in place of 17, should only be 15.

Q. In other words, it is correct on the 6 and 3?

A. The number of drip pots is correct there except omitting the one which is in my count.

Q. Will you turn to page 216 of the inventory, you will notice the inventory states 191 crossings under steam railroads; I want

to ask you to state from your personal knowledge whether that is a correct inventory in that respect?

A. I gave practically that information.

Q. That is, you gave the information from which they were made?

A. Yes, sir.

663 Q. Did you give the information according to the fact?

A. Yes, sir.

Q. So that there are 191 steam railroad crossings?

A. I didn't count the 191. I only told them where and how many there were in the different places. They added them together. I couldn't say whether that footing was 191. I didn't foot them up. I told them how many times and each and every track we cross.

Q. You worked with some one who was getting this result?

A. Yes, sir.

Q. Who was it?

A. The gentleman over there (indicating) I can't call his name.

Q. He took the information and kept the figures and then he totalled them?

A. Yes, sir.

Q. And you didn't add them up?

A. No.

Q. Is that, in your judgment, without stopping to count up or add the figures, is that a correct number?

A. I would say it was.

Q. You could, if we took the time, give those crossings now from memory, could you?

A. Yes, sir; I might miss a track or two, but then it would be pretty close.

Q. Now, do you know, Mr. Moul, how many crossings there are under the street car tracks, under single tracks and how many under double tracks?

A. I do.

Q. Referring to the inventory again on page 216, I note there is given 227 of the single track crossings, and 109 double track

664 crossings, making a total of 336; who furnished the information from which those figures are made up?

A. That was furnished practically the same time and from the same source.

Q. Is the information furnished accurate and correct?

A. Yes, sir.

Q. And according to the fact?

A. Yes, sir.

Q. Those figures then *was* made up from the information furnished by you?

A. Yes, sir.

Q. Did you do the adding up, making the calculations?

A. No, sir.

Q. What do you say as to whether the conclusions, the sums total is true and according to the fact as shown here in the inventory?

A. I would say it is correct.

Q. I wish you would take Exhibit 16 and turn to sketch 115;

now do you recognize that as a sketch showing the mains under crossings?

A. I suppose that represents the railroads and the mains crossing under them.

Q. And in sketch 116, does that give the Master an understanding of how these mains cross the street car tracks, where they are shown to cross the street car tracks, and where they are shown to cross the railroad tracks?

A. Yes; a very plain sketch of it; represents it all right.

Q. There is another sketch, is there not, 117, that shows where there is more than one track; is that a correct representation of the crossing there?

665 A. Yes, I would say that is correct.

Q. Showing the number of tracks correctly?

A. Yes, sir.

Q. Now, could you from memory now, if you took the time to do it, tell the Master where those crossings are, these street car crossings?

A. Yes, but that would take quite a little time.

Q. But you could do it, could you?

A. Yes, sir; invariably so.

At this time, 12: M. an adjournment was taken until 1:30 o'clock P. M.

666 1:30 P. M., THURSDAY, *July* 20, 1911.

HENRY MOUL, being continued on direct examination by Hon. George H. Carr, testified as follows:

Q. Now Mr. Moul, if you will refer again to Exhibit No. 15, turning to page 221, you will observe those are lists and figures showing paving over service, 221, 222, 223, 224 and ending on 225. I will ask you who furnished the data or information from which those lists were made up?

A. I furnished the principal part of it.

Q. Did you make the calculations, that is make the figures?

A. No, sir.

Q. Were the figures made up by others from the information which you furnished?

A. Yes, sir.

Q. What do you say as to whether these lists or figures, the inventory in that respect is a correct inventory beginning on page 221 and closing on page 225?

A. I would say it was.

Q. Now refer to page 226 of the Exhibit 15, cutting paving over service, by whom was the information contained in that list furnished?

A. From the same source.

Q. And made up in the same way?

A. Yes, sir.

Q. That you have described. And what do you say as to that being correct?

A. I would say it was correct.

Q. Examine Exhibit 19 and tell the Master if you know what that is.

667 A. The entire sheet?

Q. Yes.

A. The line at the top of the map represents on the street Grand Avenue, represents the six inch high pressure system which supplies Valley Junction just west of the west city limits of Des Moines. West of that is supplied the town of Valley Junction practically off of the same main with the exceptions of going through a governor in Valley Junction causes the pressure in Valley Junction to be under a low pressure system.

Q. Is there indicated upon the map the west city limits of the city of Des Moines?

A. City limits or 63d street.

Q. Where with reference to the street is the city limits, the center of the street or whereabouts?

A. Supposed to be the center of the street.

Q. Referring to Exhibit No. 18 and directing your attention to the high pressure main running to Valley Junction as shown on this map state where the main ends, that is how far this map shows the main?

A. This map shows just west of Polk Boulevard.

Q. About a block west?

A. About a block.

Q. Now refer again to the map before you being Exhibit 19, and state whether the map Exhibit 19 takes up the main at the point or substantially at the point where Exhibit 18 leaves it?

A. This is not marked. I don't know whether that is representing 43d street or 44th.

Q. It shows a continuation of the line on Grand Avenue, does it?

A. Yes, sir.

668 Q. This exhibit 19 shows a continuation of this high pressure main along Grand Avenue to what point, to what numbered street?

A. Where it ends?

Q. No along Grand Avenue to what point.

A. It leaves Grand Avenue at 56th street.

Q. There is marked on the plat Ashawa road. Is Ashawa road a continuation of Grand Avenue?

A. From 56th street.

Q. Then Grand Avenue goes to 56th street?

A. If I understand it right.

Q. Now you will notice on the plat 51st street making off of Grand Avenue to the south?

A. Yes, sir.

Q. Is there a main laid along 51st street as indicated on the map?

A. Yes, sir.

Q. And what sized main is that?

A. Two inch.

Q. Is that two inch main on 51st street connected to and supplied by the six inch main on Grand Avenue?

A. Yes, sir.

Q. I don't know but you spoke of that yesterday, but are there consumers supplied directly off of or from that two inch main?

A. Yes, sir.

Q. On 51st street. And are there consumers west of Greenwood Park that are supplied directly off of the six inch or high pressure main?

A. Yes, sir.

Q. Now when we come to 56th street how does the six inch main run?

669 A. Goes south.

Q. On 56th street?

A. Yes, sir.

Q. To what point?

A. What they call Valley Junction road.

Q. Then along Valley Junction road the main extends to what point?

A. 63d street.

Q. From 63d street going towards Valley Junction?

A. It goes south on 63d, runs from 56th to 63d.

Q. Where is 63d street with respect to the city limits?

A. It is right east of the west city limit line.

Q. Sixty third street, the center of 63d street is the city limits?

A. Yes, sir.

Q. And is that also what is called First street in Valley Junction?

A. Yes, sir.

Q. So that it really has a double name?

A. Yes, sir.

Q. Sixty Third street of Des Moines and First street of Valley Junction?

A. Yes, sir.

Q. Is there a main on 63d street?

A. Yes, sir.

Q. On which side of the street, the Des Moines side or Valley Junction side?

A. Des Moines side.

Q. And from where to where does the main run?

670 A. The six inch runs from Valley Junction road to Elm I believe it is and then there is a four inch running from Elm south to the railroad, Railroad Avenue, possibly two blocks south.

Q. From what source is the gas that is used in that main obtained?

A. Which one of the main-.

Q. The four inch main.

A. It first goes through the six inch into a governor station on the corner of First and Elm street, then the pressure is reduced to a low pressure system, takes it out of there then to the meter house and runs east on Elm until it strikes First or 63d, and then it goes south

to Railroad Avenue. Then there is another branch goes on Hartford east from 63d and south—well it is a little street, I don't know what the name of it is, possibly 62d. That is supplied through the governor under low pressure.

Q. When was the 63d street main run with reference to the first of last January?

A. You mean the four or six inch?

Q. The four, first tell us about the four.

A. That was put in at the same time the Valley Junction system was put in.

Q. That was how long ago?

A. Well I think that must be somewheres about eight years ago I guess.

Q. Does the main that you spoke of on Hartford Avenue in Des Moines, does that show on this map?

A. No, sir.

Q. Do you remember whether it was laid at the first of January or since? That main was laid since the 1st of January wasn't it?

671 A. Yes, sir.

Q. Are there consumers supplied by this four inch main on this 63d street, that is I mean customers in Des Moines?

A. Yes, sir.

Q. Are there any supplied on this main on Hartford Avenue now?

A. Yes, sir.

Q. Now are there any customers supplied from the six inch main along Valley Junction road?

A. Yes, sir.

Q. In Des Moines I mean, in the territory of Des Moines.

A. Yes, sir.

Q. Do you know the level of the surface of the ground upon which Valley Junction is built as compared with the level or elevation in the territory east of that in Des Moines?

A. It is considerably lower.

Q. Do you know just how much lower?

A. Well you take the high point on Grand Avenue this side of 56th street, I think that is about the highest point, possibly 51st is, into Valley Junction I should say there would be one hundred to one hundred and seventy five feet difference.

Q. Take the territory that is within the city limits east of 63d street, how much of that territory is there that is on practically the same level as the city of Valley Junction?

A. Oh there is quite a bit. Go east without much raise until you get across the Milwaukee railroad, I will say possibly three quarters of a mile east of 63d street before it starts to raise.

Q. The Milwaukee railroad is shown on this plat?

A. Yes, sir.

Q. After you get across that then it begins to rise.

—. —.

672 Q. So that all that portion of the city of Des Moines that lies west of where the Milwaukee railroad is shown is that practically the same level as the town of Valley Junction?

A. Yes, sir.

Q. Now going east from where the Milwaukee railroad crosses the Valley Junction road how far do you go before you come to the high point you have spoken of somewhere about Greednwood Park?

A. You go east, you have got to go north first—well I would say three quarters of a mile and then you would go east on Grand Avenue possibly a quarter of a mile before you would strike the highest point in my opinion.

Q. Now take the territory along 56th street as shown on this plat, how much of that territory east of 56th street is about the same level as Valley Junction?

A. Isn't any east of 56th on the same level of Valley Junction.

Q. The ground begins to raise from this?

A. It begins to raise when you strike 56th street.

Q. Does it rise gradually until you get to this high point you speak of?

A. Yes, sir.

COURT: I don't believe I understand you clearly there. You say Valley Junction is 150 or 175 feet lower than Des Moines?

A. The highest point in that particular district.

COURT: The highest point in Des Moines?

A. I would not say the highest point in Des Moines, but the highest point between Des Moines and Valley Junction.

COURT: East Des Moines is rather lower than Valley Junction isn't it?

673 A. That I could not say.

COURT: The coon river runs from Valley Junction?

A. Yes, sir.

Q. Now I will ask you whether this low territory that is within the city limits of the city of Des Moines which you have described could be supplied so as to give good service to consumers through the low pressure mains? The low pressure main that now supplies Des Moines?

A. No, sir; it could not, not in my opinion.

Q. Now take the territory around Greenwood park and east of there taking into consideration the distance from the works and the lay of the ground and all that and the size of the main, I ask you whether that territory could be supplied so as to give good service through the low pressure mains?

A. East of Greenwood it is now being supplied under the low pressure, but there is not sufficient pressure at the end of that low pressure main now whereby anybody beyond that at any distance could derive any benefit if tapped in on that main without reinforcing the pressure either by high pressure system or circulating line.

Cross-examination by R. O. BRENNAN, Esq.:

Q. You have told us about the character of the mains in the distribution system and their size. Can you tell us about when they were laid?

Objected to as not proper cross examination.

A. I can tell you between what years possibly but I can't tell you or apportion the particular year.

Q. You can take the streets can't you and tell us the year
674 in which these mains were laid?

A. I cannot. I can't pick out or designate each and every one in each and every year.

Q. The figures shown in the inventory to which your attention was call-d represent the length of the mains together with the specials, that is correct isn't it?

A. Yes, sir.

Q. And this high pressure main which supplies Valley Junction, that is included in the figures in this inventory?

A. No, sir.

Q. Sure about that?

A. I didn't include any of Valley Junction at all.

Q. Well is the high pressure main from the gas works to the city limits, is that included in the figures representing the amount of mileage or mains in the distribution system within the corporate limits of the city of Des Moines?

A. I didn't consider the high pressure system at all nor Valley Junction.

Q. (Question read.)

A. I said I didn't include any of that except the eight inch across the river and that was specified additional.

Q. You would say it was not included in the figures represented in this inventory?

A. Yes, it is represented in that inventory, yes.

Q. It is included in connection with the other mains?

A. Yes, sir.

Q. And forms a part of the aggregate number of feet of mains within the city of Des Moines?

A. Yes, sir.

Q. Do you know the character of the pavement upon each
675 and every street in the city of Des Moines?

A. Very closely.

Q. And character of the foundation?

A. Yes, sir. That is where the pavement covers a gas main.

Q. Did you keep a record of the pavements, character of the pavements when laid the foundations under the surface of the pavement?

A. When the pavements are laid.

Q. Did you keep a record or did you trust to your memory in giving your testimony with reference to the character of pavements in the city?

A. Why both.

Q. What kind of a record did you keep as to the pavement?

A. Every hole is placed on record that is opened in a pavement concerning the gas company.

Q. What is done with that record?

A. That is turned into the office.

Q. When is it turned into the office and by whom?

A. As soon as the work is completed or thereabouts and by me.
Q. In giving your testimony have you relied to any extent upon records which you keep and which you turned into the office?
A. I have not recferred to any that was in the office then.
Q. You have testified entirely from your memory?
A. No, sir.
Q. With reference to pavement?
A. No, sir.
Q. What has been the source of your information?
A. I have a record of my own that prompts me in some instances in regard to pavement.
Q. What is the character of that record?
676 A. That is a personal book that I carry.
Q. That book which you carry does that show the dates upon which mains were laid in the streets?
A. No, sir.
Q. Does it show the dates upon which the streets in question were paved or improved?
A. No, sir.
Q. You were not interested or concerned with dates in earlier constructions?
A. Not in regard to placing of the pavement.
Q. I believe you said upon yesterday that perhaps seventy or 75 per cent of those mains were put in on streets either at the time the street was being -aved or before it was paved?
A. That is making a rough conclusion.
Q. That is just an estimate on your part?
A. Yes, sir.
COURT: Let me understand that. Seventy five per cent was laid before the pavement on the street was laid?
A. Yes, sir.
COURT: The other 25 after?
A. The paving had to be removed.
Q. How many river crossings have you in Des Moines?
A. Four.
Q. Are they all in the river or are some of them upon bridges?
A. I did not count the two—have pour under the river and three on bridges.
Q. Where are the four that are under the river?
A. One is right south of the Grand Avenue bridge, one is right south of the Wabash railroad and there is two right south of the Rock Island railroad.
677 And the others are upon bridges?
A. Yes, sir.
Q. One on Grand Avenue?
A. No, one on Sixth Avenue, one southeast Fifth and one on southwest Ninth.
Q. Did you formerly have a main on the Grand Avenue bridge?
A. Had a temporary main across there only.
Q. How long was it there?
A. Oh I think it was there a couple or three years.

Q. Did you construct the river crossings near the Wabash bridge, or was that constructed before you entered the employ of the company?

A. Well it was and it was not. There was on- in there before I commenced with the company but I took that out and enlarged it.

Q. What was the size of the main that was across the river at the time you went to work for the company?

A. There was a ten inch then.

Q. Was that ten inch main taken out?

A. Yes, sir.

Q. And one put in?

A. Yes, sir.

Q. What was the size of the last one put in?

A. Sixteen inch.

Q. When was that put in, what year?

A. I think that 16 inch main was put in there in 1899 I guess or '98.

Q. Do you remember how long you were engaged in the construction of that river crossing?

A. From the time I began until I ended.

678 Q. I know, but tell how long that was?

A. That job took, if I remember right somewhere about eight weeks I think I was at that job.

Q. About how many men were working under you?

A. I had sixteen to twenty four.

Q. Is that where you encountered all those boulders?

A. No, sir.

Q. Where were all those boulders you tell about?

A. 24 inch line.

Q. Where is that located?

A. South of the Rock Island railroad.

Q. Between Vine and Markets streets?

A. Yes, sir.

Q. Crossing the Des Moines river?

A. Yes, sir.

Q. Is that original construction by you or was it substituted for another line that had been across?

A. No, sir; it was new line.

Q. You found a lot of boulders resting upon quick sand?

A. Yes, sir.

Q. You think the quick sand held the boulders do you?

A. Well I don't know as they held them very much.

Q. They were there and you encountered them?

A. They were there.

Q. And it was quick sand?

A. The biggest part of it, biggest part of the excavation was quick sand.

Q. In construction this river crossing did you employ cofferdams?

A. Yes, sir.

Q. All the way across the river?

679 A. Yes, sir.

Q. And the mains were laid about three feet you say below the bed of the river?

A. Yes, according to the city engineer figures.

Q. What is it according to your figures?

A. Didn't level it at all, took his figures.

Q. When did you get his figures?

A. Before we started and during the construction.

Q. He gave you levels?

A. He did.

Q. The city engineer?

A. Well an employé of that department.

Q. How did you preserve the levels which the engineer gave you?

A. He gave me a bench mark and I leveled over with a spirit level.

Q. Where was the bench mark placed?

A. One the east side of the river and one the west just above where we worked.

Q. On the bridge?

A. No, sir; on a stake he had drove down himself.

Q. Just a wooden stake which represented the bench mark?

A. Yes, sir.

Q. From which you took your levels?

A. Yes, sir.

Q. Has not part of the main within the past few years been exposed?

A. That one?

Q. Either of them?

A. Yes, sir.

Q. To what extent?

680 A. The one up at Grand Avenue is exposed in view a part of it was taken out and relaid in 1903 I believe, 3, or, 4.

Q. The same size.

A. That is a sixteen up there.

Q. You took up part of it and replaced it?

A. I relaid it all and part of it the high water took away and I replaced that with new pipe.

Q. Of the same size?

A. Yes, sir.

Q. Sixteen inch?

A. Yes, sir.

Q. That is exposed at the present time isn't it?

A. No, I don't think it is. There might a very little of it at the west end, be very close to the top of the water at the present time.

Q. You think that main is three feet below the bed of the river at the present time?

A. Not that one.

Q. Is the one down at the Rock Island bridge?

A. Well I suppose it is.

Q. Have you examined it recently?

A. No, sir.

Q. When did you last see it?
A. Not since I laid it.
Q. That is several years ago.
A. Yes, sir.
Q. You don't know what the result of the action of the river has had upon the main if any?
A. No, sir.

Q. Or whether any changes in the conditions now as com-
681 pared with the time when you placed the main in the river?

A. I could not say as to the conditions of the bed of the river.
Q. This high pressure main runs out Ingersoll Avenue does it not?
A. Part way, yes.
Q. How far west on Ingersoll Avenue does it extend?
A. 43d.
Q. It leaves Ingersoll Avenue at 43d street and goes south to Grand?
A. Yes, sir.
Q. There are other mains on Ingersoll Avenue to 43d street are there not?
A. No, sir.
Q. Where is the other main in Ingersoll Avenue?
A. It runs to between 40th and 41st.
Q. So that the high pressure main extends in Ingersoll Avenue west a distance of from two or three blocks where the other main leaves off?
A. Yes, about two blocks and a half beyond I would judge.
Q. Now are there any customers served between 40th and 43d streets?
A. Yes, sir.
Q. How many?
A. I think it is five we have got there, four or five.
Q. Are there any dead services in there?
A. No, sir.
Q. None at all.
A. No, sir.
Q. Where does this other main go after it ends there at 43d street does it end there or go south to Grand Avenue?

A. The high pressure?
682 Q. No the low pressure main.

A. It ends practically 43d and Grand.
Q. That is the terminus of that line?
A. Yes, sir.
Q. Don't extend south of Grand?
A. I don't understand you.
Q. You have two lines of main in Ingersoll Avenue up to 41st street, one high pressure and one low pressure, that is true isn't it?
A. Yes, sir.
Q. You say the high pressure mains continues on to 43d street?
A. Yes, sir.

Q. Then leaves Ingersoll avenue and goes to Grand?
A. Yes, sir.
Q. Proceeds out Grand to Ashawa road, down Valley Junction road and into Valley Junction.
A. Yes, sir.
Q. Now I am asking you about the low pressure main which you say comes out Ingersoll Avenue as far as 41st street?
A. 40th I said.
Q. Is 40th through there?
A. Yes, sir.
Q. Runs north and south of Ingersoll?
A. Yes, sir.
Q. Does the main go either north or south, is there any branch north or south of Ingersoll from 40th street?
A. To Grand, yes.
Q. Does it go south to Grand?
A. To Grand, yes.
Q. Does it go out Grand Avenue?
683 A. Well they all end at Grand Avenue with the exception of 42d street.
Q. Forty second street was the western terminus of the gas mains?
A. No, sir.
Q. Where?
A. They end just a little bit beyond 43d street, that is the low pressure system.
Q. You have how many mains in Grand Avenue running to 43d street?
A. One.
Q. Do you have any out Woodland Avenue?
A. Yes, sir.
Q. How many?
A. On Woodland Avenue we have one.
Q. How far west does it extend?
A. 25th street.
Q. Pleasant street, got one out Pleasant?
A. Yes, sir.
Q. How far?
A. It runs on Pleasant street to 28th.
Q. No more than one main in Pleasant street?
A. No, sir; not at that point.
Q. Where is it on Pleasant street you have two mains?
A. No place on Pleasant street where we have parallel mains, except the intersection of 19th.
Q. I understand you that high pressure main serves about 15 customers in Des Moines, is that right?
A. Well I would estimate that possibly more than fifteen if you are going to take in 51st street. When I made that estimate I hadn't in mind 51st street being fed off that high pressure.
Q. Have you got a low pressure main off 51st.
684 A. No, sir; high pressure.
Q. How many customers on 51st street?

A. I think about 15 on 51st street.
Q. Between Ingersoll and Grand?
A. No, runs from Grand Avenue south?
Q. How far south?
A. About 2,000 feet.
Q. You think you have about fifteen customers. That is a branch from this high pressure main.
A. I think that is it, twelve or fifteen in that neighborhood.
Q. How many additional customers?
A. Take those outside that feed off the high pressure, Greenwood west would possibly be, I would say possibly fifteen or twenty.
Q. You mean by that that you have made that many service connections. You don't know personally whether the consumers ever are served with gas?
A. No, sir; I do not.
Q. You stated on yesterday I believe you were not familiar with the service connections after they were made b- you?
A. No, sir; I am not.
Q. You don't mean that Valley Junction is 175 feet below the level of the business section of Des Moines do you?
A. I would guess that yes, it is only a guess, I didn't level it.
Q. You think that for instance the intersection of 4th and Walnut streets and the busines section of Valley Junction would vary in elevation 175 feet?
A. From 4th and Walnut to Valley Junction.
Q. Yes?
A. I imagine that the highest point between here and
685 Valley Junction would be about 170 or 175 feet.
Q. No, do you mean Valley Junction is 175 feet lower than the business section of Des Moines?
A. I didn't say that.
Q. What do you mean by this 175 feet.
A. I said Valley Junction in my opinion was about 170 or 175 feet lower than the highest point between here and Valley Junction.
Q. Where is the highest point between here and Valley Junction?
A. I would judge somewheres 51st to 56th.
Q. On Grand Avenue?
A. Yes, sir. We are speaking of Grand Avenue.
Q. You say you have 191 railroad crossings?
A. Yes, sir.
Q. And are you including in the 191 the railroad crossings shown on the map, Exhibit 19, the Milwaukee road where it crosses Grand Avenue?
A. The high pressure system?
Q. Yes.
A. No, sir.
Q. 191 exclusive of that crossing?
A. I think so.
Q. Do you know whether that is true or not?
A. No, I do not.
Q. Have you checked over the figures to ascertain whether or not

this Milwaukee crossing on the Valley Junction road is included in that amount?

A. I checked them over, I didn't make the footing.

Q. Have any railroad crossings in sout- Des Moines?

A. One.

Q. Where is that?

686 A. Greatwestern and I guess it is Jackson street now.

Q. Any in Highland Park?

A. Railroad crossings, no.

Q. How do you treat Interurban crossings?

A. Call that trolley.

Q. Call that the same as street railway crossings do you?

A. Yes, sir.

Q. In east Des Moines how many railroad crossings have you?

A. We cross the Northwestern several times, that is different lines.

Q. All the mains run east and west north of Court Avenue you cross under the Northwestern do you?

A. Yes, sir; including the one on Court Avenue.

Q. But you don't cross under the northwestern at any point south of court avenue do you?

A. No, sir.

Q. How far north do you run east and west mains under the right of way of the Chicago Northwestern Railway?

A. Grand Avenue is the farthest north we cross under the tracks.

Q. So from Court Avenue to Grand Avenue you cross the Northwestern?

A. Yes, sir.

Q. Have mains on each and every street?

A. Yes, sir.

Q. And some duplicate mains?

A. Only one.

Q. That is the one in Court Avenue?

A. Yes, sir.

Q. Now did you treat that crossing on Court Avenue as one crossing or two?

687 A. Two.

Q. Your north and south mains where they cross the Northwestern railroad right of way in Capitol park, have you any duplicate mains in that section of the city?

A. No, sir.

Q. All single mains are they?

A. Yes, sir.

Q. And how far east does the distribution system extend?

A. East 14th, that is crossing the railroad.

Q. Do you have any mains crossing the Northwestern Railroad right of way west of Ninth Street?

A. 14th street and 13th street.

Q. 14th is east isn't it?

A. Oh that is right. West of 9th street we don't cross the Northwestern only on Penn. Avenue.

Q. You have no main in Ninth Street?

A. Yes, sir.

Q. Do you have a main that crosses the Northwestern Railway at Ninth street?
A. Yes, sir.
Q. One in Pennsylvania Avenue?
A. Yes, sir.
Q. None west of that point?
A. No, none west.
Q. Penn. Avenue is the next street west of Ninth street?
A. Yes, sir.
Q. Then where is the next main?
A. 12th.
Q. Where is the next one?
A. 13th.
688 Q. Where is the next one?
A. York would be next, we have no main under that. Then comes east 14th.
Q. So you have five crossings from Pennsylvania to east 14th street?
A. Yes, sir.
Q. Where are the railroad crossings in west Des Moines?
A. They are down on the Wabash, Rock Island and Q.
Q. Your mains on all north and south streets cross the railroad?
A. Not all of them no sir.
Q. Tell us which streets?
A. At Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth and Ninth.
Q. Are these branch mains?
A. No, sir; direct.
Q. How far south do they go?
A. Well they vary.
Q. The one on First street how far south does it extend?
A. Extends just a little bit north of Elm.
Q. The one on Second street?
A. Just on the south line of Elm.
Q. The one on Third?
A. On Third street it goes to between Market and Elm.
Q. The one on Fourth street?
A. Fourth street goes to the south line, well goes south of the south line of Elm.
Q. Fifth street line?
A. Fifth street goes clear into South Des Moines.
Q. Is that where you cross the river?
A. Yes, sir.
689 Q. Crossing on the 5th street bridge?
A. Yes, sir.
Q. Now the Sixth street line, how far south does it extend?
A. Sixth street doesn't go south of——
Q. Does it go south of Cherry?
A. No.
Q. Stops at Cherry street does it?
A. Yes, sir.
Q. The Seventh street line?

A. Goes clear down the other side of Elm, south of Elm.
Q. How far south of Elm?
A. Well I would say about 200 feet.
Q. And is that the western terminus of the north and south mains?
A. No, sir.
Q. Where are your others?
A. Have one on 8th steret.
Q. Where does it run?
A. Runs down by the Des Moines Casker Company. I disremember the name of that street down there. And southwest Ninth continues south across the southwest Ninth street bridge.
Q. This 8th street line does it extend as far south as Tuttle or Murphy street?
A. Yes, on south of Tuttle I would say fifty or seventy five feet.
Q. The Ninth street line that is the one that g-es across to South Des Moines on to Park Avenue?
A. Yes, sir.
Q. That is the terminus of the South Ninth street line, is a little below Park avenue?
A. Yes, south.
Q. Any mains or branches running off of southwest Ninth
690 street?
A. West of Ninth street?
Q. Yes.
A. We have a main on 10th street.
Q. Where is that located?
A. The first part of 10th street is in between Mulberry and Cherry and then it starts again at Locust street and goes north to a little bit north of Woodland.
Q. That don't cross any railroads?
A. No, sir.
Q. Have you any mains running south of Ninth street which cross railroad tracks or under railroad tracks?
A. No, sir.
Q. Are there any duplicate mains between First and Ninth street running north and south?
A. Well I don't believe I understand your question. What do you call duplicate?
Q. I mean are ther- any streets north and south through which the company is maining in its distribution syste-, more than one main?
A. Yes, sir.
Q. Where are those streets?
A. Second street.
Q. How many mains in Second street?
A. Two part of the way.
Q. Just tell us how far south they extend?
A. Second street one of the mains extends down south of Elm street on the south line of Elm and the other one goes to the Wabash south.

Q. And where these mains go under the railroad rights of way you have treated them as two railroad crossings?

691 A. Yes, sir.

Q. Have you any duplicate mains on any street west of that point besides the mains on Second street?

A. Well replaced the main, if you call that a duplicate.

Q. Do you keep two mains, maintain two mains?

A. We don't at the present time, but they were put in at different times.

Q. What street are you referring to?

A. I am referring to Fifth street.

Q. Have you two mains in Fifth street?

A. Not in use.

Q. Well are there two mains there?

A. Yes, sir.

Q. How far south do they extend?

A. One of them goes down just a litle bit south of Elm and the other one continues on over to the south side.

Q. You have shown upon this inventory two railroad crossings every time these mains go under the railroad rights of way, isn't that true?

A. Well, I don't know in regard to that particular instance. As I said before I didn't make the footings on this I only got data to make it by.

Q. These two mains do pass under railroad rights of way?

A. Yes, sir.

Q. And as far as you know they are treated as crossings each of them.

A. My better judgment will say that they only treated them as one crossing simply because one main is in use and the other is not.

Q. When was the one discontinued?

692 A. Well that is a good while ago.

Q. About how long ago.

A. I would say something about 10 or 12 years ago.

Q. That was in 5th street and that was how large a main?

A. That was a three inch.

Q. There were service connections made to that main?

A. Yes, sir.

Q. When did you put in the second main in that street?

A. Well at the same time we abandoned that one.

Q. You don't mean to say you put them both in at one time?

A. I didn't say we put them in. You asked me what date that one was abandoned.

Q. In what year, I want to know when you put in the second line on Fifth street?

A. Well about ten years ago.

Q. Did you disconnect the service from the old main?

A. Yes, sir.

Q. Disconnected them?

A. Yes, sir.

Q. How many?

A. Well I could not give you the exact number.

Q. Tell us about the number?
A. I would say the neighborhood of twenty five.
Q. Do you know whether any services had been made to the old main?
A. No, sir; there has not since that time.
Q. At any time has the old main been used by the company in serving customers?
A. No, sir.
Q. You say there is not a single customer served by the old
693 main on Fifth street?
A. That is what I say.
Q. Does that appear in the amount of mileage or feet of mains in this inventory?
A. No, sir.
Q. Sure about that?
A. Yes, sir.
Q. Have you checked it over to see whether it is not included?
A. Yes, sir.
Q. When did you do that?
A. Oh at different times.
Q. When did you do it last?
A. Well the last time I think was possibly a month or so ago.
Q. Did you call attention to this abandoned line on Fifth street?
A. I did before the spetch was made.
Q. Are there any other abandoned lines?
A. Yes, sir.
Q. Where are they?
A. We have one on Third street from Grand Avenue to Center.
Q. What is the size of that main?
A. It was four inch.
Q. The main remains in the ground?
A. Yes, sir.
Q. Service connections still there?
A. No, sir.
Q. When were they disconnected?
A. Well from 1890 on, I disremember the year that we abandoned the main, but we reconnected them on the six inch line recently after the sixth inch line was laid in 1890.
Q. And left the old main in the street?
A. Yes, sir.
694 Q. Have you any other abandoned mains?
A. One on Mulberry.
Q. Where on Mulberry?
A. From Fifth to Seventh.
Q. That is not in use to any extent?
A. No, sir.
Q. When was the use of that main discontinued?
A. Oh I would say about three years ago possibly or four. That it was discontinued at different times from 5th to 6th was discontinued a year previous to the one between 6th and 7th.
Q. Is it used to any extent now?
A. No, sir.

Q. All services disconnected?
A. Yes, sir.
Q. When were they disconnected?
A. Oh we simply do that as fast as we could get to it.
Q. You went along Mulberry street and put in a new main?
A. No, sir.
Q. And uncovered the old main and disconnected——
A. We didn't uncover the old main.
Q. How did you disconnect the services?
A. Opened a hole over the main and cut them off and continued them on the new one.
Q. Set the services on the new main did you?
A. Yes, sir.
Q. What other abandoned mains are there?
A. I don't think there is any other that I can call to mind right now.
Q. Can you call to mind any north and south streets between First and southwest Ninth street where you have two or more
695 mains in any one street in addition to those you have enumerated?
A. No, sir.
Q. I believe you said something about lamp posts. Do you know who owns the lamp posts?
A. No.
Q. Don't know anything about that. Do you have anything to do with them?
A. No, sir.
Q. Did you set them up?
A. Yes, sir.
Q. When?
A. Different times.
Q. Were they installed by the Capital City Gas Light Company?
A. Some of them was.
Q. Have you installed lamp posts within the last two or three years?
A. Yes, sir.
Q. How many?
A. I could not say as to that. I didn't keep a record of them. It is not pertaining to my department at all, except to make the connections. That goes on the lamp record.
Q. Who keeps the lamp record?
A. It is kept by the office, I don't know what person keeps it.
Q. You have nothing to do with that?
A. I have not.
Q. You have no personal knowledge as to the source from which these posts were received do you?
A. No, sir.
Q. You were simply directed to make the connections?
A. Yes, sir. And erect the posts.
696 Q. Did you cause the holes to be dug and posts installed?
A. Yes, sir.

Q. That was all under your direction?
A. Yes, sir.
Q. Can you tell us about how many lamp posts you have installed within the last five years?

Objected to as not material and improper cross examination.

A. I have not any access to know that.
Q. Do you have a sketch or any record which you turn in to the company?

Same objection.

A. I have a card directing me to erect the post at a certain point. When that post is erected I fill out that card and return it to the office.
Q. What record do you make upon that card?
A. That is all, the descriptions of the location of the post. If it is on a corner I designate which corner. If between blocks the same applies.
Q. Do you know by whom the orders are signed which directs you to install the posts?
A. Well at the present time they all come through the engineer's office to me.
Q. Which engineer's office?
A. The Gas Company.
Q. Philadelphia?
A. No, sir.
Q. Des Moines?
A. Yes, sir.
Q. Who is engineer in Des Moines?
A. Mr. Vincent.
697 Q. And bear Mr. Vincent's signature?
A. Not exactly his signature, no. Just merely draw his attention to the fact and then pass them on to me.
Q. When you got an order to install a lamp post say 4th and Walnut streets, who would authorize on behalf of the company the installation of that lamp post?
A. Mr. Vincent I suppose.
Q. Do you remember that Mr. Vincent's signature was upon all these orders to you?
A. No signature at all except filling out the card and placing in my till and that is orders for me to place the lamp post which I do and then I return the order back to the engineer's office.
Q. That order is not signed by any one.
A. No sir.
Q. A card is left at your desk?
A. Yes, sir.
Q. Are there any instructions upon that card?
A. Yes, sir.
Q. In a general way what are the directions?

Objected to as incompetent and immaterial.

A. Right where they want the posts set.
Q. Who looks after the placing of the posts, that is from the rail-

road train or wherever it is received in the city, who looks after taking it to the place it is to be erected?

Same objection.

A. Who looks after the erecting of the post.

Q. No, who looks after bringing the post to the place where it is to be erected.

A. It was up to me.

698 Q. Was that on this card?

A. No, sir.

Q. Where would you get the directions and from whom?

A. I don't get any directions.

Q. Well suppose you found a card on your desk you were to erect a post in a cer-in street in the city where would you get the post?

A. Go down to the works and get it and take it out and erect it.

Q. They have them in stock have they?

A. Yes, sir.

Q. You say they you have kept a very complete record of the amount of labor in the extension of the distribution system of the company. Does that record include as well the amount of material used?

A. Only to a certain extent.

Q. Well to what extent?

A. My return shows the amount of material used in either service of main extensions such as cement, yarn, cast iron, or wrought iron pipe and specials connected with it and amount of labor to take it to the place, cartage going on to the job and going from the job, removing tool carts from job to job.

Q. In other words, you were not furnishing a complete itemized statement and record of the amount of material used or the kind of material used or amount of labor or amount of time consumed in taking material from the cars or from the works to the place where they are being laid in the streets?

A. That is included.

Q. Together with the sketch?

A. Yes, applying to the extension.

Q. With regard to repair work, how is that handled?

699 A. Well that is handled in my department by practically the same method. The repairs generall- comes to me on a card directing me to a certain complaint. I generally go in person and see that the complaint is and then authorize somebody to return and repair it, whatever the need may be.

Q. What record is kept on the repair work?

A. On large jobs the same record is kept the same as extensions. But small jobs it is not, small jobs go into the general fun-.

Q. You keep a record of what the men are doing under you and where they are working do you not?

A. Yes, sir.

Q. Doing repair work today you have some record to show that?

A. Yes, sir.

Q. And the place in the city where they have been working?

A. Well I don't designate that, not at all times.
Q. In a large repair job you do?
A. Yes, sir.
Q. And if you had John Doe working for you today on repair work you say John Doe worked on repairs ten hours or eight hours or during the hours he was in fact employed?
A. Yes, sir.

Redirect examination by Hon. GEORGE H. CARR:

Q. You said as you recalled it, there were no mains crossing the railroad tracks north and south west of 9th street. I call your attention to 11th street and ask you whether there is not a main that crosses the tracks or some of them north of Tuttle on 11th street?
A. Well that crosses the switch going into the Q round
700 house, that is true. Then another place I didn't specify was the line going to the army post distribution at the Great Western at the end of the bridge. I didn't specify that.
Q. In your examination by Mr. Brennan you did not undertake to specify or he did not ask you concerning all railroad crossings did he?
A. I think he did.
Q. Is there no crossing on the Great Eastern and east and west crossing in east Des Moines?
A. The only time we cross the Great Western in any way is on Grand Avenue.
Q. You mean on the east and west streets in east Des Moines.
A. Yes, sir. We cross it there and then cross on Easton Boulevard again. That is the Iowa Falls both along with the Great Western.
Q. Then there are crossings on the Great Western and on the Iowa Falls or what is not the Rock Island, Mason City line?
A. Yes, sir.
Q. They are crossings to which your attention was not directed in the cross examination?
A. Yes, sir.
Q. In the crossings to which your attention was called on First, Second and other streets in West Des Moines, do you have more that one railroad crossing on each of those streets?
A. Yes, sir.
Q. And how many do you have on some of them, give the court an idea of whether many of them or not. Take 5th street, going down Fifth street I think you will cross under about somewhere in
the neighborhood of 15 or 20 tracks. Take on Ninth street
701 you will cross possibly about ten or twelve. Now Fourth street you will cross about eight or nine.

—. ——.

Q. I don't want to go into the subject now in detail except to show the general situation of these crossings.
COURT: You count each track a crossing?
A. Yes, sir.

COURT: Where there are three tracks or two tracks together?

A. Count each one of them a track, yes.

Q. You yesterday spoke of the average length of service. Now let me ask you what the situation is or what the fact is with regard to average length of service in the last seven years say whether the average length is the same during that period that it was at an earlier period and if not why not and go on and explain to the court?

A. The last seven years I would say the services are longer now than they were previous to seven years ago, basing my decision on the fact that we have *haten* in more outskirts and the services are considerably longer in the residence district than it is in the business districts. Previous to seven years ago we done a great deal of down town work that we haven't done in the last seven years.

Q During that period your construction and extensions and putting in of services, the majority of it has been in the residence district?

A. Yes, sir.

Q. The construction in the residence district as it is now, how does that compare with the construction in the residence district years ago? As to whether the services are generally longer on account of the lots being larger and the houses set back further from the street than they do in the older portions of the city?

702 A. The services within the last six or seven years in all new additions or new extensions, the houses are set back further from the street than they are down town. It is necessary then that the services are longer.

Recross-examination by R. O. BRENNAN, Esq.:

Q. Just what additions in the city of Des Moines do you have in mind in which the houses are farther back from the street than formerly?

A. Take the northwestern part in these new additions all very long services.

Q. Which new additions?

A. Take it anywhere on Kingman Avenue west of 28th street and north of that and south in towards Grand Avenue and west?

Q. Do they differ any from the homes along west Grand Avenue?

A. Yes, sir.

Q. Farther back from the street line?

A. Most of them are. That is the biggest majority of them are.

Q. Farther back from the street line than homes on West Grand Avenue?

A. Not in particular on Grand Avenue, no. There are too some on Grand Avenue.

Q. That is just one little section of the town you have mentioned?

A. That applies to North Des Moines the same way north the new additions.

Q. What new additions are laid out in North Des Moines?
A. That is where we made our extensions.
Q. What part?
A. Where we have made extensions.
703 Q. Are there any new additions in North Des Moines south of the Des Moines river?
A. No, sir.
Q. The city is the same there it has been for twenty years?
A. Did I say North Des Moines?
Q. Yes.
A. Excuse me, I meant Highland Park. Where I say new addition I meant really extensions now.
Q. What new addition has been made to Highland Park?
A. A large territory north of Clinton and west of Sixth Avenue and east around in there by the college.
Q. That is the same as it has been the last ten or fifteen years so far as the dimensions of the Lots and general location of the buildings on the lot?
A. When I said new additions I meant new extensions made in the territory.
Q. I understood you to say on account of new additions being laid out to the city a change had been made in the manner of building houses, that that accounted for the extra service or the length of service that you were required to make?
A. Well I didn't mean the laying out of the additions, I meant the new extensions we had made is what I have reference to in new additions where we supply.
Q. Suppose you run a main along what would be a street in which you had not a main formerly, you don't mean that the houses are so far from the street in these new parts of the city that it makes up for this extra amount of length of service do you?
A. I said that in most of the—for the last seven or eight years the most of our extensions was in new territories where houses
704 sit back off the street farther than they do in the nearer territory.
Q. Just where is that territory where the houses sit far back from the street?
A. Take anywhere in the town at Kingman Avenue west, take Ingersoll Avenue, anywheres along on that.
Q. Isn't it true on Kingman Boulevard, clear out to Waveland Park that the homes along that street run back to any considerable extent from the curb line, now isn't that true?
A. They are back considerable distance. Takes 125 feet of pipe to reach from the curb to the building in most instances.
Q. You have two mains in Kingman Boulevard?
A. Yes, sir.
Q. One the north side and one the south?
A. Yes, from 35th street.
Q. You say the homes along Kingman Boul-vard are 130 feet from that main?

A. Takes 124 feet of pipe for that service, some might be more and some less.

Q. The main in the center of the street?

A. No, right a-ong the side of the curb line.

Witness excused.

705 E. P. WALTER recalled on the part of the complainant and examined in chief by Hon. George H. Carr, testified as follows:

Q. You stated that data which you obtained for making the inventory for the distribution system was obtained from records. I want to ask you whether your answers apply to the entire inventory that you made such as for example the distribution tools?

A. The distribution tools was made from an inventory of the tools themselves, not from any records.

Q. Will you please take Exhibit 15 and turn to that portion of the inventory which shows the distribution tools?

A. Pages 253, 254, 5, 6, 7, 8, 9, 260, 261, 262, 263 and 264 are the complete pages.

Q. I will ask you Mr. Walter to state whether that part of this inventory which is denomenated distribution tools and which is found on the pages that you stated in your last answer, was made from an actual inspection and count and listing of the articles themselves?

A. Yes, sir.

Q. And was not made from any record?

A. Not made from any record.

Q. You did not inventor- the works tools?

A. No, sir.

COURT: Then from 245 to 252, that was not made by your?

A. No, sir.

COURT: It is onely from 253?

A. 253 to 264.

Q. On page 265 Mr. Walter?

706 A. That is the stable equipment.

Q. By whom was the inventory of the stable equipment made?

A. This was taken under my supervision. This inventory was made from actual counting of the items as enumerated.

Q. Is that a correct list and inventory of the company's property as shown there?

A. Yes, sir.

Q. You did not make an inventory of the office furniture as I remember it?

A. No, sir.

COURT: You did the stable equipment?

A. Yes, sir.

Q. Now Mr. Walter, with respect to the matter shown on page 209 the data there was that data furnished you by Henry Moul, did he work in connection with you?

A. Mr. Moul checked over all street main maps from which these measurements were obtained.

Q. What do you say as to whether the computation or calculations rather that are expressed in these figures were correctly made?

A. I think they are as correctly made as it is possible to make them.

Objected to for the reason the figures are the best evidence of what they show.

Q. These computations as expressed in these figures shown on page 209 you say were correctly made?

Same objection.

A. Yes, sir.

Q. And these figures appearing on page 209 show the results correctly of the computation made from the records and data
707 furnished?

A. Yes, sir.

COURT: In other words, you did the adding up did you?

A. Yes, did all the compiling and most of the scaling of the plats.

Q. Turning to page- 211 212 and 213, do those figures appearing there express correctly the result of the calculations made from the data furnished?

A. Yes, sir.

Q. Is that true also of what appears on page 14?

A. Yes sir.

COURT: Those are a summary of the totals?

A. These are a summary of these figures on page- 211, 212 and 213.

Q. Turning to page 221, paving over service, do the figures as appearing on that page and on page- 222 223, 224 and 225, express truly and correctly the result of the calculations made from the data furnished?

A. Yes, sir.

COURT: You got that data from the record or from Mr. Moul?

A. This data is compiled entirely, the length of service by computing the length of the opening, the length of paving that would be cut over each service.

COURT: 221 seems to be the number of services?

A. It shows the number of services under the paving of that character and also shows the total lineal feet of paving over all the services and the total lineal feet is computed in there.

Q. Henry Moul worked with you in furnishing data and information in connection with those tables just as in connection with the tables as to the paving over mains?

708 A. Henry Moul checked up the paving in all cases.

COURT: This relates to the service does it including the lamp posts?

A. That includes the lamp posts as well as the house service.

Q. After this inventory was prepared by you from the sources of information obtained so far as it relates to the mains services and

meters, I wish you would state to the court a little more particularly what you did to ascertain from an actual checking of the property the accuracy of your inventory?

A. In counting the number of meters those were counted from the meter record books of the company. I think the only way of checking that up would be to make a personal canvass to each house in which there is a meter, that was not done. We checked up about 50 per cent I should judge of those locations.

Q. Where you checked for the purpose of testing the accuracy of the record, what was the result of that checking?

Mr. BYERS: We are not going to question the number of these meters.

Judge CARR: If that is made as an admission in the record I will spend no more time on that.

Q. Did you at the close of your cross examination on yesterday cause to be brought into court all of the records to which you referred or consulted in making this inventory?

A. I think all of those records were in *force* yesterday afternoon.

Q. To what books of record did you first refer in the court- of your work?

A. To the meter route books.

Q. I wish you would get such books together and produce
709 them so they can be marked.

COURT: Do you insist upon the records that have been referred to here by Mr. Walter and by Mr. Moul being verified and made exhibits here by the complainant before they can be considered by the court, that is the results of the record that the experts testified with reference to.

Mr. BYERS: We have never even suggested that we would insist upon having all of these books brought into court. All we have asked for is that the witness make a complete compilation of the books and records covering the period of his investigation and if it should develop upon the cross examination of this witness after he has responded to the direction of the Master to make a further compilation, that there is any particular records that we desire — use in the cross examination or if in the further progress of the trial, we will ask for it.

Mr. READ: You do not insist of record that the records be identified and verified.

Mr. BYERS: I have stated fully in the record.

Mr. READ: You have not answered the question. Do you insist upon their being identified and put in evidence in this case before the results *wo* which the experts testify may be considered?

Mr. BYERS: We do not at this time your honor at all, but of course we cannot be required to state in advance of further examination just what we may want as we proceed with this witness.

Mr. READ: You have also made the statement that you ask that the witness Walter make a complete compilation of the records. I understand that to be only to the extent that you have re-
710 quested.

Mr. BYERS: I said as the Master directed him yesterday.

COURT: If there is any record he wants he can call for it on cross examination.

Mr. BYERS: We do not intend to put anybody to any annoyance or trouble or be captious about it.

Mr. READ: Then to make it real sure I understand the identification or production of the records is not required in order to render the testimony of the witness competent?

COURT: That is the way I understand it.

Q. Will you refer to one of the records you mentioned a moment ago, meter record, take any one you choose. I wish you would state to the Master what such records purport to contain, what information in a very general way.

A. This record is for the use of the men reading meters in the consumer's house and each leaf or page in the book represents one meter, the number of that meter is on here with the size, the consumer's name and the consumer's address. In the bottom of that page is left spaces in which the reading of the meter is put down each month in the year.

COURT: You can by the reading of the meter, — the amount of gas.

A. The amount of gas consumed each month. In other words, these books represent all the meters in use by the gas company, that is in use by the consumers.

Q. At the particular time?

A. At any one particular time, yes. In some instances the gas might be shut off of the meter and it would not be in use still it might be in the meter route book at the same time.

COURT: How could you tell from these records if it was not in use?

711 A. A record is kept in the company's office of all meters that are shut off.

COURT: How could you tell from this it was shut off?

A. From this I could not tell that that *that* meter was not in use.

COURT: There are other records that give you that information?

A. Yes, sir. The meter reader is supposed to go to each address in these books and read his meter. The meter might be shut off in a consumer's residence by one consumer and someone else move in a few days afterwards and the gas be turned on again. The man who reads the meter would not know anything about it. Consequently he goes there each time to read that meter.

COURT: That would show then frequently by the fact there was no gas charged?

A. Yes, sir. In a great many cases he would not be able to get in the house.

Q. The man that reads the meter makes the entry in the book?

A. In the route book of the consumption, or the index of the meter.

Q. That is the consumption.

A. That is not the consumption, no sir. He read the meter last month that had a certain index. Now he goes there the end of this

month and reads it again and the consumption is the difference between those two readings.

Q. Does the man that reads the meter make that computation?

A. No, sir.

Q. What is done with the information obtained by the reader of the meter?

A. The man who reads the meter writes that right in this
712 book and that book is turned into the office and the ledger clerks transfer that information into their books and do the computing.

Q. Then the information obtained from reading the meter is the basis from which the charges for the gas are made?

A. Yes, sir.

COURT: Does the man that reads the meter collect?

A. You mean collect the bills, not necessarily. I think very seldom that he does. The man who reads the meter does collect from prepayment meters.

Q. The collection of the bills follows later after the reading of the meters?

A. Yes, sir.

Q. That may or not be done by the same man?

A. Yes, sir.

Q. What use did you make of such books in doing your work in connection with the inventory?

A. In connection with the inventory I took these various meter route books and listed all the house numbers by streets in which there was a meter. For instance in this book are numbers on Mulberry street, one page 610, another 618, 614, 610, 608, 602 Mulberry St. I listed those various numbers all up in rotation.

Q. All the numbers you found in the record?

A. Yes, sir. Those numbers show the location of the meter.

Q. That was the purpose and object of your work in that respect was it?

A. Yes, sir.

Q. What was the next step?

A. Following that we referred to the service records.

713 —. Now will you turn to one of those services records? Do you have now in your hand one of the service records?

A. Yes, sir.

Q. What information does that record purport to give and in a general way explain the system of keeping the record?

A. That record is made out by the street main foreman on the work and gives the name of the consumer his house number and street. Also the date and kind of building.

Q. Date of installation?

A. Date of installation of the service, the kind of building to which the service is run. The character of the service, whether it is new service or renewed service. By that is meant old service that is for some cause leaking or old or has to be enlarged, that is called renewed service. Gives the size of the service, the length of the service in feet and inches, the size of the tap by which is meant size of

the hole that is drilled in the main in the street and the location of the service in relation to the line of the lot of the house. The kind of joint which is used at the street main and whether there is a curb top on the service, whether there is a service box on the service and whether the service pipe is quoted or not. Also shows location of the main, the size of the main and the depth of the main, depth from the top of the surface of the ground.

Q. What do you mean with reference to the location of the main? The card shows location with respect to what?

A. To the curb line or the property line of the street.

Q. What use did you make of the information furnished by and obtained from these service cards, in making up the inventory made by you?

714 A. All these service car-s represent one service as counted in the inventory and in connection with that the mains on the plates shown in Exhibit- 17 and 18 are checked with these cards.

Q. You mean each card represents one service.

A. Each card represents one service. The sizes of the mains as shown on the maps were checked off from the size shown on the service cards. In some instances there were service cards and service on streets on which no main was shown on the map. In a case of that kind we made investigation to see the size of the main that was in the street and verified that either by the sketch records or by Henry Moul.

Q. You say an investigation was made?

A. Yes, sir.

Q. What as the character of the investigation?

A. Either on the records of the sketch books in which each main as laid is shown in detail and if we got no information there Henry Moul was consulted to see if he knew of the main being laid there and size of the main.

Q. Have you now given the extent of the use made by you of the service cards in making up the inventory, if not you may continue.

A. I think so.

Q. What was the next record you resorted to or records in making up the inventory?

A. The meter record books.

Q. Will you turn to one of such books?

A. I don't think they are here. They are a large ledger showing the number of the meter, also the size of the meter by whom the meter was manufactured and date the meter was purchased.

715 Q. I now ask you to state what use you made of the meter record book in making up your inventory?

A. The meter record book was used to obtain the number and size of meters in use in the city of Des Moines.

Q. The number, you mean the total number or number of the maker?

A. The total number of meters by size and kind owned by the gas company.

Q. That comprehended meters in use and those not in use?

A. Yes, sir.

Q. Then the meter record book shows a history does it of each meter purchased by the company?
A. Complete history of each meter.
Q. From the time of its purchase until its final elimination?
A. Yes, sir.
Q. So that you used that record for the purposes just stated?
A. Yes, sir.
Q. What is the next record resorted to by you?
A. The next record was the street main map.
Q. Will you turn to such map?
A. Exhibits 17 and 18 are this map.
Q. Are they original maps?
A. They are not original maps, they are photographs.
Q. You didn't have recourse to these exhibits 17 and 18?
A. No, sir.
Q. You had recourse to the original map?
A. To the original map.
Q. Where is that map?
A. It is at the office, in the gas company office.
Q. Have they been brought down here?
A. Yes, they were here yesterday.

716 Mr. BYERS: Proceed on the theory they are here.

Q. What information do such maps purport to give?
A. These maps show the size of all mains in the streets and the location in a general way, not an accurate location, the maps are too small to show an accurate location of the mains in relation to the curb.
Q. How many of such maps did you consult?
A. Three. One showing the eastern half of Des Moines, one the western half of Des Moines, and one showing a small extreme part of the western half of Des Moines. Also Valley Junction that map shows.
Q. What did these three maps have to do with the making or production of the two large maps, exhibits 17 and 18?
A. From these original maps a tracing was made, these maps being old and not in a proper condition to have a print taken from them. New tracings were made from these maps checked and verified by Henry Moul and from these new tracings these reproductions were made.
Q. Then a reproduction was made?
A. By photograph.
Q. What use then did you make of the original maps of the reproduction in making your inventory?
A. The sizes of the mains and the length of the mains were scaled from these original maps and those sizes and lengths are the final results as shown on page 209 of Exhibit 15.
Q. What other records did you consult and obtain information from in making up your inventory if any?
A. We used the valve records for getting the number of valves

and the sizes of the valves on the street mains, also the drip records for getting the sizes of the drips.

717 Q. Before going into the drip records have you present in the court room any of the valve records?

A. Yes, sir.

COURT: If I understand it right these valves are used to cut off gas at any point?

A. Yes, sir.

Q. You have in your hand now one of the valve records?

A. Yes, sir.

Q. What do such records purport to show?

A. These records show the nearest house number, the location of the valve from the nearest intersecting street or from the nearest house line, the size of the main, the depth of the main and the location of the main, the kind of valve and the size of the valve and the direction in which the valve turns to open.

Q. By whom are such cards made, what employé of the company?

A. By the main foreman.

Q. That is true of the service cards also?

A. Yes, sir.

Q. Do they purpose to be made up at the time the work was done?

A. I don't think they are always made up at the time the work is done. The location of the valve is made at the time the work is done. I don't think the card is always made out at that time.

Q. I don't mean at the instant of time, but immediately.

A. Well, yes, it is done practically at that same time.

Q. What use did you make of the valve cards or record cards in making up your inventory?

A. I used the valve record cards to get the size and the number of valves as used on the distribution system.

718 Q. The size and number as thus obtained were carried by you into the inventory?

A. Yes, sir.

Q. The result of your information obtained from the valve cards appears on Exhibit 15, at what page?

A. Page 215.

Q. You may turn to some of the drip cards. By whom are they made out?

A. They are made out by the street main foreman.

Q. What do they purport to show?

A. The nearest house number to the location of the drip. The location of the drip in reference to the nearest intersecting street or nearest house. The size of the main on which the drip is located, the depth to the top of the main from the surface of the ground. The style of drip, the capacity of the drip and the class of the drip.

Q. You have said these cards were made up by whom?

A. The street main foreman.

Q. What use did you make of the information afforded by those cards?

A. I used these drip cards for obtaining the size and the number of the drips in use on the distribution system.

Q. Did you carry that information into the inventory?

A. That information is in the inventory exhibit 15, on page 215.

Q. What other records, if any did you have recourse to. You have referred to the street main sketch book. Have you one now in your hands?

A. Yes, sir.

Q. What information do those books or records furnish?

719 A. These sketch books show in detail the location of the mains on the street, showing the distance from the curb line or the property line, the total length of the pipe laid at that particular time, any specials used, the location of any old mains connected to and the end of the main, the dead end of the main. I think it also shows the location of all the drips and all bends or specials that are used.

Q. How are such records made up, what is the genesis of its various stages?

A. These records are made up from information furnished by the main foreman who gets his data at the time the work is done.

Q. Are the sketches that the main foreman refer- to in his testimony which he makes and file- on the completion of the job the basis of this compilation?

A. Yes, sir.

Q. They are copied and transcribed into this book?

A. Into this book.

COURT: Is that done by the engineer of the plant?

A. The transfer of the data from the card to the pages is done by *what* cadet engineer, he does that character of work.

Q. He sketches this?

A. Yes, sir.

Q. What use did you make of the information contained in this book?

A. The information in these books was used in checking up the original street main map to see that the street main map was correct as to showing location of the main and size of the main and the street in which the main was laid.

COURT: Does that give the date of the work?

720 A. I think so, yes. Gives the authorization number, completed such and such a date and initials of the engineer who put the sketch in the book?

Q. What is the authorization that is there referred to, what is the character of it, from whence does it emanate, do you know?

A. That comes from Philadelphia.

Q. That is the initial step is it?

A. No, sir; the initial step starts from the gas company in Des Moines.

COURT: I understand this engineer simply orders the work done and these initials show it is done by his orders?

A. These initials on here, no sir. These initials show the person who drew this sketch, who transferred the data from the card handed in by the street main foreman on to the sketch book.

COURT: But gives the date on which it is done?

A. Yes, sir.

Q. The records to which we are now referring show the date of the doing of the work do they?

A. The date of the completion of the work. In case of a small job that would be the date of its starting too, be all done in one day. A large job might be started a week or two before.

Q. You checked then the main maps with this information?

A. Yes, sir.

Q. And the result of all your work in that respect appears in the inventory?

A. Yes, sir.

Q. Were there any other records which were consulted by you or from which you derived information in making up your in-

721 ventory, if so you may now produce them?

A. Here are these meter record books referred to awhile ago.

Q. You may tell what such records purport to contain, you may explain the method of keeping that record and also what information is there recorded.

A. As the gas company purchases meters, when they are first put into stock or before they are put into stock each meter is badged with the gas company badge, these numbers originally starting from one and running up to the present time I suppose over 20,000, possibly 21,000 now. Then these numbers, meter numbers are registered in the meter books and following the meter number is the name of the maker of the meter, the size of the meter and the maker's number on the meter and the date that the meter was purchased by the gas company. Following that information is the information as to the time any one particular meter was set and a reference to the page and the folio of the consumers' ledger books which show the address and the consumer's name at that address who is using that meter. When the meter is removed there is another column showing the location of that.

Q. Let me interrupt by asking if the consumers' ledger shows the number of the meter?

A. Yes, sir.

Q. The same number as appears in this record here?

A. Yes, as a gas company number.

Q. You may proceed and complete your answer?

A. The meter record book also shows the index of the meter, the day at which it was set and when it was removed shows the date of removal, also the index of the meter at the time of removal. It also shows the date on which the meter is tested, also showing

722 the test, that is percentage fast or percentage slow that the meter may register when it is tested.

Q. Does it show when the meter was repaired if that did occur?

A. Yes, shows the date that the meter was repaired and the location at which the meter was repaired.

Q. In short, it is a record of the history of the meter?

A. Yes, sir.

Q. From the time of its purchase?
A. From the time of purchase until each meter is condemned or lost or stolen or burned up by fire.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

723 Friday Forenoon Session.

JULY 21, 1911, at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of complainant resumed as follows:

E. P. WALTER, re-called for further direct examination examined by W. L. Read, Esq., testified as follows:

Q. Was there any other record from which you obtained information than those already mentioned; if so, what was it?
A. Yes, sir; there is a lamp record; record of the street lamps.
Q. You may produce these records, or one of them, and state what they purport to show, by whom made, and when those records are made.
A. The street lamp record shows the location of the street lamps, giving the distance from the nearest intersection of the street; the number of the house which the lamp is in front of, if it is in front of the house, the style of lantern upon the lamp, by whom the lamp post was erected and the date; by whom the top of the lamp was put on and the date; by whom the lamp was removed and the date; the time the service was removed or abandoned and the date; also the size of the main to which the lamp service is connected. This is made out *my* the street main foreman.
Q. What use did you make of the information derived from these records?
A. Each one of these records shows a street lamp that is being used at the present and these records were counted and the number of lamps obtained from that count as shown on page 216 of Exhibit number 15.
Q. Were there any other records resorted to by you?
724 A. I think not.
Q. Was there included in the inventory any dead mains?
A. No, sir.
Q. The dead mains were all excluded?
A. Yes, sir.
Q. What about services that have been plugged up, were they included?
Q. You mean abandoned services?
Q. Yes.
A. All services which had been abandoned were not counted, services which were not in use—by not in use I mean services which do not have a meter on at the present time but in which there was gas, was counted.
Q. Abandoned services were not counted?
A. No, sir.

Recross examination by R. O. BRENNAN, Esq.:

Q. At page 227 of Exhibit 15, I believe it is Mr. Walter, you have an item near the bottom of that page, 2,000 Lt.—just what kind of a meter is that?

A. That is very commonly known as a station meter, a meter that is used in measuring gas at the manufacturing plant, an extraordinarily large meter.

Q. The letters Lt. what words do they embrace?

A. Light.

Q. You seem to have the meters scheduled in two columns, one ordinary meter and top A meter. What is the difference between ordinary meter and top A meter?

A. The difference is in the capacity of the meter. The ten light A meter has a capacity, I think, of about three times that
725 of the ordinary ten light meter.

Q. And the pre-payment meters, of course, are the ones where twenty-five cents is inserted and the gas paid for before it is used?

A. They are meters with the pre-payment attachment.

Q. What is the purpose in distinguishing type A meters from the other meters?

A. The type A meter is a more expensive meter to build.

Q. Now, you referred in your testimony on yesterday to one of the sketches or records with reference to extension work, I think it was a card perhaps.

A. I didn't have any card; they are here though.

Q. Let me ask you this, now: The local Company here makes a request on the Philadelphia office for extensions, as I understand it?

A. Yes, sir.

Q. And then there is an authorization comes from Philadelphia?

A. Yes, sir.

Q. And upon that authorization the extensions are made?

A. Yes, sir.

Q. Have you got one of those main records you referred to on yesterday, the card showing the manner in which the mains are extended?

(Witness produces it.)

Q. Mr. Walter, in your testimony you have made some reference to the main records kept in the office of the Des Moines Gas Company, and I now show you one of such records, marked Defendant's Exhibit No. 3, and ask you to state if that is one of the records to which you referred and from which you made up in part this inventory?

726 A. This record was used in confirming the information as to the mains on the maps; as to whether I referred to this special record, I could not say.

Q. Now this "Des Moines Gas Company Street Main Construction Order Requisition No. 565", do you know from what source the requisition referred to originates?

A. That comes from Philadelphia; that is the requisition giving the authority.

Q. Is that the requisition from the Des Moines office?

A. Where that number is from I don't know.

Q. This requisition shown on this Exhibit 3, number 565, under date of November 19, 1910, and then immediately following that which I have read is the authorization No. 320, under date of December 5, 1910?

A. Yes, sir.

Q. Now, I will ask you if that indicates that this requisition No. 565 was made here at the Des Moines office and the authorization is from Philadelphia?

A. I would like to change what I said previous to that. The requisition number does not come from Philadelphia; it comes from Des Moines; that is making application for a main; the authorization comes from Philadelphia.

Q. Can you get the authorization under date of December 5, 1910?

(Witness produces record.)

Q. Mr. Walter, I show you the record which the reporter has marked Defendant's Exhibit No. 4, and I will ask you to state what information that record purports to give?

A. This authorization, it is headed "Authorization of Extension Street Mains". It shows the requisition number, the authorization number; the date of the requisition number, the date of
727 the requisition; the date of the authorization; the size of the pipe; gives the name of the street on which the main is to be laid, giving the starting point and the point to which the main is to be laid, and the length in feet.

Q. Examine Defendant's Exhibit 3 and state upon whom that requisition is made?

A. This is not a requisition.

Q. Where is the requisition—is that No. 565?

A. The requisition number is 565. I expect the original of that requisition number is in Philadelphia, and a copy is in the office of the Des Moines Gas Company.

Q. Well, the record from which you have been reading is the authorization that was issued on requisition No. 565, under date of November 19, 1910; that is correct, is it not?

A. Yes, sir.

Mr. BRENNAN: The defendant as a part of the cross examination of the witness now offers and reads in evidence Exhibit No. 3 as follows:

Des Moines Gas Company. Street Main Construction Order.
Requisition No. 565. Date 11-19-'10.
Authorization No. 520. Date 12-5-1910.
Main to be laid as follows: Size, 4 inch, on Eighth Street (H. P. North of Douglas) 275 feet, north of Seneca, length 435; Seneca from Eighth Street to Seventh, length 345; on Seventh Street from Seneca to 500 feet north of Seneca, length 500 feet.

Now, immediately below is a sketch showing the location of the main and the dimensions and the street or streets in which the mains were laid.

The dotted line shows the main to be laid. The word Seneca the sketch refers to, shows Seneca or Lincoln street, and running
728 at right angles to Eighth and Ninth streets. Sketch No. 1 being shown on the exhibit, between Eighth and Ninth street. Sketch No. 2 between Seventh and Eighth. And Sketch No. 3 east of Seventh Street.

"Commenced 11-22-1910. Finished 11-26-1910.

HENRY MOUL, *Foreman.*

Pipe used 166 L of 4 inch (L. indicates Length).

Total length run, size 4 inch; total length run size 1,281 feet; cement 350 pounds; yarn, 30 pounds; coal oil, 5 gallons; nature of ground, clay.

On the reverse side of the Exhibit is the sketch of the completed work showing the location of Seneca Street and the other streets running at right angles thereto. Made by Henry Moul.

The following specials are shown on the reverse side of said exhibit: Two covers, 4 inches; four plugs, 4 inches; a cap, 4 inches. Foreman on job, E. W. Wilson. Moved from Thirty-sixth and Woodland. Entered in sketch book 12-13-1910. Book No. 7 page 59. By N. C. J.

Judge CARR: Before we leave this. I wish we might have this kind of an agreement: I would like to have the record to show by agreement that a copy of Exhibit No. 3 can be made on the blank furnished, and the copy thus made together with the matter that has been referred to shall stand in lieu of the original exhibit, and that the original exhibit may be withdrawn and retained by the Company as a part of the record of the Company.

Mr. BRENNAN: It is so agreed to by all the defendants.

Mr. BRENNAN: The defendant offers and reads in evidence defendant's Exhibit No. 4 as follows:

Des Moines Gas Company Authorization of Extension
729 Street Mains. Requisition No. 565; date 11-1910.
Authorization No. 520. Size of pipe, 4 inch. 13-5-10.

Mr. Jansen Haines, Manager.

DEAR SIR: Your requisition of the above number has been received and the expenditure you recommend is approved. You are hereby authorized to proceed with the work as follows:

Mr. BRENNAN: The first column here is name of street, and then there is another, side of street, and then is the word "from" and then "to" and then the length *of the* feet. Under the column "name of street" is 8 H. P., end of main North of Douglas 275 feet; north of Seneca 435. Under the column name of "streets" Seneca. Under the column "from" 8th to Douglas. Under the column "to" 7; under "length in feet" 345. Under the column "name of street" 7;

under the column "from" Seneca. Under "to" 500 feet north; in the column "length in feet" 500; total length in feet 1280.

Specials order, blank. Pipe order, blank. Lead order, blanks. Yarn order, blank. Tools order, blank. Amounts authorized—extension—property 627.20, service and meters, $299. Proper to be charged to specials account, extension, extension mains authorized, 4 inch.

Special account to be classed in the extension mains account. Service and meters to be charged direct to their respective accounts. Remarks, blank. Compare this authorization with your requisition.

WALTON CLARK,
Second Vice President.
Per THOMAS S. GENAY.

Upon said exhibit are the following stamp marks: Noted December 12, 1910. Received, December 10, 1910. On said appears the letters H. E. G.

It is agreed that the words H. P. referred to in the column "name of street" in Exhibit 4 has reference to Highland Park. It is further agreed that the witness may make a copy of Exhibit 4 and
730 that it be substituted in lieu of Exhibit 4 now read.

Q. Now, Mr. Walter, you said something about lamp records. Do you show in this inventory Exhibit 15, any Boulevard lantern or equipment for street lighting?

A. No, sir.

Q. Just lamp posts?

A. Merely the lamp posts.

Q. From what sources did you secure the information as to the lamp posts as shown in the inventory?

A. From Mr. Vincent, engineer of the Des Moines Gas Company.

Q. You made no further inquiry except to take the information he furnished?

A. No, sir.

Q. Personally, I take it, you know nothing of the arrangement under which the street lights are furnished or by whom, or the nature of the contract under which they are furnished?

A. No, sir.

Q. You know nothing about those things?

A. No, sir.

Redirect examination by Mr. READ:

Q. Turn to Exhibit 4 Mr. Walter; what is the name signed to the authorization?

A. Walton Clark, Second Vice President.

Q. Mr. Clarke is the second vice president of what company?

A. Of the Des Moines Gas Company.

Q. Exhibit 3, the original sketch of the main extension, that is a typical sketch, is it?

731 A. Yes, sir.

Q. Such sketches as that are entered into the sketch book you just referred to?

A. Yes, sir; in those sketch books.

Q. Exhibit 4 is a typical authorization?

A. Yes, sir.

Recross-examination by Mr. BRENNAN:

Q. Have you identified the sketch that was used in connection with Exhibits 3 and 4?

A. That is sketch book No. 7, page 59.

Q. I show you a sketch appearing in the book which you have just identified and which has been marked by the reporter as Defendant's Exhibit No. 5; I wish you would tell the court just what that sketch is and what it purports to be?

A. This sketch is copied from the original sketch on Exhibit No. 3, showing in detail the mains laid on authorization No. 520.

Q. And showing the street or streets in which the mains were laid?

A. Yes, sir.

Mr. BRENNAN: The defendant as a part of the cross examination now offers in evidence Defendant's Exhibit No. 5.

Mr. READ: May it be agreed that a copy made by Mr. Walter shall be substituted?

Mr. BRENNAN: Yes, sir.

Q. You say Walton Clark is the second vice president of the Des Moines Gas Company?

A. So I understand.

Q. What relation does he sustain to the United Gas Improvement Company?

A. I don't know that.

732 Q. Is he an officer of the United Gas & Improvement Company?

A. Yes.

Q. Do you know what office he holds in that corporation?

A. I think he is Third Vice President.

Q. His home is in Philadelphia?

A. Yes, sir.

Q. He has no office in Des Moines so far as you know?

A. So far as I know, no sir.

Re-redirect examination by Mr. READ:

Q. Do you know whether the remaining data not sketched into the sketch book is entered on other records of the Des Moines Gas Company?

A. The number of feet of pipe used, specials used, the amount of cement, yarn, coal oil, is entered into the store room records of the Company.

Q. You did not consult such records?

A. No, sir.

Re-recross-examination by Mr. BRENNAN:

Q. Do the records in the office of the Des Moines Gas Company which you investigated in connection with the inventory, Exhibit 15, show the same general plan of making extensions; that is to say, first the requisition and then the authorization and then the sketch and record with respect to extensions, the same as they are shown by Exhibits 3, 4 and 5, from 1887 down to the 1st of January, 1910?

A. In later years they do; around in 1887 and for a few
733 years in there, I don't think the records are quite as complete.

Q. From 1887 up to about what time?

A. I don't know just exactly; I should say four or five years.

Q. In those years, from 1887, it shows the same general plan with reference to extensions?

A. Yes, sir.

Q. And the manner of keeping the records with reference thereto?

A. Yes, sir.

Q. And the manner of the requisition and the authorization and the laying of the mains in pursuance of the authorization.

A. I am not positive as to that, back in the earlier days or time.

The MASTER: If I understood you right you said you obtained the mains for 1886 by deducting those laid since?

A. Yes, sir,.

Excused.

E. L. HEYSER, being first duly sworn on part of complainant, examined by W. L. Read, Esq., testified as follows:

Q. Where do you live?

A. In Philadelphia.

Q. What is your occupation?

A. I am a mechanical engineer.

Q. In the employ of what concern?

A. United Gas Improvement Company.

734 Q. What is your age, Mr. Heyser?

A. Thirty-three.

Q. How long have you been employed by the United Gas Improvement Company?

A. Two years.

Q. In what particular capacity in that length of time?

A. Making replacement valuations.

Q. Did you assist in making an inventory of the property of the Des Moines Gas Company?

A. Yes, sir.

Q. You acted as assistant to whom?

A. Mr. Brodnax.

Q. Were you the chief assistant?

A. Yes, sir.

Q. Did you act during the entire period covered in taking the data obtained at Des Moines?

A. Yes, sir.

Q. What previous experience in such work had you had before coming to Des Moines?

A. I was with the American Bridge Company.

Q. How long?

A. Two years.

Q. In what capacity there?

A. In the engineering department, drawing room.

Q. What experience did you have in this particular line of work you were engaged in at Des Moines prior to coming to Des Moines?

A. I assisted in making inventories of different plants.

Q. What did you do in the way of assisting in making the inventory of the Des Moines plant?

A. Making of drawings, tracings and checking.

735 Q. There were others also engaged in that work, were there not?

A. Yes, sir.

Q. Now, I wish you would tell the Master what measurements you made personally?

A. The particular buildings I worked on?

Q. Yes, and what data you obtained personally.

A. I worked on the No. 3 building, making a field sketch, finished drawing and tracing, taking measurements on this building; also on No. 7 building and No. 12, and assisted in a general way in checking over the rest of the work.

Q. What general plan was pursued in taking and making measurements?

A. Two men worked on a building; one taking the north and east side of the building, and the second man taking the south and west side of the building.

Q. What was the object and purpose of that method?

A. To facilitate time and to be more sure of accuracy.

Q. How would that tend to secure accuracy?

A. The men would work separately as far as making their field sketch and drawing and tracing; when they came to making measurements they would work together, one man holding the end of the tape and the other man reading the tape; the man holding the end of the tape would take the measurements down. When they went to the other side of the building, they would exchange places and in finishing the drawing, after their drawing was completed and figured, the dimensions of it didn't agree, they would go back and check over to see where the discrepancy was and make the corrections.

Q. What was the plan or method in respect to the contents of the apparatus, machinery, etc.

A. The same methods was used.

736 Q. Two men?

A. Two men would collect the data, one making the foundation plans and the other taking a list of the contents, and they would follow the same method taking the measurements.

Q. In a general way, what data was obtained at Des Moines?

A. Simply the drawings and tracing of the apparatus.

Q. The measurements were all taken at Des Moines?
A. Yes, of course, the drawings would not be complete without the measurements.
Q. Mr. Heyser, will you refer to Exhibit 16 and first to building No. 3——
The MASTER: No. 3 is the meter governor, exhauster and wash room?
A. Yes, sir.
The MASTER: No. 7 is the generator house?
A. Yes, sir.
The MASTER: No. 12 is the pump house?
A. Yes, sir.

Mr. BYERS: I was going to say, for the purpose of shortening this examination and saving as much time as possible, if this is the witness who prepared these drawings and made the measurements that are shown on the drawings, we will make no objection whatever to the drawings themselves and the sketches as to the character of the building-, the size of the building-, the location of them, the number of them, and the size and character of the apparatus on the inside.
Mr READ: That is to say, you will not question the accuracy of the measurements.
The MASTER: As shown on Exhibit 16?
Mr. BYERS: Yes, there are a few things we want to question but it don't involve the character of the apparatus nor the size.
737
Judge CARR: I would like to inquire of Gen. Byers—he started his admission by saying that if; I don't know whether he said if this is the witness——
Mr. READ: I will ask him a question.

Q. Are you the person who made these measurements?
A. I made some of them.

Mr. BYERS: So far as these sketches and drawings in Exhibit 16 are concerned, as I stated a moment ago, we do not intend to spend any time in questioning the accuracy of the measurements, that is the length, breadth, thickness, nor the number of buildings, nor the character, nor the location, nor the contents. There is one or two matters that we have objection to but that is not involved in the examination of this witness.
Judge CARR: You say as to the number or size and everything that pertains to measurements.
Mr. BYERS: We make no objection to that.
Judge CARR: How about the material in the building?
Mr. BYERS: As shown in the sketches, so far as we know, we have no objection to that. If something develops later on we will call your attention to it.
Judge CARR: Gen. Byers says there are only a few instances in which they expect to question our showing. It seems to me under all the circumstances here it would be no more than fair for the other side to furnish us the information.

Mr. BYERS: It is not involved in this witness' testimony
738 at all. It is a matter which Mr. Brodnax testified to and we will take it up in further cross examination.

The MASTER: That saves the making of preliminary proof with reference to these exhibits and these buildings by this witness, and by other witnesses, as I understand it, also.

Mr. BYERS: Yes. Of course it is understood that this admission does not cover anything that is involved as to the value of the buildings.

Mr. READ: We have mentioned one as Exhibit No. 15. Exhibits 15 and 16 are complementary. I take it the concession of counsel applies to both exhibits.

Mr. BYERS: I didn't know that this witness was being examined on any other one. I have no objection to making the same concession as to 15. The thing I had in mind was that we may want to examine Mr. Brodnax later on on something that is in Exhibit 15.

Cross-examination by Mr. BYERS:

Q. You stated to Judge Read you were at present in the employ of the United Gas Improvement Company?

A. Yes, sir.

Q. You have — in their employment for two years?

A. Yes, sir.

Q. And on the road most of the time?

A. About half the time.

Q. And does the company have such employment as you performed at Philadelphia, does the company operate a gas plant in Philadelphia?

A. Yes, sir.

739 Q. And has your employment been there in connection with the Philadelphia plant?

A. No, sir.

Q. You never had any employment at all in connection with the Philadelphia plant?

A. No, sir.

Q. Your employment has involved altogether outside plants and outside work and away from Philadelphia?

A. Yes, sir.

Q. You say you assisted in some other inventories of gas company properties?

A. Yes.

Q. Where were they located?

A. At Syracuse, Allentown, Pa., and Reading.

Q. Syracuse, New York?

A. Yes, sir.

Q. Was that property owned by the United Gas Improvement Company?

A. Not to my knowledge.

Q. Did you do that work for them?

A. Yes, sir.

Q. You were under their employment at that time?

A. Yes, sir.
Q. At Reading, was that a United Gas Improvement concern?
A. Not to my knowledge.
Q. Where was the other place?
A. Allentown.
Q. What connection if any did the United Gas Improvement Company have with that plant?
A. I don't know.
Q. Did they have a plant there?
740 A. I don't know.
Q. You are not advised as to that?
A. No.
Q. You are a mechanical engineer?
A. Yes, sir.
Q. How long have you been in the business?
A. Twelve years.
Q. In gas work?
A. No, sir.
Q. Not in gas work?
A. No.
Q. Your employment along gas lines, has that only been recent?
A. The last two years.
Q. Where were you when you were directed to come to Des Moines?
A. In Philadelphia.
Q. To make the inventory?
A. In Philadelphia.
Q. From whom did you receive your instructions?
A. The engineer in charge of the work.
Q. What work?
A. Making inventories.
Q. Who is that man, what was his name?
A. Mr. Crissman.
Q. Does he have his office at Philadelphia?
A. Yes, sir.
Q. In connection with the United Gas Improvement Company?
A. Yes, sir.
Q. Had you ever been in Des Moines before?
A. No, sir.
Q. That was your first visit?
A. Yes, sir.
741 Q. About what time did you come here, what was the date of your arrival in Des Moines?
A. November 7th.
Q. And how long were you here?
A. Until December 23.
Q. How large a staff or what number of engineers and other assistants does Mr. Crissman have in his department?

Objected to on part of complainant as immaterial and not proper cross examination.

A. He had six at the time.
Q. Six mechanical engineers?
A. Not all mechanical engineers.
Q. You mean he had six here?
A. Yes, sir.
Q. I mean how large a staff does he have right along under him?
A. It varies.
Q. Well, give us the varying nnmbers, from what number to what number?

Same objection as last above.

A. From six to ten.
Q. Is the business of making inventories of gas properties throughout the country the special business of Mr. Crissman?

Same objection as last above made.

A. Yes, sir.
Q. How long do you know he has been engaged in that work?

Same objection as last above made.

A. To my knowledge, two years.
Q. You are a member of his staff for that purpose?
A. Yes, sir.

Excused.
Attendance: E. L. Heyser, two days.

742 Judge CARR: We have introduced in chief our preliminary evidence, but I understand from Gen. Byers that he wants to further cross examine Mr. Brodnax. Manifestly we are not ready to offer these exhibits until we get through the preliminary evidence. There may be something develop on the cross examination that would require something further.

Mr. BYERS: It would not affect the competency. The thing I have in mind would only go to the accuracy of one of the matters involved.

Judge CARR: That might be one of the matters we might want to go into.

The MASTER: You would have a right to go into it afterwards.

Judge CARR: We would prefer to have our preliminary evidence all in before offering these exhibits. The cross examination may develop something we may want to take up further.

The MASTER: Do you want to examine Mr. Brodnax now?

Mr. BYERS: If he wants to go away, we will be perfectly willing to waive the cross examination; we can cover it by our own testimony.

Judge CARR: The complainant now offers in evidence Exhibits 15 and 16, and in connection with the offer of Exhibits 15 and 16, which offer includes the sketches and photographs and maps appearing in the said bound volume Exhibit 16, complainant further offers in evidence the map Exhibit 17, and the map Exhibit 18, and the map Exhibit 19; the offer includes the contents of each and all of these exhibits. The complainant further offers in evidence the map

Exhibit 5, and complainant now offers in evidence the map Exhibit 6.

743 Mr. READ: In connection with Exhibit 5, there appear some yellow pencil marks and various figures showing elevations above city datum at the several points; that has not been explained yet, and the engineer who made the survey is not in the court room, which will occasion some delay.

Mr. BYERS: Is that what those figures show?

Mr. READ: That is what those figures show.

Mr. BYERS: Very well.

HENRY LEA, being first duly sworn on part of complainant, examined in chief by N. T. Guernsey, Esq., testified as follows:

Q. Please give the reporter your name, age and residence?

A. Henry T. Lea; age thirty-three; residence, Chicago.

Q. What is your profession?

A. Consulting gas engineer.

Q. I wish you would state somewhat in detail, your experience in the operation, construction, and planning of gas plants, manufacturing gas and manufacture of gas making machinery.

A. Do you want me to give the dates as I go along?

Q. Whichever way you prefer; I don't think we care.

A. In 1896 I entered the gas business at Madison, Wis. My work there the first year was not very specific in character. I was located at the works of the gas company, but had no title. The second year I was works foreman. The third year I was works superintendent. During my third year I left Madison to go to Peoria, Illinois,

744 as assistant in charge of the construction of a new gas plant there. Through an unforeseen circumstance I was placed in charge of the construction of that plant, before we had actually begun the work, and remained in Peoria in charge of construction of the new gas works until it was completed and gas was being made. This plant had a capacity of about 650,000 cubic feet per day and was of the coal gas type. As soon as this plant was in condition to operate, was actually making gas I went to Fondulac, Wis., for interests who were rather indirectly connected with the people I was working for in Peoria. At Fondulac I was manager, and because the plant there was in very bad condition physically, about the first thing I had to do at Fondulac was to begin planning extensions and improvements needed. I was there only a few months, because the people who sent me there sold the property, within, I think, four months after I got there. The people I referred to are the Dawes Gas Syndicate; that is not the corporate title, but it represents the group of men.

Q. It is the popular title?

A. Yes. When they sold the Fondulac plant they sent me to Ottumwa, Iowa, to take charge of the reconstruction of a portion of the plant and all extensions, street mains, and services in Ottumwa. I was there, I don't remember the year or number of months, I can get them if you wish. The Dawes people also sent me to Keokuk, Iowa, to make some alterations in a plant there;

that was relatively a short job, and I went back from Keokuk to Ottumwa to complete my work there, and was then transferred again by the Dawes people to Evanston, which was the largest gas plant the Dawes people had at that time.

Q. Evanston, Illinois?

A. Evanston, Illinois. The plant in Evanston supplied
745 Evanston and three other Chicago suburbs on the north shore. In Evanston I was first the superintendent of the distribution, and second I was general superintendent, and the third year I was general manager. This plant was sold by the Dawes people about the end of my third year in Evanston, and about two months after that I was transferred by the interests connected with the new ownership to the Division Street Station of the Peoples Gas Light and Coke Company in Chicago. This Division Street Station was a water gas plant and at that time was the largest in Chicago. The daily send-out was approximately ten million cubic feet. The spring following my going to Division Street Station I left Chicago to go to Ft. Wayne, Ind., as first assistant to the president and chief engineer of the Western Gas Construction Company. At that time the Western Gas Construction Company had the largest shops devoted exclusively to the construction of gas works equipment, and the company was engaged solely in the manufacture and erection of gas works equipment for coal gas plants, water gas plants, crude oil gas plants and coke oven plants. I remained in Ft. Wayne about a year and a half, when I went to Pittsburg for Mr. George Westinghouse, to take charge of experimental development of gas making equipment used in the generation of power principally. The type of plant I am referring to here is called producer gas plant. While in Pittsburg I was in complete charge of the design, construction and experimental operation and erection in the field of all gas producers up to the time of my leaving Pittsburg. During this period I developed from the original idea to the finished plant each of the three types of gas producers now being sold by the Westinghouse Machine Company of Pittsburg, and before I left Pittsburg, there were in operation in various
746 parts of the country either nine or ten plants getting their power from the gas producers of my design. I left Pittsburg in the spring of 1907 to open my own office in Chicago as consulting gas engineer and have since been so engaged.

Q. Are you a member of any learned or technical societies?

A. I am a member of several technical societies, more or less learned.

Q. What are some of them?

A. American Gas Institute, American Society of Mechanical Engineers and four or five smaller Gas Associations.

Q. Now, you spoke of the capacity of this Evanston plant where, I think, you were some three years in various capacities; what was the capacity of the plant?

A. The capacity of the Evanston plant was approximately five hundred to six hundred thousand feet per day, maximum.

Q. About what population did you supply?

A. About forty thousand; that is the total population of the districts which we reached, but we did not reach all of each of the districts.

Q. What was the output of this Division Street Station in Chicago?

A. About ten million cubic feet per day.

Q. About twenty times that of the Evanston plant?

A. Yes, sir.

Q. And do you know what population you supplied with that?

A. I presume in the neighborhood—no, I can't tell you the population supplied with that, except this, the Division Street plant did at that time supply a large portion of the entire west side of the city of Chicago.

Q. Now, you said at Ft. Wayne you were engaged with a concern there manufacturing and erecting gas works equipment; what do you mean by gas works equipment?

747 A. All of the machinery used in gas plants with the exception of small engines, such as we use for driving exhausters and blowers. These shops in Ft. Wayne comprised pattern shop, foundry, machine shop, boiler shop and forge shop in addition, of course, to the offices and drafting room, and employed about 450 men at the shops and had at that time about 120 men scattered all over the country erecting plants.

Q. Now, then what did you do there?

A. I was first assistant to the president, who was also chief engineer. When the president was in Ft. Wayne, I would go out after contracts; when I would come back, the president would go out after contracts and I would remain in Ft. Wayne in charge of the shops. The president was out a great deal more than I was.

Q. When you went out after contracts, where did you go?

A. All over the United States, and some in Canada.

Q. Was there any competition in connection with the contracts?

A. Yes, sir.

Q. When you went out after contracts, what did you have to do with reference to fixing the prices of your business?

A. I was in control of fixing the prices of such contracts as I went after.

Q. Now, I want to go back to Madison for a moment. What did you do in that Madison plant?

A. My first year—well the very first thing I did there was to begin keeping records of the readings of the station meter and the sales of coke, and later on I kept time—I don't remember the exact growth of the work—but one thing after another was given to me to do until the second year, when as works foreman I had the hiring of men discharge of the men employed in the gas works; the control of the operating conditions of the plant itself.

748 Q. So that prior to the establishment of your office as consulting gas engineer, your experience included the actual work of manufacturing and distributing gas, and also the work

that was incident to designing and manufacturing and selling appliances used in the manufacture of gas?

A. Yes, sir; I can say I have done each of the things any of the men around a gas plant have to do.

Q. That is, you mean operate each machine and perform each kind of labor?

A. Yes, sir.

Q. Now, after you established this office in Chicago I suppose you did some work also as a consulting gas engineer?

A. Yes, sir.

Q. Tell us something about the character and extent of that work and the territory covered by you?

A. The territory of the work varied. I have been called on to make examinations of plants for bond houses undertaking underwriting of securities, by individuals or companies, or cities contemplating building new plants, wanting to know whether it would be advisable to go ahead; by companies having difficulties in the operation of their plant. I also designed new plants and determined whether the conditions in operating or distribution expenses could be affected; figured on the improvement of existing plants. I think that covers it in a general way.

Q. I wish you would tell the Master whether your employment has been solely by the owners of plants or partly by owners of plants and partly by municipalities?

A. My work has come from individuals who owned no plants, from cities which didn't own gas works in their own communities,
749 from individuals and companies owning the properties which I have examined, and for individuals or companies interested in the purchase of, but not owning the properties examined.

Q. Now will you give us some—I don't care for all—some cities by which you have been employed comparatively recently?

A. Beatrice, Neb., and Buffalo, New York.

Q. Have you recently done any work similar to the work that has been done here in connection with the valuation of the gas plant in Chicago.

A. I have made a complete appraisal of the gas plant in Chicago within the last year and a half.

Q. I wish you would explain by whom you were first employed to do that?

A. I was first employed by the interests antagonistic to the Gas Company.

Q. And did you complete the valuation for them?

A. No.

Q. That was abandoned for some reasons?

A. That was abandoned because of debts in the organization which changed the policy of the concern.

Q. Were you afterwards employed to complete the valuation? If so, by whom?

A. By the Gas Company.

Q. And you did complete it then?

A. I completed it on exactly the same basis as it started; it was about half done when it first stopped.

Q. Now, Mr. Lea, have you made an examination of this plant in Des Moines for the purpose of putting a value on this plant here?

A. Yes, sir.

Q. I wish you would tell the Master when you first came
750 here for the purpose of looking at the plant and in a general way the character of your examination of it and the time that you have devoted to the actual plant itself and the conditions here in Des Moines affecting the valuation of the plant?

A. January 13th, I think, was the day I reached here for this examination.

Q. In what year?

A. This year. On January 13th, and I went, after having seen Mr. Haines at the office of the Company, I went immediately to the works and made a general examination of the plant without the aid of any detailed inventory.

Q. Tell what you mean by a general examination of the plant.

A. Walking through each of the buildings, examining the equipment to get the lay of the land—I hadn't been in Des Moines for several years, and had forgotten the exact lay of the plant and a good many extensions have been made since I was here. I went through to get a general impression of the arrangement of the plant and the equipment and its placings; and shortly thereafter I was supplied with an inventory of the equipment, covering not only the plant, but the distribution system as well, and then went back to the plant and with this inventory made a very careful examination of the plant.

Q. Was that what purported to be a copy or reproduction of the inventories that have been offered here?

A. Yes, sir. I took this inventory and went over the plant with the view of determining whether all the items of importance, such as buildings and machinery were there, and later I went again over to the plant to determine by inspection the then condition of each of those items in the inventory. The inventory also covered the distribution system. I did not check the distribution data with
751 the same detail: that is impossible; but I did go all over, at least I went all around the city of Des Moines, back and forth in the several directions many times, to observe whether there were evidences of the use of gas at the outermost points indicated by the maps, and satisfied myself that the maps showing the street main system were substantially correct, just as I had satisfied myself previous that the inventory of the building, equipment of the buildings and machinery was substantially correct. At the plant I went further. I even checked a good many of the measurements. The only errors I found—I won't say they were errors—the only differences I found were so small I wouldn't measure them over again to get my own measurements of it much more correct. If I would take a tape line and the map showed a building 109, and I would run down the building and show it 108, I would say the other fellows were probably more careful than I was and would say it was substantially correct, and couldn't go beyond that.

Q. You spoke of the evidences of the use of gas you could observe around the outskirts, extremities of the distribution system; tell what such evidences are, we are not familiar with the gas business and you are.

A. Gas street lamps and lamp posts, and the pumping points for drip pots, gas burners in stores or residences.

Q. Now, before taking up the detail of this matter of the valuation, the gas that is manufactured here is called what?

A. Water gas.

Q. Now, I wish you would describe in a general way the method of manufacturing water gas as it is manufactured by the plant of the complainant company?

A. The basis of the water gas process, you might say, is a
752 fuel bed made up of coke or anthracite coal. If the fuel bed under a boiler, for instance, is shallow, if you pass air through that boiler fire, the air will attack the carbon in the coal and burn it to carbonic acid gas. The hydrogen in the coal will be burned on combination with the oxygen to water vapor. That is about all you need to consider of a boiler fire, because the depth is not great. But if you were to increase the depth of that same boiler fire to five or six feet, and then pass air through that fuel bed, the oxygen would attack the carbon forming C O-2 or carbonic acid gas. That carbonic acid gas passing up through the remainder of the fuel bed will be reduced; that is, one atom *atom* of oxygen in the C O-2 will combine with another atom of carbon and you have as a result two volumes of carbon monoxide. The principle then is, carbonic acid gas is a product of complete combustion. You cannot burn it any more; it is diluent or inert gas. It is heavier than air. We don't want it in the gas we sell, because we can't use it. The other gas carbon monoxide is combustible, but it is not good for illuminating; it burns with a blue flame. Now, if you imagine this boiler of fire deepened and instead of having a rectangular fire box, put it in a cylindrical fire box, you have a water gas generator in effect. The water gas generator is a cylindrical steel shell having a lining of fire brick. The thickness of the lining of course will vary with the size of the machine. On a ten foot diameter machine, the lining would be about fifteen inches thick. There is a grate or bars near the bottom of this shell and there is a hole at the top of the shell for the admission of coal or coke to be used. There are also bars for the cleaning of the fire. There is a gas outlet near the top of the shell, which communicates with the top of this second steel shell,
753 and about the same size as the generator. This second shell is called the carburetor. It contains a large number of fire brick built up checker fashion, placed on top of each other, so that they are zig-zag and there are flues all through the brick work. The bottom of the second shell communicates with the bottom of the third shell, which is called the super-heater. From the outlet at the top of the third shell the gas is led into what we call a washer or seal pot, which is another cylindrical steel shell with a flat top and bottom, containing water. When the machine is in operation the water is always entering this seal pot, but there is always a fixed overflow be-

neath the surface of the water in this seal pot, dips the pipe coming from the top of the super-heater. The purpose of that seal pot is to provide a kind of a valve, so that the gas may come from the super heater and pass through this water seal without much resistance, and go on to the balance of the cleaning and purifying equipment, but cannot go back without much higher pressure than will force it forward. This is due to the fact that the area of the inlet pipe is much less than the area of the seal pot itself, and since the inlet pipe dips below the surface of the water, any gas which leaves that pipe must on entering the seal pot depress the water within the pipe to the bottom of the pipe. But the amount of water displaced is of course only that which was within the pipe. To force the gas back however from the seal pot into the pipe a much larger volume of water must be displaced, since the surface of all of the water in the seal pot must be depressed below the end of the inlet pipe. The amount of water displaced in this case, when forced up into the pipe, will of course make a much greater head than was encountered by the gas entering the seal pipe, and the pressure required to force the gas back into
754 the pipe is therefore correspondingly greater than the pressure required to force the gas into the seal pot. Now, beyond this seal pot come the condensers, scrubbers, exhausters, storage holders and purifiers and meters, which we will come to later. To make water gas, having your fuel bed in the generator built up, you turn a blast of air beneath the grate of this fuel bed. This air comes from a fan or blower operated by a vertical steam engine, steam turbine or any other source of power adapted to the work, and for a few minutes, assuming you have been in operation for some time, after a few minutes blowing you have developed a temperature in the fuel bed to the required point. During this period the hot gases from the generator have been passing over and around the checker brick in the carbureter and in the super-heater, thus also increasing their temperature. While you are doing this you are blowing the products of combustion out of the top of the super-heater through what we call the purge stack. All of this time you are blowing you are making in the generator this carbon monoxide, the gas which burns with a blue flame, combustible gas. The process of making that gas itself throws out heat. Consequently the temperature of the fuel bed keeps rising. But the gas you make you lead forward to those second and third shells. By admitting more air you complete the combustion in those shells. You admit more air at the top of the carbureter and at the bottom of the super-heater. As a result the gasses leaving the top of the super-heater are the products of complete combustion and there is nothing in them we want except the sensible heat of the gas. Having obtained the required temperature of the fuel bed and carbureter brick and super heater brick, you shut the valve in
755 the top of the super-heater and shut off your air and admit steam below the grate. Now the steam or water vapor, composed of hydrogen and oxygen, passing up through that fire, is decomposed. It is split up into hydrogen and oxygen. The hydrogen goes on through the fuel bed, we suppose, unaffected. The oxygen acts just as oxygen from the air in attacking the carbon in the fuel

bed and at the bottom of the fire makes carbonic acid gas. That gas passing through the upper part of the incandescent fuel bed is again reduced to carbon monoxide. At the top of the fuel bed we find our carbon monoxide and hydrogen in practically equal volumes with a small volume of carbonic acid gas and of nitrogen and in some cases of sulphur compounds. These are things we do not want in there; but they represent a small percentage of the total volume of gas. Some of them are later removed. These gases, carbon monoxide and hydrogen have a relatively low heat value. The gas being distributed around the city here has a heat value of about 650 units per cubic foot of gas. The gas that we got at the top of the generator has only about 320 heat units and it has no illuminating value. To make it a commercial gas we have got to increase the illuminating power of it and heat value of it. So at the top of the carbureter we admit crude oil or petroleum or some distillate of petroleum; crude oil is generally used. That comes in usually under pump pressure or pressure from some other source, comes through a spray which atomizes the oil in a finely divided state, just like mist. The hot gases coming into the carbureter striking this oil evaporizes it mechanically and then mixing with the oil vapors travels around those checker brick. As far as we know there is no specific and dependable chemical reaction goes on. It is simply mechanical as far as we know.

756 They mix mechanically with the fixed gas from the oil. The oil gases passing through this originally high temperature are brought themselves to a temperature which makes them permanent gases, after having gone through the vapor state. They come in as a liquid and then vaporize and then the vapors are made in to permanent gas by the heat.

The MASTER: What kind of gas?

A. Hydro carbon; all have more or less illuminating value. They are very rich. If you were to take those gases alone, the flame would be smoky, not adapted to distribution generally. They have to be diluted. They are all perfectly good for certain specific purposes, but neither alone is adapted to general distribution for the supply of the city. These rich gases when they are permanently fixed by the heat, have been so thoroughly mixed that they maintain that relationship throughout the distribution system, and the result is a mixture of gases which has a high illuminating value and a high heating value. As soon as this gas is made, while it is being made, just after it enters the seal pot, it meets the first step of the purification scheme, that is the seal pot. It is physically impossible to expose every little vescicle of oil to the temperature, and the time required to fix it into permanent gas, consequently some of the oils go through as vapors. It is also practically impossible to expose every vescicle of oil to just that temperature which will make it into permanent gas without going too far. If you go too far you split it into hydrigen and carbon and the carbon will deposit in the form of lamp black. There isn't much difficulty getting the tar out of the gas and most of it comes out in the seal pot or washer. We have got to get rid of the water vapors, so we just pass the gas

757 through the second shell called the scrubber, another steel cylindrical shell six or eight feet in diameter, 18 or 20 feet

high. It is filled with, sometimes wooden trays and sometimes stone and sometimes coke; any material which will afford a relatively large surface for the retention of water. Water is admitted at the top of the scrubber and trickles over the surface coming down and getting gradually hotter and in that shell or scrubber the major portion of the remaining water evaporates or condenses, but even at the top of that shelf there is still a temperature whic- carries considerable water vapors and the gas itself is then taken into the condensers, another steel shell built a good deal like a boiler put on end. If you imagine the water surrounding the tubes and the gas passing through the tubes you will see what the condenser is. From that condenser the gas goes to the relief holder, called relief holder only because it serves to relieve the generator. You are making gas for only a few minutes at a time, say from three to seven to nine minutes. Then you stop making commercial gas and again begin blasting to bring your temperature back. So to keep the fire in workable condition, you have got to stop every few minutes and blow it up again. That means you alternate all day long. You are blowing for a few minutes and then making gas for a few minutes; and then you blow again, and so on. You are actually making gas at a rate very much faster than the average rate of production throughout the day. A machine having a capacity of a hundred thousand cubic feet per day is actually making its commercial gas at a much higher rate than the average for the day. To provide against the necessity of having a plant beyond the water gas set big enough to take care of this maximum rate of production, the holder is put in. If
758 you do not put in a relief holder, you can not have all the balance of the plant big enough to take care of the gas made at the maximum rate of the generator, you would have to have which would be very expensive. To provide against that, the relief holder is installed. As the gas comes into this relief holder and it comes up and then the generator goes to blasting again and the holder begins to drop. The output of this holder goes to the exhauster, which draws the gas out at a uniform rate from the relief holder and passes it through the purifiers, station meter, and out to the storage holder. Now, this relief holder has only that function, except it does tend to cool the gas and condense some of the vapors. Now then, the exhauster draws the gas from this relief holder at a uniform rate. If you are making a hundred thousand feet a day, the gas leaving the relief holder comes out at the average rate and the gas coming in sometimes twice or three times as fast as the gas going out. But the exhauster is going all the time; the exhauster pulls the gas from the holder and pushes it ahead through what we call the purifier. The purifiers here are large cast iron boxes, about 20 feet square to 7½ feet deep, four of them. The fourth in the series is always held in readiness for use. The third one in the series is the one that the inlet of which you are testing the quality of gas. The purpose of these boxes is to take out the sulphur compounds from the gases. The sulphur compounds we have to take out are practically restricted to sulphuretted hydrogen—that stuff makes a rotten egg smell. We don't like to have that. It is objectionable, not only because it smells, but because when you burn it

it becomes sulphurous oxide, and this on taking up this on
759 taking up the water vapor becomes sulphuric acid, which would of course ruin all the fixtures and metals with which it might come in contact. Each of these boxes contains trays which carry layers of iron oxide or rust which is mixed with shavings or saw dust and forms what we call iron sulphide. After a while that rust has taken up as much sulphur as it can carry and if you apply the sugar of lead test upon white paper it will show that this is the case. As soon as the second box has fouled the sulphur box we throw the fourth into operation and throw out box number one. Then the iron rust and shavings in number one are thrown out into the air and the oxygen of the air comes along and attacks that and reduces it back to iron oxide or rust sulphur we started with, free sulphur. That free sulphur does not affect the gas and the gas does not affect the sulphur. So we put this oxide back into the box and use it over again. From the purifiers the gas goes to the station meter; all the time the exhauster is pushing the gas ahead, and pushing it through the purifier; then through the station meter, and then the gas goes from the station meter into the storage holder, and from the storage holder, the big holder, the gas goes through the governor, pressure regulator, and then goes into the street mains to supply the city.

The MASTER: What is the specific gravity of the two gases?

A. The specific gravity of the mixture will run from .55 to .65 depending on the amount of oil used.

The MASTER: They are mixed in the same proportion?

A. They are mixed in the proportion necessary to give you the candle power or heat value you maintain.

Q. You speak about specific gravity, .55 or .65; what do you mean by that?

A. Point 65, as compared with air. You call air 1, this
760 gas would be .65 as much weight as air. These percentages of course vary up and down; there is a wide variety of gas there; you can't put any one value without knowing the exact gas.

Q. When you say point 65, you mean decimal point 65?

A. Yes.

Q. You state your amount of oil would vary with your candle power?

A. Yes, sir.

Q. As the candle power increases, how would that effect it?

A. All illuminating value comes from the oil; the higher the candle power the larger the amount of oil required.

Q. Have you at the request of the complainant made an estimate of the value of the property of the complainant used and useful in its business of manufacturing and distributing gas in the city of Des Moines?

A. Yes, sir.

Q. Now, in making the valuation or appraisement of the property referred to, what method, Mr. Lea, did you adopt?

A. I first satisfied myself as to the substantial accuracy of the inventory and then I set about obtaining the local data as to the costs of labor and all the materials entering into the construction.

Q. That is things that would be furnished locally?

A. Yes, sir; they represent but a small percentage of the total investment, but I got a great deal of information as to local prices before beginning my calculation. The information I obtained locally was not used exactly as received, because all information of that sort has a good deal of variableness in it. Three contractors in one town won't give you the same figures. For instance, as
761 against the figures I obtained locally, I have used for comparison a large number of similar figures in other cities. Then I selected such units throughout as appeared in my judgment would represent and might fairly and reasonably be expected in the city of Des Moines at this time.

Q. Before we go into the details of this, I wish you would explain whether what you have adopted is what is known among the engineers as the reproduction method of valuing such properties as this, and some of the reasons which led to the general adoption of that method, if it has been generally adopted.

A. The reproduction method is not the only one I have considered, but it is the one on which I have placed the greatest reliance. It is also the method which is most generally accepted as the correct basis for valuations, because it is the most comprehensive and the most direct of all of the methods. For instance, one of the things you might consider in the value of the property, is its issue of securities. While the issue of securities may have some bearing on the actual value of the property, but that does not necessarily follow.

Q. I suppose they usually run under, don't they?

A. They are not reliable enough to indicate much. You might take the market value of securities, but that again is not at all a reliable method, because the market value may be fictitiously maintained. The third method you might say is to go back to the records of the company and find what the actual cash investment of the property has been. This is not a fair method, although it is to be considered to some extent. It is not a fair method of arriving at the present value of the property, because obviously the amount paid for anything does not always determine its present value. Real estate will illustrate this most clearly, I should say, but the
762 same thing applies to all the equipment used by the gas company. The reproduction theory is the most reliable of any that I have been able to find, because it contemplates the placing of value upon existing property in its present condition. If property has been badly used, has been neglected and allowed to depreciate faster than it should, the reproduction theory makes proper allowance for this by making a corresponding depreciation in the property. If extraordinary care has been exercised and the property maintained above the average, the reproduction theory gives credit for such improvement or good condition. In other words, whether your value is up or down, for you or against you, the reproduction theory represents it more accurately than any other theory or method I know of.

Q. It is based on the actual facts?

A. It is based on the conditions and facts as they are to-day, not as they might have been or were.

At this time, 12: M., an adjournment was taken until 1:30 P. M.

763 1:30 P. M., FRIDAY, *July* 21, 1911.

HENRY I. LEA, continued on direct examination — N. T. Guernsey, Esq., testified as follows:

Q. Mr. Lea, if you will, please explain a little more fully the theory upon which this reproduction method of valuation of properties of this character of property is based?

A. The reproduction theory is a means—outlines a means of arriving at the present worth of the property. It is in other words a means of finding what a man wanting property of that kind would be willing to pay for it at the time. It covers all of the elements entering into present value, not only the cost of building of equipment of the property now but makes allowance for the depreciated condition of the property in existence.

Q. Have you, Mr. Lea, made an estimate of the value of this plant on this reproduction theory and is Exhibit 20 which has just been marked by the reporter a report showing the final results of that work which you have done?

A. Yes, sir; this is a copy of that report.

Q. You say this is a copy. It is an original isn't it?

A. That is an original of my report.

Q. Now Mr. Lea, taking this exhibit No. 20 and the first page of it is a letter from yourself to the manager of the Gas Company. This first page in the form of a letter to Mr. Haines of June 24, 1911, gives a summary of your conclusion that the aggregate reproduction cost and present value ascertained by you by the methods you have referred to?

A. Yes, sir.

764 Q. And what is the distinction now between reproduction cost and present value or reproduction costs and present values as you use them in this letter?

A. The reproduction cost is the total of all of the elements of cost which enter into the production of any element in the plant, that comprises the labor and all the various materials as they exist today. The reproduction cost covers the building now today of each of the elements in this existing property but each of these elements depreciate or appreciate depending on the element. Real estate for instance bought a great many years ago has appreciated, it is worth a good deal more today that it was when it was purchased, but the buildings, erected some years ago have constantly depreciated and unless there has been a rise in the value of raw materials which will more than offset depreciation due to wear and tear obsolescence or p*g*ysical decay then the net result will be that each of the buildings has today a lower present value than its reproduction cost. You may illustrate the difference very clearly in the cost of an abandoned street main. Suppose the company laid some years ago a piece of ten inch main out in this street and for some reason or other that main has been

abandoned. Now you may by taking the present price of the various elements entering into the cost of laying pipe, you may figure out the reproduction cost of that piece of ten inch pipe but that particular piece, however, is not today in use by the company. It has been abandoned, it has no value whatever to the company. It is not used or useful in manufacturing or supplying the gas to the city and it has depreciated whatever it cost. It has no value in today's figures.

Q. Now following this letter in this report, Exhibit 20, is
765 an index is there not?

A. Yes, sir.

Q. And that index refers to the various exhibits indicated by letters which follow it in which the details of these various items that re-grouped in your letter are taken up?

A. Yes, sir.

Q. Now turn to the first one of those, Exhibit "A", what do you take up there?

A. Organization and legal expense.

Q. I wish you would state what items you consider in getting at that total of this item?

A. If you are going to arrive at the reproduction cost of any property you must obviously begin at the beginning of the reproduction. I might to make myself clear, say that a man comes to Des Moines for the purpose of buying the property of the Des Moines Gas Company and when he finds the price at which it is held he does not buy right away. He stops to find out whether he could build another plant to do the same work, another plant of the same kind and characteristics throughout for less money. In other words he figures what would be the reproduction cost of this property and then he depreciates that reproduction cost in accord with the conditions as he finds them existing in this property. That reproduction cost must cover not only physical equipment of the company, but all the elements of value concerned in the company's property. He must begin then at the beginning and say to himself if I am going to reproduce this property the first thing I have got to have is an organization. I can't get an organization without spending some money. So he sets about first finding men to enter into this
766 organization with him, finding where he can raise the necessary money, figures about how much it requires to do each of these particular things and having made the arrangements for the organization of his company and having made arrangements for the money required he goes ahead with his plans and about the first thing he would do is to bring some gas engineer to Des Moines to look over the situation and to give him a report as to the advisability of the undertaking which he is so anxious to go into or interested in going into. That preliminary investigation and examination of all of the local conditions, calculations as to the probable cost of the plant, probable income, probable earnings, etc., is covered in my item of preliminary investigation under Exhibit "A". I have assumed that $3,000 would be required for such preliminary investigation. If this report has been found to agree with the hopes of the promoters, the company is organized and

it becomes necessary to prepare articles of incorporation, it will be necessary to make and have certified a number of abstracts and there will be drawing and examining of contracts as the work gets further along and a general retaining fee for the counsel of this company which I have put in a lump figure covering each of the items last mentioned the total figure being $10,000 for the period of construction. There will be a state incorporation fee which this company must pay and in Iowa that would be a trifle over $4,000, I have made it $4,000 flat. Having incorporated the company *etc* about the building of its organization and the securing of detailed plans and specifications from which its proposed plant is to be built. These plans and specifications would be prepared by engineers who ordinarily are paid a percentage of the total cost of con-
767 struction of the property. In addition to the engineer's handling the structural engineering end of the work the company would have to have its own local offices to look after a great many of the details involved more or less directly with the engineering even before the plant is ready to make gas and the most important active officer would be the manager. I have allowed his salary in here for three years as a part of the cost of the construction of the plant because he would be necessary during that period in a great many ways. The manager and his assistants would have to do more or less traveling throughout the period of construction of the plant. There would be various incidental expenses of that sort involved and I estimate that for a period of three years these expenses would aggregate about $4,500. During the construction of this plant there would be very large quantities of raw material coming in. There would be a great many accounts and contracts to be kept and records to be made, and a clerical force would be necessary beyond the force of the engineering department and this I have estimated for the three year period as involving an aggregate expenditure of $13,500. Also during this preliminary period, the period of construction of the plant and distribution the company would be obliged to maintain office quarters of some sort and there would be the usual expenses of stationary and office supplies rent, water and light which I estimate for the three year period would aggregate $4,500. The sums I have already given make a total of $62,000. And this total figure is one of the elements which enter into the final reproduction cost of the property as a whole. They enter into the value of the property and in view of the fact that can have but one value for a property, that is, we cannot have
768 one value for taxation and another value for rate making we are compelled to include the organization and legal expense total as one of the items in the reconstruction chart and the total of $62,000 previously given has been so carried in my report and I have found that the taxes during construction on that portion of the investment represented by organization and legal expense would be $1,429. Also that the loss of interest during the construction of that portion of the investment represented by organization and legal expenses would be $4,594.

Q. Now a word of explanation about that loss of interest during

construction? What do you mean by loss of interest during construction?

A. If I have $1,000 with which to build a store and if it takes me one year to complete the building of this store from the time I set this money aside for this purpose until I am operating the store, in other words if a period of one year elapses before I get any return on this money I am losing the income which that money would otherwise have brought me and that loss of interest during the preliminary period, the construction period is of course a part of the total cost of building that store.

Q. So that here you have computed the interest which you would have lost on the amount thus expended in this organization and legal expenses during this period of construction?

A. Yes, sir.

Q. And when for the purpose of this report does the period of construction end, that is when with reference to when the plant begins to operate, I don't mean what year, what time.

A. Well it is assumed in all reproduction cost calculations that you are going to expedite this work of reproduction, going to push everything as fast—going to complete the work as fast as is hu-
769 manly possible. Now the time required for the building of a plant is of course determined by the character and volume of the different elements of the plant. The buildings will require a certain time, the works equipment will require some other time and street mains another time. In other words you cannot build a million foot holder as soon as you can a forty by forty building. Each of these things is considered and in this report will be found a chart showing the rate at which this plant would actually be built if you were to begin today to reproduce it. You would do certain things first and certain things next and so on through. You would begin building your plant on such a date and by such and such time you would have completed such and such portions of the building. You would begin building this holder at such a period and on such a time it will be completed. There is no use to begin building the building of your distribution system as early as you begin the works because you would have your distribution system in readiness for use before you had any gas to put into it. So we don't begin building the distribution system until some time after we begin the works' construction. And each of these items is shown in detail in a series of charts called reproduction expenditures to be found in Exhibit "J" of my report. The period of construction required, as I said depends on the nature of the work and the logical sequence. The first thing you would do——

Q. I don't care to go into that in detail now Mr. Lea, we will reach that later but I would like to follow this in our order here and see whether this loss of interest during the construction was computed up to the time the plant began to operate and furnish gas or up to the time you had reproduced the earning power of the old plant
770 or at what time with reference to the time the plant is ready to operate?

A. Throughout my report I have calculated the loss of interest

during construction and all the other items enter into construction cost clear up to the point at which that particular part of the equipment goes into use, the loss of interest for interest and taxes on a given machine are charged to the construction of the plant until the machine goes into use. But you don't begin the construction of it earlier than necessary. As soon as it can operate you charge the taxes and so forth to operation.

Q. Now one other thing before we go ahead. You said in building a plant you endeavored to construct your hypothetical plant as fast as humanly possible, if I caught your language?

A. Yes, sir.

Q. Is that to any extent limited by the fact that you also desire to secure the minimum cost?

A. That is the principal reason governing this method.

Q. In other words, it is the method of construction that will reproduce the plant at the least expense to the investor.

A. Yes, sir. The man who reproduces this property naturally wants to reproduce it at the lowest cost possible. That means he must reproduce it as quickly as possible.

Q. So in determining these questions you put yourself in the position of a man investigating his own money and trying to do it economically?

A. Who wants to get that money to work.

Q. This gives you an aggregate of $68,023 for this item organization and legal expenses which is shown in your reproduction
771 costs in the letter that opens this report?

A. Yes, sir.

Q. Now the next item in that letter is working capital, and by the index I see that is taken up in detail under Exhibit "B" in this report which is Exhibit No. 20. Now I wish you would explain in the first place what you mean by working capital and the necessity for it and then later where you obtained the information which is contained in Exhibit "B" and the use which you made of it?

A. Working capital is the total of the money tied up in what might be called quick assets necessary in the conduct of the business. For example a company operating a gas plant must at all times carry a stock of raw materials. These represent investment. It must all the time carry a stock of gas consuming appliances like gas ranges and water heaters and stoves. It must always carry a reserve stock of some of the portions of the plant equipment for emergencies, duplicate portions for instance or parts of the plant. It must carry money for the operation of the petty or sundries sales department. It must also have enough money in cash or its equivalent to tide over the period between the production and the actual consumption of gas to the payment by the consumer for that gas. The gas is made and delivered throughout the entire month, but the bill for that gas is not sent out until after the end of the month and the payment is made at a still later period. The money required to pay for all of these items enter- into manufacturing cost must of course be provided in working capital. Then there will be a little in actual cash which the company will have in one form or another and on some few ac-

counts there will be advanced payments necessary from time
772 to time as on insurance. The total of the money tied up in material and supplies and in accounts receivable which cover more than the sales of gas, cover also the sales of appliances, and in cash and in advance accounts I find to be $181,377.29. And the company has some accounts payable and the total of accounts is of course a legitimate deduction from the foregoing total inasmuch as it reduces the net working capital required. I find the accounts payable as of the date of this statement to have been $39,607.29. Leaving net working capital $141,770.00. I used instead of the last figure the round sum of $142,000. Now the working capital must also be provided during the construction of the proposed plant. The man who is about to build this plant or is building it, must from time to time build up the amount of this working capital until it reaches his maximum requirement and during the period prior to the manufacture of gas he will have been paying taxes on that according to the value of his property represented by the additional working capital put in. He will also have been losing the interest upon the money put in for working capital and the amount of these taxes and the amount of that loss of interest I have added to the total working capital of $142,000 and I have arrived at a total working capital of $150,896. These figures as to working capital with the one exception of the item of $142,000 which I use instead of $141,770, I obtained from the company. I had made my own estimates of the amount of working capital required in a case like this and had arrived at $160,000 but when the company's books were shown me I found I was too high and I put it back to exactly what I have
773 here.

Q. Took the actual present working capital in lieu of your estimate of $10,000 higher.

A. Yes, sir.

Q. Just a word to have no possible misunderstanding about interest and taxes during the construction, on this working capital. They are figured in upon the entire working capital during the entire period, but only upon the part that has been invested and for the term that it is invested and not earning?

A. Yes, sir. It is figured in this way. If I am going to invest a thousand dollars through a period of four years and I am going to invest it uniformly I have charged to the construction account the interest on the first thousand dollars for the first year plus the interest on the first and on the second thousand for the second year, plus interest on the first second and third thousand for the third year, plus the interest on the first second, third and fourth thousand for the fourth year excepting in each case that I deduct from that total one half of the interest for the years in which the investment was made, in other words the thousand dollars invested the first year would have been invested in equal portions throughout that year and if the interest rate is six per cent we would have lost only three per cent because we had on the average only one half of the full amount invested. But that thousand dollars invested the first year on the second year is drawing six per cent if that was the rate accepted. The

first year it only was a rate of three per cent because it would only be one half in use.

Q. Now the next matter which you take up is the matter
774 shown here in Exhibit "C" under the heading "Engineering, etc." I wish you would explain what is covered by these items?

A. Under Exhibit "C" in my report I have covered the items of engineering and supervision and casualty liability and of omissions and contingencies. The items of engineering and supervision I have placed at five per cent of the net construction costs of equipment covered. This figure of five per cent is very often exceeded in engineering work it being not infrequent to find large contracts in which the fee for engineering and supervision will run from ten to fifteen per cent. The item of casualty liability I have placed at two per cent of the net construction cost of equipment covered. The items of omission and contingencies I have placed at eight per cent. The total of these three foregoing figures is fifteen per cent and the fifteen per cent I have added to all of the net construction costs of physical equipment with the exception of real estate.

Q. And that is the reason why this does not appear as a separate item in this letter because it is included in the other items.

A. Yes, sir. It appears with the total.

Q. Now your casualty liability is intended to cover what sort of expenses in connection with the reconstruction of the plant?

A. The insurance of employés and of property against casualty of any kind.

Q. Such as personal injuries and things of that kind?

A. Yes, sir.

Q. What is the item omissions and contingencies intended to cover?

A. It is the universal experience of engineers and perhaps
775 not only of engineers, that a completed structure has required some things that were not foreseen. The man who has built a house has in nearly ever- case found extras at the end of the job. It is the purpose of this allowance of eight per cent to cover all of the omissions that might have been made in the calculations covering the inventory or other features either of physical or the other elements of value of this property and to provide also for such contingencies as must be provided for in being safe on any structure.

COURT: How could there be any in this case?

A. In the cost of reproducing this property?

COURT: That is where you have got the thing completed and got all the items.

A. Well it is not always sure that you have all items. There may have been items omitted from the inventory. I don't suppose that any large items have been omitted but there must certainly have been some omitted. There must certainly in my recalculation or in my calculation of the reproduction of this property there must have been some elements of cost which I have overlooked. There must be some features which are peculiar perhaps to this place that would tend to increase the cost of rebuilding with which I am not familiar.

A. Digressing for a moment and recurring to your illustration of the house, before you start to build a house, what is the fact as to whether plans and specifications show exactly what is to be done?

A. The plans and specifications are supposed to show exactly what is to be done in such detail as they may represent, but they never do cover everything entering into the property.

776 Q. If we were reproducing this particular plant knowing just exactly what the plant is, taking for illustration storms and strikes and things of that kind, can you tell in advance what expense may be incurred on that account?

A. No, sir; we must provide for not only strikes in local labor unions, but must provide for strikes at each of the sources of supply of raw material or on the transportation system, there may be a strike at the brick yards, or lumber yards or in the pipe works. All of these represent expense legitimately added to the cost of building the plant which must be provided for in any conservative estimate of the cost of reproduction.

Q. Now I wish you would state Mr. Lea whether or not in making estimates of the cost of work whether they are for replacing properties or not it is customary to include this item and what amount is usually allowed on work of this kind.

A. It is customary to include an allowance for omissions and contingencies in all estimates of the probable cost of any engineering work contemplated. The amount allowed for this purpose of course varies with the character of the work as well as with the various factors in a given kind of work and it is not infrequent to find omissions and contingencies represented by an allowance of more than fifteen per cent. I have allowed eight.

Q. Now the next item which is referred to in your letter to Mr. Haines of June 24th accompanying Exhibit 20 is real estate and I find that in the aggregate at the commencement of the first page of Exhibit "D" to this Exhibit 20.

A. You will find the details under Exhibit "F."

Q. Turning to Exhibit "GF" there is first a statement or description of the real estate. I wish you would state whether or

777 not that was taken by you from the inventory?

A. I have no values whatever taken from the inventory.

Q. I didn't ask you about the values. (Question read.)

A. The description of the property was taken from the inventory. I am not sure that the arrangement or parcels in the inventory is exactly as I have it because I re-wrote what was given me in the inventory, but I believe this is verbatim as shown in the inventory.

Q. That is found commencing at page 12 of Exhibit 15 is it not?

A. Yes, sir, the same thing.

Q. Now pas-ing over this description of the real estate to the value of it, on what did you obtain this value, have you knowledge as to real estate values in Des Moines?

A. I have no expert knowledge as to real estate values in Des Moines. I have made some investigation as to values here. I did get a general impression as to the relative value and I found some property considerably higher than I had expected to find, for in-

stance I didn't suppose there was any property worth $6,000 a foot out here, but I found some. I placed on this property a figure of $1.00 per square foot in the absence of any expert information as to the value of the various pieces because I find that throughout the country properties located approximately as these are worth a dollar a square foot and I submit it only for what it is worth, I don't claim to be a real estate expert.

Q. You have an item here add ten per cent for difficulty of obtaining contiguous lots at this time. That item I suppose explains itself?

A. I believe so.

778 Q. Here is the next item headed for sinking test holes, grading and filling?

A. To the cost of real estate I added no percentage to cover the statement of engineer, I added a lump sum of $5,000 to cover the expense of sinking test holes in the various parts of the ground under consideration and of grading and filling making a total net consideration cost of the property of $220,993. From my construction chart or reproduction chart I find the tax during construction would be $10,470 and that the loss of interest during construction would be $28,192 making a total reproduction value of $259,655 for the real estate of the company.

Q. And that is the amount for which you have carried into the letter that I refer to?

A. Yes, sir.

Q. Now then turning to the next Exhibit "G" you have covered there the buildings?

A. Yes, sir.

Q. And the first building referred to is the purifying house?

A. Yes, sir.

Q. Now will you turn to the inventory Exhibit 15 at page 16, and state whether the description of this building *is* shown in that volume of the inventory is the description which you have adopted in your report under the heading purifying house.

Q. Now will you turn to Exhibit 16 and tell us which plate there is a photograph. Look at plate 7 of this house we are talking about now. Plate 7 is a photograph of the purifying house.

Q. Sketch No. 3 gives the location of this purifying house at the corner of the property at east First and Market streets does it not?

A. Yes, sir.

779 Q. And what sketches in Exhibit 16 are sketches that relate to this building?

A. Sketch No. 4 shows the plans and elevations of this same building. Sketch No. 5 shows further plans and elevations. Sketch No. 6 shows foundations of this same building. Sketch No. 7 shows the arrangement of the purifying room connections and foundation for the piers. Sketch No. 8 shows some of the details for the lift for the purifier connections in this same building.

Q. Digressing for a moment, you spoke of this iron, shavings, and so on that you used in this house. This house is where that process is carried on.

A. Yes, sir; purifying house.

Q. I notice something marked oxide conveyor on sketch No. 5.

A. This iron, rust, oxide and shavings when the three are fixed up we call the mixture it makes still oxide and this conveyor lifts that mixture of iron rust and shavings.

Q. You talk about four tanks there as I recall it or purifying boxes?

A. Yes, sir.

Q. And about using three and keeping one fresh all the time and connecting it up when necessary. In that connection what is indicated by this round figure in the middle of the sketch on the left hand side of sketch No. 7 called center seal?

A. The center seal is a value having many compartments. It is a circular cast iron valve approximating four feet or four feet six in diameter, amde thurteen feet deep and cut in two in the middle and there are various cast iron compartments in it and to the outside of the lower half is made a number of pipe connections and through these connections and channels or divisions within the casing
780 due to the fact that the top half is movable on the lower half you may change the direction of the floe of the gas. The gas will come into that center seal and if you have the top cap placed in one position the gas will go through certain boxes in a certain rotation. Swing that top cap around in another position and it will go another way through some other boxes. The idea being there are four boxes, one of which was idle, while the other three are in use. If No. 3 shows any little trace of impurity then No. 4 is put on and No. 1 left idle and the gas is then turned through these other boxes. The center seal is then swung around so it causes the gas to go through boxes 2, 3 and 4, box one being idle.

Q. These plans show an elevator in this plate, what do they show that for?

A. The elevator is used for lifting oxide from the ground to the upper floor of the purifying house in boxes. When this oxide is out of the purifiers it may be in the basement being revived, that is called reviving oxide when the air is getting back to it and releasing the sulphur. The oxide may be out in the yard some distance away from the building. If out in the yard it is loaded in a buggy, in a two or three wheeled cart and it is quicker and more economical to put these carts on an elevator and lift the whole business up and dump the buggy into the purifying box that to throw it into a conveyor.

Q. Then the tops of these boxes are higher than the surface of the ground or ground level?

A. Yes, sir. The bottom of them are above the ground by several feet. They are eight feet ten above the floor line, the bottoms of the boxes.

781 Q. How high up is the top of these boxes where you do this work?

A. About eight feet.

Q. From the bottom of the box?

A. Seven feet to the top of the box. Fifteen feet ten inches from the top of the ground floor to the top of the box.

Q. For what purpose is this hoisting apparatus that is referred to in Sketch No. 8 used?

A. These cast iron purifiers are provided with steel or wrought iron covers. The boxes being twenty feet square and being only one cover it is too big for men to lift and a mechanical device has to be provided. This is simply a device for the multiplying of the power of the man so he can by turning a hand wheel lift a very heavy covering and then work it away from the boxes so a man could get into that box to empty it.

Q. Turning to Exhibit 20, under purifying house, have you in detail here the figures making up your estimate of the reproduction cost of this building?

A. Yes, sir.

Q. Or the net construction cost?

A. Yes, sir. The net construction cost figures appear here. That is to say the net construction cost figures which enter the reproduction cost are here.

Q. You begin with clearing site?

A. Yes, sir.

Q. What is next?

A. Excavation.

Q. And next?

A. Foundations.

Q. In order to connect this up with the inventory will you turn to page 18 of Exhibit 15 and state whether these items which
782 are shown on the page of Exhibit 20 to which we have been referring are the same items, that is clearing site and staking out, excavating foundation forms foundation back filling walls etc., that appear on pages 18, 19, 20, 21, 22, 23, 24 of Exhibit 15?

A. I have in my report covered each of the items shown in Exhibit 15, but not in the same way nor in the same detail. I have summarized.

Q. Now I notice here something we might as well call attention to now. On page 18, under foundations I see that Exhibit 15 gives the number of brick as 3990 while you have it as 3056. I will ask you whether in what purported to be a copy of the inventory furnished to you there were a number of these variances in amounts such as this?

A. There were some such variances, yes, sir.

Q. You followed the copy which you received?

A. Yes, sir.

Q. And are they of enough consequence to make any difference in your ultimate result?

A. No, I looked into that to make sure and I found they were of no consequence whatever, in giving the brick there would be once in awhile a few brick difference on them but not enough to affect the value in any case.

Q. Here is an item I want to ask you about. Under foundations you have concrete costs, that is concrete foundation.

A. Yes, sir.

Q. Then you have forms. What do you mean by forms?

A. The boards which are placed in a position to hold the concrete as it is being poured.

Q. Now you say so many brick at $16.50. What do you mean by that?

783 A. $16.50 per thousand brick laid.

Q. That covers brick and other material and labor?

A. Yes, sir.

Q. Brick in place. That is under the foundation. Now in walls I notice an item 235,742 brick at $17.00. That is the brick in the walls, as I understand it?

A. Yes, sir.

COURT: I don't understand that $16.50 per thousand for brick in the wall in the foundation and for brick in the walls, how much?

A. $17.00 per thousand.

Q. I might ask you if you will explain why you made that difference of 50 cents?

A. I estimated the cost 50 cents more per thousand to lay brick in the wall than to lay them in a foundation of that kind.

Q. Then your scaffolding is scaffolding for what purpose?

A. For the masons to tsand on and hod carrier to walk on.

Q. The next item is what?

A. Roof.

Q. And you sub divide that into what?

A. Into the various parts composing the roof which is cover or slate, wood supports for the slate, some iron trusses and sheathing.

Q. In each instance your price is for the material in place?

A. Yes, sir. These prices under net construction cost cover only the material and the labor.

COURT: What do you figure that amount of brick in the foundation?

A. 3056.

784 Mr. GUERNSEY: You see that is less by 944 brick than the amount of the inventory.

A. The figure in the inventory you have is somewhat higher than the figure in mine, there is some error. My figure is 3056. To get that you would take 3056 and multiply by the cost of the brick per thousand and arrive at the net construction cost chargeable to brick, multiply 3,056 by 16.50.

Q. Taking as an illustration, this item of 3056 brick at $16.50 a thousand, $50.00 if that is multiplied out it gives some odd cents over $50?

A. Yes, sir. If the odd cents are fifty or more, I run them up to the next dollar. If they are less than 50 cents I drop them and keep the figures in even dollars rather than cents.

Q. And what is the fact as to whether that is customary in making estimates?

A. That is customary in estimates of this kind.

COURT: Did you give the brick in the walls?
A. Yes, sir; 235,742.
COURT: What is the total amount of that?
A. $4,008.00 for the brick.
Q. Take for example the concrete in the foundation there, you have how many cubic yards?
A. Thirty nine.
Q. Why did you reduce it to yards?
A. Because it is customary to estimate concrete work by the cubic yard.
Q. You estimated that in that place at how much per cubic yard?
A. $8.00 with the forms extra at $2.00 per yard.
COURT: What is the total amount?
785 A. $312.
Q. The next item you have here is monitors?
A. Yes, sir.
Q. How much did you estimate the squares of slate at?
A. 6.55 squares at $14.50 a square.
Q. Aggregating what?
A. $95.00.
Q. The next item is 898 feet B. M., while you have 892 feet wood supports?
A. The 892 feet B. M. means 892 feet board measure of lumber and knowing that these were the wood supports in the monitors I just put them in 892 feet wood supports.
Q. You put them in at what price?
A. $41.00 per thousand in place.
Q. Covering labor and material?
A. Yes, sir.
Q. Amounting to how much?
A. $37.00.
Q. The next item I find in the inventory is iron, 134 pounds.
A. That iron is also for supports. I put that in at six cents per pound a total of $8.00 in place.
Q. Now the next item in your report Exhibit 20 and in the first volume of the inventory Exhibit 15, is sheathing. You put that in at what?
A. 655 square feet, that is also 655 feet board measure in this case at $40.
Q. Amounting to what?
A. $27.00.
Q. The next item I find in the inventory and in your report is flashing tin, 144 square feet. What did you estimate that
786 and what is the aggregate for that?
A. 14 cents per square foot in place or a total of $20.
Q. Now the next thing in the inventory and in your report, Exhibit 20 is floors, the first sub item being concrete 2752 square feet in your report and 2753 in the inventory. At what did you estimate this concrete.
A. This is concrete floor and that is customarily estimated on the

square foot basis. I put that in at 12 cents per square foot or an aggregate of $331.

Q. That is the floor complete?

A. That is the floor comp-ete with labor and material.

Q. The next item is wood. That means wood what?

A. That is wood in the floor. I estimate that at nine cents per square foot.

Q. How many square feet?

A. 1169 square feet.

Q. What are the dollars?

A. Aggregate $106.

Q. Your next item is concrete partitions and the next item in the inventory is partition for holding oxide concrete. I wish you would tell what that is in the first place.

A. The ground floor of the purifying house is made of cement. the purifying boxes are about eight feet above this floor and these boxes are provided with chutes in the bottoms of them so that the oxide may be dropped to the floor below for revivication. Now this reviving of oxide is brought about more quickly if the material be moist or wet. This ground floor of the purifying house therefore has some concrete partitions, they are very low, about 12 or 16 inches
I should judge, dividing the floor into sections so you may
787 have water in one part of this floor without having water in the others while you are treating oxide.

Q. You have how much at what price and what is the aggregate?

A. The concrete partisions three cubic yards at $10.00 $30.00. I might say that the price is up on that kind of work because of the nature of it, the work is small, they are narrow *m*artitions.

Q. Now Mr. Lea, before we pass that item you have estimated that in cubic yards and in the inventory on page 22 it is given in cubic feet, there would be one extra cubic foot there, did you ignore that?

A. I ignored that, I took that as three yards.

Q. Now the next item that I find in the inventory here is forms, 498 feet board measure. How did you estimate the forms?

A. The estimate is based on the volume of concrete. There were three cubic yards of concrete and forms on a job like that cost a great deal more than the previous instance, cost fully $8.00 per cubic yard of concrete. $24 for the forms for these little partitions. In other words forms on a job like that cost almost as much as the concrete.

Q. And your total on account of these forms is how much?

A. $24.00.

Q. Now the next item in the inventory is floor supports 26,932 feet B. M. and in your exhibit 20 supports under the heading floors, 26,932 feet B. M. At what amount did you estimate that and the total?

A. I estimated that lumber at only $26 per thousand which would be about the cost of that, of the lumber itself because there is practically no labor on that stuff.

Q. And what was the total in dollars for that item?

788 A. $701.

Q. Now you have another item, framing and erecting? What is that?

A. That is the preparation for the laying of the ceemnt floor, the timbers used in that and the labor.

Q. And that aggregates how much?

A. $404.

Q. And that is an item that is incidental to the construction of these floors that are referred to on page 22 of Exhibit 15.

A. Yes, sir.

Q. And should go there then?

A. Yes, sir.

Q. Now I notice the next item in the inventory is doors, batten four, 155 square feet. In what form does that appear in your Exhibit 20?

A. Under the word doors 155 square feet batten, 15 cents per foot $24.00.

Q. The words "per foot" do not appear in your exhibit?

A. No, sir. I have 155 feet batten 15 cents.

Q. The next item in the inventory Exhibit 15 is panel, 54 square feet?

A. I have put that door 20 cents per square foot or $11.

Q. What is the next item?

A. That is the labor of placing the doors which I estimate at 5 cents per square foot.

Q. For hanging and things of that kind?

A. Yes, sir; actual labor.

Q. That amounts to how much?

A. $11.00.

Q. That also should go under this item "doors" on page 22?

789 A. Yes, sir.

Q. Now the next item on page 22 of the inventory is windows and it appears in the inventory plain 20 325 square feet?

A. I estimate that windows plain 325 square feet at 50 cents.

COURT: I don't understand this $11.00 hanging the doors.

A. There are two kinds of doors put in and I estimate the work of setting and placing the doors as so much in addition, $11 for hanging these doors, all of the doors covered under that, five doors altogether, four batten and one paneled. $11 for hanging the five doors.

Q. Now the next item in the inventory appears under the head windows continued at the top of page 23, box five, 510 square feet. How does that appear in your exhibit 20, your report?

A. Under the heading wibdows box, 510 square feet at 75 cents, total of $383.

Q. And the next item is fitting and setting of all of the windows box and plain.

A. Yes, sir; at 35 per cent of the cost of the windows making a total of $191.

Q. How do you get at that 35 per cent?

A. That is the customary allowance on the cost of windows for the labor of hanging and placing the windows.

Q. Now the next item page 23 is sills cut stone 34 cubic feet. On your report how is that?

A. Sills cut stone, 34 cubic feet at $1.75 a total of $60.

Q. The next item appearing on page 23 of the inventory is lintels, cut stone 72 cubic feet. That appears under the head of your report, Exhibit 20.

A. Yes, sir.

Q. And you estimate it at what amount?

790 A. Cut stone 72 cubic feet at $1.75 a total of $126.

Q. Iron under the same heading 2,555 pounds?

A. I have iron 2,555 pounds at 4 and one half cents.

Q. Amounting to what in the aggregate?

A. Amounting to $115.

Q. The next item which appears in the inventory on page 23 is brick work, under the head of painting, brick work west and south walls 3,435 square feet?

A. I have painting brick work 3,446 square feet at 6 cents a total of $207. I also have for painting the woodwork 1,790 square feet at nine cents a total of $161.

Q. The next item which appears here in the inventory is pit for pipe, 180 brick.

A. There is a small pit in the floor in which the 180 brick are used. I put them in at $19.00 per thousand or a total of $4.00.

Q. The next item in the inventory is driveqay, 587 brick. How does that appear in your report.

A. Under driveqay 587 brick at $19.00 a total of $11.

Q. What are the brick for in the driveway?

A. This is a small runway from the yard level down to the ground level of the purifying house, a matter of two or three feet drop there. A small brick runway.

Q. Then we have wood floor?

A. There are 18 feet board measure of wood in that little runway and I put that in $41 per thousand or a total of $1.00.

Q. This item in the inventory under floor two inch plank eighteen feet B. M.

A. Yes, sir.

Q. Next to the last item.

A. Yes, sir.

791 Q. The next item in the inventory is brick laid on edge 56 square feet. How does that appear in your report?

A. That appears as brick floor 56 square feet at ten cents, a total of $6.00.

Q. That gives $5.60, nearer six than five?

A. Yes, sir.

Q. Now the next item in the inventory is the first item of page 24 stairs common, three treads, finish including handrail sixteen treads. How did you put that in in your estimate?

A. I put them in together under the heading stairs, nineteen treads at $1.50 erected a total of $29.

Q. Then the next item which appears in the inventory here is brick steps 189 brick.

A. I omitted them in my report.

Q. They did not appear in the list that as given you as I understand it?

A. Yes, they were not in the detail which I had, were omitted.

Q. The next item which appears in the inventory page 24 is platform 162 feet board measure?

A. I have it under platform 162 feet B. M. at $26.

Q. What else have you under that same item?

A. Erection $10.00 I have evidently made a mistake in there, I have got that in $26. I have got a wrong figure there.

Q. What should it be?

A. Should be about $3.50 or $4.00. I have got it $26.

Q. In other words, you put in the full thousand instead of 162 feet?

A. Yes, sir; I have carried over the price of a thousand feet instead of the price of 162 feet, made a mistake. That is $4.21 where I have got $26, I put that in at $4.00 and the *the*
792 erection would be about $2.00 instead of ten. In other words that would reduce the net construction cost of that building as I have it by $30.00. That will take $30.00 off the cost of the building as I have it, the net construction of it.

Q. Now then Mr. Lea, this gives you as what you call the net construction cost of this building how much?

A. $9,507.

Q. Turn back if you please Mr. Lea to Exhibit "E" in your report and tell us how this building we have just referred to is designated under the heading buildings on this Exhibit "E"?

A. Under Exhibit "E" which is a summary of physical equipment and net construction cost this purifying house we have been talking about appears as one of the buildings entering into the total amount of $85,723. The Exhibit "E" shows a total of net construction costs as obtained by taking the total of each of the buildings for example in the construction cost as shown in Exhibit "G" of my report.

Q. Now turn back to Exhibit "D". The first page of that Exhibit, how is this building designated there?

A. Building No. 1, the purifying house shown under the head building No. 1 A. B.

Q. Showing what amount?

A. The first column here is total reproduction cost and for that building that amount is $11,860.

Q. And how do you account for that difference between $9,507 less $30 on account of the error that has been referred to and this total of $11,860.

A. You will find first net construction cost of the building
793 as shown here being the estimate of the labor and material in the entire building that is $9,507 and to that you must add 15 per cent for engineering, casualty liability, omissions and contingencies and supervision during construction. To that amount,

this net construction cost plus engineering you must add taxes during the construction and loss of interest during the construction and the figures thus obtained is the figure shown under total reproduction cost, Exhibit "D" of my report. Take off about $26 from that final figure shown there of $9,432 the present value of that building instead of $9,132 it should be only $9,106.

Q. $11,860 is the total reproduction cost?

A. Yes, sir.

Q. Now taking this $11,860 as the total reproduction cost of this building as it appears on the page of your report headed summary of physical equipment in Exhibit "D" and I find there is a column following it which is headed age in years. In that column you have stated what as to this building.

A. That this building is nineteen years old.

Q. In the next column is the heading assumed life years. What do you mean by that?

A. That is the average life of buildings of that kind.

Q. And that is how long?

A. Fifty years.

Q. Then your next column is what?

A. The per cent condition.

Q. What do you mean by per cent condition?

A. Ratio of the present condition of the building to its original or new condition.

Q. As to this building that is what?

794 A. 77 per cent.

COURT: How did you figure that per cent?

A. The depreciation of a building or anything else does not accrue in a straight line, that is it is not uniform, put up a new house today and at the end of the year the building will have depreciated some, but it won't be noticeable. In other words the loss in value due to depreciation in that building the first year of its life is not nearly as great as the corresponding loss during the ninth year. In other words the loss increases as the age go- on. Now there have been curves platted that shows all that if you want to see it.

COURT: I don't care about that, I just simply wanted to know how you arrive at the 77 per cent.

A. It is because a building depreciates faster as it gets older.

Q. What in your judgment is the present value as you have headed it here of that building standing a-one there?

A. $9,132.

Q. With the correction?

A. With the correction because of the error of my own of $30 in construction costs, makes a final deduction here of about $26.

Q. That would make it what?

A. $9,106.

Q. Now you have on this same page as to this building another column that is headed depreciation annuity on sinking fund basis. What is that?

A. The figures in that column have nothing to do with the determination of the value of the property, but they do have to do

with the future depreciation of the property and consequently
795 with the future operating expenses and I have just included them with the balance of this material so I would not be to the trouble required and lot of extra work of writing it over.

Q. So that $105 which appears in the column just referred to as to this building under consideration represents your judgment as to what?

A. $105 represents the amount of money which must be set aside annually at the give- rate of interest for fifty years having the interest compounded annually to arrive at the reproduction cost of the building at the end of its life. This is not the depreciation per year, this is the depreciation annuity.

Q. You say that the brick that are involved in pilasters and cornices have been included in the brick in the walls at $17 a thousand.

A. Yes, sir.

Q. Here you only put that at $4.25?

A. I have included the number of brick in pilasters and cornice at 25 per cent additional over the rate on the wall brick because it costs 25 per cent more to lay cornice brick than on the wall and that 25 per cent applies only to the number of brick in the pilasters and cornice.

Q. Your estimate of so many brick in the wall at $17.00 includes the brick in the pilasters and cornice. Is that right?

A. Yes, sir.

Q. And because the bricklaying where brick are in pilasters and cornice cost more than straight work in the walls, you add
796 this $4.25 to the number of brick that are used in that way?

A. Yes, sir.

Q. That amounted to how much?

A. $55, the rest of the pilasters.

Q. Pass to the next building which is on the next page of Exhibit "G" of your report. Is that the building that is referred to at page 26 of the inventory fire brick shed building 1 C?

A. Yes, sir.

Q. By what sketches is it shown, turn to No. 9 will you please?

A. Sketch No. 9 shows this same shed.

Q. Now referring first to your description of this fire brick shed that is adopted by you from page 26 of Exhibit 15 is it not or practically?

A. Practically, yes.

Q. And verified by your own examination of the building?

A. Yes, sir.

Q. Now on the next page you have your net construction cost. What is your first item?

A. Clearing of the site.

Q. How much?

A. $2.00.

Q. The next item?

A. Excavation six cubic yards at $1.10 or $7.00.

Q. Returning back to that clearing site and staking out, that is

the first item of page 27 of Exhibit 15 corresponding with your item clearing site, $2.00?

A. Yes, sir.

Q. And then the next item on page 27 excavating six
797 cubic yards is what corresponds with your excavations six cubic yards at $1.10, $7.00 which you just gave?

A. Yes, sir.

Q. The next item I find on page 27 of the inventory Exhibit 15, is foundations, 389 brick in cement mortar, you were twenty or thirt- brick less I see, 24 to be accurate?

A. Yes, I have 365.

Q. You estimate them at how much per thousand?

A. $17.

Q. Aggregating what?

A. $7.00.

Q. The next item shown at page 27 of the inventory is wall, south wall No. 2 corrugated iron 1.2 squares. What is the item corresponding with that?

A. 1.2 corrugated iron at $7.00 total of $9.00.

Q. The next item on page 27 of the inventory is roof, No. 24 corrugated iron 2.63 squares. You have a little less than that 2.47?

A. 2.47 squares corrugated iron at $7.00 total of $18.00.

Q. Then the next item at page 27 of Exhibit 15 the inventory is roof supports iron, 1,311 pounds, how do you have that?

A. I have iron supports 1,311 pounds at six cents total to $79.

Q. The next item in the inventory page 27 is wood, 51 feet B. M.

A. I have wood supports 51 feet board measure at $41 a total of $2.00.

Q. Making the aggregate net construction cost of this fire brick shed building 1 C how much?

A. $124.

Q. Turning to Exhibit "E," how is this fire brick shed building
1 C designated on the first page of your Exhibit D to your
798 report Exhibit 20?

A. Under the head of building No. 1 C.

Q. And you have as its total reproduction cost what amount?

A. $155.

Q. As compared with $124 net construction cost?

A. Yes, sir.

Q. What items make up the difference?

A. Engineering supervision, casualty liability, omissions, contingencies, taxes during construction and loss of interest during construction.

Q. And the age of this building is what as shown by this summray of physical equipment?

A. Eight years.

Q. What is the life assumed for this building?

A. Thirty years.

Q. And what is its present per cent condition?

A. 82.

Q. Under your column headed present value, what in your judgment is the amount that should be given?

A. $127.

Q. Did you compute as to this building depreciation annuity on sinking fund basis in the manner and upon the theory which *wou* stated with reference to building 1 A and B?

A. Yes, sir.

Q. And to what did this amount?

A. $3.00 per year.

Q. Now let's go over to the next building. The next building which you take up is what?

A. Meter, exhauster and wash room, building No. 3.

Q. You first have a historical and descriptive statement?

799 A. Yes, sir.

Q. Is that substantially the same as the statement of like character commencing at page 28 of Exhibit 15 as to this same building?

A. Yes, sir.

Q. I wish you would turn to Exhibit 16 and state whether sketches 11, 12, 13, 14, 15, 16, 17 and 18, relate to this building and its contents?

A. They do.

Q. State whether or not this description and historical matter was verified by you by observation so far as that was practicable by inspection?

A. It was yes, in a general way, it was all verified by me.

Q. Now the first item which I find as to this building in Exhibit 15 is in the inventory is on page 30 clearing site and staking out. That apears in your inventory as what and at what amount?

A. As clearing site in the amount of $20.

Q. Now the next item appearing upon that page in the inventory is excavating foundations 161.28 cubic yards. That appears how in your report and at what price?

A. Under excavation foundations 161.28 cubic yards at $1.10 a total of $1032.

Q. Then the next item appearing on page 30 of Exhibit 15 is cellar excavation or excavations cellar 945.86 cubic yards. How does that appear and what amount in your report Exhibit 20?

A. Under the head excavation cellar 945.86 cubic yards at $1.30 a total of $1.230.

Q. The next item appearing at page 30 of the inventory Exhibit 15 is foundations rubble stone 184.83 perches. How does

800 that appear in your report, Exhibit 20?

A. Under foundations rubble stone 187½ purches at $5.50, a total of $1032.

Q. The next item appearing on page 30, Exhibit 15 is back filling 169 cubic yards. How does that appear in your report Exhibit 20 in connection with this building?

A. Back filling, 169 cubic yards at 6 cents, a total of $102.

Q. The next item appearing at page 30 Exhibit 15 is walls, common brick and pilaster and so on, an aggregate of 117,282 brick,

that appearing on page 32 of the inventory. How does that appear in your report?

A. Under walls 117,278 brick at $17.00, total $1,994.

Q. Now it appears that in this building there were brick in pilasters to the number of 1548. How much additional have you if any added to your estimate on account of the fact that these brick were in pilasters etc., as shown in your report.

A. I have added to the price per thousand of brick laid in the wall 25 per cent of that price to each of the brick laid in pilasters or 1,548 brick at $4.25 making a total of $7.00.

Q. Your report shows pilasters, etc. Does that include cornices as well?

A. Yes, sir.

Q. Now you have a further item in connection with these walls as to scaffolding. Please state what you estimate on that account?

A. This appears without stating the amount the first item of page 33 of the inventory. I include scaffolding at approximately $1.00 per thousand making a total of $118.

801 Q. The next item on page 33 of the inventory just referred to Exhibit 15 is emplacements. That runs on in the inventory to and including the first matter set out on page 34 with an aggregate of 4489 brick. How does that appear in your report and what amount?

A. Under the heading emplacements 4,489 brick at $17 a total of $77.

Q. What do you mean by emplacements?

A. Little brick walls around the grated windows below the ground level.

Q. The next item appearing upon page 34 of Exhibit 15 is water table dressed stone, 140.11 cubic feet. How does that appear on your report and what amount?

A. Water table dressed stone, 140.11 cubic feet at $1.75 a total of $246.

Q. The next item in Exhibit 15, page 34 is window sills cut stone 11.5 cubic feet six sills as per sketch. Now in the first place how does that appear in your report here?

A. Appears as window sills cut stone, 11.5 cubic feet at $1.75 making a total of $21 to which I have added $4.00 per sill because there is some fancy cutting on them making an addition of $24.

Q. I wish you would turn to Exhibit 16 sketch No. 11 and point out to the Master the sketch showing the cut stone work on account of which you make the additional allowance?

A. Sketch No. 11. That spans the window.

Q. Now the next item in the inventory is lintels cut stone 20.68 cubic feet, eight lintels as per sketch. That is page 34 of Exhibit 16. How do you show that?

A. Lintels cut stone 20.68 cubic feet at $1.75 total of $37 to which I have added for rather elaborate cutting of each of these lin-

802 tels $20 per lintel or $160.

Q. What is the fact as to whether there is a sketch of that cutting on sketch 11 of Exhibit 15?

A. Sketch 11 shows a detail of the lintel, the upper right hand corner. Here is the sill I have allowed $4.00 for cutting and I have allowed $20 for cutting that lintel a very elaborate piece of work.

Q. The next item on page 34 of Exhibit 15 is floors. A balcony. What does that A mean?

A. One of the rooms in that building.

Q. A balcony (2 inch concrete on 2 inch plank) 436 square feet concrete two inches thick. How does that appear in your report and at what figures?

A. Under floors A balcony 436 square feet at 14 cents, $61 and 872.12 square feet at 14 cents, a total of $122, the first figure being the balcony and the second the floor proper of room A.

Q. The next item page 34 of Exhibit 16 tim-ers 654 feet board measure?

A. I have that timber 654 feet board measure at $41, total $27.

Q. Then the next item on the said page is A basement (concrete two inches thick) 497 square feet. What do you have for that item?

A. I have it under floors A basement 497 square feet at 8 cents a total of $40.

Q. The next item on page 34 of Exhibit 15 is room B, floor timbers 600 feet board measure?

A. I have B timbers 600.79 board measure at $41 a total of $25.

Q. Turning to page 35 of Exhibit 15, at the top of the
803 page the first item is floor (2 inch concrete on 2 inch plank) 298.71 square feet concrete. How does that appear in your report Exhibit 20, and at what have you estimated it?

A. I have floor 298.71 square feet at 14 cents, a total of $42 and 597.42 square feet at 14 cents a total of $84. Cast iron plate there is a separate item.

Q. Turning back to that floor on page 35 of the inventory, you will notice there is 298.71 square feet concrete and then 298.71 square feet floor. You have 298.71 and then 597.42 square feet in your report. Is there a discrepancy between the two and if so state it, and if not explain the situation?

A. That floor is two inch concrete on plank and the detail I have shows 298.71 and 597.42 square feet.

Q. So that is an instance where there was a discrepancy between the figures furnished you and the inventory?

A. That is one of them.

Q. The floor appears to be two inch concrete on two inch plank. The 298.71 square feet of plank floor two inches would amount to 597.42 at one inch wouldn't it?

A. Yes, sir.

Q. Now is your figures there of fourteen cents per square feet for that wood floor based upon one inch stuff?

A. I would have to look that up Mr. Guernsey, I can't say, I would have to get the detail.

Q. Can you do that now?

A. No, I have it in my room not here.

Q. Will you make a memorandum of that and look it up between

now and tomorrow morning so we may straighten it out as
804 we go along. Now your next item is cast iron plates. That is the item C I plates on page 35 of Exhibit 15 3821 pounds. You estimate it at what?

A. Cast iron plates, 3821 pounds at four cents $153.

Q. Now we have next on page 35 in this Exhibit 15, room C, floor timbers, 486.8 feet board measure.

A. I have C timbers 486.8 feet board measure at $41, total of $21.00.

Q. The next item on Exhibit 15, page 35 is room C, double floor one inch match 322 square feet?

A. I figured that as floor under C, 645 square feet at 8 cents.

Q. And the 645, what is the fact as to whether that is 322 double?

A. That is 322 double. I judge that is what is the case up above but I can't remember it. This entry comes under Room C at 322 square feet, but where a double floor would be equivalent to 644 feet and my figures based on board measure was double the number of square feet.

Q. Your amount for that item is how much in dollars?

A. $52.

Q. The next item on page 35 is basement brick flat, 301.8 square feet? How does that appear in your report?

A. As base floor 391.8 at 11 cents, $34.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

805 Saturday Forenoon Session.

JULY 22, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

HENRY I. LEA, re-called for further direct examination, examined by N. T. Guernsey, Esq., testified as follows:

Q. Now, Mr. Lea, last evening we had two items here about which there was a little uncertainty, you were going to look up; have you looked them up?

A. Yes, sir.

Q. Referring to these two items, Mr. Lea, which was the first one?

A. The floor in room B, building 3. That is a two inch plank on concrete, and the concrete is based at the concrete rate. The floor being two inches thick is double in area; so we doubled that.

Q. So that 597.42 square feet is what you say is correct?

A. Yes, sir.

Q. What is the next item you were going to look up?

A. I believe it was room A, where the same thing occurs.

Q. What did you find as to that?

A. That was also a two inch floor and the area was doubled, because unit parts was based on a one inch floor. My price was based

on a floor *inch* inch thick. This floor was two inches thick, so I doubled the area and used the one inch unit.

Q. Now, passing to room B, floor timbers, 960 feet B. M., how does that appear on page 24 your Exhibit 20?

A. I have it 960 feet B. M., $21, total $40.

Q. The next item, double flooring, 7/8 inch thick, 736 square feet?

A. That appears as flooring 722 square feet. I have
806 doubled that because the floor is double.

—. The next item, room D, basement brick, flat, 602.42 square feet. How does that appear on your Exhibit 20?

—. How does that appear on your Exhibit 20?

A. Basement floor 602.42 square feet, 11 cents, total $67.

Mr. BYERS: What is that item Mr. Guernsey in Exhibit 15, how does the item read there?

Mr. GUERNSEY: Room D, basement, brick, flat 602.42 square feet.

Q. Now, this last item is on page 35. What kind of a floor is this floor in Room D?

A. Inch and seven-eighth.

Q. Now, going to the next page of the inventory, page 36, roof supports. We have room A, wood trusses 509.65 square feet B. M.; how does that appear in your report?

A. Room A, wood trusses 509.65 square feet *N.* M. $21, total $41.

Q. Now, at the top of page 36, exhibit 15, the next item of the inventory appears Room B, inch and a quarter pipe 246 feet. How does that appear in your report?

A. Room B, 246 feet, one and one-half inch pipe, 30 cents, total $74.

Q. Does your inventory read a*nd* inch and a quarter or an inch and a half?

A. It is an inch and a quarter in the inventory. There is practically no difference in the cost of the pipe for a job of that kind; an inch and a half costs practically the same as an inch and a quarter.

Q. The next item on page 36 is Room C, wood trusses 713.51 foot B. M. How does that appear on page 24 of your report Exhibit 20?

A. As room C wood truss 713.51 feet B. M. $41. total $30.

Q. The next item on page 36 of the inventory room D, wood trusses, 1427 feet B. M. How does that appear on page 24 of Exhibit 20?

A. Room D, wood truss 1427 feet B. M. $41. total $59.

807 Q. B. M. means board measure?

A. Yes, sir.

Q. The next item, room D, page 36, on Exhibit 15, rafters 651 feet, B. M. How does that appear in your report?

A. Room D, rafter, 651 feet, B. M. $21. total $27.

Q. The next item on page 36 of Exhibit 15, sheathing 3012.58 square feet. How does that appear in your report?

A. That appears here sheathing, 2977, 5 cents, total $149.

Q. You are a little under what the inventory is?

A. Yes, sir.

Q. Now, the next item on page 36, Exhibit 15, is roof, slate 3012.58 square feet. You have that item how in your report?

A. Slate 29.776 squares, $14.50 total $432.

Q. Here then you have made your estimate on a little less than the actual amount shown by the inventory?

A. Yes, sir.

Q. Now, the next item, page 36, the last one on the page, ventilators, two. How does that appear on your report?

A. As ventilators, two, $9, total $18.

Q. Turning to page 37 of Exhibit 15, the first item is gutters, 197 feet. What do you mean by gutters?

A. The troughs taking the water away from the roof.

Q. They appear how on page 24, exhibit 20?

A. As gutters, 197 feet, 20 cents, total $40.

Q. Now, there it seems to me—it is a trifling matter—that your amount would be $39.40; that is, 197 feet, 3 feet less than 200?

A. Yes, there has evidently been a drop to the dollar below; it should have been $39.40.

Q. The next item is down spouts, 60 feet with trough; how
808 does that appear on page 24 of Exhibit 20?

A. Down spouts 60 feet, 15 cents, total $9.

The MASTER: I see you differ here on the amount of the squares of slate?

A. Yes, I have less than the inventory shows.

Mr. GUERNSEY: As I said yesterday, there are some slight inaccuracies, but that they were so small that it wouldn't be worth while to figure them up.

Q. The next heading on page 37 on the inventory Exhibit 15 is doors, beginning with transom, 163.99 square feet. How does that appear on page 24 of your Exhibit 20?

A. Under doors, panel with transom, 163.99 square feet at 30 cents, total $49.

Q. Now, that is the cost of what?

A. That is the cost of the transoms themselves as delivered on the ground.

Q. You say panel with transom

A. That is panel with transom as delivered.

Q. Is that the transom alone?

A. That is the panel door with the transom.

Q. You separate then the door and placing and fitting of the door?

A. Yes, sir.

Q. What do you estimate the placing and fitting at?

A. Thirty-five per cent of the cost of the door with transom delivered, making a total of $18.

Q. How do you get at the thirty-five per cent?

A. That is commonly accepted as the percentage allowed by con-

tractors as covering the work necessary in placing and fitting doors of that type.

Q. Now, the next item in the inventory is on page 37 and
809 is panel, common, one, 37.53 square feet. How does that appear on page 24 of Exhibit 20?

A. That appears as panel, common, 37.53 square feet, at 25 cents, total $9.

Q. Now the next item is batten, one, on the inventory page 37, 37.53 square feet. How have you that on page 24 of your report?

A. Batten 37.53 square feet, 15 cents, total $6.

Q. And for placing and fittting that door?

A. An addition of 35 per cent, as in the other cases, making $2.

Q. Did I ask you about the placing and fitting of the door above?

A. No, sir.

Q. You added how much?

A. 35 per cent of $9 or $3.

Q. $3 is a trifle under 35 per cent?

A. Yes, sir.

Q. That illustrates how you take an even basis?

A. Yes, sir.

Q. The next thing on page 37 of the inventory is windows, 14, 274.88 square feet; that appears how on page 24, Exhibit 20?

A. Under the head of windows, 274.88, 50 cents, total $137.

Q. And that covers the windows alone?

A. The windows delivered.

Q. And not the placing and fitting?

A. No.

Q. How much have you estimated the placing and fitting?

A. 35 per cent of the cost of the windows, or $48.

Q. You adopt that for the same reason as you did before, because it is a recognized standard of percentage?

A. Yes.

Q. There appears in this inventory on page 37 one boarded
810 window, 21 feet, B. M. What is a boarded window?

A. It is an opening left in the wall meant for a window, boarded up without the window.

Q. How did you estimate that?

A. I have it here, windows boarded, 21 feet B. M. $21, total $1.

Q. The next item on page 37, one stairs, 36 treads, as it appears on Exhibit 15. That appears how in your report?

A. That appears as 36 treads, 50 cents, total $18.

Q. Then on page 38 of Exhibit 15, the first item, platform, 43.73 feet B. M. .068 cubic yards concrete. How does that appear in your report Exhibit 20, page 24.

A. Under the head of platform, 43.73 feet B. M. $41, total $2. .068 cubic yards concrete, $15, total $1.

Q. Now the next item on page 38 of Exhibit 15, steel bracing, 1548.72 pounds. How does that appear on page 25 of your report, Exhibit 20.

A. Under the heading of steel bracing 1548.72 I-beams at 4½ cents, total $70.

Q. The next item is C. I., cast iron, I suppose that means?
A. Yes, sir.
Q. Bracket supports 152 pounds, on page 38 of the inventory. How does that appear in your report?
A. As 152 pounds C. I. brackets 3½ cents, total $5.
Q. The next item on page 38 of Exhibit 15 is railing, room A, one inch piping 76 feet erected. How does that appear in your report on page 25?
A. As railing, 76 feet, one inch pipe, 15 cents, total $11.
Q. I might state generally that where I refer to quantities in the inventory, I refer to Exhibit 15, so that I will not repeat that Exhibit 15 so continuously. The next item on page 38 of the
811 inventory is sumps, room A. What is sump?
A. It is a little pit in the floor or any place else for the collection of water or other liquid which is to be pumped from there to some other point.
Q. It is a low place to which it drains?
A. Yes, sir.
Q. The first thing that appears on page 38 of the inventory, room A, excavation, 2.44 cubic yards. How does that appear in your report?
A. As A excavation, 2.44 cubic yards, $1.10, total $3.
Q. The next item is brick work under sumps 450 bricks. How does that appear on page 25 of your report?
A. 450 brick, $17. total $8.
Q. And the final item under the head of sumps—covers, cast iron, 351.33 pounds. How does that appear on page 25 of your report?
A. As covers 351.33 pounds at 3½ cents, total $12.
Q. Now, the next item, page 38 of the inventory, is painting, 1510 square feet. How does that appear on page 25 of your report?
A. 1510 square feet under painting at 6 cents, total $91.
Q. Then under painting we have 549 square feet, multiplied by two. How does that appear on page 25 of your report?
A. 549 square feet, multiplied by two, 6 cents, total $66.
Q. Now, to stop for a moment; how does that happen to be put in that way; because there happen to be two areas opposite each other corresponding in size?
—. ——.
Q. Then we have the final item on page 38 under painting, 8444 square feet. Where does that appear in your report?
A. Under painting 8444 square feet, 2 cents, total $169.
Q. Why is a part of it two cents and a part of it six cents.
A. It is not the same kind of painting.
Q. What is the difference, do you remember?
812 A. I don't remember the detail; I knew it at the time.
Q. Have you that information—you need not look for it here; have you it here in Des Moines?
A. It can be obtained, yes.

Q. The next item on the inventory, page 38, the last one is photometer room. That is the room where they keep this apparatus for testing the candle power?

A. Yes, sir.

Mr. BYERS: I would suggest that you are doing too much testifying; let the witness do it.

Q. Please describe this room in your own way?

The MASTER: It was described. I remember that distinctly.

Q. Tell what it is, the photometer room?

A. The photometer room is really a portion of the office which has been boarded off for the covering up of the phonometer itself, which has to be operated in a dark room. There are three wooden walls and a brick wall of the building, comprising four walls of this photometer room, and a little frame cover over the top of it with a door leading into it. It is one inch stuff in there; its only purpose is to keep the draft and light away from the standard.

The MASTER: The photometer room, as I understand it, is for the purpose of testing the candle power of the gas?

A. That is all it is for.

Q. The first item appearing at the bottom of page 38 of the inventory, under photometer room, is 223 square feet; that you have how on page 25 of your report?

A. Under photometer room 283 feet B. M. $41. total $12.

Q. Then the next item here in the inventory under photometer room is studding, 112 feet B. M. on top of page 39. Do you
813 have that?

A. That is not in my report.

Q. So that you run over 60 feet of board measure and you have omitted 112 board measure of studding?

A. Yes, sir.

Q. And that is because the memorandum furnished you was over and made this omission?

A. Yes, sir.

Mr. BYERS: Mr. Guernsey you are testifying. That is one thing I am objecting to.

Mr. GUERNSEY: If the witness had not been testifying to this four or five time-, I would not ask leading questions.

Q. Now, then, I wish you would turn to page 39 of the inventory and tell us what you find there as to the item following this studding?

A. Door panel, 16 square feet.

Q. If that item appears on page 25 of your report, will you please point it out there?

A. That appears under photometer room, batten door, 16 square feet 15 cents, total $2.

Q. Will you please turn again to page 39 of the inventory and tell us what is the next item there?

A. Painting, 239 times two, equals 478 square feet.

Q. Will you please state where this item appears on page 25 of your report, Exhibit 20, if it appears there?

A. Under photometer room as painting, 477 square feet, at nine cents, total $43.

Q. Now, will you please again refer back to the inventory and compare the number of feet stated in the inventory with the number of feet stated as to this same item in your report and state
814 whether or not there is any discrepancy and if so, how much?

Mr. Byers: This is objected to for the reason that it is simply asking the witness to state what appears upon the record and what is found in the two exhibits. All of this examination is simply having the witness read the items and compare them with what appears on the other book; it is simply a pure waste of time. And the same objection is made to the other way of doing it; it is a waste of time.

A. The inventory shows 478 square feet of painting. My report shows 477 square feet, one foot less than the inventory.

Q. How does it happen that there is that discrepancy between your report and the inventory?

A. My report was made from the data furnished me some time ago, and the 477 agrees with what was given me at that time.

Q. Now, turn to the next item at page 39 of the inventory, the heading is what?

A. Tool room.

Q. What is the first quantity given there?

A. 66 square feet.

Q. Following that is what item on the inventory?

A. Studding, 42 feet B. M.

Q. State whether or not those two items are grouped together in your report, if so, how they appear there at page 25?

A. These two items appear together in my report under the heading tool room as 108 feet B. M. $41. total $4.

Q. What is the next item on page 39 of the inventory?

A. Door, batten, 16 square feet.

Q. How does that appear on page 25 of your report?

A. Batten door, 16 square feet, 15 cents, $2.

Q. What is the next item on page 39 of the inventory?
815 A. Wire screen, 166 square feet.

Q. How is that item shown on page 25 of your report?

A. Wire screen, 160 square feet, 8 cents, total $13.

Q. What appears next on page 39 of the inventory?

Objected to on part of defendants for the reason that the item shows for itself what it is and the Master can read it just as well as the witness; and it is purely a waste of time.

A. Tool room, room A, 103 square feet.

Q. How does that appear on page 25 of your report.

Same objection as last above made.

A. Under the head of tool room A, 116 feet B. M. $41, total $5.
Q. What appears next at page 39 of the inventory?
A. Studding 51 feet B. M.
Q. How do you estimate that in your report?
A. That has been omitted from my report.
Q. Now what is the next item that appears in the inventory?
A. Room C, 116 square feet.
Q. How does that appear in your report?
A. Room C, 145.05 feet B. M. $41. total $6.
Q. Now what is the next item that appears in the inventory?
A. Studding, 36 feet B. M.
Q. How does that appear in your report?
A. It is omitted.
Q. The next item?
A. Door, swinging, slat, one (8.47 square feet).
Q. At what amount?
A. There is no amount in the inventory. That appears in my report dorr, 8.47 square feet, 30 cents, total $3.

816 Q. Now, how do you explain these discrepancies between the inventory and your report?

A. Some of them are doubtless errors due to copying the originals. There were several copies made up and some of them are due to the difference in the scheme of calculating from the original dimensions. Some of the brick, for instance, is figured on a cubic foot basis and some is figured on the wall area.

Q. Now, these items give you what as to the net construction cost of the building which we have been considering, being the building #3, meter, exhauster and wash room?

Objected to for the reason that the item appears and can just as well be read by anyone.

A. $7,793.

Q. Now, I wish you would turn back to page 5 of your report, exhibit D, and tell us what you estimated as to the cost of this building after the addition to the amount you have just stated of the expenses on account of interest, taxes, and over-head charges, such as engineering, etc.

A. The total reproduction cost of the building #3, I estimated as $9,718.

Q. Now, what was the age of this building as shown in the column age and year.

A. Thirty-five years.

Q. And the assumed life of this building?

A. Fifty years.

Q. And the per cent condition?

Objected to on part of the defendants as being incompetent and improper examination, for the reason that this table has been fully explained by this witness, and it is just as evident to the Master and counsel, the age of the building and per cent as any other item in the total and is simply a waste of time and padding the record

817 with an expensive witness.

A. Sixty-six.

Q. Now, then, Mr. Lea, taking into account the total reproduction cost of this building, its age, the life of such buildings, and its per cent condition, what in your judgment is the present value, as you use the term in this Exhibit D of this building?

Objected to for the same reason as to the former question; the item appears in figures that are intelligible and can be easily read; this is simply having this witness take the time of this Master and counsel to read what anybody can read from his inventory and which has already been fully explained.

A. $6,414.

Q. And have you computed as to this building the depreciation annuity on a sinking fund basis?

A. Yes, sir.

Q. It is what?

Same objection as last above made.

A. $86.00.

Q. Now, returning to page 26 of your report, first referring to this historical and descriptive matter which is contained on page 26 of your report, I wish you would state to the Master whether that is substantially the matter contained on pages 43 and 44 of the inventory and what attempts if any you made to verify its correctness.

A. The description I have given of the building #4 is practically the same as appears on pages 43 and 44 of the inventory, and I have satisfied myself as to the substantial accuracy of each statement therein by personal inspection of the building.

Q. Will you please turn to Exhibit 16, sketch 19, 20, 21,
818 22, 23 and 24 and state whether or not these sketches are sketches or plans relating to this building and its contents?

A. They are.

Q. Now, then, Mr. Lea, turning to page 45 of the inventory, I find the first item there as to this building, clearing site and staking out. How does that appear and how have you estimated it on page 27 of your report Exhibit 20?

Mr. BYERS: For the purpose of the record, I inquire whether you intend to offer in evidence Exhibit 20.

Mr. GUERNSEY: After I have identified it and have shown that the items contained in it are correct, I propose to offer it.

Mr. BYERS: I object to this question then as incompetent and immaterial; simply asking this witness to read items which have already been fully identified and fully explained. It is a pure waste of time and an inexcusable padding of the record.

A. That item appears as clearing site at $20.

Q. That is the amount at which you have estimated that item?

A. Yes, sir.

Q. Now, taking the next item, excavation 205 cubic yards, please state where that appears in your report, Exhibit 20, and at what amount you estimated that?

A. It appears as excavation, 205 cubic yards at $1.10, total $226.

Q. Now, at page 45 of the inventory, the next item appearing is foundations, rubble stone, aggregating 99½ perches; how do you have that?

A. I have it as foundations, rubble stone, 2,600 cubic feet, equal 105 perches, $5.50, total $578.00.

Q. Now, I see here there is a slight discrepancy; I wish you
819 would state whether in each instance, when these discrepancies appear they are explained by what you said about those heretofore appearing?

A. Yes, sir.

Q. The next item appearing on page 45 is back filling, 63 cubic yards. Please state what you estimated that and where that appears on page 27 of your report.

A. It appears here, back filling, 63 cubic yards, 60 cents, total $38.

The MASTER: Suppose you would ask him here a general question as to these matters.

Mr. GUERNSEY: That was the course I intended to pursue until I found you were checking each item. Let me see if I understand what your honor has in mind.

The MASTER: Ask him to give an itemized valuation.

Q. Now taking the balance of the items shown in the inventory as to this building, will you please state in detail how you have estimated those items, commencing with the walls and running to the end of the building, as the results of these estimates appear in your report.

A. Under the head of walls, I have 127,715 brick at $17, total $2,171. Extra for pilasters and cornices, 8,900 brick, $4.25, total $38.

Mr. BYERS: If it is proper for me to make a suggestion, I don't think anybody here is anxious to take up unnecessary time. Of course it will take a long time for the witness to read what is in these books. It seems to me if the witness was simply asked if the figures and items appearing here in Exhibit 20 under retort, generator, engine and blower house are his valuations placed upon the items that appear in Exhibit 15——

820 Mr. GUERNSEY: That is satisfactory to us, except as there may appear some special item we might want to ask about.

The MASTER: It is a little out of the order, but I don't see why it won't work here.

Mr. BYERS: We will only examine him upon such matters as we feel there would be some change in the figures.

Q. Now, then, Mr. Lea, taking this report, Exhibit 20, at pages 27 and 28, have you estimated the net construction cost, as you use that phrase, of each item in this building as it appeared in what purported to be a copy of the inventory furnished to you and are the figures which you set down here your estimate of that cost?

A. I have covered each of the items as given me originally and all of the figures showing the valuations in this report are my own figures.

The MASTER: Are there any discrepancies between that and the inventory?

Mr. GUERNSEY: I can not tell you; but I can say this, your honor, we will go through and we will furnish a list of those discrepancies; if my recollection is correct the gross sum is something like $14.

Q. In the third line from the bottom of the page you have 6 lintels as per sketch, $20. The reference to the sketch is for what?

A. The sketch shows the *the* cutting of the lintel.

Q. Whether it is elaborate or not?

A. Yes, sir.

Q. Now, turning back, Mr. Lea to page 5 and building 4 as it appears there, I wish you would state what was your estimate of the total reproduction cost, including your net construction cost,
821 as you have stated it, and the additional items which you said must be added to it, for this building?

A. I have building #4, total reproduction cost $6,300.

Q. That is your estimate?

A. Yes, sir.

Q. What was the age of this building?

A. 35 years.

Q. And the prospective life of the building?

A. 50 years.

Q. And its per cent condition?

A. 66.

Q. What then was our estimate of the present value, as you use that term of this building?

A. $4,158.00.

Q. And what was your estimate of the amount of the depreciation annuity on a sinking fund basis which should be set aside each year on account of it?

A. $56.

Q. Turn to building 5 on page 29 of your report.

The MASTER: I see your items here are $5050 and you have here $6300.

A. The $5050 is the total cost of labor and material entering into the building; to that total you must add for casualty liability, omissions and contingencies, taxes during construction and loss of interest during construction a certain amount which brings that total up to what I show here, $6300.

Mr. BYERS: As I understand that, that is the 15 per cent you passed over here, and the other items appear over here in Exhibit J?

A. Yes, sir.

822 The MASTER: Then you add $500 for taxes and loss of interest?

A. Yes, sir.

Mr. BYERS: Then the difference is between $5300 and something and the taxes and interest?

A. Yes, sir.

Mr. BYERS: And you get at that by some process?

A. Yes, sir, that is fully shown in Exhibit J.

Q. You will first take $5050 and you would add that 15 per cent

on account of the contingent items we have spoken of; after doing that, the tax and interest through construction are computed on each amount?

A. Yes, sir.

Q. And the aggregate, including the taxes and interest during construction is the item appearing on page 5 as your total reproduction cost?

A. Yes, sir.

Q. Now, turning to page 29 of Exhibit 20, building 5, please state whether or not the historical and descriptive matter there shown was adopted by you from page 53 of the inventory after such verification of its statements as you were able to give it?

A. It was so taken.

Q. Now, turning again to Exhibit 16 and looking at sketch 25 and 26; I will ask you whether these sketches, 25 and 26, refer to the building now under consideration?

A. They do.

Q. Now this building is called coal shed, scrubber and condenser room. What part of the process of manufacturing gas is carried on in this room?

A. In one portion of this roo mare located the scrubbers
823 and con*con*densers and two 6 foot 6 water gas sets; the balance of the room is the coal shed proper.

Q. What is the fact as to whether this scrubbing process is carried on in the apparatus that you describe as having wood or stone or something in it and the water running through it?

A. Yes, sir; the same thing.

Q. I will call your attention to plate 3 in the inventory, exhibit 16, state whether the building on the left of the figures 1876 appearing in front of it is the building to which you refer?

A. The building is the lean-to of that building.

Q. On the left hand side?

A. Yes, sir.

Q. Now, Mr. Lea, returning to your report, I wish you would state whether or page 30 of this report you have set out by items your estimate of what you have defined as the net construction cost of this building, covering the items involved in its construction as they appeared on the inventory?

A. I have.

Q. And your gross estimate or your estimate of the gross amount of this net construction cost is what?

A. $3,009.00.

Q. Now turning back to page 5 of Exhibit D, what is your estimate of the total reproduction cost of this building, #5, including in addition to the net construction cost all incidental items that you refer to, taxes and interest lost during construction?

A. $3,754.00.

Q. What is the age of this building?

A. 35 years.

Q. And the assumed life of this building?

A. 50 years.

824 Q. The per cent condition of this building?
A. Sixty-six.
Q. And what is your estimate of what you designate as its present value?
A. $2,478.00.
Q. And what amount would it be necessary to set aside on account of the depreciation annuity on sinking fund basis for this building?
A. $33.00.
Q. Each year?
A. Each year; that is an annuity.
Q. Turn to page 31 of your Exhibit 20, and also please refer to page 59 of Exhibit 15 and state whether or not the discriptive matter which you show upon page 31 was adopted from page 59 in Exhibit 15, after such verification as you were able to give it?
A. Building #6 A and B, yes sir. My description is practically the description give- and has been verified by me.
Q. Turning to Exhibit 16, I wish you would state whether sketches #28, #29, #30, #31, #32, #33 and #34 relate to this building?
A. Yes, sir, they do.
Q. Now, then I wish you would turn to the photograph which appears as plate 17 and state whether or not that is a photograph of this building, Mr. Lea?
A. Yes.
Q. Now, then, Mr. Lea, please turn to page 32 and state whether or not the items shown on this page are your estimate of the net construction cost of the various items shown as to this building on pages 60 and the following pages of the inventory, Exhibit 15, not including the apparatus or the foundation for the apparatus, or
825 what pertains to the apparatus.
A. Yes, sir; they are.
Q. In order to make this a little more definite, will you state whether or not the items you refer-ed to end on and including page 72 of the inventory?
A. No, sir; the items I have covered in my total net construction cost of building A and B, end at the bottom of page 65 of the inventory.
Q. Now, then, what was your estimate, aggregate, of the net construction cost of this building?
A. $6,853.00.
Q. Turning back now to page 5 of your Exhibit 20, please state what your estimate of the total reproduction cost of this building is?
A. $8,550.00.
Q. What is the age of this building?
A. Nine years.
Q. Its assumed life?
A. Fifty years?
Q. And its per cent condition?
A. Seventy-eight.
Q. Taking these matters into account, what is your estimate as to

the present value of this building, as you use that designation in this report?

A. $6,669.00.

Q. And what in your judgment is the depreciation annuity on a sinking fund basis, which should be set aside on account of this building.

A. $76.00.

826 Q. Turning to page 33 of your report, Mr. Lea, and also to page 68 of Exhibit 15, please state whether or not the descriptive matter shown by you on page 33 was adopted by you from the page referred to in the inventory, after such verification as you were able to give it?

A. It was.

Q. Now, then, referring to page 34 of your report, I wish you would state whether or not the items there set out, are the items showing your estimate of the net construction cost of the various items with reference to this building designated as 6-C boiler house extension, set out on pages 69 and 70 of Exhibit 15.

A. Yes, sir, they are.

Q. Does it also include what is set out on pages 71 and 72 of Exhibit 15?

A. It includes all items covering the building which run over to 71 and 72.

Q. What did you estimate the aggregate net construction cost of this building?

A. $1,354.00.

Q. Turning again to page 5 where this building is designated as 6-C, will you please state what you estimated as the total reproduction cost of this building?

A. $1,689.00.

Q. What was the age of the building?

A. Three years.

Q. What the assumed life of the building?

A. Forty years.

Q. I notice that is less than some of the other buildings?

A. It is a different type of construction.

Q. What is the present per cent condition?

A. Ninety-eight.

827 Q. Now, state what your estimate was, taking these factors into account of the present value, as you use that term, of this building 6-C?

A. $1,655.00.

Q. Will you please state what the depreciation annuity on a sinking fund basis is on account of this building?

A. $22.00.

Q. State whether or not sketch 33 and 34 are sketches which refer to this building—I mean of course sketches of that number in Exhibit 16?

A. They are.

Q. Now then the next building which you took up, as I understand your report, is the generator house, building #7, page 35;

now Mr. Lea, referring to page 35 of your report and to the historical descriptive matter that is there contained and also referring to page 74 of Exhibit 15, I wish you would state whether or not the descriptive matter on page 35 of your report is adopted by you from page 74 of Exhibit 15, with such verification as you have been able to give it?

A. The descriptive matter I have in my report is taken from the descriptive matter on pages 74 and 75 of Exhibit 15, with personal verification in a general way.

Q. I wish you would turn to Exhibit 16 and state whether or not the drawings indicated there as sketches 35, 36, 37 and 38 refer to this building we have just been mentioning and designate the generator house building #7?

A. Yes, sir, they do.

Q. I show you these photographs which are marked plates 11 and 12, in Exhibit 16, and ask you whether or not they are photographs of this building now under consideration?

828 A. They are.

Q. You have got here in your description metal louvres, what are they?

A. Ventilator on the top of the roof.

Q. Now, I wish you would turn to pages 79 and 82, inclusive, of Exhibit 15, and would state whether or not the estimate set out on pages 36 and 37 of your report, Exhibit 20, is a detailed estimate, itemized as shown, of the various items entering into the construction of this building shown by the pages I just referred to in Exhibit 15?

A. The items I have shown correspond with those on pages 76.

Q. Did I get the wrong page?

A. Yes, sir.

Q. 76 to what inclusive?

A. To 82 inclusive. And my total net construction cost is $15,336.

Q. That is your estimate of the total net construction cost of that building?

A. Yes, sir.

Q. Turn back to page 5 of this report, will you please state your estimate of the total reproduction cost of this building #7?

A. $19,131.00.

Q. What is the age of this building?

A. Two years.

Q. What is the assumed life of this building?

A. Fifty years.

Q. And its per cent condition?

A. Ninety-nine per cent.

Q. Taking these factors into account, and any other factors that are material, what is your judgment as to the present value of this building?

829 A. $18,940.00.

Mr. Byers: In these questions you assume all this; those are the figures that appear there.

Mr. Guernsey: I suppose he is going to say this; I have to verify these figures as his estimate.

Mr. BYERS: I was just wondering if you asked him this as independent testimony.

Mr. GUERNSEY: Of course this is simply verifying it. He would have to have a memorandum. He couldn't carry those figures in his mind.

Q. Now, then, what is the depreciation annuity on a sinking fund basis for this building?

A. $170.00.

Q. Will you turn now to the next building on page 38 of Exhibit 20, have you lumped these two buildings?

A. No, sir; except in the descriptive matter.

Q. Take first then the coal shed building 8–A and your descriptive matter as to that; where did you get it and what did you do in the way of verifying it?

A. The descriptive matter I have given for building 8–A is practically the same as appears in the inventory on page 84, and has been checked by my personal inspection of the building.

Q. Covering this same matter now in connection with building 8–B did you obtain the descriptive matter as to that as it appears on page 38 of your report in the same manner?

A. In the same manner, but the descriptive matter of 8–B is on page 88.

Q. Referring to Exhibit 16 I will ask you to state whether the sketch 39 is a sketch of Building 8–A and the sketch #40 of building 8–*b*?

A. The sketch #39 shows the plan and elevation of build-
830 ing 8–A; #40 shows the plan and elevation of building 8–B.

Q. Now turning to page 39 of your report I wish you would state whether that page contains your estimate of the net construction cost of the various items entering into this building 8–A as they appear on pages 85 and 86 of the inventory Exhibit 15?

A. Those items are shown in my report.

Q. And what is your estimate of the total net construction cost of this building?

A. $6,974.00.

Q. Turning now again to page 5 of building 8–A, what is your estimate of the total reproduction cost of this building?

A. $8,700.00.

Q. What is the age of the building?

A. Fifteen years.

Q. What is the assumed life of the building?

A. Twenty years.

Q. And what is the per cent condition of the building?

A. Thirty-four.

Q. What in your opinion is the present value of this building?

A. $2,958.00.

Q. And what amount is the depreciation annuity on the sinking fund basis on account of this building?

A. $308.00.

Q. Now, digressing for a moment, to avoid any possible misun-

derstanding—in this total, the assumed life includes the total life what has already elapsed as well as the future?

A. The assumed life is the total average life of buildings of that character.

Q. In other words it is not the life you assumed for the future?

A. No, sir.

831 Q. Now, turning to this next building, run-way and coal shed, building 8–B, at page 40 of your report, and turning also to pages 89 and 90 of Exhibit 15, please state whether upon page 40 you have shown your estimate in detail of the net construction cost of the various items as shown on the said pages, 89 and 90, going into this building?

A. I have.

Q. And what is the total cost of this building as estimated by you and shown on page 40?

A. $440.00, the net construction cost.

Q. Turning now to page 5 and to this same building, 8–B, please state what in your judgment the total reproduction cost of this building is?

A. $549.00.

Q. What is its age?

A. Ten years.

Q. The assumed life?

A. Twenty years.

Q. The per cent condition?

A. Sixty.

Q. And what in your judgment is its present value?

A. $329.00.

Q. What is the amount of the depreciation annuity on a sinking fund basis on account of this building?

A. Nineteen dollars.

Q. Now, referring to this photograph, plate 13, can you point out this structure on this photograph?

A. This coal shed and this run-way.

Q. This run-way between the coal shed and the other building, the generator.

832 A. Yes, sir; #7 generator house.

Q. Now, the next building we take up here is building #10, the smith and carpenter shops and store room, page 41 of your report. Where did you obtain the descriptive matter and to what extent did you verify it?

A. It was obtained from pages 92 and 93 of the inventory and verified by my personal examination of the building as to its substantial accuracy.

Q. Now, referring to volume two of the inventory, Exhibit 16, I wish you would state whether sketches 41, 42, 43, and 44 relate to this same building #10?

A. They do.

Q. And turning to the same volume of the inventory, please state whether the photograph indicated as plates 5 and 6 show this building?

A. Yes, sir they do.

Q. Now, referring to pages 42 and 43 of your report, Exhibit 20, I wish you would state whether those pages contain your estimate by items of the various matters going into this building #10, commencing with page 94 of the inventory, Exhibit 15, and continuing to and including page 102 of Exhibit 15?

A. My report covers the items mentioned.

Q. Now, in running down page 42 I see one item at least that is not very clear to me—fire, Und. Standard.

A. That means fire underwriters standard type of building.

Q. Then there are some fire doors in the building?

A. Yes, sir.

Q. What in your judgment is the total net construction cost of this building?

A. $8,221.00.

833 Q. Turning back to page 5, building 10, please state what in your judgment the total reproduction cost of this building is?

A. $10,255.00.

Q. What is the age of the building?

A. Thirty-five years.

Q. The assumed life?

A. Fifty years.

Q. Its per cent condition?

A. Sixty-six.

Q. Considering these matters, in making your estimate, what is the present value of this building?

A. $6,768.00.

Q. And what is the depreciation annuity on a sinking fund basis on account of this building?

A. $91.00.

At this time, 11:15 A. M. an adjournment was taken until 9:30 A. M., July 25th, 1911.

834 Tuesday Forenoon Session.

JULY 25, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

HENRY I. LEA, re-called on part of complainant for further direct examination, examined by N. T. Guernsey, Esq., testified as follows:

Q. Now, Mr. Lea, turn to page 44 of your report, this building is shown by sketch 45 in Exhibit 16, is it not?

A. Yes, sir.

Q. And the descriptive matter you took from page 104 of Exhibit 15, after verification by yourself, as far as you can verify it?

A. Yes, sir.

Q. Now, then, on page 45, please state whether or not you show on your estimate of what you call net construction cost of this building all items and the aggregate and what the aggregate is?

A. The items are shown and the aggregate is $210.

Q. Now I wish you would look again at Exhibit 16 and see whether plate 19 is a picture of this little building?

A. Yes, sir.

Q. Now, turning to page 5, under Exhibit D, you have the total reproduction cost of this building estimated, have you not, at how much?

A. $263.00.

Q. And its age is what?

A. Two years.

Q. And its life?

A. Fifty years.

Q. And the per cent condition?

835 A. Ninety-eight.

Q. And what do you call the present value?

A. $258.

Q. And what is the depreciation annuity on a sinking fund basis?

A. Two dollars.

Q. Now, turning to page 46 of your inventory, I will ask you whether sketch 46 in Exhibit 16 is the sketch showing this building?

A. It is.

Q. Turning now to photographs indicated by plates 9 and 10 in Exhibit 16, please state whether or not the building referred to is the brick building that appears in the foreground in plate 9 and in front of the holder in plate 10?

A. This building does so appear.

Q. Referring to page 107 of Exhibit 15, please state whether or not the descriptive matter which appears on page 46 of your Exhibit 20 is adopted by you from Exhibit 15 after such verification as you were able to give it?

A. It is.

Q. Now, turning to page 47 of your report Exhibit 20, Mr. Lea, please state whether or not upon this page there appears the detailed estimate of the net construction cost of this building number 12, and also the aggregate, and what in your judgment this net construction cost is.

A. The detailed estimates do appear in my report and my estimate is $880. of this building.

Q. This $880. is your net construction cost, your estimate of what that would be?

A. Yes, sir.

Q. Turning back again to page 5, Mr. Lea, #12, what in your opinion is the total reproduction cost of this building?

836 A. $1,098.

Q. What is its age?

A. One year.

Q. And its life?

A. Fifty years.

Q. And its per cent condition?

A. Ninety-nine.

Q. And its present value?
A. $1,087.00.
Q. What is the depreciation annuity on a sinking fund basis?
A. Ten dollars.
Q. Now turning to page 48 of your report, we have oil pump house building 13; I will ask you whether sketch 47 in Exhibit 16 shows this house?
A. It does.
Q. Now will you turn to plate 20 and state whether or not this is the brick building that appears just to the left of the oil tanks there?
A. Yes, sir; it is.
Q. And referring to Exhibit 15 at page 112, please state whether or not the description which you show at page 48 is adopted from this page of Exhibit 15, with the verification you have been able to give to it?
A. It is.
Q. Turning to page 49 of your report, Exhibit 20, please state whether your estimate of the net construction cost of this building, #13, is as to the items and aggregate as shown on that page, and what the aggregate is?
A. The items are shown on that page and the aggregate is $229.00.
Q. Now, referring to page 5 of your report, please state
837 what in your judgment the total reproduction cost of this building #13 is?
A. $285.00.
Q. What is its age?
A. Four years.
Q. And its assumed life?
A. Fifty years.
Q. Its per cent condition?
A. Ninety-six.
Q. And its present value?
A. $274.00.
Q. The depreciation annuity on a sinking fund basis?
A. Three dollars.
Q. Now referring to page 50 of your report, I wish you would state whether sketches 48, 49 and 50 in Exhibit 16 relate to the meter house, building #14, referred to on the page of your report just mentioned?
A. They do.
Q. Now will you look at plate 23 in Exhibit 16 and state whether or not that is a photograph of this building?
A. It is.
Q. This is called a meter house; is this for the storage of ordinary meters or for some special meter, if so, what?
A. This building is only for the purpose of housing the large meter through which all the gas or the major portion of the gas supplying the city may be passed; the large station meter through which we register the amount of gas sent through the streets, is in this building.
The MASTER: It send- the gas to the city?

A. Yes, sir; it is fourteen feet in diameter.

Q. This building, as I understood somebody the other day,
838 the meter practically fills this building?

A. Yes, sir.

Q. Now, I wish you would refer to page 116 of Exhibit 15 in the inventory and state whether or not the description which you have on page 50 of your report, Exhibit 20, is adopted from this page 116, and whether you have verified it so far as you have been able to do so?

A. I have verified the description and have adopted it from Exhibit 15 practically as given.

Q. Now, please state, Mr. Lea, whether page 51 of your report, Exhibit 20, sets out your estimate of the net construction cost of this building #14, giving it by items and also the aggregate?

A. My report does show the items and the aggregate. The aggregate is $1,576.00, the net construction cost of building number 14.

Q. Turning to page 5 of your report, please state what is the total reproduction cost of this building in your judgment, being building number 14.

A. $1,966.00.

Q. What is its age?

A. Two years.

Q. And its life?

A. Fifty years.

Q. And its per cent condition?

A. Ninety-eight.

Q. And the present value?

A. $1,927.00.

Q. What is the depreciation annuity on a sinking fund basis?

A. Seven dollars.

Q. Turning to page 52 of your report, please state whether
839 sketches 51 and 52 in Exhibit 16 relate to this building?

A. They do.

Q. Also state whether the photograph plate 24, shows this building in the foreground?

A. It does, yes sir.

Q. Now, referring to Exhibit 15, page 121, please state whether or not the description shown at page 52 of your report has been adopted from this page 121 with such verification as you have been able to give it?

A. It is.

Q. Now, taking page 53 of your report, Exhibit 20, please state whether that shows your estimate of the net construction cost of this building, number 15, the stable?

A. It does.

Q. By items and the aggregate?

A. It shows it by items; and the aggregate is $2,266.

Q. Now, turning to page 5 of your report, building 15, please state the total reproduction cost of this building?

A. $2,827.

Q. What is its age?
A. Twenty years.
Q. The assumed life?
A. Twenty years.
Q. Its per cent condition?
A. Twenty-five.
Q. Its present value?
A. $707.
Q. What is the depreciation annuity on a sinking fund basis?
A. One hundred dollars.

Q. Now, referring to the next building mentioned in your
840 report page 54, boiler house building number 16, refers to this building?

A. They do.
Q. State whether or not the photograph plate 27 in Exhibit 16 also shows this building?
A. Yes, it does.
Q. Now, referring again to page 54 of your report, please state whether the descriptive matter there set out is adopted by you from page 126 of Exhibit 15, and whether it was verified by you so far as you were able to verify it?
A. My description was adopted from the inventory and was verified by me.
Q. Now, referring to page 55 of your report, please state whether or not that contains your estimate of the net construction cost of this boiler house building #16.
A. It does.
Q. By items and the aggregate?
A. It does. The aggregate is $983.
Q. Turning back now to page 5 of your report, please state the total reproduction cost of this building, what in your judgment is the total reproduction cost?
A. $1,226.
Q. And its age?
A. Five years.
Q. Its life?
A. Thirty years.
Q. And its per cent condition?
A. Ninety.
Q. Its present value?
A. $1,104.

Q. Its depreciation annuity on a sinking fund basis?
841 A. Twenty-six dollars.

Q. Turn to page 56 of your report, please state whether sketch 55 of Exhibit 16 is a sketch showing this building #17, fire brick storage?
A. It is.
Q. Please state whether or not your description on this page is adopted from page 130 of the inventory with such verification as you have been able to give it?
A. It is.

Q. Please state whether or not page 57 of your report Exhibit 20 is an estimate in detail of the aggregate and your estimate in detail and aggregate of the net construction cost of this fire brick storage house, building 17?

A. It is.

Q. What is the aggregate amount?

A. The aggregate is $132.

Q. Turning to page 5 of your report, please state what in your judgment is the total reproduction cost of this building #17?

A. $164.

Q. And its age?

A. Six years.

Q. Its life?

A. Twenty years.

Q. Its per cent condition?

A. Seventy-nine per cent.

Q. And its present value?

A. $120.

Q. And the depreciation annuity on a sinking fund basis?

A. Six dollars.

Q. Turning to page 58 of your report, fire hose building,
842 please state whether sketch 60 in Exhibit 16 refers to this building?

A. It does.

Q. Also please state whether the descriptive matter which you have there is adopted by you from page 132 of Exhibit 15 with such verification as you have been able to give it?

A. It is.

Q. Please state whether page 59 of your report is your estimate of the next construction cost of this building, in detail and in the aggregate and what that aggregate is?

A. That is my estimate; the aggregate is $34.

Q. Turning back to page 5 of your report, what is the total net reproduction cost of this building?

A. $42.

Q. Its age?

A. Six years.

Q. Its life?

A. Twenty years.

Q. Its per cent condition?

A. Seventy-nine per cent.

Q. Its present value?

A. $33.

Q. Its depreciation annuity on a sinking fund basis?

A. Two dollars.

Q. Now turning to page 60 of your report—coke shed, building 53, please state whether sketch 65 in Exhibit 16 is of this building?

A. It is.

Q. Also please state whether the descriptive matter found on page 60 of your report is adopted by you from page 134 of Exhibit 15, with such verification as you were able to give it?

A. It is.

843 Q. Also please state whether page 61 of your report is your estimate and detailed aggregate of the net construction cost of this building and what that aggregate is?

A. This is my estimate, and the aggregate is $584.

Q. Turning now to page 5 of your report, please state the total reproduction cost of this building #53, in your judgment?

A. $729.

Q. And its age?

A. Twenty four years.

Q. Its assumed life?

A. Twenty years.

Q. Its per cent condition?

A. Twenty five.

Q. Its present value?

A. $182.

Q. The depreciation annuity on a sinking fun- basis?

A. $26.

Q. Now, I see this building apparently, by your report has been dead four years?

A. It has actually lived four years longer than the average life of that type of building, but it has been ruled that any building or machine in use has a minimum service value of about twenty-five per cent.

Q. Now, the next thing on page 62 of your report is coke rack building 54; please state whether sketch 56 in Exhibit 16 relates to this building?

A. It does.

Q. Referring to the descriptive matter which you have here, please state whether or not it is adopted by you from page 154 of Exhibit 15 with such verification as you have been able to give it?

844 A. It is.

Q. State whether or not page 63 of your report Exhibit 20, shows your estimate of the cost of this building in detail and in the aggregate and what that aggregate is?

A. This is my estimate of the net construction cost in detail and aggregate. The aggregate is $74.

Q. Now, turning to page 5, what in your judgment is the total reproduction cost of this building, #54?

A. Ninety-two dollars.

Q. And its age?

A. Four years.

Q. Its assumed life?

A. Twenty years.

Q. Its per cent condition?

A. Eighty-seven.

Q. Its present value?

A. $80.

Q. Its depreciation annuity on a sinking fund basis?

A. Three dollars.

Q. Now, passing to page 63½ of your inventory—oil barrel store

house, building 55; please state whether sketch 122 of Exhibit 16 relates to this house?

A. It does.

Q. Also please state whether your descriptive matter on page 63½ is adopted by you from the description of this same building as it appears on page 195 of Exhibit 15 with such verification as you have been able to give it?

A. It is.

Q. Turning to page 64 of your report, Exhibit 20; please state whether this page contains in detail and in the aggregate
845 your estimate of the net construction cost of this building #55?

A. It does.

Q. What is that aggregate?

A. Ninety-four dollars.

Q. What is the total reproduction cost in your judgment of this building and as shown on page 5 of your report Exhibit 20?

A. The total reproduction cost is $117.

Q. And the age?

A. Five years.

Q. Its life?

A. Twenty years.

Q. Its per cent condition?

A. Eighty-one.

Q. Its present value?

A. Ninety-five dollars.

Q. Its depreciation annuity on a sinking fund basis?

A. Four dollars.

Q. The next item in your report is on page 65, Des Moines Gas office; now that descriptive matter you obtained where?

A. In general from the description given in the inventory and from an examination of the office itself.

Q. Now, on page 66 of your report you have what, as to the west side office?

A. I have an estimate in total of the fixtures and fittings of the office.

Q. How is that estimate made?

A. That was arrived at through approximately finding the total of the various contracts concerned in the refitting of this office.

Q. And it was based then upon the cost as ascertained from these contracts?

846 A. Yes, sir.

Q. What have you as the total reproduction cost for this item on page 5 of your inventory?

A. $17,464.00.

Q. What is its age?

A. One year.

Q. Its assumed life?

A. Twenty years.

Q. Its per cent condition?

A. Ninety-seven per cent.

Q. Its present value?
A. $16,940.
Q. Its depreciation annuity on a sinking fund basis?
A. $618.00.
The MASTER: What item is that on page 67?
Mr. GUERNSEY: It is on page 66, that $14,000 on his report.
Q. This inventory of office furniture and fixtures involved here is found on page 239 to 243, except the last few lines of page 243.
A. That detail was not in the copy of the inventory supplied to me; and there is a good deal of material in the detailed list which I have not considered in my report.
Q. Not included in your report?
A. Not included in my figures.
Q. Turning to Exhibit 16, sketches 118, 119, 120 and 121, all refer to this office and the fixtures, do they not?
A. Yes, sir.
Q. Now, returning to Exhibit D to your report, Exhibit 20, I find that under your total reproduction cost you have for buildings $106,934. State whether or not that is where you obtained
847 the same item in your letter of June 24, 1911, preceding this report, which summarizes the buildings and the reproduction cost—$106,934.
A. The reproduction cost given under the head of building on the first page, or the letter to my report is taken from this summary of physical equipment.
Q. Following this item, on the same line, buildings, present value, $82,445.
A. That appeared in the letter, and in my report is also taken from this Exhibit D, summary of physical equipment.
Q. This $82,445 which appears in the letter, is the footing of the column of the present value of the buildings in Exhibit D, page 5 of your report?
A. Yes, sir.
Q. Now, you next take up what in your report?
A. Works equipment.
Q. Now, turning to page 67—in the first place, do you treat works equipment in the same way you treat buildings, by ascertaining first the net construction cost and then the total cost of reproduction, and then depreciation and present value, etc.
A. Yes, sir. But they are not treated in the same detail, because works equipment is composed of machinery which is ordinarily bought from contractors in lump figures. You do not buy a pulley and a shaft and make a machine. You buy a machine as a whole, instead of buying different parts through different parties.
Q. In buying a machine you do not buy the parts erecting the machine?
A. Yes, sir. So the figures given are the contractors figures you would expect to find in Des Moines at this time.
Q. Turn to page 67 of your report, I find first, building 1, A and

B and under that certain machinery or apparatus or equip-
848 ment, to use your word, specified; then I find building 3 with apparatus specified. Now, please state generally, Mr. Lea, whether in making this estimate of the net construction cost of the works equipment you have included under the heading of each building the equipment in that building?

A. I have, together with the foundations for the equipment in that building.

Q. I was going to ask you whether you also included what was incidental to the equipment, such as foundations and perhaps other matters?

A. I have.

Q. Now, then, referring to building one, A and B, you have first what?

A. One steam hydraulic elevator, 8 feet by 8 feet, platform, installed in 1893, net construction cost $29.

Q. In the first place can you tell us, where with reference to this building we shall find in Exhibit 15 of the inventory a description of the contents of the building?

A. You will find it immediately following the description of the building in Exhibit 15.

Mr. GUERNSEY: Does your honor care to have me check back in Exhibit 15?

The MASTER: No.

Q. You will find this, if you turn to building 1, A-B, Exhibit 15, page 25, we first have the building itself. Then commencing at page 25, right after the building, you will find a heading, Contents Purifying House, Building 1, A-B, apparatus, steam hydraulic elevator, etc., and then the piping, and that is arranged, as I understand it, Mr. Lea, in this same manner throughout the inventory?

A. I have the same items as appear in the inventory, practically the same as those excepting in the details; but I have not the
849 same arrangement in my report.

Q. I mean the arrangement in the inventory is to follow each building by the apparatus or equipment of the building?

A. Yes, sir.

Q. Now, that steam hydraulic elevator, what is that for?

A. That is for lifting buggies of oxide to the charging floor of the purifying house.

Q. Now, did you carry that item over to Exhibit D?

A. Yes, sir.

Q. On page 5, what did you make the total reproduction cost?

A. $352.

Q. What the age?

A. Eighteen years.

Q. The assumed life?

A. Thirty years.

Q. The per cent condition?

A. Fifty-two.

Q. The present value?

A. $183.

Q. Depreciation annuity on a sinking fund basis?
A. Seven dollars.
Q. Now, your next item here is 4 cast iron purifying boxes, 7 feet by 20 feet by 20 feet; these are the boxes which you have already described?
A. Yes, sir; the purifying boxes.
Q. What in your judgment is their net construction cost?
A. $19,600.
Q. Turning to page 6 of your Exhibit 20, the first item on that page please state the total reproduction cost of those boxes?
A. $23,784.
850 Q. What is their age?
A. Six years.
Q. The assumed life?
A. Thirty years.
Q. The per cent condition?
A. Eighty-seven.
Q. The present value?
A. $20,692.
Q. The depreciation annuity on a sinking fund basis?
A. Five hundred dollars.
Q. Your next item is what?
A. One Link Belt Engineering Company oxide conveyor and 5 inch and 6 inch vertical engine installed in 1905, net construction cost $1050.
Q. What is that thing?
A. That is a little conveyor made of a pair of chains carrying steel buckets which dip down into a boot, sort of surface floor, into which you dump your oxide, and carry it overhead into the spout that delivers it to the purifying boxes, and the engine drives the chain carrying the buckets.
Q. Now, what in your judgment is the total reproduction cost of this as shown by your report?
A. The total reproduction cost is $1,275.
Q. What is its age?
A. Six years.
Q. Its life?
A. Sixteen years.
Q. Its per cent condition?
A. Seventy.
Q. Its present value?
A. $892.
851 Q. Its depreciation annuity on a sinking fund basis.
A. $66.
The MASTER: What does C. I. Mean?
A. Cast iron.
Q. What is your next item?
A. 327 feet and 6 inches of 16 inch cast iron pipe at 4½ cents a pound, net construction cost, $1597.
Q. What is that pipe for?

A. That is the pipe required in making connections to and from these purifiers within the purifying house.

Q. Turning to page 6, please state the total reproduction cost of this item.

A. $1939.

Q. What is the age?

A. Six years.

Q. The life?

A. Fifty years.

Q. Present per cent condition?

A. Ninety-five.

Q. The present value?

A. $1842.

Q. The depreciating annuity on a sinking fund basis?

A. $17.

Q. Now that covers the apparatus in that building?

A. Yes, sir.

Q. Now, turning to the next building on page 67, building 3, I notice you have grouped items there; for instance, you group four items making $1635. Please state on what theory you done that and why you done that?

852 A. I have grouped the first four items under building #3, because they all have to do with the cost of the same foundations; they are items entering into the cost of foundations, and they would have to appear together for that reason. The following four items I have grouped together because they are all of practically the same age and they practically have the same rate of depreciation, and to reduce the amount of figuring I have classed them as one group. It does not effect the result in any way and saves a lot of time.

Q. In other words, we can take one item from page 67 over to page 6 and figure it on one item there instead of four?

A. Yes, sir.

Q. Now, Mr. Lea, stopping for a moment, I wish you would turn to the photograph, plate #4, and state whether that is a photograph of the interior of part of this building showing part of this machinery or equipment?

A. This is the interior view of building #3.

Q. Please state whether this aggregate of $1,635. shown on page 67 of your report, Exhibit 20, is your estimate of the net construction cost of the foundations, including the items which make up this aggregate?

A. It is.

Q. These are the foundations for the equipment?

A. Yes, sir; the machinery.

Q. Then that item, coming to page 6 of your report, is called what?

A. Foundations.

Q. What is the total reproduction cost of those items?

A. $1,984.

Q. What is the age?

A. Ten years.
853 Q. The life?
A. Twenty-five years.
Q. The per cent condition?
A. Sixty-nine.
Q. The present value?
A. $1,369.
Q. The depreciation annuity on a sinking fund basis?
A. Fifty-one dollars.
Q. Now please state whether or not, turning back to page 67, the $1,360, is in your judgment the net reproduction cost of the photometers there mentioned and the pentane lamp?
A. It is.
Q. What is a pantane lamp?
A. It is a special form of oil lamp, you might say that is used in standardizing means in the photometer.
Q. It is the one you referred to when you talked about this standardizing last week?
A. Yes, sir.
Q. Turning to page 6 of your report, Exhibit 20, please state under what head the total reproduction cost of this item is given?
A. Under building 3, heading photometer, etc., total reproduction cost $1,650.
Q. What is the age?
A. Eleven years.
Q. And life?
A. Fifteen years.
Q. The per cent condition?
A. Thirty-three years.
Q. The present value?
A. $545.
854 Q. The depreciation annuity on a sinking fund basis?
A. $86.
Q. Now, taking your next group item $737. please state whether that is in your judgment the net construction cost of the various pieces of apparatus or equipment that are grouped there to make this amount?
A. It is. Now this group was not made a part of the group just above it, because although those items have about the same rate of depreciation, they are all about five years younger.
Q. So that while your rate would have been the same, the age would have been different?
A. Yes, sir. I grouped together those things that have practically the same rate of depreciation and practically the same age.
Q. Now, under this head I notice the C O-2 apparatus, what is that?
A. That is an arrangement of glass tubes and bulbes for determining the carbonic acid gas in the product we are making.
Q. What need do you have for stop watches?
A. We have to use stop watches in making tests of the candle power, because one of the things we must know is the volume of gas

which passes in a given time; we must know exactly the time elapsed during the period of trial.

Q. So that you use stop watches to measure time?

A. Yes, sir.

Q. What is a wet meter?

A. A meter in which registration is effected, not through the action of any bellows, such as on the ordinary consumers' meters, but in which you use a vessel containing water; in this water it revolves, acts something like a wind mill; the gas comes in under the wings and pushes it over all the time and by the time it gets almost
855 over another wing exposes itself, and so on.

Q. What is a hydrometer?

A. A device for testing the gravity of liquids.

Q. What do you need a barometer for?

A. If you want to know the pressure of the atmosphere in making photometric tests.

Q. Your photometric tests are tests made with the photometer for the candle power?

A. Yes, sir.

Q. What is this medicine chest here?

A. That is an emergency kit having a lot of chemicals and bandages that a doctor would ordinarily carry for emergency cases; just for little accidents around the plant, burns or cuts or scalds; so that you can give a man first attention before the doctor gets there if necessary.

Q. What are the sulphide tests?

A. That is a part of the equipment used in the laboratory for making tests of the sulphur compounds in the gas.

Q. You told us what anorsat was, but I have forgotten it?

A. That is a chemical apparatus for determing the carbonic acid gas or carbon monoxide in the gas.

Q. These items you estimate here as $737, and are indicated how under building 3, page 6.

A. Pontane lamps, etc.

Q. What in your judgment is the reproduction cost of these items?

A. $895.

Q. Their age?

A. Six years.

Q. Their life?

A. Ten years.

856 Q. The per cent condition?

A. Forty-two.

Q. The present value?

A. $376.

Q. The depreciation annuity on a sinking fund basis?

A. Seventy-five dollars.

Q. Now, what is your next item?

A. One 8 foot by 8 foot Goodwin meter, Hinman drum and ten inch connections. Net construction cost $2,605.

Q. What is this meter used for?

A. To measure the gas made at the works prior to putting it into the street mains.
Q. Turning to page 6, that is itemized as an 8 foot meter.
A. Yes, sir.
Q. What is its total reproduction cost?
A. $3,161.
Q. What is its age?
A. Nine years.
Q. And assumed life?
A. Thirty years.
Q. Per cent condition?
A. Eighty.
Q. Present value?
A. $2,529.
Q. Depreciation annuity on a sinking fund basis?
A. $66.
Q. What is your next item on page 68?
A. One 8 foot by 7 foot 6 American meter. Net construction cost $2,405.

Mr. BYERS: Does your record show when the meter pre-
857 ceding this was installed?

Mr. GUERNSEY: You can get that inferentially by the age which appears as nine years on page 6.

A. No, sir. I did not get it from the inventory; I got it from inquiry at the works as to about when it was installed.
Q. So that you investigated it on your own account?
A. Yes.
Q. Now, referring again to this 8 foot by 7 foot 6 meter, how does that appear on page 6 under apparatus, building #3?
A. As seven foot, six inch meter.
Q. What is the total reproduction cost of that?
A. $2,918.
Q. Its age?
A. Six years.
Q. Its life?
A. Thirty years.
Q. The per cent condition?
A. Eighty-seven.
Q. The present value?
A. $2,539.
Q. The depreciation annuity on a sinking fund basis?
A. Sixty-one dollars.
Q. Let me ask you a question here. I noticed the present value of one of those meters is $2,529; and the other $2,539, a difference of ten dollars. There is a difference in the depreciation annuity of five dollars; one is 66 and the other 61. What makes that difference?
A. The 7 foot 6 meter, the reproduction cost is $2,918. The 8 foot meter has a reproduction cost of $3,161. The meters have the same life; consequently the depreciation annuity required

858 with a given rate of interest would have to be larger for the 8 foot meter.

Q. Your next item is what?

A. One 16 inch Conley automatic governor, 24 inch connections, installed in 1896; net construction cost $850.

Q. What is that thing?

A. That is a cylindrical cast iron shell in which is floating and inverted cup in the water seal, and that cup floats on the gas pressure as it enters the street mains, as the pressure tends to rise.

Q. I don't believe I myself understand what is meant by the cup floats on the gas pressure.

A. It floats in exactly the same sense as the moving part of a gas holder floats. Its function is to regulate the pressure of gas at its outlet.

The MASTER: It is like an inverted cup?

A. Yes, sir; if the pressure backs up against that cup it lifts a valve below.

Q. Your net construction cost is what?

A. $850.

Q. Now, then, turning to page 6, is the item 16 inch governor, building 3, a corresponding item?

A. Yes, sir.

Q. What is the total reproduction cost?

A. $1,032.

Q. What is the age?

A. Five years.

Q. Its life.

A. Fifty years.

Q. Per cent condition?

A. Eighty-three.

859 Q. Present value?

A. $857.

Q. The depreciation annuity on a sinking fund basis?

A. Nine dollars.

Q. What is your next item on page 68 of your report?

A. One 24 inch Conley Automatic Governor 24 inch connections, installed in 1903; net construction cost $1,650.

Q. Turning to page 6 is this indicated as a 24 inch governor?

A. Yes, sir.

Q. What is your total reproduction cost of that item?

A. $2,002.

Q. What is the age?

A. Eight years.

Q. What is the assumed life?

A. Fifty years.

Q. The per cent condition?

A. Ninety-two.

Q. The present value?

A. $1,842.

Q. Depreciation annuity on a sinking fund basis?

A. Seventeen dollars.

Q. Now, you have grouped some small items here with a three foot six by four foot six safety blow bag. What is that?

A. That is a sort of a seal pot placed in the basement office of the building to provide against any excessive pressure.

Q. Now, then you grouped these items for the same reason you explained before?

A. Yes, sir, that reason applies to all, wherever I group items.

Q. What is your judgment as to the net construction cost of those five items which you have grouped together?

860 A. The net construction cost is $448.

Q. Turning to page 6, how do they appear there?

A. As wash stands, etc.

Q. What is the total reproduction cost in your judgment of those items?

A. $544.

Q. The age?

A. Six years.

Q. Their life?

A. Fifteen years.

Q. The per cent condition?

A. Sixty-eight.

Q. What is the present value?

A. $370.

Q. The depreciation annuity on a sinking fund basis?

A. Five dollars.

Q. Now your next item is #8, Wilbraham W. Green Exhauster, 16 inch connections, etc.

A. Yes.

Q. What is that, what is it for?

A. That is one of the rotary pumps which draws the gas out of the relief holder and pushes it on through the purifier, motor, and into the storage holder.

Q. What in your judgment is the net construction cost of this apparatus?

A. $2,080.

Q. Turning to page 6, does that item appear as #8 exhauster?

A. Yes, sir.

Q. What is the total reproduction cost of that item in your judgment?

A. $2,524.

861 Q. What is the age?

A. Two years.

Q. Its assumed life?

A. Twenty-five years.

Q. The per cent condition?

A. Ninety-five.

Q. Present value?

A. $2,398.

Q. The depreciation annuity on a sinking fund basis?

A. Sixty-five dollars.

Q. Now, you- next item on page 68 is what?

A. One #7 Root's Exhauster, with 16 inch connections, Huntoon

governor, 40 horse power, 10 inch by 9 inch New York Safety Engine, installed 1895.

Q. That is for purposes similar to the other?

A. The same type.

Q. What in your judgment is the net construction cost of that item?

A. $1,687.

Q. Turn to page 6; does that appear as #7 exhauster there, that first item?

A. Yes, sir; the first item.

Q. What in your judgment is the total reproduction cost of that item?

A. $2,047.

Q. What is the age?

A. Sixteen years.

Q. Its life?

A. Twenty-five years.

Q. Its per cent condition?

A. Forty-nine.

Q. Its present value?

A. $1,003.

862 Q. What is the depreciation annuity on a sinking fund basis?

A. Fifty-three dollars.

Q. Now, your next item is another exhauster of exactly the same kind?

A. The same type, kind and size.

Q. And it is made a separate item why?

A. Because it is three years older.

Q. Now, then, what is the net construction cost of the second #7 Root's Exhauster?

A. The same as the first, $1,687.

Q. That appears as #7 exhauster, the second item of that designation on page 6?

A. Yes, sir.

Q. What in your judgment is its total reproduction cost?

A. $2,047.

Q. What is its age?

A. Thirteen years.

Q. Its life?

A. Twenty-five.

Q. Its per cent condition?

A. Fifty-eight.

Q. Its present value?

A. $1,187.

Q. Its depreciation annuity on a sinking fund basis?

A. Fifty-three dollars.

Q. What is your next item?

A. Two #5 Wilbraham Green High Pressure Exhausters, 10 inch connections, installed in 1906.

Q. What in your judgment is the net construction cost of this apparatus?

A. $2,020.

863 Q. Turning to page 6*m*, how does that appear?

A. #5 exhausters.

Q. And the total reproduction cost is what?

A. $2,452.

Q. What is the age?

A. Five years.

Q. Its life?

A. Twenty-five years.

Q. The per cent condition?

A. Eighty-seven.

Q. The present value?

A. $2,133.

Q. The depreciation annuity on a sinking fund basis?

A. $63.

Q. Now, what is your next item there, the last one on page 68?

A. One 3 foot 6 inch diameter by 6 foot 11 inch T. and E., 20 inch connections, installed in 1905.

Q. What in your judgment is the net construction cost of this apparatus?

A. $1,716.

Q. Turn to page 6; that appears there as what?

A. That appears as tar extractor.

Q. What is the total reproduction cost of that item?

A. $2,082.

Q. What is the age?

A. Six years.

Q. Its life?

A. Thirty years.

Q. Its per cent condition?

A. Eighty-seven.

864 Q. The present value?

$1,811.

Q. The depreciation annuity on a sinking fund basis?

A. Forty-four dollars.

Q. Now, you have a number of items here grouped, commencing with 4 foot by 2 foot work bench at the top of page 69; please state what their net construction cost is in your judgment?

A. $384.

Mr. BYERS: Let me make a suggestion. The question you put to the witness is misleading in the record unless it is cleared up; in asking the straight question, what is its net construction cost, that would indicate actual construction cost of these articles, and not his estimate of the cost of construction.

Mr. GUERNSEY: I think the record may show, wherever I asked for the net construction cost or total reproduction cost or present value, I mean the witness' estimate of those various items. It is a little shorter to say, what is the net construction cost, instead of what in your opinion is or was the net construction cost. But that may be shown here in the record. Of course we are only asking for his judgment and not for the actual cost.

The MASTER: This witness testifies from judgment and not as to the actual fact.

Mr. GUERNSEY: Yes, sir; in each instance he is giving his judgment, not the actual cost.

Q. Now, turning to the question what in your judgment is the net construction cost of the items just referred to?

A. $384.

Q. Turning to page 6, do they appear in building 3 under
865 the head of work bench, etc.?

A. Yes, sir.

Q. Now, what is the total reproduction cost in your judgment?

A. $467.

Q. What is the age?

A. Six years.

Q. The life?

A. Fifteen years.

Q. The per cent condition?

A. Sixty-eight.

Q. The present value?

A. $318.

Q. The depreciation annuity on a sinking fund basis?

A. Twenty-four dollars.

Q. Now you have, following the items just referred to, a group of three items, one being a Buffalo duplex fire pump, what is that for?

A. That is a high pressure pump used in case they require fire service.

Q. The other two items grouped here are two other pumps?

A. Yes, sir, water pumps.

Q. What is your judgment as to the net construction cost of the three items just referred to?

A. $798.

Q. Do they appear under the head of pumps, building 3, on page 6 of your report?

A. Yes, sir.

Q. What is your estimate of the total reproduction cost?

A. $969.

Q. Their age is what?

A. Fourteen years.

Q. And the life?

866 A. Twenty years.

Q. And their per cent condition?

A. Forty.

Q. And their present value?

A. $388.

Q. The depreciation annuity on a sinking fund basis?

A. $34.

Q. Now, you have a group of remaining items in this building, and they are what?

A. That is cast iron pipe forming connections to and from the machinery in this room, gas connections.

Q. And what in your judgment is the net construction cost of this pipe?
A. $3,117.
Q. That appears as the last item under building 3 on page 6 as pipe?
A. Yes, sir.
Q. What is the total reproduction cost in your judgment?
A. $3,783.
Q. And the age?
A. Ten years.
Q. And the life?
A. Fifty years.
Q. The per cent condition?
A. Ninety.
Q. And the present value?
A. $3,405.
Q. And the depreciation annuity on a sinking fund basis?
A. $31.
Q. Now, you turn to the next building #4 and what have you estimated as the net construction cost of the foundations for apparatus in that building?
867 A. $482.
Q. And that appears on page 69 of your report?
A. It appears under building #4, my pages are not numbered.
Q. How does this item appear on page 6?
A. Under building #4, foundations.
Q. What is the total reproduction cost in your judgment of that item in your report?
A. $584.
Q. And the age?
A. Twelve years.
Q. And the life?
A. Fifteen years.
Q. The per cent condition?
A. Twenty-six.
Q. The present value?
—. $152.
Q. The depreciation annuity on a sinking fund basis?
A. Thirty dollars.
Q. Now, you have a group following the item just referred to—two engines and countershaft and belting and two blowers; what are those engines used for?
A. To operate the blowers and to provide blast for the water gas sets.
Q. And the blowers are the blowers you just referred to?
A. No, they are another type of blower.
Q. What is your judgment of the net construction cost of the two engines, shafting and blowers, you grouped near the bottom of page 69.
A. $1,125.
Q. This appears on page 6 under building 4, engines, etc.?
A. Yes, sir.

868 Q. What is the total reproduction cost in your judgment of those items?
A. $1,365.
Q. What is their age?
A. Twelve years.
Q. Their life?
A. Fifteen years.
Q. Their per cent condition?
A. Twenty-six.
Q. Their present value?
A. $355.
Q. The depreciation annuity on a sinking fund basis?
A. $71.
Q. The last item on page 69 is what?
A. Two 6 foot by 6 foot by 6 foot U. G. I. water gas sets, installed in 1899; net construction cost $11,791.
Q. U. G. I. means what?
A. United Gas Improvement Company.
Q. Why did you put that in?
A. Because that is a trade name of a standard water gas set all over the world.
Q. These sets belong to that type?
A. Yes, sir.
Q. These water gas sets include what?
A. In my figure here they include the generators, carburetors, super-heaters, condensers and scrubbers. I use the term sets, not water gas plants.
Q. The sets include four machines you mentioned which you described in describing this process?
A. Yes, sir.

869 Q. Now, then, turning to page 6, these appear under the head or as the item of water gas sets building 4?
A. Yes, sir.
Q. And the total reproduction cost in your judgment is what?
A. $14,308.
Q. And the age?
A. Twelve years.
Q. Their life?
A. Thirty years.
Q. The per cent condition?
A. Seventy.
Q. The present value?
A. $10,016.
Q. The depreciation annuity on a sinking fund basis?
A. $301.
Q. Now your next item, page 70, is steam hydraulic elevator; what is that for?
A. That is for lifting coke to the charging floor of the water gas room.
Q. By charging floor you mean the floor where the coke is put into the apparatus?
A. Yes, sir.

Q. And that is above the level of the ground, decidedly?
A. Yes, sir.
Q. About how much?
A. About 13 or 14 feet from the basement floor.
Q. What do you mean by basement floor?
A. This floor is a little below yard level. It is really the ground level of this building.
Q. Is it 8 or 10 feet below the ground level?
A. No, it is about three feet.
870 Q. This coke charging buggy, what is that?
A. That is a steel cart in which you carry coke around the place.
Q. What in your judgment is the net construction cost of these two items?
A. $510.
Q. Do they appear as elevators, etc., under building 4 on page 6 of your report?
A. Yes, sir.
Q. What in your judgment is the total reproduction cost of these items?
A. $620.
Q. What is their age?
A. Six years.
Q. Their assumed life?
A. Thirty years.
Q. The per cent condition?
A. Eighty-seven.
Q. The present value?
A. $539.
Q. The depreciation annuity on a sinking fund basis?
A. $13.
Q. Now, then your next item, five half depth benches, sixes; what does that mean?
A. Six retorts for each furnace. They were installed in 1899.
Q. They are an apparatus of what kind?
A. They are settings or furnaces for the manufacture of coal gas.
Q. And they were installed when?
A. In 1899.
Q. What in your judgment is their net construction cost?
A. $10,800.
871 Q. Are they in use now?
A. No, sir.
Q. The only gas they manufacture is water gas?
A. Yes, sir.
Q. They appear under the head of benches on page 6?
A. Yes, sir; building #4.
Q. What in your judgment is their total reproduction cost?
A. $13,106.
Q. What is their age?
A. Twelve years.
Q. Their assumed life?
A. Twenty years.

Q. The per cent condition?
A. Nothing.
Q. What do you estimate their present value?
A. Nothing.
Q. The depreciation annuity?
A. No, sir.
Q. Now, that finishes building 4?
A. Yes, sir.
Q. Now, building #5, that is the coal shed, scrubber and condenser room, I believe; you have estimated a net construction cost of the foundation in your report on page 70, as what?
A. $313.
Q. And the total reproduction cost of the foundation is what?
A. $379.
Q. What is the age?
A. Twelve years.
Q. The life?
A. Thirty years.
872 Q. The per cent condition?
A. Seventy.
Q. The present value?
A. $265.
Q. The depreciation annuity on a sinking fund basis?
A. Eight dollars.
Q. What is the next item in this building?
A. One #12 R. H. switch, 140 feet straight and curved track; one 52 turn table and connections and two roller bearing top charging cars.
Q. What is that, as a matter of fact?
A. That is a little industrial railway running from the boilers out from the steam building into the coal shed and on that run some steel cars.
Q. For handling what?
A. Boiler coal.
Q. In order to handle the coal more economically?
A. Yes.
Q. What is the net construction cost of this?
A. $935.
Q. That is indicated on page 6 of your report as building 5, switches, etc.?
A. Yes, sir.
Q. What in your judgment is the total reproduction cost of that item?
A. $1,134.
Q. What is the age?
A. Six years.
Q. What is the life?
A. Twenty-five years.
Q. The per cent condition?
873 A. Eighty-four.
Q. The present value?

A. $953.
Q. The depreciation annuity on a sinking fund basis?
A. $29.
Q. Now turn to sketch 27, if you will Mr. Lea, this sketch shows the location of that track and a little sketch of the cars?
A. Yes.
Q. Now, the next building, #6, A and B, do you remember what building that is?
A. The boiler and engine room.
Q. And you have grouped the foundation items on page 70 of your report; what did you estimate the net construction cost of those items?
A. $782.
Q. Turning to page 6, these appear as what item?
A. Foundations in building 6.
Q. What in your judgment is their total reproduction cost?
A. $948.
Q. What is their age?
A. Twelve years.
Q. Their assumed life?
A. Twenty years.
Q. Their per cent condition?
A. Fifty-one.
Q. The present value?
A. $483.
Q. The depreciation annuity on a sinking fund basis?
A. $34.
The MASTER: What is your depreciation annuity figured on, on the present value?
874 A. It is figured on the reproduction value.
The MASTER: Not on the present value?
A. No; nor on the present life left; it is figured on the reproduction cost new and on the full life. One would tend to bring it up and the other bring it down; so that they are both necessary to be fair.
Q. Now, then your next item is what?
A. Two 8 foot 6 diameter by 22 feet condensers, 20 inch connections.
Q. What are condensers?
A. They are cylindrical steel shells containing a lot of cubes; their purpose is to cool the gas by causing the gas to go on one side of the tube with water on the other.
Q. That is what you described as a tubular boiler?
A. A boiler on end.
Q. What in your judgment is the net construction cost of this item?
A. $5,074.
Q. That appears as an item as condensers on page 6, building 6?
A. Yes, sir.
Q. What is the total reproduction cost of this item?
A. $6,157.

Q. What is its age?
A. Six years.
Q. The assumed life?
A. Thirty years.
Q. The per cent condition?
A. Eighty.
Q. The present value?
A. $5,357.
Q. The depreciation annuity on a sinking fund basis?
A. $129.

875 Q. Now you next have several items grouped, what are they?

A. Two 55 horse power engines, one lot lubricators, double belting, two extra heavy blowers, making a net construction cost of $3,022.

Q. On page 6 those items appear in building 6 as engines etc.?
A. Yes, sir.
Q. What do you say is the reproduction cost of those items?
A. $3,667.
Q. What is the age?
A. Eleven years?
Q. Assumed life?
A. Fifteen years.
Q. Per cent condition?
A. Thirty-three.
Q. Present value?
A. $1,210.
Q. Depreciation annuity on a sinking fund basis?
A. $190.
Q. Now you have two items grouped following this?

A. 135 feet 20 inch cast iron pipe; 32 feet 16 inch cast iron pipe. The word pipe is left out, but that would mean pipe to any gas man.

Q. Now, then, your $1,068 is what?

A. The net construction cost of the large gas pipe leading to and from the condensers in this room.

Q. Turning to page 6, that appears as the item pipe in building 6.
A. Yes, sir.
Q. What is the total reproduction cost of that pipe?
A. $1,295.
Q. Its age?

876 A. Eight years.

Q. Its life?
A. Fifty years.
Q. The per cent condition?
A. Ninety-two.
Q. The present value?
A. $1,191.
Q. The depreciation annuity on a sinking fund basis?
A. Eleven dollars.
Q. Now does this photograph plate 18, in Exhibit 16, show some

of these connections you have just been talking about in the interior view here?

A. Yes, sir; it does.

Q. Now, turn to page 71; you have grouped a number of items on the top of that page, commencing with boiler—well, they seem to be boiler stacks and feed pumps; things that pertain to the boiler?

A. Yes, sir.

Q. What in your judgment is their net construction cost?

A. $5,605.

Q. Turning now to page 6, are they represented by the last item on that page as boilers etc.?

A. Yes, sir.

Q. What in your judgment is the total reproduction cost of those items?

A. $6,801.

Q. What is their age?

A. Eleven years.

Q. Life?

A. Seventeen years.

877 Q. Per cent condition?

A. Thirty-three.

Q. Present value?

A. $2,244.

Q. Depreciation annuity on a sinking fund basis?

A. $352.

Q. Now in this first line on page 71, H. P. means horse power in connection with the boiler?

A. It does, yes sir.

Q. What does H. R. T. mean?

A. Horizontal return tubular.

Q. A class of boilers?

A. Yes, sir.

Q. The next item on that page takes up building 6, is that right?

A. Yes, sir.

Q. In that building is what?

A. Foundations for equipment in that building, net construction cost in my opinion is $227.

Q. That is boiler house extension?

A. Yes, sir.

Q. Now, taking this item you just gave its corresponding item on page 7, building C foundations?

A. Building 6 C foundation.

Q. What is the total reproduction cost in your judgment of that item?

A. $275.

Q. What is its age?

A. Six years.

Q. Its life?

A. Fifteen years.

Q. Per cent condition?

878 A. Sixty-eight.

Q. Present value?
A. $187.
Q. Depreciation annuity on a sinking fund basis?
A. $14.
Q. And the next three items are grouped—boiler stack and injector?
A. Yes, sir.
Q. What in your judgment is the net construction cost of these items?
A. $1,748.
Q. Do they appear as boilers etc., building 6 C, page 7?
A. Boiler, etc.
Q. What is the total reproduction cost of this item?
A. $2,121.
Q. The age?
A. Six years.
Q. The assumed life?
A. Fifteen years.
Q. The per cent condition?
A. Sixty-eight.
Q. The present value?
A. $1,442.
Q. The depreciation annuity on a sinking fund basis?
A. $110.
Q. Now building #7 comes next on page 71. That is the generator house I believe?
A. Yes, sir.
Q. You grouped their foundations. What in your judgment is the net construction cost?
A. $3,946.
Q. Going to page 7 you have for the total reproduction
879 cost of the foundations, what in your judgment?
A. $4,789.
Q. What is the age?
A. Nine years.
Q. Assumed life?
A. Thirty years.
Q. Per cent condition?
A. Eighty.
Q. Present value?
A. $3,831.
Q. Depreciation annuity on a sinking fund basis?
A. $101.
Q. This building, without stopping to turn to Exhibit 16, is the one we referred to with the corrugated iron, so as to provide for extensions?
A. Yes, sir.
Q. Now, you- next item is what?
A. Two 8 foot six D. S., meaning double superheater sets built in 1910.
Q. What are sets?

A. The water gas machinery itself is grouped in the generator house ordinarily; the generator, carbureter, superheater, condenser or scrubber. In this case the condenser is not a part of the set. It is in another building and treated separately.

Q. Then the next item, one 10 foot 6 D. S. low set; is a similar apparatus of larger size?

A. Yes, sir.

Q. What is the net construction cost of these two 8 foot 6 D. S. low sets?

A. $17,600.

880 Q. And 10 foot 6 D. S. low sets?

A. $16,000.

Q. What is your vapor extractor?

A. That is rather an oval shaped steel shell in which gas by sudden change of direction of flow is caused to throw out the major portion of water vapor on its way to the relief holder.

The MASTER: This is that teakettle affair?

A. It serves a good deal the same purpose. Here is your steel shell, a steel baffle plate; the outlet is up under that baffle here; the gas comes around it at a very high rate of speed and is thrown out around the baffle and it comes out at the bottom of the overflow.

The MASTER: Does that take out the tar?

A. That takes out a good deal of the tar.

Q. I did not ask you the net reproduction cost of this vapor extractor.

A. $800.

Q. You grouped those three items—under what head does that appear at page 7 in building 7?

A. Water gas sets.

Q. And what is the total reproduction cost of these three items?

A. $41,744.

Q. What is the age?

A. Two years.

Q. The assumed life?

A. Thirty years.

Q. The per cent condition?

A. Ninety-six.

Q. The present value?

A. $40,074.

Q. The depreciation annuity on a sinking fund basis?

881 A. $877. The 8 foot 6 sets were rebuilt in 1910. The 10 foot 6 were put in about a year and a half ago.

Q. Following the sets just referred to, you have grouped in one item the remaining contents of this building at the bottom of page 71 of your report. What in your judgment is that net construction cost?

A. $3,949.

Q. Does that number, lockers, etc., belong to building #7?

A. Yes, sir.

Q. What is the total reproduction cost of that group of items?

A. $4,792.

Q. What is the age?
A. Four years.
Q. The life?
A. Fifteen years.
Q. The per cent condition?
A. Seventy-nine.
Q. Present value?
A. $3,786.
Q. The depreciation annuity?
A. $248.

Q. There is something here Judge Carr called my attention to; I presume he assumed correctly that I don't know what it is—Bristol Electric Pyrometer.

A. That is a device for measuring the intensity of temperature. It is based on the fact that as you increase the temperature of certain metals you affect their resistance to the passage of the electric current. Taking two metals which have by very carefully determined analysis rhodium and platinum rhodium—taking these two
882 couplets, having two of their ends together and expose these two ends to the place in which you want to measure the temperature; the other ends are laid to the opposite of the electrical measuring instrument—resistance measuring instrument. As you increase the temperature in those two irons which are equally coupled, the degree of resistance indicates the degre of temperature.

Q. You measure the temperature in the generator or carbureter, or where?

A. You may measure it anywhere. Ordinarily you measure it about one third way down in the carbureter.

Q. And that suggests something that has occurred to me. You said they were of a very high temperature?

A. The maximum is 1,450 degrees Fahrenheit.

Q. That is heated by coal or coke?

A. In this case coke.

Q. This photograph, plate 16, shows the operating floor of this generator room; the floor you said was up above the street level?

A. Yes, sir.

Q. This will show some of those down below?

A. Yes, sir. The floor I was speaking of before was one in connection with a room having a smaller set.

Q. The set there is a smaller set and don't have to be so high to get to the top of it?

A. Yes, sir.

Q. Now, building 8-A, top of page 72, is simply a pair of platform scales; what did you estimate their net construction cost?

A. $150.

Q. That appears on page 7. The total reproduction cost is what?

A. $183.

883 Q. The age?

A. Four years.

Q. Assumed life?

A. Fifteen years.

Q. Per cent condition?
A. Seventy-nine.
Q. The present value?
—. $145.
Q. Depreciarion annuity on a sinking fund basis?
A. Nine dollars.
Q. In building 8-B which is the run-way and coke shed, you have a steam hydraulic elevator used for what purpose?
A. For lifting buggies of coke from the floor of the coke shed; it is eight or twelve feet below the yard level, to the runway which is possibly 14 or 16 feet above the yard level. The runway leads into the operating floor of the water gas room.
Q. How is that as compared with the level of this operating floor, about the same?
A. About the same.
Q. What is the net construction cost of this hydraulic elevator?
A. $1,600.
Q. Turn to page 7, this item, elevator in building 8-B, what is the total reproduction cost of that?
A. $1,942.
Q. What is the age?
A. Fifteen years.
Q. The assumed life?
A. Thirty years.
Q. The per cent condition?
A. Sixty-one.
884 Q. Present value?
A. $1,185.
Q. The depreciation annuity on a sinking fund basis?
A. $41.
Q. Now, referring to building #10, you estimate the foundation as what?
A. $14.
Q. That appears as foundation on page 7?
A. Yes, sir.
Q. What is the total reproduction cost of that item?
A. $17.
Q. What is the age?
A. Ten years.
Q. The life?
A. Fifteen years.
Q. Per cent condition?
A. Thirty-nine.
Q. The present value?
A. Seven dollars.
Q. The depreciation annuity on a sinking fund basis?
A. One dollar.
Q. Then you have next, engine and blower?
A. Yes, sir.
Q. You grouped their net construction cost as what in your judgment?

A. $200.
Q. That appears as blowers, etc., building 10 on page 7?
A. Yes, sir.
Q. What is the total reproduction cost of those items?
A. $242.
Q. What is the age?
885 A. Ten years.
Q. The life?
A. Fifteen.
Q. The per cent condition?
A. Thirty-nine.
Q. The present value?
A. Ninety-four dollars.
Q. The depreciation annuity?
A. $13.
Q. Now the remaining apparatus and equipment in that building you grouped?
A. Yes, sir.
Q. What is the net construction cost of the items so grouped as appear here on page 72?
A. $822.
Q. What is the reproduction cost of those items?
A. $997.
Q. What is the age?
A. Six years.
Q. Assumed life?
A. Fifteen years.
Q. The per cent condition?
A. Sixty-eight.
Q. Present value?
A. $678.
Q. Depreciation annuity?
A. $52.
Q. Now this building #12, this pump house, you have first grouped there four pumps?
A. Three.
886 Q. The first item is two?
A. Oh, yes, four pumps, three items.
Q. What is the net construction cost of those four pumps?
A. $990.
Q. Turning to building 12, page 7, the first item, pumps, represents the item just referred to?
A. Yes, sir; four pumps.
Q. What is the total reproduction cost of those pumps in your judgment?
A. $1,202.
Q. What is the age?
A. Two years.
Q. The assumed life?
A. Twenty years.
Q. The per cent condition?

A. Ninety-three.
Q. The present value?
A. $1,118.
Q. Depreciation annuity?
A. $32.
Q. Now you next have grouped two more pumps at the bottom of page 72; what is your net construction cost of those?
A. $210.
Q. And they are the second item of pumps in building 12?
A. Yes, sir.
Q. What is the total reproduction cost of this item?
A. $256.
Q. What is the age?
A. Ten years.
Q. The life?
A. Twenty years.
887 Q. Per cent condition?
A. Sixty.
Q. The present value?
A. $154.
Q. Depreciation annuity?
A. Nine dollars.
Q. You next have a single pump estimated by itself—Warren—what is its net construction cost?
A. $125.
Q. That appears under the item of pumps on page 7?
A. The first item of pumps.
Q. The total reproduction cost of that is what?
A. $152.
Q. Its age?
A. Twelve years.
Q. Its life?
A. Twenty years.
Q. Per cent condition?
A. Thirty-one.
Q. Present value?
—. $78.
Q. Depreciation annuity on a sinking fund basis?
A. Five dollars.
Q. The last item in this building—Davidson pump—second item, page 73, what is your estimate of the net construction cost of that.
A. $70.
Q. This same item, the last item in building 12, page 7, what is your estimate of the total reproduction cost?
A. $85.
Q. Its age?
A. Six years.
888 Q. Assumed life?
A. Twenty years.
Q. Per cent condition?
A. Seventy-eight.

Q. Present value?
A. $66.
Q. Depreciation annuity?
A. $3.
Q. Now, the next building is building 113. That is the oil pump house I believe?
A. Yes, sir.
Q. You estimate the net construction cost of the foundation there how much?
A. $10.
Q. Following that through on page 7, what is the total reproduction cost ?
A. $12.
Q. What is the age?
A. Eight years.
Q Assumed life?
A. Twenty years.
Q. Per cent condition?
A. Seventy.
Q. Present value?
A. Eight dollars.
Q. Depreciation annuity?
A. One dollar.
Q. Then the contents of this building is one Davidson oil pump. You estimate the net construction cost of that pump at what?
A. $490.
889 Q. On page 7 that appears as an item of pump in building 13?
A. Yes, sir.
Q. And its total reproduction cost is what?
A. $595.
Q. Its age?
A. Eight years.
Q. Its life?
A. Twenty years.
Q. Per cent condition?
A. Seventy.
Q. Present value?
A. $417.
Q. Depreciation annuity on a sinking fund basis?
A. $21.
Q. Building 14 is the meter house referred to?
A. Yes, sir.
Q. What did you estimate the net construction cost of the foundations?
A. $185.
Q. These are the foundations for the meter?
A. Yes, sir; not for the building.
Q. Turning to the item on page 7, what is the total reproduction cost of the item?
A. $225.
Q. What is the age?

A. Two years.
Q. Life?
A. Thirty years.
Q. Per cent condition?
A. Ninety-six.
Q. Present value?
A. $216.
890 Q. Depreciation annuity on a sinking fund basis?
A. Five dollars.
Q. What is the next item?
A. One 14 foot by 14 foot American station meter; net construction cost $8,400.
Q. That is the largest meter at the station now?
A. Yes, sir.
Q. Going to page 7, next to the last line is meter.
A. That is the same meter.
Q. The total reproduction cost of the meter is what?
A. $10,194.
Q. What is the age?
A. Two years.
Q. Its life?
A. Thirty years.
Q. Per cent condition?
A. Ninety-six.
Q. Present value?
A. $9,786.
Q. The depreciation annuity on a sinking fund basis?
A. $214.
Q. The next item is piping valves in this meter house in connection with the meter.
A. Yes, sir.
Q. What is their net construction cost as you grouped them on page 73 of your report?
A. $870.
Q. What is the total reproduction cost in your judgment?
A. $1,056.
Q. What is the age?
A. Two years.
891 Q. Its life?
A. Thirty years.
Q. The per cent condition?
A. Ninety-six.
Q. Present value?
A. $1014.
Q. The depreciation annuity?
A. $22.
Q. Now the next building is 16. We have foundation; we have this boiler house I believe; you estimate the foundation at what?
A. $124.
Q. And in each instance the foundation is for the apparatus and not for the building itself?
A. Yes.

Q. That appears at the top of page 8 of your report, does it not?
A. Yes, sir.
Q. And what is the total reproduction cost of this item?
A. $151.
Q. What is the age?
A. Four years.
Q. Its life?
A. Fifteen years.
Q. Per cent condition?
A. Seventy-nine.
Q. Present value?
A. $119.
Q. Depreciation annuity on a sinking fund basis?
A. $8.
Q. The next item here is concrete slab on brick on edge, what is that for?
A. That is the floor in the boiler house.
892 Q. What is the net construction cost of these two items?
A. $69.
Q. Turning to page 8 this appears as slab, etc.?
A. Yes, sir.
Q. What is the total reproduction cost of that?
A. $83.
Q. The age?
A. Four years.
Q. Assumed life?
A. Fifteen years.
Q. Per cent condition?
A. Seventy-nine.
Q. Present value?
A. Sixty-six dollars.
Q. Depreciation annuity?
A. Four dollars.
Q. Now you have grouped boiler for stack and injector at the bottom of page 73; what in your judgment is the net construction cost?
A. $1055.
Q. These items are indicated in building 16 as boiler, etc. What is the total reproduction cost?
A. $1280.
Q. What is the age?
A. Four years.
Q. The life?
A. Fifteen years.
Q. Per cent condition?
A. Seventy-nine.
Q. Present value?
A. $1011.
893 Q. Depreciation annuity?
A. $66.
Q. At the top of page 74 in the contents of this building you have

a number of gauges and nine thermometers grouped; what is the net construction cost of those items so grouped?

A. $863.

Q. What do you use nine thermometers for?

A. Taking the temperature of gas in various parts of the plant.

Q. Turning to page 8, do these items appear under building 16?

A. Yes, sir; the total reproduction cost is $1,047.

Q. What is the age?

A. Four years.

Q. The life?

A. Ten years.

Q. The per cent condition?

A. Sixty-one.

Q. The present value?

A. $639.

Q. Depreciation annuity?

A. $87.

Q. Your next item I believe is fire protection?

A. Yes, sir. Under that item I included all the fire extinguishers, fire buckets, hose, reels, nozzles and all equipment for the fighting of fire.

Q. That is their own fire department?

A. Yes, sir; including fire alarm boxes.

Q. What is the net construction cost of those items?

A. $427.

Q. They appear under the head of fire protection in this building on page 8?

A. Yes, sir.

894 Q. What is the total reproduction cost of this item?

A. $518.

Q. The age?

A. Four years.

Q. Assumed life.

A. Ten years.

Q. Per cent condition?

A. Sixty-one.

Q. Present value?

A. $316.

Q. Depreciation annuity?

A. $43.

Mr. GUERNSEY: Mr. Byers, Mr. Vincent told me I had erroneously referred to this apparatus as all located in this one building. It is not; it is scattered over the plant.

The WITNESS: As a matter of fact the stuff in 16 ends with the item of boiler.

Q. The same page shows miscellaneous works tools $600. Are those items in the inventory?

A. They are now but not at the time I received the inventory. I didn't take the trouble to make a list of them; just put in $600, being assured that was much too small.

The MASTER: There are some tools in the inventory here.

A. They are in there now, but were not at the time it was given to me.

Q. A list of the tools of the works appears in the inventory at page 245; will you look at this list that appears in the inventory, if you have not already done so, and state whether after examining the list you are still satisfied that your estimate is under the actual net construction cost at $600.

A. Yes, sir; I feel certain this list of works tools will
895 amount to $600, the net construction cost, although I have not figured it.

Q. This item of works tools appears on page 8?

A. Yes, sir.

Q. What is the total reproduction cost of that item?

A. $728.

Q. Its age?

A. Two years.

Q. Its life?

A. Ten years.

Q. Its per cent condition?

A. Eighty.

Q. Present value?

A. $582.

Q. Depreciation annuity?

A. $60.

Q. Now, under the heas of outside apparatus you have grouped a Davidson pump, Fairbanks scales, Standard scales, stiff legged derrick, on page 74; will you state if you please what the net construction cost of these various items is in your judgment?

A. $1,640.

Q. That appears as outside apparatus on page 8?

A. Yes, sir.

Q. What was the total reproduction cost of these items in your judgment?

A. $1,990.

Q. The age?

A. Twenty years.

Q. The life?

A. Twenty years.

Q. The per cent condition?

A. Twenty-five.

896 Q. The present value?

A. $498.

Q. Depreciation annuity on a sinking fund basis?

A. $70.

Q. Now you have next a heading of wells, valaves, man holes, separators, etc. In a general way describe what you cover under that head.

A. There are several wells for the drawing of water around the place. Several manholes or brick basins in which valve boxes are located; and there are at least two or three separators of brick and timber, constructed and placed beneath the surface of the ground for the purpose of separating the water from the tar that comes from

the water gas sets in the form of an emulsion, which can only be separated by long standing and traveling at a certain temperature.

Q. Taking the items which you have so grouped, commencing near the bottom of page 74 and continuing on page 75, what in your judgment was their net construction cost?

A. $3,486.

Q. That appears on page 8 as wells, etc.?

A. Yes, sir.

Q. What is the total reproduction cost of those items under that heading?

A. $4,230.

Q. The age?

A. Ten years.

Q. The life?

A. Thirty years.

Q. Per cent condition?

A. Seventy-six.

Q. Present value?

897 A. $3,215.

Q. Depreciation annuity?

A. $89.

Q. Now, your next thing is exhaust pipe?

A. That is piping throughout the works' buildings for the carrying of steam exhausted from the engines.

Q. Then you have another head, valves?

A. Those are the valves on that steam piping.

Q. Radiators?

A. The radiators to which the exhausted steam passes before it reaches the air.

Q. Covering?

A. Covering on the exhaust steam piping.

Q. You have insulating?

A. Yes, sir.

Q. Exhaust head?

A. That is a metal device on the top of an exhaust pipe to take away the water condensation and muffle the noise.

Q. And some tracks?

A. For taking away the water out of these same pipes?

Q. They perform the same function as the drip pot in the distributing system?

A. Yes, sir.

Q. You have referred to separators?

A. No, this is another type.

Q. Taking these items including the exhaust steam piping, commencing on page 75 with valves, radiators, covering, exhaust heads, steam traps and separators, what in your judgment was their net construction cost?

A. $2,261.

Q. Turning to page 8 that appears under what head?

898 A. Exhaust steam piping.

Q. The total reproduction cost of those items *are* what?

A. $2,744.

Q. The age?
A. Five years.
Q. The life?
A. Twenty years.
Q. Per cent condition?
A. Eighty-two.
Q. Present value?
A. $2,250.
Q. Depreciation annuity?
A. Ninety-seven dollars.
Q. Without referring to it, this system of piping is all sketched in Exhibit 16?
A. Yes, sir.
Q. You have next steam piping?
A. That is live steam piping.
Q. You distinguish that from your exhaust system of piping?
A. Yes, sir; merely for convenience in making the inventory.
Q. The first item here is excavation. Some of this is underground is it?
A. Yes, sir.
Q. Now, taking steam piping and then the covering, includes what?
A. That is a covering over the pipe to prevent loss of heat, usually a magnesia compound.
Q. These valves pertain to what?
A. Steam valves on the heavy steam pipe.
Q. The hose?
A. Connected with the heavy steam pipe.
Q. And then you have in building 50 some piping?
A. That is steam piping indicated there because it is the
899 property of the company, the building is not.
Q. Then following that you have valves near the bottom?
A. These are in building 50; they pertain to the piping.
Q. And some excavation, covering and boxing?
A. Some of those pipes so laid in the ground are not only covered with ordinary insulating material, but protected by a box around the material.
Q. Taking those items of steam piping on page 77—covering, valves, hose and pipe, building 50, and the first three lines on page 78, please state whether or not the estimate there is the net construction cost and if so what it is?
A. I estimated their net construction cost at $4,064.
Q. Under what head is this item carried to page 8?
A. Steam piping.
Q. What is the total reproduction cost of these various items?
A. $4,932.
Q. The age?
A. Five years.
Q. Assumed life?
A. Twenty years.

Q. Per cent condition?
A. Eighty-two.
Q. Present value?
A. $4,044.
Q. Depreciation annuity?
A. $174.
Q. Now you have next an item on page 78, circulation pipe; what do you mean by that?
A. That is the pipe through which the water is circulated from the condensers into the holder tank, used for the carrying of gas to the condensers and for the prevention of freezing the water
900 in the gas holders in the winter time.
The MASTER: That hasn't anything to do with the distribution system?
A. No, it is just a little steam pipe for reflecting economy in the *the* manufacture.
Q. You have under this head W. I. pipe?
A. Wrought iron.
Q. You show the feet and the diameter?
A. Yes.
Q. Then you have a little tile?
A. Yes, sir.
Q. And these valves are used in connection with this pipe?
A. Yes, sir.
Q. Now, taking all the items included under circulation piping what does this page 78 show in detail, your estimate and the cost in the aggregate, and what is the aggregate?
A. The group is $1,287.
Q. Turning again to page 8, that is indicated there how?
A. As circulation piping.
Q. What is the total reproduction cost of this item?
A. $1,652.
Q. What is the age?
A. Five years.
Q. What is the life?
A. Twenty years.
Q. The per cent condition?
A. Eighty-two.
Q. The present value?
A. $1,281.
Q. The depreciation annuity?
901 A. $55.
Q. Now the remainder of page 78 of your report is covered by items under the head of oil piping?
A. Yes, sir.
Q. That includes also boxing and strainers and hand pumps, not mentioned in connection with the circulation piping. Please state whether this page shows each of those items and your estimate of the net construction cost and the aggregate and what is it?
A. Yes, sir; $4,200.

Q. Following that to page 8, how does it appear there?
A. Oil piping, etc.
Q. What is your estimate of the total reproduction cost?
A. $5,096.
Q. The age?
A. Five years.
Q. The life?
A. Twenty years.
Q. The per cent condition?
A. Eighty-two.
Q. The present value?
A. $4,179.
Q. The depreciation annuity?
A. $180.
Q. Now, the next page is headed water pipe; what do you mean by that?
A. Piping for carrying the supply of water throughout the work.
Q. Now as to the valves, I didn't ask you what I think is obvious; is it true that here as elsewhere where you specify valves, you show the number and size?
A. Yes, sir.
Q. So that here, for instance you would have three quarter
902 inch valves, etc.
A. Yes, sir; all in connection with the water pipe.
Q. What do you mean by specials?
A. They are fittings, special fittings, crosses, T's, elbows, etc.
Q. Some of this pipe appears to be also in this building #50?
A. Yes, sir.
Q. Does your page 79 show your estimate of the net construction cost of each one of those items?
A. Yes, sir.
Q. What is the aggregate?
A. $3,492.
Q. Carrying that to page 8, it appears under what head?
A. Water piping, etc.
Q. What in your judgment is the total reproduction cost?
A. $4,238.
Q. And the age?
A. Five years.
Q. Assumed life?
A. Twenty years.
Q. The per cent condition?
A. Eighty-two.
Q. The present value?
A. $3,475.
Q. The depreciation annuity on a sinking fund basis?
A. $149.
Q. Now, your next item on page 80 of exhibit 20 is what?
A. Gas piping, meaning small piping for the lighting of the place.

And for leading gas to the photometer room; any place they want a small supply.

Q. And that shows the net construction cost by items and in the aggregate.

903 A. Yes, sir; the aggregate is $536.

Q. That appears as gas pipe on page 8?

A. Yes, sir.

Q. What is the total reproduction cost?

A. $650.

Q. And the age?

A. Five years.

Q. And the life?

A. Twenty years.

Q. And the per cent condition?

A. Eighty-two.

Q. The present value?

A. $533.

Q. The depreciation annuity on a sinking fund basis?

A. $23.

Q. You have electric wiring, that is for what purpose?

A. That is small wiring around the plant for electric lighting.

Q. Does page 80 show the various items?

A. Yes, sir.

Q. And the net construction cost of each item in the aggregate?

A. Yes, sir; the aggregate is $189.

Q. That is carried to page 8 as electric wiring?

A. Yes, sir.

Q. And what is the total reproduction cost of that item in your judgment.

A. $229.

Q. And the age?

A. Five years.

Q. And the assumed life?

A. Fifteen years.

Q. And the per cent condition?

904 A. Seventy-two.

Q. The present value?

A. $165.

Q. Depreciation annuity on a sinking fund basis?

A. $12.

Q. Your next list on page 80 is a general item, sewer pipe.

A. Yes, sir; that is all the sewer pipe within the property of the company.

Q. You show at page 80 your estimate of the net construction cost of the various items and the aggregate?

A. Yes, sir; the aggregate is $2,817.

Q. That appears as sewer pipe on page 8?

A. Yes, sir.

Q. What is its total reproduction cost in your judgment?

A. $3,418.

Q. And the age?
A. Eighty years.
Q. The life?
A. Thirty years.
Q. The per cent condition?
A. Eighty-two.
Q. The present value?
A. $2,803.
Q. The depreciation annuity?
A. $72.
Q. Now you have your next item on page 81, drain pipe, what is the distinction between that and sewer pipe?
A. A drain pipe leads into the sewer pipe eventually, but carries only clean waters from the building until it reaches the sewer.
Q. You have again W. I. pipe?
A. Wrought iron, such as is under that heading; there
905 is tile there also.
Q. And you have the valves in connection with it?
A. Yes, sir.
Q. Taking these items under that general head of drain pipe as shown on page 81, does your report at that page show your estimate of the net construction cost of each item?
A. Yes, sir; the aggregate is $572.
Q. That appears on page 8 as drain pipe?
A. Yes, sir.
Q. What is its total reproduction cost?
A. $694.
Q. And the age?
A. Eight years.
Q. And the life?
A. Twenty years.
Q. The per cent condition?
A. Seventy.
Q. The present value?
A. $486.
Q. The depreciation annuity?
A. $25.
Q. Your next item is tar pipe? What is that for?
A. Pipe for conducting tar around the premises.
Q. And ydo you under that head on page 81 show your estimate of the net construction cost of each item and the aggregate?
A. Yes, sir.
Q. The aggregate is what?
A. $782.
Q. This item appears on page 8 as what?
A. Tar pipe.
Q. What is their total reproduction cost?
906 A. $948.
Q. And the age?
A. Seven years.
Q. And the life?

A. Twenty years.
Q. The per cent condition?
A. Seventy-four.
Q. The present value?
A. $702.
Q. The depreciation annuity?
A. $34.
Q. Now at pages 82 and the first half of 83, did you itemize the gas mains in the yards of the country?
A. Yes, sir; the gas mains and all the specials.
Q. That includes the mains, drips, valves, reducers, crosses, T's, quarter bends, solid slabs, plugs, flanges and caps.
A. Yes, sir.
Q. And do these pages I have referred to show your estimate of the net construction cost of each one of those items and the aggregate?
A. Yes, sir. The aggregate is $21,183.
Q. That appears as what on page 8?
A. Gas mains, etc.
Q. What is the total reproduction cost of this item?
A. $25,705.
Q. The age?
A. Eight years.
Q. Assumed life?
A. Fifty years.
Q. Per cent condition?
A. Ninety-two.
907 Q. The present value?
A. $23,649.
Q. The depreciation annuity on a sinking fund basis?
A. $239.

At this time an adjournment was taken until 1:30 P. M.

908 1:30 P. M., TUESDAY, *July* 25, 1911.

HENRY I. LEA, being continued on direct examination by N. T. Guernsey, Esq., testified as follows:
Q. Now following the item that you have just referred to Mr. Lea, there is an item here of p-ving?
A. Yes, sir.
Q. That paving is where?
A. Within the fence enclosing the works.
Q. And it includes some cement sidewalk and curbing. What do you mean by curbing?
A. The curbing is outside and some of that cement walk is outside.
Q. This is all figured in square feet, square yards or cubic yards.
A. Yes, sir.
Q. Does page 83 of your report Exhibit 20 show your estimate of the net construction cost of these various items?
A. It does.

Q. As well as the total?
A. Yes, sir.
Q. What is the total?
A. $2,586.
Q. Now turn to page 8 that appears under what item?
A. Paving.
Q. And what is the total reproduction cost in your judgment?
A. $3,138.
Q. And the age?
A. Eight years.
Q. And life.
A. Fifteen years.
909 Q. Per cent condition?
A. 54.
Q. Present value?
A. $1,695.
Q. And depreciation annuity?
A. $162.
Q. Now your next item page 84 is what?
A. Fencing and gates.
Q. You have divided that separating it into what classes or on what basis?
A. 1,218 feet and ten inches of the fencing and gates is on the property owned by the company. 475 feet six inches of this fencing and gates are on property leased by the compan-, but the fence was built and is owned by the company.
Q. Now what have you estimated as the net construction of these items of fences on page 84 of your report?
A. $2,869.
Q. How does that appear on page 8?
A. As fences, etc.
Q. And what is the total reproduction cost of it?
A. $3,481.
Q. The age?
A. Six years.
Q. Life?
A. Twenty years.
Q. Per cent condition?
A. 78.
Q. Present value?
A. $2,715.
Q. Depreciation annuity?
910 A. $123.
Q. You next have rubbish kiln?
A. Yes, sir.
Q. You have estimated under net reproduction cost page 84, at $10.
A. Yes, sir.
Q. This is an appatatus for busning rubbish?
A. Yes, sir.
Q. And it appears——

A. I omitted that, didn't think the amount warranted a recalculation.
Q. Now your next item?
A. Oil unloading device.
Q. That is what in a general way.
A. Wait a minute, this rubbish kiln I overlooked in making the calculation, but I find I caught it here before I got through and it is the last item on page 8.
Q. What is your estimated reproduction cost?
A. $12.
Q. And age?
A. Three years.
Q. Estimated life.
A. Ten years.
Q. Per cent condition?
A. Seventy three.
Q. Present value?
A. $9.00.
Q. Depreciation annuity on sinking fund basis?
A. $1.00.
Q. To return to this oil unloading device, that is what?
A. That is a rigging for the unloading of oil cars, a device
911 for lifting the unloading pipe so you can place your car anywhere within reasonable range and still make the connection.
Q. The oil comes in tank cars?
A. Yes, sir.
Q. An apparatus for unloading them?
A. Yes, sir.
Q. What is the net construction cost of this apparatus?
A. $134.
Q. That appears on page 8 as oil unloading device?
A. Yes, sir.
Q. And total reproduction cost is what?
A. $162.
Q. And age?
A. Twenty six.
Q. Life?
A. Twenty years.
Q. Per cent condition?
A. Ninety three.
Q. Present value?
A. $151.
Q. Depreciation annuity.
A. $6.00.
Q. You have another item here lumber in yard, is that some supply of lumber on hand?
A. That is some lumber that is not carried in the store room records it is an extra lot.
Q. You estimate the net construction cost of that as what?
A. $67.
Q. How does that appear over here at page 8?

A. As lumber.

912 Q. What is the total reproduction cost?

A. $81.

Q. Age?

A. One year.

Q. Life?

A. Twenty years, 97 per cent condition, present value $79, depreciation annuity on a sinking fund basis $3.00.

Q. The next item you have on page 84 is fixtures, etc., in building No. 50. Do you remember what that building is?

A. Yes, that is the last building, it is used for a meter fitting or repair shop.

Q. You say fixtures, what are those?

A. The lighting fixtures and little incidental trimmings that the company put into the building.

Q. What is the total amount which you have estimated as net construction cost of these items?

A. Including meter dipping outfit and meter provers, $520.

Q. That appears under what heading on page 8?

A. Fixtures building 50.

Q. What do you estimate the total reproduction cost?

A. $631.

Q. Age?

A. Four years.

Q. Life.

A. 20 years.

Q. Per cent condition?

A. 86.

Q. Present value?

A. $543.

Q. Depreciation annuity?

913 A. $22.

Q. The next item is relief holder No. 18. Is this plate No. 21 in Exhibit 16 a photograph of that holder?

A. Yes, sir.

Q. I wish you would point out on this photpgraph—that is in how many sections.

A. Two.

Q. Lifts, is that what you call it?

A. Yes, sir.

Q. Where is the line between the two lifts?

A. Right here.

Q. That is in three sheets?

A. Three sheets to the lower lift above the curve we call it to the top of the tank.

Q. This holder or tank is below the ground?

A. Yes, sir; masonry tank below the ground.

Q. That is the holder referred to in sketch No. 56 is it?

A. No, that is the 300,000 holder.

Q. Is it on the other side of that page, on the right hand side of that page?

A. Yes; the right hand side of sketch 56 is the relief holder.

Q. Now you say there are two lifts, the 175,000 cubic feet holder in brick tank. In the first place the 175,000 cubic feet is the capacity?

A. That is the effective working capacity or amount of gas which can be displaced by the holder. It is less than the figured capacity of the lifts themselves of course.

Q. You don't know why of course?

A. Because the lifts have to extend down into the water as one point and because as the second point you can't displace all
914 of the gas that is in the enclosure. It has an effective displacement of 175,000 cubic feet.

Q. Now you say sixteen inch and twenty inch connections, what does that refer to?

A. To the cast iron pipe taking gas into and out of the holder.

Q. You have computed and estimated this net construction cost by items?

A. Yes, sir.

Q. As they appear commencing near the bottom of page 84 and finishing on page 65 of Exhibit 20.

A. Yes, sir.

Q. And what in your judgment was the net construction cost of this holder?

A. $29,870.

Q. Turning to page 8, how does that item appear there?

A. As relief holder No. 18.

Q. And what in your judgment is the total reproduction cost of this holder?

A. $36,248.

Q. Its age?

A. Forty nine years.

Q. Assumed life?

A. Forty years.

Q. Per cent addition?

A. Twenty five years.

Q. Present value?

A. $9,062.

Q. Depreciation annuity?

A. $481.

Q. Now the next item you have is storage holder No. 19,
915 that is a two lifter?

A. Yes, sir.

Q. Of what capacity?

A. 309,432 cubic feet.

Q. Is that in a tank that is below the ground or above the ground?

A. Below the ground.

Q. Why do you call that a tank?

A. Because it is filled with water, the purpose is to hold water.

Q. This water is the water that seals the gas in the holder?

A. Yes, sir.

COURT: How far down is the holder?

A. That goes twenty one feet below the surface of the ground. The holder on the lower end rests on the bottom of this tank when

down. When up to the maximum height the holder is forty two feet above the ground.

COURT: How much of it goes into the water?

A. Well it all goes into the water.

Q. When it is full how much in the water?

A. None of the tank in the water except a few inches of the lower rim of the outside section.

Q. You said then there was none of the tank in the water?

A. No, I meant none of the holder proper in the water except the lower rim.

Q. I wish you would explain to the Master in this same connection—this holder is in two lifts, sections?

A. Yes, *sur.*

Q. One of them goes down inside of the other. Now I wish you would explain to him how and when it goes back you preserve the water seal between those two sections after that section is up in the air so as to prevent the escape *if* the gas?

916 A. I can do that better with a sketch than any other way I think. When both sections are down and no gas at all in the holder, the outer section has a grip hanging over like that and the inner section has a cup which is capable of engaging this grip but do not at the bottom of the tank, but the grip on the outer section is under water. When the grip goes up it engages the cup and serves as a seal still below the water and as it comes out there and the other section comes up to this cup it is filled with water and that maintains the seal so the gas cannot get out.

Q. It picks up water as it goes up there?

A. Yes, sir.

COURT: Kind of a cup there?

A. Yes, sir; a cup.

Q. Now have you estimated in detail and in aggregate the net construction cost of this storage holder No. 19 that appears on page 85 of your report?

A. I have shown there the price.

Q. What is the gross amount?

A. $45,699 net construction cost.

Q. Turning now to page 8, how does this item appear on that page?

A. As storage holder No. 19.

Q. What is the total reproduction cost in your judgment?

A. $55,454.

Q. The age?

A. 20 years.

Q. Life.

A. 40 years.

Q. Per cent conditions?

A. 63.

917 Q. Present value?

A. $34,963.

Q. Depreciation annuity?

A. $735.

Q. The next item is storage holder 20, that is what we call the large holder?
A. Yes, sir.
Q. What is its capacity?
A. 1,132,000 cubic feet.
Q. In how many lifts or sections is that holder?
A. Three lifts.
Q. Is that tank in which holder sinks as the gas comes out of it below the ground or above the ground?
A. This is in a steel tank above the ground.
Q. Is this tank shown by this picture, plate No. 25?
A. Yes, sir.
Q. You said a steel tank, is there any masonry around there?
A. Yes, sir. It has a brick surrounding wall to protect the tank against the water and prevent the freezing of the water, preserve the steel.
Q. Your last answer suggested another thing. Doesn't the water freeze up in these tanks in the winter?
A. No, sir.
Q. Why don't it?
A. Because the surface of the water is always kept in motion and water can't freeze when it is in motion. Steam jets are used for this purpose or in some infrequent cases a supply of hot water is caused to circulate around.
Q. So that is one use to which some of these steam pipes are put to?
918 A. Yes, sir.
Q. To keep this water from freezing?
A. Yes, sir.
Q. Now have you beginning on page 85 and concluding on page 86, estimated by items and in the aggregate the net construction cost of this storage No. 20?
A. Yes, sir.
Q. What is the amount of this cost as you estimate it?
A. $113,717.
Q. Now turn to page 8, how does this holder appear there?
A. As storage Holder No. 20.
Q. And what in your judgment is the total reproduction cost of this holder No. 20?
A. $137,988.
Q. What is its age?
A. Eight years.
Q. Its life?
A. Forty years.
Q. Per cent condition?
A. 89.
—. Present value.
A. $122,809. Depreciation annuity is $1,830.
Q. The next item page 86 is oil tank 21. What is that tank used for?
A. For storage of oil used in making gas. I am not sure about

that I will have to refer to my inventory, whether that is used for the crude oil, or for the tar oils, I am not sure.

Q. Mr. Vincent says 21 is for tar and 22 for oil and I guess there will be no objection to use taking his word for it?

Mr. BYERS: Oh no objection, if Mr. Vincent says that it
919 is undoubtedly true.

Q. Now have you estimated and set out on page 86 here, the net construction cost of this oil tank No. 21, in detail and in the aggregate?

A. Yes, sir.

Q. What is the aggregate?

A. $5,944.

Q. Turning to page 8, that appears how?

A. Oil tank No. 21.

Q. What in your judgment is the total reproduction cost of this item?

A. $7,213.

Q. Age?

A. Nine years.

Q. Life?

A. Thirty years.

Q. Per cent condition?

A. 80.

Q. Present value?

A. $5,770.

Q. Depreciation annuity?

A. $152.

Q. Your next item on page 86 of your report is oil tank No. 22, capacity 64,000 gallons. Have you estimated and show- on that page the net construction cost of this tank in detail and in the aggregate?

A. I have.

Q. What is your estimate of the net construction cost in the aggregate.

A. $2,852.

920 Q. Turning now to page 8, that appears how?

A. Oil tank No. 22.

Q. What is the total reproduction cost of this item in your judgment?

A. $3,461.

Q. Its age?

A. Fourteen years.

Q. Life?

A. Thirty years.

Q. Per cent condition?

A. 65.

Q. Present value?

A. $2,250.

Q. Depreciation annuity?

A. $73.

Q. Now turn to page 87 of your report, have you there estimated the net construction cost of oil tank No. 23?
A. Yes, sir.
Q. Shown it in detail and in the aggregate?
A. Yes, sir.
Q. And what is the aggregate?
A. $1,424.
Q. Turning to page 8, that appears how?
A. Oil tank No. 23.
Q. What is the total reproduction cost of this item?
A. $1,729.
Q. Age?
A. Twenty years.
Q. Life?
A. Thirty years.
921 Q. Per cent condition?
A. Forty five.
Q. Present value?
A. $778.
Q. Depreciation annuity?
A. $36.
Q. The next item appearing on page 87 of your report is oil tanks No. 24 and 25, capacity 300,000 each. Are those the tanks that are shown on the photographs plate 28?
A. Yes, sir.
Q. They are in masonry foundation?
A. Yes, sir. Those are brick tanks.
Q. What is this thing that -eems to stick up above the brick work?
A. There is a steel tank in there, I presume the area of the brick tank is calculated, it is so any leakage in the steel tank the brick will hold it.
Q. It is a steel tank inside of a brick one?
A. Yes, sir. It is a think very often done in the storage of oil because oil is much harder to hold than water in tanks and if it begins to get away from you it is very dangerous and it is better to spend some money and brick enclose it so if the oil tank should break it would hold it and cut out the chance of a conflagration.
Q. Does this section 29 show a cross section showing how the steel tank sits down inside of the masonry tank?
A. Yes, sir. That is a common practice in the storage of oil.
Q. Have you estimated and set out in detail and in aggregate on page 87 the net construction cost of thes- two oil tanks Nos. 24 and 25?
922 A. Yes, sir.
Q. What is it in the aggregate?
A. $16,894.
Q. Turning now to page 8, that *apparsas* oil tanks 24 and 25.
—. Yes, sir.
Q. What is the total reproduction cost of these two tanks in your judgment?
A. $20,500.
Q. Age?

A. Two years.
Q. Life?
A. Thirty years.
Q. Per cent condition?
A. 96.
Q. Present value?
A. $19,680.
Q. Depreciation annuity?
A. $430.
Q. Your next item is holder oil tank No. 36, on page 87, you show the net construction cost at what?
A. $99.
Q. That is carried over as what on page 8?
A. Oil tank No. 36.
Q. The total reproduction cost is what in your judgment?
A. $121.
Q. Age?
A. 18 years.
Q. Life?
A. Thirty years.
Q. Per cent conditions?
923 A. 53.
Q. Present value.
A. $64.
Q. Depreciation annuity?
A. $3.00.
Q. Your next item at the bottom of page 87 is holder oil tank No. 58, capacity 9500 gallons. You have estimated the net construction cost of that tank?
A. Yes, sir.
Q. Amounts to how much?
A. $108.
Q. That is on page 8 as what item?
A. Oil tank No. 58.
Q. And the total reproduction cost of that item is how much?
A. $495.
Q. Age?
A. Seven years.
Q. Life?
A. Thirty years.
Q. Per cent conditions?
A. 85.
Q. Present value?
A. $421.
Q. Depreciation annuity??
A. $10.
Q. Your next and last item in this class is on page 88 of Exhibit 20, pipe covering tank No. 16. In the first place what is a pipe covering tank?
A. It is a thing more of a trough than tank for the coating of service pipes with tar or some compound of tar before you
924 place them in the ground to protect them against rust.

Q. Did you estimate the new construction cost of this tank?
A. Yes, sir.
Q. At what amount?
A. At $59.
Q. That appears on page 8?
A. As pipe coating tank.
Q. And what in your judgment is the total reproduction cost of this item?
A. $72.
Q. The age?
A. Eleven years.
Q. Life?
A. Ten years.
Q. Per cent condition?
A. 25.
Q. Present value?
A. $18.
Q. Depreciation annuity?
A. $6.
Q. You have here an aggregate on works equipment, total reproduction cost of $510,179. Will you please state whether that is where you obtained the item in the same amount under the heading, reproduction cost and opposite works equipment in your l-tter of June 24, which precedes this report?
A. It is.
Q. On that same page 8, state whether or not the total of the present value $384,723, is the basis for the sale figures in the column p-esent value in the letter referred to, opposite the words, works equipment?
A. It is.
925 Q. Turning over to page 89 of your report, you take up what part of the plant?
A. This is headed distribution system, street mains, and is the first page of Exhibit "I." That is the distribution system and I have divided that into street mains, services and meters, with some miscel-aneous material.
Q. Taking this under street mains, taking this up first on page 89 so that we may understand it, you have how many feet of main two and one half inches or under in the aggregate?
A. $33,947.
Q. Turning to page 209 of the inventory, that corresponds with the number of feet of main of that size shown in the inventory does it not?
A. Yes, sir.
Q. Now following this down, you take up next on page 89 three inch main and your aggregate there corresponds with the aggregate of three inch main in the inventory?
A. 35,301, yes.
Q. Now turn to four inch main which appears at page 209 of the inventory, the aggregate amount of four inch main is 573,724?
A. That is what I have.

Q. The six inch mains, the aggregate amount in the inventory appearing as 163,004?

A. I have that.

Q. And the aggregate amount of 8 inch main appears 64,934.

A. I have 65,607, but mine includes the river crossing, and the river crossing in the inventory is given separately. We will have to add 673 feet to this 64,934, add the street mains eight inch to the river mains 8 inch gives a total of 65,607 which agrees with
926 my total, I have specified that as being river crossing which checks with this inventory.

Q. Now taking ten inch main, the inventory page 209 shows 32,008 feet in the aggregate. How many do you have.

A. 32,008.

Q. Then 12 inch main, the inventory shows 31,349. You aggregate what?

A. 31,349.

Q. Fourteen inch main, the inventory shows 622, you aggregate the same amount?

A. 622 feet.

Q. Sixteen inch main the inventory shows 27,206?

A. The inventory shows 27,206 in the streets and 1,300 in the river, that makes 28,506, and my aggregate is 28,506.

Q. Twenty inch main the inventory shows 6,036?

A. The same as I have.

Q. And the twenty four inch the inventory shows 1,180?

A. I have 1,819, but I have included river crossings which are given below as 639 feet, that makes the total in the inventory 1,809 feet, which is what I have.

Q. Now then going back to this first item how have you separated these totals in these pages 89 and 90 with reference to what?

A. I have separated them with reference to the pipe laying as a whole in unpaved streets and have shown the ta-ing up and replacing of pavements existing over mains as a separate item.

Q. Take this first item and explain this a little further, you have 25,527 feet, then kind of pavement none. What does kind of pavement mean?

A. That is part of the description of the kind of pavement existing over the pipe referred to in the foregoing column.

Q. Then if there is pavement the character of it is specified.
927 A. Yes, sir.

Q. If there is not you say none?

A. That is right?

Q. Now what occasion is there for distinguishing for instance between brick on concrete and asphalt on concrete?

A. Well the cost of tearing up and replacing these pavements varies, consequently the cost of replacing a main in a given street will depend very largely on the kind of paving existing over that main.

Q. Now the inventory as I recall it contains an estimate of the amount of paving which it would be necessary to tear up and restore in the relaying of these mains or perhaps only a statement of

the width of the trenches from which that amount might be deduced. I wish you would state whether in making your estimate up you have accepted these amounts stated in the inventory, or whether you have taken the amount of paving which in your judgment it would be necessary to remove and replace for the doing of the work with these respective sizes of pipe?

A. I used none of the figures as to the amount of paving necessary to be taken up given by the company. I saw them in the inventory but I did not use them because they did not agree with what I considered standard practice and in arriving at my cost I have taken the least width of paving I could as it seemed to me the proper width without referring to the inventory as to the amount the company thought should be removed.

Q. In other words you acted on your own judgment basid on your information and experience?

A. Yes, sir.

COURT: Under two and a half inch pipe I notice you have 25,527 feet that there is no pavement over.

928 A. That is in dirt streets, upon streets that have not been paved.

COURT: *Go* do you get at that?

A. That has been scaled, all of the paving maps in the city have been compared with the street main maps of the company. The company will find paving will exist on such and such a street such a distance. Then they will scale the amount on each street of pipe they have unt-l they arrive at the number of feet of each sized pipe they have on that street. By going over the entire city they arrive at the totals of each size of pipe, get the total length.

Q. As I understand you the amount given here in the tables of pipe that is laid where there is no paving, that is figured in that size?

A. Yes, sir. The next line shows that of the two and a half inch and under, 1835 feet are under pavement made by brick on concrete. The next 3200 on brick on said foundation the next 23933 asphalt on concrete. I had to separate these because the cost of doing different kinds of work will vary widely.

COURT: Wood block on concrete?

A. There are only 322 feet in blocks.

COURT: 150 feet under macadam.

A. Yes, sir.

COURT: These vary in the cost of replacing the pavement?

A. Yes, sir.

COURT: Also vary in the cost of laying the pipe originally?

A. If no paving on any of these streets, I would not have separated these items at all.

COURT: I understand in these figures you separate them because of the difference in the cost of laying in dirt or brick on con-

929 crete *pr* sand, asphalt on concrete, wood block on concrete and macadam.

Mr. BYERS: These different kinds of paving, statements here with reference to them are made solely with reference to the

present condition in the street and without any reference whatever to the condition when the pipes were laid?

A. Made solely with reference to the present condition because we are trying to arrive at the present reconstruction value.

Mr. BYERS: It is not intended here to indicate what the condition of the streets were at the time the pipe were actually laid?

A. Not at all.

Q. You state present condition, present as in the sense of the time of the values?

A. As of the time of the inventory.

Q. You refer to noting the various kinds of paving. This plat 29 in Exhibit 16, shows the various kind of paving?

A. Yes, sir.

COURT: Let me ask one other question. Where there is marked none, is that where the streets indicated has no paving on?

A. Yes, sir.

Q. Taking this main, that is two and a half inch or under, and you have a column headed here net construction cost of pipe laid in unpaved streets ?

A. Yes, sir.

Q. That I see is carried out for each item?

A. Yes, sir.

Q. So that you figured each item first as if there were no pavement?

A. Yes, sir.

Q. Then what is the next column?

930 A. Net construction cost of tearing up and replacing pavement. I might have figured those two items together if my tables had been differently arranged, but with the tables arranged as I had them I could save time making two separate columns so I worked them in that way.

Q. Then what is your final column?

A. That is the total net construction cost which is the sum of the two previous columns.

Q. So taking your first item here, 25,527 feet where there is no pavement your last column and your first column are the same because there is nothing to add on account of paving?

A. Yes, sir.

Q. Now take your next item, this brick on concrete, 1835 feet. Then the first column is the next construction cost as if *they* were no paving there?

A. Yes, sir.

Q. Now what is the next column?

A. $1,290 which would be cost of tearing up and replacing the pavement over that strip of pipe at this time which added to the previous figure, $386 gives a total net construction cost of $1,676 shown in the right hand column.

Q. Now I will ask you whether taking the two and a half inch pipe and under on this page 89, shows your estimate in detail and in the

aggregate of the total net construction cost of relaying that main?
A. It does.
Q. And that is what, the aggregate?
A. For the two and a half inch and under, $11,715.

Mr. BYERS: For the purpose of the record here, we don't want to make objections as we go along. I suppose it is your purpose after this examination which I take it is to identify and
931 qualify this exhibit, you will then offer the exhibit?
Mr. GUERNSEY: I expect to offer the exhibit.
Mr. BYERS: We can then make our objections to such parts as we otherwise would make now if this was incompetent testimony you were putting in here.

Q. Turning back to page 9, under your summary of physical property you have a sub head distribution system and street mains and where does this 33,947 feet of mains, two and a half inches and under appear?
A. Under street mains, two and one half inches and under, total reproduction cost, $14,838.
Q. That is $14,838 is the estimate of the total reproduction cost of these mains just considered?
A. Yes, sir.
Q. Now you have next the age in years?
A. 8.97 years.
Q. I suppose we might just as well stop here and ascertain how you get at that. I will call your attention in this connection to the next page of your report, page 10, Is that your information?
A. That shows the method of calculating by which I arrived at the present age.
Q. Now will you explain that?
A. The result arrived at is the greatest composite age of the distribution system as a whole. There are two ways of working this out, you may arrive at it either through going over the records of installation of the system by so many feet of such sized pipe each years, or you may work it on the basis of investment. Of course it is on the basis of investment we are interested here, but I
932 worked it both ways. The installation basis shows that in 1910 there are a total of 183.89 miles at the end of the year of which amount 6.73 miles have been installed during that year, previous year. 167.16 in use at the end of the year and 9.28 installed during that year and so on. We go back through the records that way until we come to 1891 and from 1891 to 1864 the records are not clear as to the mains added per year but the total amount in use at the end of the period of 26 years was available and by extending the curve represented by the growth of the distribution system from 1891 to 1910, extending that backwards——
COURT: You got this then from an investigation of the records?
A. Yes, sir.
COURT: That showed how much was installed each year?
A. Yes, sir; as far as the records went.

Q. You personally did not make these computations?
A. No, I did not.
Q. This was furnished to you?
A. Yes, sir.
Mr. GUERNSEY: We shall identify this by somebody else unless Mr. Walter's work does it.
A. No, I didn't do this myself.
Q. Let me ask you one more question, perhaps it is not necessary but you spoke about extending this curve backward, by that you mean you had the history from 1910 back to 1891.
A. Yes, sir.
Q. And that gave you the ratio in which the mains had increased or averaged there for some 20 odd years?
A. Yes, sir.
Q. And in order to get the conditions prior to that time,
933 you on that ratio extended that curve back to the commencement of the plant?
A. Yes, sir.
—. And that gave you as the average age of the mains in the plant what?
A. On the installation basis gave 10.3. On the investment basis gave 8.97.
Q. Is there any reason for adopting one of these figures instead of the other?
A. Yes, sir.
Q. That was what?
A. The only figure you can adopt here is the investment basis figure.
Q. Why.
A. Because the depreciation is figured on the investment.
Q. What do you mean by the installation basis or number of miles?
A. That is only a check on the other method of calculation.
Q. What do you mean by the investment basis?
A. Well that is what is called the average, if you invested $10,000 ten years ago and $5,000 nine years ago and $6,000 four years ago and so on, the weight of average of your investment would be obtained by multiplying your $10,000 invested ten years ago by ten and your $6,000 invested six years ago by six and so on coming down to the present time when you divide by the total number of years.
Q. Then if I may ask you a leading question, your investment basis is based upon the number of dollars invested in the mains each year.
A. Yes, sir.
Q. The installation basis would be based on the miles in-
934 stalled?
A. Yes, sir.
COURT: Is that the actual price at the time they were invested or at this time?
A. Well it would not make any difference as long as you maintain

a correct ratio between the *united* on the different sized pipe, you would get the same result in years whether you used four or forty as long as you maintain the ratio between that pipe and all other sizes.

Q. In figuring the investment did you figure money actually invested?

A. No, I don't know what the money actually invested was. In arriving at the investment basis you start out and take any one sized pipe at a given unit per foot. You know what the ratio should be between that sized pipe and any other sized pipe and follow that ratio out and it won't affect your average in the slightest degree what the figure was as long as you maintain the ratio between the different sizes. You may use units that are 50 per cent low or 50 per cent high or any other per cent above or below as long as you maintain the same ratio to themselves.

Q. Now what is the assumed life of that pi-e, two and one half inch and under?

A. Twenty five years.

Q. I see that the assumed life of most of the pipe is 75, why is this so low?

A. The life of a pipe depends very largely first on the kind of pipe and then on the size. Two and one half inch and under is what is called wrought iron pipe, but as a matter of fact it is steel in nearly all cases these days and it has a much shorter length of life that three inch wrought iron, three inch being heavier
935 a great deal. Then comes the next size four inch cast iron, cast iron is longer lived than wrought iron in any size and the size being larger the metal is thicker and these two reasons combined give four inch cast iron about fifteen years more life than three inch. Then comes *16* inch cast iron and when you get six inch you get a longer life than four inch. The size and quality of the pipe determine the life.

Q. What is the per cent condition as you estimated it of this two and one half inch and under main?

A. 76.

Q. Present value?

A. $11,277.

Q. Depreciation annuity on a sinking fund basis?

A. $381.

Q. Now turning to the next size larger, that is marked on page 89 three inch W. I., that simply means what?

A. Wrought iron.

Mr. BYERS: This 8.97 averages what?

A. That is the composite age of all the street mains. It is obviously impracticable to try to work out a depreciation of an individual piece of street main pipe when you haven't an exact -ecord of them so the only thing you can do is to strike an average which will help some sections of pipe and which will run against other sections. It is the fairest thing that can be done, not exact, but the fairest thing you can do.

Q. Now passing to the three inch mains, have you on page 89 of your report estimated the net construction cost of this main, including the extra cost on account of pavements both in detail and in the aggregate.

A. I have.

936 Q. And what is the aggregate amount of this estimate?

A. $30,811.

Q. That appears as what on page 9 in the summary?

A. Thre- inch W. I.

Q. Under street mains?

A. Yes, sir.

Q. What is the estimate of the total reproduction cost of these mains?

A. $39,025.

Q. As to these mains you have the same age in years because you have taken the composite age all the way down?

A. Yes, sir. The same age on all mains.

Q. So I won't ask you about that again. I will wait until we get to services. Now what life have you on these three inch mains?

A. 35 years.

Q. And per cent condition?

A. 85.

Q. Present value?

A. $33,171.

Q. Depreciation annuity on sinking fund basis?

A. $645.

Q. Have you in the same way on page 89 estimated in detail and in the aggregate the net construction cost of the four inch cast iron mains?

A. I have.

Q. And what is the aggregate amount?

A. $451,908.

Q. That appears on page 9 as four inch C. I.?

A. Yes, sir.

Q. And what is the net reproduction cost of these mains

937 in your judgment?

A. The total reproduction cost is $572,370.

Q. The life?

A. Is 50 years.

Q. Per cent condition?

A. 91.

Q. Present value?

A. $520,857.

Q. Depreciation annuity?

A. $5,071.

Q. Now in the same way on page 89 have you estimated in detail and in the aggregate the total net construction cost of the six inch mains?

A. I have.

Q. What is the aggregate?

A. $175,985.

Q. That appears as six inch cast iron on page 9?
A. Yes, sir.
Q. And what is the total reproduction cost of this item?
A. $222,901.
Q. Life?
A. 75 years.
Q. Per cent condition?
A. 96.
Q. Present value?
A. $213,985.
Q. Depreciation annuity?
A. $1,034.
Q. Now have you shown on page 89 in the same manner you estimate in detail and in the aggregate of the total net con-
938 struction cost of the 8 inch mains?
A. I have.
Q. And what is the aggregate.
A. $101,272.
Q. That appears as 8 inch C. I. on page 9?
A. Yes, sir.
Q. What is your estimate of the total reproduction cost of these mains?
A. $128,270.
Q. Life?
A. 75 years.
Q. Per cent condition?
A. 96.
Q. Present value?
A. $123,139.
Q. Depreciation annuity?
A. $595.
Q. Turning now to the next page 90, have you in like manner estimated in detail and in the ag-regate and shown thereon the total net construction cost of the ten inch mains?
A. I have.
Q. And what is this total?
A. $57,392.
Q. That appears on page 9 as ten inch?
A. Yes, sir.
Q. And what is the total reproduction cost of this item in your judgment?
A. $72,691.
Q. Life?
A. 75 years.
939 Q. Per cent condition?
A. 96.
Q. Present value?
A. $69,783.
Q. Depreciation annuity?
A. $337.
Q. Have you shown in like manner on page 90 in detail and in the

aggregate your estimate of the total net construction cost of the 12 inch cast iron mains?

A. I have.

Q. And that amounts to what?

A. $61,709.

Q. And that appears how on page 9, as 12 inch?

A. 12 inch C. I.

Q. What is the total reproduction cost of those mains?

A. $78,159.

Q. Life?

A. 75 years.

Q. Per cent condition?

A. 96.

Q. Present value?

A. $75,033.

Q. Depreciation annuity?

A. $363.

Q. Now have you the fourteen inch on page 90. Have you estimated the total net construction cost of the fourteen inch mains?

A. I have.

Q. And that is what?

A. $1,267.

Q. That appears as 14 inch C. I. on page 9?

940 A. Yes, sir.

Q. What in your judgment is the total reproduction cost of these mains?

A. $1,605.

Q. Life?

A. 75.

Q. Per cent condition?

A. 96.

Q. Present value?

A. $1,541.

Q. Depreciation annuity?

A. $7.00.

Q. Have you in like manner estimated in detail and in the aggregate and so shown upon page 90 the total net construction cost of the 16 inch cast iron mains?

A. I have.

Q. What is the aggregate?

A. $98,602.

Q. That app-ars as 16 inch C. I. on page 9?

A. Yes, sir.

Q. And what is your estimate of the total reproduction cost of those mains?

A. $124,887.

Q. The life.

A. 75 years.

Q. Per cent condition?

A. 96.

Q. Presenr value?

A. $119,892.

Q. Depreciation annuity?

941 A. $579.

Q. Taking the 20 inch mains, have you in like manner on page 90 shown your estimate in the aggregate and in detail of the total net construction cost of them?

A. I have.

Q. This amounts to how much?

A. $23,364.

Q. That appears as twenty inch on page 9?

A. Yes, sir.

Q. And what is the total reproduction cost of these mains in your judgment?

A. $29,593.

Q. Life?

A. 75 years.

Q. Per cent condition?

A. 96.

Q. Present value?

A. $28,409.

Q. Depreciation annuity?

A. $137.

Q. And have you in like manner on page 90 shown the total net construction cost in detail and in the aggregate as you estimate it of the 24 inch cast iron mains?

A. I have.

Q. That amounts to how much?

A. $16,311.

Q. That item appears under 24 inch on page 9?

A. Yes, sir.

Q. What is the total reproduction cost of these 24 inch mains?

A. $20,659.

942 Q. Assumes life?

A. 75 years.

Q. Per cent condition?

A. 96.

Q. Present value?

A. $19,833.

Q. Depreciation annuity?

A. $96.

Q. Now the river crossings, the 8 inch main, the 6 inch main and the 24 inch main are included in thee estimates to which we have referred and in each instance the amount which you estimated these crossings appear?

A. The figures I have given you from my report include the river crossin-s with the particular sizes of pipe but they are not handled separately as they are in the inventory.

Mr. Byers: Before you go farther I would like to inquire if the witness has the figures anywhere in this exhibit by which he arrived at this investment age of 8.97?

A. I have not.

Mr. Byers: We will ask for these later on. I suggest it now so the witness may be prepared for that.

Q. Does the method by which this is obtained appear on page 10?
A. My details are not there but the method is shown.
Q. Both that and the average age of mains on the installation basis?
A. Yes, sir; that shows the method of calculation.
Q. Now the next thing you take up is what Mr. Lea?
A. Services.
Q. That is on page 91 of your report, Exhibit 20?
A. My pages are not numbersed. It is headed distribution sys——

943 Q. Before I forget it, did you take the computation of the amount of paving given in the inventory or did you rely upon your own judgment or experience as to the amount of pavement it would be necessary to remove and replace?
A. Used my own judgment and experience altogether, worked from my own tables only.
Q. Here I see you have the number of services 17,120. This aggregate amount of service 17,170 I see accords with the number given at page 217 of Exhibit 15. You obtained it from the inventory.
A. Yes, sir.
Q. And I see you have analyzed this number of services with reference to whether they were under p-ving or not, and if so the kind of paving?
A. Yes sir.
Q. For what reason?
A. For the same reason that I had them analyzed in the street main work, the cost of the services will be determined very largely by the kind of pavement you have to go through to lay that service.
Q. Now your column headed net construction cost, pipe, -aid in unpaved street on page 91 of your report, includes what on account of paving, if anything?
A. Nothing.
Q. Now what does the next column cover?
A. That covers only the net construction cost of tearing up and replacing the pavement over the pipe specified.
Q. What is the third colunm?
A. The total of the items of the foregoing two columns.
Q. Column one covers the cost except paving?
A. Yes, sir.

944 Q. This page 91 shows in detail and in the aggregate your estimate of the total net construction cost of these house services?
A. It does.
Q. And what is that total?
A. $287,626.
Q. Now turning back to page 9, under what head does that appear there?
A. As house services.
Q. And what is the total reproduction cost?
A. $364,290.
Q. Now what is the age?
A. 8.94 years.

Q. What is that, average age?

A. That is the composite age.

Q. Can *t*ou explain to us briefly and clearly the difference between average age and composite age.

A. Yes, sir. The average age you would arrive at by say taking a period of five years, you laid 100 services the first year, 90 the second year, 80 the third year 70 the fourth year, and sixty the fifth, add them up and divide by five would be the average age*m* but as a matter of fact the composite age would be really some more than that because more tha*h* one fifth of these mains were in the first year. If you were atte*no*ting to figure the interest on your money, the composite age of these mains, you would see very soon the composite age was the one you had to rely on. You have got to multiply the investment by the year, by the number of years it has been in service, and then divide finally by the total number of dollar years in order to arrive at the composite age. If you don't do that you are fooling yourself.

945 COURT: The composite age is the real average?

A. It is the true average, but not what is ordinarily meant when we say average. It is the true average.

Q. I wish you would turn to page 11 of your report, the second page after this summary that we are now referring to and state what that is and what that has to do with the ascertainment of this average age?

A. That table shows the calculation I have just described which was gone through in arriving at the composite age, the true average age of the services in use at the time of the taking of this inventory. That shows that the composite age or true average age on the investment basis of the services was 8.94, the installation basis shows 8.27 in this case we have just reversed the other, here the installation shows a smaller age than the investment, but the investment is the one we have to stand on so I have had to give the services 8.94 years instead of 8.27 years shown by the installation.

Q. Taking this up a little more in detail you have 1910 the total invest-ent in services, then you have a fraction of a year.

A. I might explain Mr. Guernsey that these figures shown there as investment do not s-ow the actual investment, they represent what I was explaining. They represent the total of certain units which bear a given ratio to each other but are not themselves the correct units or cost only of reproduction.

Q. Take 1905 for instance, you multiply that amount by the number of years to get your dollar years?

A. Yes sir.

Q. You run it down that way and what do you do for this period from 1864 to 1878.

946 A. That is handled the same way as the main figures were handled you extend the curve backwards from the point where the records leave you to the beginning of the operation of the plant, that is the best you can do.

Q. You take that then for your average age there?

A. Yes, sir. I have taken the composite age or true average age on the investment basis as my figure.

Q. Now then turning to page 9 what is the life of these services?

A. Twenty five years.

Q. And there per cent condition?

A. 76.

COURT: These services are what, wrought iron?

A. Yes, they are all bought as wrought iron, but there is a great deal of question these days whether you are getting wrought iron when you buy it, specify it. Very frequently they give you soft steel.

Q. What is your estimate of their present value?

A. $276,860.

Q. And what is your estimate of the depreciation annuity on a sinking fund basis on account of this item?

A. $9,351.

Q. Now turning to page 91 of your report, your next item is lamp post services. Have you estimated and shown on that page in detail and in the aggregate their net construction cost?

A. I have.

Q. And what is the total?

A. $24,943.

Q. Turning back to page 9, that appears as lamp services upon that page?

A. Yes, sir.

Q. What in your judgment is the total reproduction cost of this item?

947 A. $31,592.

Q. How is the age ascertained?

A. In the same mann-r as for house services.

Q. What is the estimated life in years?

A. Twenty five.

Q. Per cent commission?

A. 76.

Q. Present value?

A. $24,010.

Q. And depreciation annuity on a sinking fund basis?

A. $811.

COURT: Let me ask you a question, who owns these posts?

A. The posts risers and services belong to the company. I have estimated the lamp posts complete with the exception of the lamp heads, the risers and posts belong to the company, the service pipe riser and post. The lamp and lamp head belong to somebody else.

Q. With reference to the posts, the number of lamp posts and services this information is shown on page 218 of the inventory Exhibit 15, is it not?

A. Yes, sir.

Q. Your next matter you take up on page 92 of your report is what?

A. The line pot drips. That page covers the miscellaneous material which is also a part of the street main system properly.

Q. These drips and valves are inventoried where in Exhibit 15?
A. Page 215.
Q. I recall I think that Mr. Moul testified that this inventory omitted one 24 inch line pot drip. Your number of line pot drips in existence was taken from that in the inventory I believe?
A. Yes, I have no twenty four inch drip.
948 Q. So if he is correct about that that is something that is omitted from your valuation which might properly be added to it. Now taking these line pot drips does page 92 of your report show in detail and also in the aggregate your estimate of their net construction cost?
A. Yes, sir.
Q. And what is that?
A. $2,400.
Q. That appears under what item, opposite what item on page 9?
A. Line pot drips.
Q. And what is your estimate of the total reproduction cost of these drips?
A. $3,040.
Q. You give what as the age?
A. The age of the street mains as a shole.
Q. And why?
A. Because they are a part of the street main system, attached to it and made of the same material.
Q. What would they be good for without the system, without the mains?
A. Nothing that I know os.
Q. So they are a part of that system and have the same life.
A. Yes, sir.
Q. And what is their estimated life?
A. Their estimated life will be between the maximum life of the pipes composing the main system because they are located on pipes of various sizes, most of them though on the large pipes so I have gone some above the average in allowance of life and give them sixty years.
Q. And what is the per cent condition upon this item?
A. 94.
949 Q. Present value?
A. $2,857.
Q. And the depreciation annuity on sinking fund basis?
A. $22.
Q. Now the valves you have listed here are listed at page 215 of Exhibit 15 I believe?
A. Yes, sir.
Q. Your list coincides with that one I find by looking at it. Did you at page 92 show and estimate in detail and in the aggregate of the net construction cost of these valves?
A. Yes, sir.
Q. Where are these valves located?
A. Scattered about the city. The purpose of them being to pro-

vide a means of isolating certain sections of the city in case of trouble, might be compelled to repair a certain main if there were a break in it. If you had no means of shutting off any section all the gas held in storage would get away from you so in the course of time you could not keep up the supply so to protect yourself and your consumers you put in these valves so you may shut off on either side of that break and let the rest of the city go ahead while the repair is being done. Suppose you have to take up a given part and replace with a larger one the same thing ap-lies.

COURT: They are emergencies.

A. That is all.

Q. What is the estimate of the total net construction cost of the valves?

A. $3,519.

Q. I read this $3,319.40.

A. I have $3,519.40 and that 40 cents might have been
950 dropped before we came in here, should have been dropped. It is a mistake in copying and should have been $3,519.

Q. Will you please read the various amounts of these valves?

A. $50, $1,039.50, $594, $237.60, $316.80, $148.50, $737, $396.

Q. Now add it if you please and we will be sure we are right?

A. It should be $3,519.40.

Q. Now Mr. Lea turning back again to page 96, that item appears a*w* valves?

A. Yes, sir.

Q. And what is the total reproduction cost?

A. $4,457.

Q. Age?

A. 8.97 years.

Q. You obtained that just the same as you did for the drips?

A. Yes; for the same reason.

Q. Estimated life?

A. 60 years.

Q. For what reason?

A. The same.

Q. Per cent commission?

A. 94.

Q. Present value.

A. $4,190.

Q. Depreciation annuity?

A. $33.

Q. Now the next item you have page 92, is steam railroad crossings, what do you mean by that. Has the company a*h*y steam railroad crossings?

A. The company does not own any steam railroads, but there are a number of points, 191 points in the city of Des Moines
951 where the company's mains pass under the steam railroad tracks, counting tracks two rails as a single track.

COURT: That is to say where there are three or four tracks?

A. If your pipe goes under eight different rails that is equivalent to four crossings, two rails to a crossing because you have got to shore each time. That is the reason it is counted each time. You

have got to shore up under each track the same as though there were no other tracks there.

Q. Now then this item, if I understand you then is on account of additional cost that would be involved in reproducing the plant on account of the presence of these steam railroad crossings.

Q. Yes, each time you are to go under a steam railroad you must first get the consent of the railroads, sometimes that is difficult, then you will have to take extra precautions to see there is no cave in of any kind, do everything you can to prevent the possibility of caving in, that means expensive work.

Q. What in your judgment is the net construction cost of these steam railroad crossings, if I may put it that way, that is the additional cost due to the fact that they are to be encountered?

A. $3,820.

Q. What appears as steam railroad crossings on page 9?

A. Yes, sir.

Q. And what is in your judgment the total reproduction cost of this item?

A. $4,839.

Q. And the age you take as what?

A. 8.97.

Q. For the same reason you did these other pertinent things.

A. Yes, sir.

952 Q. And the life?

A. 60 years for the same reason.

Q. What is the per cent condition?

A. 84.

Q. What is the estimated present value.

A. $4,548.

Q. And the depreciation annuity on sinking fund basis?

A. %36.

Q. You also have here page 92, an item street railroad crossings. What is the fact as to whether they are analagous to the steam railroad crossings?

A. They are analagous, but the expense of passing under them is not as great as the steam railroad, the weights you have to carry are not as great and the corresponding expense is less. A single tract street railway can be crossed under for $15 extra.

Q. Are these street railroad and steam railroad crossings the ones referred to at page 216 of Exhibit 15?

A. Yes, sir.

Q. Have you at page 92 shown your estimate of the net construction cost which would be incurred on account of these street railroad crossings?

A. I do.

Q. What is it in the aggregate?

A. $5,585.

—. This item appears at page 9 under street railroad crossings.

A. Yes, sir.

Q. What is your estimate of the total reproduction cost on account of this item.

A. $7,074.

Q. Age?
953 A. 8.97 years.
Q. For the same reason as the other things?
A. Same reason as before.
Q. And the estimated life?
A. 60 years for the same reason before explained.
Q. Per cent condition?
A. 94.
Q. What in your judgment is the present value on account of this item?
A. $6,650.
Q. And depreciation annuity on a sinking fund basis
A. $52.
Q. You next take up here your last item on page 92, tools.
A. These are tools that relate to the distribution system, bicycles ditch pumps, etc.?
Q. What do they want bicycles for?
A. The men who look after complaints do a lot of gratuitous work and in some cases the regular fitters have to use bicycles or motorcycles or horse and wagon to get around with. For emergency work use, bicycles or motorcycles are used.
Q. How did you make your estimate of these bicycles and so on?
A. I had no statement of the tools in the distribution department nor in the works at the time I made up my figures and I put in here one lump sum which I am very sure is less than the detail would show.
COURT: Simply an estimate?
A. Yes, just a rough off hand estimate.
Q. I find for instance here on page 230 of Exhibit 15, under distribution system, stable equipment, ten horses, 17 wagons,
954 two automobiles, four motorcycles, two tri cars, 12 sets of harness Where do they come in here?
A. They don't come in.
Q. They would be included in this item of $5,000 here?
A. This list may have been made up, I am not sure, I don't remember it now, but there came to me after I had passed that stage in my work some lists of tools, for instance an itemized list of the stuff in the office, the distribution tools and works tools and I did not consider these items of enough importance to warrant me in going through my calculation again because I felt sure I was on the low side anyway and I was willing to let it go at the figures I have put in here. I have not these items as there shown in my report at all. I have just a lump sum of $5,000, this covers the total. I know that is less than the total sho-ld be, but I had it down and will stand on it.
Q. Are these items I have read items that would have been included in this $5,000?
A. Oh yes, all of them.
Q. What are tri cars?
A. I presume that means a motorcycle with three wheels.
Q. Now these items you have estimated at what amount?
A. $5,000 net construction cost.

Q. That is the last item on page 92?
A. Yes, sir.
Q. Are you still satisfied that that is a minimum estimate?
A. I am satisfied that it is extremely conservative.
Q. That appears as what on page 9?
A. As tools.

Q. And what in your judgment is the total reproduction
955 cost of that item.
A. $6,333.

Q. Age?
A. 8.97 years.
Q. Estimated life in years?
A. 60. These figures are admittedly not correct, these ages and lives applied to tools.
Q. Per cent condition?
A. 94.
Q. Present value?
A. $5,953.
Q. Depreciation annuity on sinking fund basis?
A. $47.
Q. Now turning to the last item on your distribution syste-, we have the meters at page 93 of your report. I wish you would turn to page 227 and 228 in Exhibit 15 and state whether or not that is the statement in the inventory as to the meters which constitute a part of the plant of the complainant, the Des Moines Gas Company?
A. The statement of meters you have referred to is a statement of consumer's meters in use in the city of Des Moines on the 1st of November 1910. The statement to which I worked is a corrected statement bringing the figures down to the 1st of January 1911.
Q. That is the date of your inventory as a complete — and valuations.
A. Yes, sir. I have more meters than this inventory shows because mine is brought up nearer date.
Q. Brought up to the 1st of January 1911.
A. Yes, sir.

Q. In the first place you have down here the letters P. P.
956 A. Means prepayment. That is the nickel in the slot machine Judge Sloan refers to.

Q. What is a prepayment meter?
A. It is practically the same as an ordinary meter, except that it is provided with a little sort of a box fastened to it on one side into which you may drop a quarter or any other standard coin and this quarter will operate a little mechanism, clock work which will admit gas to the meter or allow it to pass through the meter until 25 cents' worth of gas, if that is the coin you have dropped, has passed and then this device automatically shuts off the sup-ly after having notified the consumer his quarter is about to run out.
Q. How does it give notice?
A. Through dimming the light.
Q. Will they take any coin?

A. You can make them to take any coin and you can adjust them for any given price of gas, that is most of them you can.

Q. Mr. Haines suggests a question, will they work with milk tickets?

A. Unfortunately they will with some.

Q. One thing I have not talked with you about, but I will ask you about and see whether you are familiar with it. How many of these prepayment meters are there?

A. Of the five light size there are in use 10,201 or were on the 1st of January 1911 in use 10,201.

Q. Of the ten light size?

A. 227 in use at that time.

Q. What does this letter A mean?

A. That is a trade name for another design of meter which is practically the same as the ordinary meter except has larger
957 seals, larger ducts, greater capacity to a give- size shell.

Q. Is it a prepayment or not?

A. No it is not a prepayment.

Q. You say you put a quarter of a dollar into one of these meters and get that much gas by virtue of this mechanism there is there. Now suppose that the price of gas were changed what would you have to do to these meters?

A. Well some of them you would have to send back to the factory and have this present device thrown away because they are probably not all capable of adjustment. If you have all devices that are capable of adjustment over a range that will cover the proposed change in price then you would have to get each individual meter and readjust it or take it to the shop and readjust for the new price of gas.

Q. So if there were a change in the price of gas there would be in this present system about 10,428 meters which would—it *be-n* necessary to make some mechanical adjustment before the company could put a new rate into effect?

A. Yes, sir.

Q. Take *aa* an illustration this new ordinance which imposes various penalties which I have forgotten for charging more than 90 cents for gas. Nos. if that ordinance were in effect is there any practical way that the company without the delay incident to changing about 10,500 of these meters could comply with it?

Objected to as incompetent, immaterial and not the subject of expert testimony.

A. Absolutely none. The quickest thing they could do would be to replace them with new meters, that would be the quickest thing. Of course that would involve a great deal of expense, and that would involve a great deal of time.

958 —. How long would it take, have you made any estimate of that to reasonably adjust a system such as this to a change in the price so that the company might comply with such ordinance?

Objected to as immaterial and incompetent, so far as this witness is concerned, because his whole proposition is based upon the theory

of the reproduction without any reference whatever to the material on hand or character of it, and especially as to meters other than just the number of them.

Mr. GUERNSEY: I propose to ask this witness some questions that do not relate to reproduction, I see no reason why I should not be permitted to do so.

A. I have not made any estimate of that but I do not believe it would be possible if you would put on all the men you could get here and order new meters, do not expect to make any changes, just order 10,000 new meters from the shops, I don't believe it would be possible to make the change inside of sixty days, using every facility open to you?

Q. And without reference to expense.

A. Without any reference at all to expense. It would be exceedingly poor business, but that would be the minimum time in my judgment.

Q. Now turning to your report, Exhibit 20, in this report on page 93 here, have you given first the net construction cost of the meters of each size or class?

A. Yes, sir. Of all of the meters of a given size and class but not of the individual meters.

Q. I notice here there is one 2000 light C. I., I suppose that is cast iron?

A. Yes, that means a meter with a cast iron shell of the
959 station meter type.

Q. That suggests what I was going to ask you, and that is whether or not that is a station meter?

A. It is not a station meter, it is of the station meter type, but it is for some job where the demand for gas is too large for the ordinary type of meter to meet the requirements.

Q. Some large consumer then?

A. Yes, sir.

Q. Does this page 93 show your estimate of the net construction cost of the meters in use and if so what is the amount?

A. The total net construction cost of meters in use I estimate to be $179,333.

Q. Before we turn to the other page I notice a memorandum at the bottom of this page, above prices include cost of meter from connections and incidentals as per schedule. What does that mean?

A. Well that note has no business there as a matter of fact because corresponding notes might have been written about everything else there. It was on one of my memorandum- when it went to the stenographer and came back in this form. It means only that I have all the details in my tables and I do not have to go back to the service calculations to get this separate. There is sometimes a difference in the plan, some people figure meter connections as part of the service. I figure them as part of the meter.

Q. Turning to page 9, this item appears as meters in use?

A. Yes, sir.

Q. And what in your judgment is the tota- reproduction cost of this item.

A. $227,145.

960 Q. Now what is the age of these meters?

A. 7.7 years.

Q. How do you ascertain that, is there a memorandum here with reference to that?

A. Yes, sir.

Q. Is that found on page 12, headed average age of meters installation basis?

A. Yes, sir.

Q. I wish you would explain that memorandum?

A. The same explanation applies to this as applies to the corresponding Exhibits or sheets for age of service and for age of mains. The composite age was arrived at in the same manner.

Q. A little more in detail if you please. You began in 1886.

A. In 1886 there were at the end of that year 1261 meters in use. Going to the third column number of meters installed during the year we find that figure of 1261, which only means in this case that the 1261 is the total meters installed during the preceding 22 years.

Q. Why didn't you give the meters installed during the time of the preceding twenty two years?

A. The figures were not available, the records were not available.

Q. And for these twenty two years——

A. The curve of the period since then was extended backward to give the approximate figures.

Q. Take 1886 you have your 1261 meters and you multiply that by 29.1?

A. They had been in use at the time of this calculation 29 years making a total number of meter years of 36,397.

Q. How did you get that one tenth, or do you remember?

961 A. I don't remember. Oh yes, that is the weighted average. The number of meters installed during the latter part of the 22 years of which no record is obtainable was greater than the number of meters installed during the beginning and this curve showed that a weighted average would give you for this 22 years an equivalent of 29.

Q. The next year you multiply by the 23 years, that is from 1887 to 1910, as I understand it, the 43 the number of meters installed during that year?

A. Yes, sir.

Q. And so on your multiple is of the number of meters installed each year by the number of years they have been in service?

A. Up to the time of the investigation.

Q. And what do you give as the average age of the meters on the install-tion basis.

A. 8.27 years.

Q. You have a memorandum following that average of meters of investment basis which is less, which did you adopt?

A. The investment basis figure.

Q. Why?

A. Because depreciation is based on investment.

Q. Based on the dollars invested at the specific time?

A. Yes, sir.

Mr. BYERS: Does that appear anywhere figured up?

A. Not beyond this, no further detail than I have shown here.

Mr. BYERS: We will want that when we come to that part of the examination.

Q. You have taken then 7.7 as the age in years of this item of meters to which we were just referring.

A. Yes, sir.

962 Q. I believe I asked you the total reproduction cost, if not will you please state it?

A. You did on the meters in use.

Q. Meters in use is what we were talking about?

A. Total reproduction cost of the meters in use I estimate would be $227,145.

Q. The age in years.

A. 7.7.

Q. Estimated life is what?

A. 25 years.

Q. Per cent condition?

A. 80.

Q. And the pres-nt value?

A. $181,516.

Q. And depreciation annuity on sinking fund basis?

A. $5,831.

Q. Now then take the meters in stock. In the first place I cal- your attention to page 228 of Exhibit 15 and ask you whether the meters in stock 853 shown there check wi h the meters in stock on which yiu base your estimate?

A. The meters in stock November 1st were the same as the meters in stock January 1st according to the record we have here. My figures agree with the inventory.

Q. You have estimated -he net construction cost, shown that in detail upon page 93.

A. Yes, sir.

Q. In the same manner in which you estimated this same thing as to meters in use.

—. ——.

Q. And what in your opinion is the net construction cost of the meters in stock referred to on page 93 of your report?

963 A. $7,309.

Q. Turning now to page 9 of your report under what item do these meters in stock appear there?

A. As meters in stock.

Q. And what in your judgment is the total reproduction cost of these meters in stock?

A. $9,259.

Q. What is the age which you show there?

A. They are practically new. They are so new that they are less than one year and I put in no age on them.

Q. Then by the meters in stock you mean meters on hand ready for use but not used?

A. Yes, they are all in No. 1 condition, they *are* recently tested and proven.

Q. And what is the life of these meters?

A. 25 years.

Q. Their per cent condition?

A. 100.

Q. Present value?

A. $9,259.

Q. Depreciation annuity on sinking fund basis?

A. $238.

Q. These items that I have called your attention to now commencing with the mains and ending with the meters that we have just referred to constitute what you have classified as the distribution system in your report.

A. Yes, sir.

Q. And what is the aggregate tota- reproduction cost of these item-?

A. $1,963.027.

Q. Now will you turn to your l-tter of June 24, 1911, to Mr. Haines and state whether or not that is the item which
964 appears in that letter opposite distribution system and under the head reproduction cost?

A. It is the same figure. The figure in the letter was taken from Exhibit "B" of my report.

Q. Passing on to the 5th column of page 9, I find the total distribution system u*b*der present value to be $1,732,969. Turning to the letter of June 24, I find opposite distribution system under the head present values the same amount. Is this Exhibit "B" the source from which this amount given in the letter is obtained?

A. It is.

Q. Now you have following this entire total, total physical equipment. Now to ascertain what you include in that may we not look back through this Exhibit "D" and see what you have itemized as equipment?

A. This Exhibit "D" is all of the physical equipment.

Q. What is the fact as to whether that total which is given on this page 9, as $2,839,795 under the column total reproduction cost covers what appears in that colum- commencing with the works equipment in buildings 1-A and B on page 5, and running down through page 9?

A. Commencing with real estate.

Q. Does *t*our physical equipment include the real estate?

A. Yes, sir.

Q. Then it begins with the beginning of page 5?

A. Physical equipment includes real estate, building-, works equipment and distribution system. If you will add together from the figures in my letter under reproduction cost opposite the headings real estate, buildings, works equipment and distribution sys-
965 tem you will arive at the total of $2,839,795 shown as the total reproduction cost in Exhibit "D" of my report.

Q. Now Mr. Lea, under this second column on page 9, age in years, total distribution system you have 8.77. That seems to be something that is different from anything that precedes it. Will you explain how you get that. And what it is?

A. You get that in the entire distribution system just as you get the corresponding figure for the mains alone by working out the composite age on investment basis of equipment in the distribution system.

Q. Now you have following that under the same column opposite total physical equipment, age in years 8.9 and a star there, asterisk referring you to a note apparently at the bottom all physical equipment except real estate. Will you explain that?

A. Yes, because I am unable to determine the age of the real estate.

Q. And this age alone is only material when you come to matters of depreciation I suppose.

A. Yes, sir.

Q. And that is not applied to real estate.

A. No.

Q. Now your next column you have 50 as the assumed life in years for the distribution system. That is on the investment basis?

A. Yes, sir.

Q. Composite or average life?

A. Yes, the true average life.

Q. And in the same column right below that in the table of physical equipment, you have 46 as the assumed life in years?

A. Yes, sir.

966 Q. That is the composite or average life of the total physical plant, except real estate.

A. Yes, sir.

Q. Then you have under the next column in your distribution system as per cent condition 88.23. You get that in the same way I suppose as your composite per cent condition, of the entire distribution system?

A. It is yes.

Q. Below that in the same column you have the figures 85.3 opposite total physical equipment. What are they?

A. That is the composite per cent condition of all physical equipment except real estate. The real estate of course is 100 per cent, that would tend to bring up the balance of the plant and has no right there.

Q. Now one or two general questions on this matter. I want to ask you first whether in making up your estimates in your annuity prices and in the other prices which you have adopted you have in each instance adopted what you believed to be reasonable market value at the time of the inventory or of the valuation, that is January 1, 1911, of the item in question.

A. I have.

Q. In asking you the questions I note that I have been at times at least careless about the tense, sometimes using present tense and sometimes past tense, so I wish you would state whether each of

your answer- in giving your estimates and the results of your estimates is as of the date of this valuation, that is January 1, 1911.

A. All of my figures refer to the property of the company as reported to me as of the date of January 1, 1911.

Q. That don't quite answer my question. I asked you for
967 instance I remember of noticing it myself, what is your estimate of the net construction cost of this item, or what was your estimate I said. I want to know whether all of your answers as to these estimates are to be taken as referring to the date of January 1, 1911?

A. Yes, they are.

The COURT: You figure the price of labor and material as of January 1st?

A. I do not mean by that I assumed you would go ahead and begin the laying of these mains on the first of January but I figured on the reproduction of the mains which were in existence on the first of January during such times as the company would want to install such equipment, of course in the summer time.

Q. And the price of labor required?

A. Yes, sir.

Q. And price of material required?

A. Yes, sir.

COURT: How do you get at the price of labor?

A. By making local inquiry and from information I have got here in line with other information I have from other parts of the country.

COURT: How do you get the price of machinery?

A. By referring to my notes, I have a great many, I might show you some of them, if you are interested.

COURT: No I do not care for that.

A. I have a great number of records of the cost of construction and erection of all kind of gas equipment all over the country.

COURT: Not from personal purchase?

A. Oh no. Well I have been with concerns that were building all these kinds of stuff and I have all the record these companies
968 I had to have.

Mr. GUERNSEY: You said in the commencement of your examination you had designed, built and sold this machinery?

A. Yes; I have.

Q. Does this include the kind of apparatus you are referring to here?

A. Exactly. It is the kind of apparatus with which I have been working for fifteen years exclusively.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

969 Wednesday Forenoon Session.

JULY 26, 1911, at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on behalf of complainant resumed as follows:

HENRY I. LEA, re-called for further direct examination, examined by N. T. Guernsey, Esq., testified as follows:

Q. Before I forget it, there is one little matter that perhaps might be subject to misconstruction. In estimating the cost or additional cost on account of railroad crossings, did you include or take into account anything on account of the difficulties in obtaining consent or permission from the railroads.

A. I did not in this case. I mentioned that was one of the things we frequently find adding to the expense.

Q. I next want to take up with you the matter of going value. What do you mean by that?

A. The going value of a company is that value which is beyond the physical equipment of the property but is an attribute of the physical equipment. You might say going value is measured by the difference between the total present value of the physical equipment of a company and the total value of the company as a whole as a revenue producing concern of which the physical equipment is but a part.

Q. You have said the Company—you mean the plant, the property?

A. By Company I mean the physical equipment plus the business; I do not mean the corporation itself.

Q. Now, to go into a little more detail about that, in the first part of the reproduction of the property of the corporation, such as the complainant here, the Des Moines Gas Company, you would
970 reproduce the mere physical property?

A. Yes, we have several methods—if they are methods—of arriving at the going value of gas companies, but with the exception of one they have all been more or less subject to the personal judgment of the estimator as based on the total volume of business done and those estimates have not been capable of the verification which it seems they should be.

Q. Well, you are getting away from me a little. To go back, when you reproduce the property of the Des Moines Gas Company, we will say, the first thing reproduced would be the mere physical property of the plant?

A. Yes, sir.

Q. What is the fact as to whether there would be any difference between the value of the bare physical property of the Des Moines Gas Company, taking it in the concrete instead of the abstract, and the value of that same property with its ordinary capacity developed up to its present condition?

—. There is a very large difference in the value.

Q. Please tell the Master whether the element of value which represents this difference is what you designate as going value?

A. It is.

Q. Now, then, you said a moment ago that the difficulty had been not in recognizing the existence of this value, but in measuring it?

A. Yes, sir.

Q. What method have you adopted for the purpose of measuring this going value of this plant?

A. I have made a detailed estimate of the cost of reproducting the physical equipment of the company and of the cost of
971 reproducing the present business of the company, taking each of the steps involved from the beginning up to the point at which you would have acquired a business equal to that of the present company.

Q. Then, if I understand you, you have taken as your fundamental proposition that the property would be worth, is worth, what it would cost to reproduce it?

A. Yes, sir.

Q. That the purchaser, if he wanted the property would be willing to pay what it would cost to reproduce it?

A. Yes, sir.

Q. And you have applied that to this feature of going value which is one of the attributes of this property?

A. Yes, sir; my entire calculation is made with a view of determining what it would cost to reproduce, not only the physical equipment, but the business which that physical equipment serves, or makes it possible to serve.

Q. At the risk of repeating a little—that cost of reproduction is only material because of the assumption if a man wanted to buy it he would give what it would cost?

A. Yes; and my justification for it is based on this. If we assume that a house has cost one thousand dollars, and has depreciated by one hundred dollars, and is today worth nine hundred dollars; that some other man comes along and wants a house exactly like that, in an exactly similar location and is up to the point where he must decide whether to buy the existing house or build another house, he is going to figure both methods; he is going to find that to build another house like this would cost him at least one thousand dollars. On top of this thousand dollars he would have the additional element of chance—he might go through with this thousand dollars as estimated, which would include some allowance for contingen-
972 cies, but that might not be enough. This man is going to be willing to pay for the existing house what it would cost to reproduce it. If in that house there happened to be conducted a grocery business with an established patronage and established income, and this man wanted to use this new house for that same business in that same place, he would have to add to the cost of building his house the cost of building up a corresponding grocery business, or the cost of getting established relations with people who buy groceries; that would be one of the things which he would have to consider in arriving at the total cost of this venture of bringing his new building, plus the new business up to the point where he can buy the new building, plus the existing business. That cost of the existing business he would have to consider as an attribute, for its

going value is an attribute of the physical equipment of the company; it is a part of the physical equipment of the company and has to be so considered.

The MASTER: Would that be good will?

A. No, sir; there isn't any good will in the sense it is ordinarily used in connection with public utilities. There is a good will in connection with public utilities, but it is not a thing which you can capitalize as such, or which you can include specifically in any account anywhere. I have made no allowance whatever for good will, or for franchise value. But the allowance made for a going concern value is a totally different thing; is independent of good will and independent of franchise value. Represents only what a man would be willing to pay for a created business of a given company.

Q. Now, Mr. Lea, what is the fact as to whether, in order to accurately estimate this cost of reproducing the business or income or earning capacity of the going plant, it is necessary to study
973 the history of the plant, and if it is necessary, why it is necessary?

A. It is necessary before you can accurately estimate the cost of reproducing the business of this company, to study not only the history of the company, but the history of the town, because the future growth of the town itself has a very important bearing on the cost of developing a corresponding business in what we might call a hypothetical plant.

Q. Now, turning to your report, Exhibit #20, you take up this matter of going value in Exhibit J to your report, do you not?

A. Yes, sir.

Q. Now, there is first here a plat at page 94, and there is a key here—the curves are indicated by numbers, are they not?

A. Yes, sir.

Q. The first curve is #1; where do we find that on the plat?

A. About the middle of the page.

Q. Point it out to the Master?

The MASTER: I have got it.

Q. Now that curve indicates what?

A. Curve #1 indicates the total manufacturing cost of the hypothetical plant. I might say, to make that more clear, that to find out just what would be the cost of building up a business equivalent to that of the Des Moines Gas Company at this time, I have had to assume that I begin at the initial step of reproducing a plant capable of handling this business; then go on through each of the various steps required in building up the business of the hypothetical plant, which we assume is to be built in a town having exactly the same characteristics as those of Des Moines, and we will say we will build it in a town in an adjoining township, and with the present
974 state of knowledge and education of the community with respect to the use of gas in that town, we begin the building of this hypothetical plant which is to catch up at some time in the future with the Des Moines Gas Company, in the plant itself and in the business of the company. On this first chart is shown the rate at which each of the features of the hypothetical plant and going

plant would develop. This curve #1, dotted line, refers to the hypothetical plant. All dotted curves refer to the hypothetical plant.

Q. You call those all curves, whether they are straight lines or not?

A. Well, that is a trade name; current usage in engineering, but is not strictly correct.

Q. That is the way you use the word?

A. Yes, sir.

Q. Taking this curve #1, it begins at what time?

A. At the left hand edge of this plant and shows a portion of years.

Q. The word years appears at the top of the column at the left hand edge of the plat?

A. Yes, sir; the lower edge of the plat is used to indicate dollars, beginning with ten thousand dollars, and increasing by ten thousand dollars, amounts per square.

Q. At what year does this curve which represents the total manufacturing cost of the hypothetical plant begin?

A. That begins in 1912.

Q. Why does it begin with 1912?

A. Because the date of this inventory is January 1st, 1911, and it is assumed if you conceive the idea of either buying an existing property or building this duplicate property at that time, in
975 order to find out what the going value of the existing property is, you have got to go through all these calculations of building a hypothetical plant to see how much you can afford to pay for the going value of the existing property. Having conceived this thing on the 1st of January 1911, and having gone ahead as fast as it is humanely possible, as fast as is consistent with the view of getting your plant established as quickly as possible, you will still be unable to make gas before the first of January, 1912. Consequently you have no manufacturing cost at all after that period.

Q. Then the time there, this 1912, is fixed by the time when the hypothetical plant would first begin to manufacture gas and therefore you first have a manufacturing cost?

A. Yes, sir; on the first of January, 1912, your construction would have been so far advanced that a portion of your plant and a portion of your distribution system could be used, but your construction would not yet be completed?

Q. How do you find what your manufacturing cost, what rate it would be in 1913 of this hypothetical plant?

A. You find the total manufacturing cost of the hypothetical plant only after you have done a lot of other work. First you have got to find out how much gas your plant will be selling that year; you have got to find out the manufacturing cost and the distribution cost.

Q. How do you find out from this plat?

A. Looking up to the year 1913, running along that 1913 line until the horizontal line is crossed by curve #1; then following down at the point of the crossing down to the lower line, you find you are between $73,000 and $74,000; the total manufacturing cost

for the year 1912 and 1913 would be between $73,000 and $74,000.

This curve, I might say, only is made up after all the figuring
976 is done.

Q. Do you simply evolve this curve out of your inner consciousness or is it based on some computation?

A. They are all results of computation. You first make elaborate calculations. When you get them done you go over them and make your curve. This is only a picture of what the figures will show.

Q. Now, this curve really would be determined by the amount of gas manufactured, wouldn't it?

A. Very largely.

Q. You have another curve here marked 7; what does that indicate?

A. That represents the total manufacturing cost, as I believe it will be for the existing plant.

Q. So that in the existing plant it corresponds with curve 1 of the hypothetical plant?

A. Yes, sir; curve 7 shows what I believe will be the total manufacturing cost of the existing plant from the year 1910 up to 1918.

Q. Now, this curve 7 for the existing plant then begins with what year?

A. At the end of 1910.

Q. And with a manufacturing cost of how much?

A. $166,000.

Q. That is based upon what?

A. That is based upon the records.

Q. That is the existing plant?

A. Yes, sir.

Q. Then how do you get your information by which you determine this curve from 1910 on?

A. That is the result of figuring several things. One of
977 the elements entering into that curve is the prospective growth of the city; another is the prospective increase of consumption per capita per annum, and these are compounded in arriving at the total volume of gas to be sold.

Q. Then having the volume, do you compu-e from that the manufacturing cost?

A. The manufacturing cost, yes sir.

Q. These curves get together where?

A. In 1918.

Q. The first of 1918?

A. The first of 1918. It is my belief when you start this hypothetical plant, you conceive it from January 1, 1911. You go through all the periods of construction and business development; but while you are doing this the going plant is naturally gaining in business, the town is growing, the going plant is developing; but the hypothetical plant is overtaking the going plant. The going plant will not be overtaken, however, in point of volume of business, nor increase of revenue, nor operating expenses, until during the year 1918. From the first of January 1918, I estimate that the hypothetical plant will run parallel in all respects to the going plant.

Q. So that the reproduction is completed at that time?

A. Yes, sir. There will consequently be no going value of one plant over the other beyond that period.

Q. From this plat here it appears, from 1910 until 1918 the manufacturing cost of the going plant increased from say $166,000 to $226,000.

Mr. BYERS: The defendant objects to this line of examination and objects to the introduction of any testimony or evidence upon the question of going value, for the reason that it is incompetent,
978 not relevant to the issue involved in this controversy. And we object further to the testimony of this witness as it is now being taken, for the reason that it develops that his testimony and his chart is purely hypothetical, and not based at all upon any fixed or definite facts derived from the plant or property about which this inquiry is being had, and it is pure fiction.

A. Yes.

Q. Now the curve one shows here the gradual increase of the operating or the manufacturing cost rather of the hypothetical plant until its output and its cost shall have equaled the going value?

A. Yes, sir.

Q. Now take up the next curve there, 2 and 8. In the first place state what you mean by manufacturing cost?

A. Manufacturing cost covers all those items which enter into the labor and material of manufacturing gas and repairs of works machinery, maintenance and equipment.

Q. Up to what point?

A. Up to the outlet of the manufacturing plant.

Q. Now, then, curves 2 and 8 represent what?

A. The total distribution cost. The total of all the charges legitimately placed against the cost of distributing gas from the outlet of the manufacturing plant.

Q. Curve 2 begins at 1912; why does it begin then?

A. Because that is when you begin to distribute gas.

Q. Begin to incur expense on that account?

A. Yes, sir.

Q. And when does it reach the same point as the curve 8
979 showing the same item of expense for the going plant?

A. The first of 1918.

Q. And it is intended here to show what that cost would be each year?

A. Yes, sir.

Q. What do you mean by distribution cost?

A. The total of all such charges as are properly made against the cost of distributing gas, as distinguished from the cost of manufacturing or the cost of maintaining a commercial department or a new business department.

Q. It is one of the items of operating expenses?

A. Yes, sir.

Q. Now, curves 3 and 9 represent for the two plants the total commercial expense; what do you mean by that?

A. That is the expense of handling distinctively the commercial features of the gas business, aside from the development of additional business.

Q. And curve 3 begins where, with what item with the hypothetical plant?

A. The first of 1912.

Q. The expense commences at the same time?

A. It commences when you begin to sell gas.

Q. And it coincides with curve 9 at what time?

A. The first of 1918.

Q. When the plants get together?

A. Yes.

Q. And the diagram here shows that expense each year?

A. Yes, sir.

Q. For each plant?

A. Yes, sir.

Q. Now, here they get reasonably close together in 1915;
980 how far apart are they then?

A. They are about $3,500 apart, I would judge from this chart.

Q. What is the expense item for the going plant at that time?

A. The going plant in 1915—for the year 1914 will have spent $58,000.

Q. And the hypothetical plant about $3,500 less?

A. Yes, sir.

Q. Now, curves 4 and 10 represent for the two plants as shown by the key the total new business. What do you mean by that?

A. That is the total, all charges properly entering into the cost of connecting up additional consumers; not only the labor and material in actually making the connections, but all the advertising, soliciting, demonstrating and educational work necessary.

Q. Now I notice that curve 10, which is the unbroken line furthest to the left of this diagram, if I am correct, is practically a uniform curved straight line?

A. Yes, sir.

Q. And it is $29,000 a year?

A. Approximately that.

Q. I notice that curve 4 which is the corresponding item of expense for the hypothetical plant goes out beyond that, is not straight; what does that mean?

A. That means that in building a plant with which to recover or catch up with the business of the Des Moines Gas Company at this time, you would have to spend a great deal of money in your works and distribution system, and if you did not get your business quickly, the loss of interest and low operating deficiencies would be a very serious charge. And to get the entire property on earning basis at the earliest date possible; consequently to reduce to a mini-
981 mum the necessary investment and of course as a consequence to reduce the price, it is necessary to obtain for the product, every possible effort will be made to get the business as quickly as it may be had. That means in a hypothetical plant, you would

spend a very great deal more money per year for the first few years to get this business than the company is now spending after a great many years of continuous effort per year.

Q. When as shown by this diagram would the expense of this account, new business, equal the expense of the same account of the going plant?

A. The first of January 1918.

Q. When would it first equal it?

A. Perhaps I didn't get your question.

Q. My question—of course it would equal it the first of January 1918.

A. For the year 1918 the cost of new business of the hypothetical plant would be the cost of the business of the going plant.

Q. If you turn back to 1912, when would the hypothetical plant first spend as much for new business as the going plant?

A. The hypothetical plant would spend a great deal more money the very first year of gas making for new business than the going plant is now spending.

Q. Would it continue to spend more until 1918?

A. It would, yes sir.

Q. Now, the next curves you have are 5 and 11, indocating a total general expense. What do you mean by total general expense?

A. That is the total of expenses of such nature that they cannot be accurately subdivided, as the manufacturing or distribution or commercial expense or new business.

982 Q. Now take curves 6 and 12, what do they represent?

A. The total operation and maintenance cost exclusive of taxes and depreciation.

Q. Then each of the items represented by the curves preceding 6 and 12, would be included in 6 and 12?

A. If you will add all the other curves together of a kind in a given year, you will arrive at that point of that year.

Q. Your curve 6 begins in 1912 and shows the operation of the hypothetical plant, what it would cost to operate it exclusive of taxes and depreciation, and including maintenance until the two plants get together?

A. Yes, sir.

Q. And curve 12 shows the going plant beginning with 1910?

A. Yes, sir.

Q. Now, I notice when we get up here to 1914 the curve which represents the hypothetical plant, curve 6, goes out beyond, so that the amount of this operation and maintenance exceeds that of the going plant—let me see—until we get back to 1917 or 1918; what is that due to?

A. That is due to the fact that the total expenditures of the hypothetical plant exceeds the corresponding total of the going plant, and principally because of the large amount of money the hypothetical plant would be spending for the quick acquiring of its connected business.

Q. In other words, it reflects the same bulge in curve 4?

A. Yes, sir.

Q. Now, turning to the next plat or diagram which appears at page 95 of your report, I wish you would state whether that is a compilation up to 1910 of the statistics, or of statistics relating to the history of the going plant, which you have utilized in
983 making your estimates which are shown in the preceding diagram.

A. It is.

Q. This is a little more complicated—there are some rows of figures here—for instance, we begin with population on the left hand side of the plat; this shows the population of Des Moines from what time?

A. From 1889 until 1910, as obtained from the records and projected up to the first of January 1918, on my assumption.

Q. What use do you make of this history of the population, beginning with some twenty-three thousand in 1880 and running up to eighty-six or eighty-seven thousand in 1910, in projecting that curve on to 1918?

A. It is necessary to have some clear idea as to the amount of gas you will have to make in any given year, other conditions being equal, in order that you may arrive at the cost of manufacturing and distributing such gas. You cannot make an intelligent estimate as to the probable future sales of the company without having studied the past growth of the city, and the growth of sales per capita per year in that city, because you have to extend both the curve showing the population of the city and the curve showing the sales per capita per year, in order that you may compound the two to arrive at the amount of gas which you will be able to sell.

Q. That is because as the population increases, the amounts of the gas sold will increase naturally.

A. Yes, the amount of gas sold will increase because of the increase of population, but will also increase because up to a certain point in a given community there will be an increase of sales per capita per year without an increase of population.

Q. You estimate what the probable increase of population will be by studying the growth of the population for the preceding
984 thirty years?

A. Yes, sir.

Q. Now, referring to this population curve, how would you ascertain the population of Des Moines at any given time here?

A. The population for the past has been obtained from the federal census; and between the dates of the federal census from such other authorities as we found to be reliable.

Q. The state census?

A. The state census and the school census.

Q. Suppose I wanted to read this diagram and I wanted to get the population in 1903 as shown here, how would I go at it?

A. You would read along the bottom of the line year, until you came to 1903; and then you follow 1903, the vertical line; until you

cross the curve marked population; then you would follow back to the left of the horizontal line until you came to the row of figures following the word population at the left, and the horizontal line you are following on that you would find 70,000 which was the population of Des Moines in 1903.

Q. That is the way you would obtain the population for any given year?

A. Yes, sir.

Q. Now, the next thing I find, working from the left to the diagram, total sales, in M cubic feet. What does that mean?

A. In thousands of cubic feet.

Q. The total sales are shown by what curve.

A. They begin at the last line on the year 1888.

Q. How is the curve marked?

A. It is marked total sales, after you get over here a ways where there is room for the words, about 1904.

985 Q. And that means total sales what?

A. Total sales of gas within the city of Des Moines alone.

Q. By what plant?

A. By the Des Moines Gas Company.

Q. How did you obtain the information necessary to make that curve?

A. From the records of the company.

Q. You have also here sales per capita, population, per mile of main, population per meter, number of miles of main and number of meters; now you have your total sales from the records of the company up to when?

A. Up to and including the year 1910.

Q. Now what factors did you use in making your estimate of the fuutre sales up to 1918, as they appear here by the dotted or broken line?

A. First I found, by dividing the population into the total sales what the sales per capita per year have been. They are shown on another curve; the sales per capita are worked out up to the end of the year 1910. Now from the population, the history of the growth of the city, I have extended the curve to show what I believe will be the growth of the city of Des Moines during the next seven years or eight. From the sales per capita curve I have made extensions showing the increase in the amount of gas to be sold per capita per year, and on multiplying the population of the city at any year in the future by the sales per capita, which I estimate will have been attained at that time, I arrive at the total gas sales for that year.

Q. Now I think the next thing referred to is the sales per capita in cubic feet per annum. Now they are shown by what curve?

A. By the curve marked sales per capita.

Q. And it commences when?

A. It commences in the year 1888 and is the second line
986 from the bottom.

Q. And down to 1910 upon what data or information is that curve based?

A. The records of the company.

Q. And you have projected that by a dotted line up to what time?

A. 1918.

Q. Upon what do you base your conclusion what the sales per capita will be up to 1918?

A. Upon the knowledge of what the sales per capita of a number of cities of similar size have been and are today, and a knowledge of the growth of the sales per capita in a given community.

Q. Do you take into consideration your knowledge of the character of the city of Des Moines or anything of that kind?

A. Yes, sir.

Q. And you would ascertain the amount of the total sales at any time and the amount of sales per capita at any time by simply taking the time and from the bottom of the map reading back to the column on the left containing the figures of sales per capita?

A. Yes, sir.

Q. Now, what does the curve that is marked total meters mean?

A. That shows how many meters were in use in the city of Des Moines at the end of a given year.

Q. And begins with what year?

A. Begins on this chart with the year 1886.

Q. And up to and including the year 1910 that is predicated upon what?

A. The records of the company.

Q. And you have then projected that basing it upon the general history of this plant and your knowledge of the business?

A. Yes, sir.

987 Q. Now, the next column at the left of this diagram is miles of mains. You have here shown the number of miles of mains for what period?

A. Beginning with the year 1888.

Q. And continuing?

A. Up to and including the year 1910.

Q. That curve is based upon what data or information?

A. The records of the company.

Q. Now the next thing here is sales per meter; that is in cubic feet I believe?

A. Yes, sir.

Q. You have here a curve that is marked sales per meter near the bottom of the plat, beginning when?

A. 1888.

Q. And continuing to what time?

A. 1910.

Q. That is, up to and including 1910 predicated upon what?

A. The records of the company.

Q. Have you projected that curve or not?

A. I have.

Q. And of these two that are projected near the bottom of this plat here, it is the upper one?

A. Yes, sir.

Q. What were the sales per meter in 1888?

A. 24,500 cubic feet per year.
Q. What were they in 1910?
A. About 26,000 cubic feet.
Q. The next thing here is sales per mile of main; that is in thousand cubic feet instead of cubic feet?
A. Yes, sir.
Q. Where does your sales per mile of mains appear?
988 A. That is the third curve from the bottom, beginning with 1888.
Q. Now beginning in 1888, up to and including 1910, what data has that curve been based upon?
A. The records of the company.
Q. Have you projected it?
A. No, sir.
Q. The next curve is, population per meter; that begins up at the top here?
A. That is the highest curve on this chart.
Q. At the left hand side it is the highest?
A. Yes, sir.
Q. What was the population per meter *when* that begins?
A. In 1888 there were over thirty-three people for each meter in use in the city of Des Moines.
Q. What is the present population per meter?
A. In 1910 there were less than 4.3 people for each gas meter in use in the city of Des Moines.
Q. You have projected that curve until 1918?
A. Yes, sir.
Q. Now, the next curve here—referring to the figures on the left, population per mile main, that also begins near the left hand upper part of the plat?
A. Yes, sir.
Q. What was the population per mile main *when* that curve begins in 1888?
A. About 18,600.
Q. You say thousand?
A. I am wrong. 1,860, as closely as I can read it.
Q. At the end of 1910, what was the population per mile main?
A. 470, approximately.
989 Q. Now, referring first to these curves up to and including the year 1910, I wish you would state whether they correctly summarize the facts as to the matters to which they relate, as shown by the company's record?
A. Yes, sir.
Q. Of course the population is not shown by the records?
A. No, that is shown by other records though that are available.
Q. Now then, so far as you have projected these curves up to 1918, please state whether you are satisfied in your own judgment or not, that the results as indicated by the projected curves are substantially accurate?

Objected to on part of defendants as incompetent and immaterial.

A. I am satisfied that these projections are substantially what will be found, and the basis of my confidence lies in the fact that curves of this sort are regularly used by banks, bond houses, investment concerns of all kinds, when they take over gas properties. They base their investments upon such extensions as these. They won't go into an investment of the gas business until they find out what that property is capable of doing and why. Nobody can tell that without having made curves of that sort.

The defendants move to strike the answer as incompetent, immaterial and not responsive.

Q. What is the fact as to whether estimates and curves of this sort form the foundation for the additions which are made to gas plants from time to time?

A. They do. And for the determination of what the character of these conditions should be; how great they should be. Take holders, for instance, mains, extensions and things like that.

990 Curves of this nature are used and are essential in determining what the future investments should be, made in properties of this sort; the kind and the scale of such investments, as well as the time at which such investments should be made; all of those things are determined from curves of this sort.

Q. So that if I understand you, the estimates you are using here in this computation are of exactly the same character as the estimates which bankers and investors are using today as the basis of investing money in these plants?

The defendants interpose the same objection last made and that it is leading.

A. Yes, sir.

Q. Now, then, going back to the plat, there is to me a very interesting curve here at the right hand side, marked total sales of the hypothetical plant beginning in 1912 and going up almost straight very rapidly and then gradually until it meets the total sales of the going plant; what does that curve represent?

A. It represents the growth of the past of the hypothetical plant, and by comparison with the corresponding curve, marked total sales of the going plant, will give very clearly the idea as to the rapidity with which business would be piled on to the hypothetical plant, in order that the investment might be maintained at a minimum and the consequent selling price of gas be made at the minimum.

Q. To get this a little more in the concrete—you have estimated I believe—you conceive the idea of this plant in 1911; and you begin the manufacture of gas in 1912; now when did you have your hypothetical plant completed?

A. The construction is completed at the end of the year 1914.

Q. Now at that time, by the time your hypothetical plant is completed, how far is it behind the going plant in the amount

991 of gas sold?

A. At the end of 1914 the hypothetical plant will be selling approximately 460 million cubic feet of gas; the going plant at

that same time will be selling in my opinion, 650 million cubic feet of gas per year.

Q. You estimate by the time the hypothetical plant is completed it will be selling nearly three fourth- as much gas as the going plant?

A. Yes, sir. The hypothetical plant I estimate would at the end of the year 1914 be selling almost as much as the going plant is now selling.

Q. Now, there is another curve here—the sales per capita of the hypothetical plant—which is just to the right of the total sales of the hypothetical plant beginning with 1912, at the botom of the plat, that represents what?

A. That represents the amount of gas you would be able to sell per capita per year during each year indicated, and is arrived at by dividing the total sales by the population for that year.

Q. Now that of course means low sales per capita while your plant is beginning and rapidly becoming higher?

A. Yes, sir; I have allowed there final sales per capita that is materially in advance of the present sales per capita.

Q. What are your sales per capita estimated in 1918?

A. Almost 7,300 cubic feet.

Q. Now, finally, there is a little curve here beginning with 1913, just below the word- total sales hypothetical plant, that is what?

A. That is the population per meter of the hypothetical plant.

Q. And is obtained how?

A. By dividing the total population at a given year by the number of meters it is estimated there would be in use in the hypothetical plant at the end of that year.

992 Q. Of course, that, as you begin to install meters is high and works down?

A. Yes, sir. You get another idea here how rapidly a hypothetical plant picks up business, comparing the short curve with the long curve at the top of the page, until we get down to the present small number per meter, in five years; whereas the existing plant required from 1888 to 1910 to make a correspondingly low point.

The MASTER: What do you figure the present production of the gas plant?

A. A little over 525 million cubic feet.

The MASTER: The increase you figure there is due to what?

A. To the prospective growth of the city and the prospective increase of sales per capita.

The MASTER: Now this increase is figured from the past?

A. It is based on the history of the company. I can refer now, if you wish, to the records and show what the increase in the last several years has been. That is an increase that may reasonably be expected.

Q. These curves here on page 95, showing the total sales will show the increase or decrease, whatever it is, each year, since 1888, of the present company would it not?

A. Yes, sir.

The MASTER: That 525 million is about a six per cent per annum increase?

A. Yes, sir, for the next seven years, I have estimated about forty

per cent, which would be a trifle under six per cent for the length of seven years, beginning with 1911. For instance, I estimate that the sales in 1917 of the going plant will be 735 million—approximately a forty per cent increase.

Q. Turn to the next plat here, that shows what?

993 A. That shows the history of the company in matters more directly connected with money.

Q. Well, you begin at the top here with the gas sold by the company and to the left of that you have the net selling price as $1.70 and then this curve runs down in two curves there; what does that mean?

A. That curve with the three arms means that in the year 1895 there were three prices for gas. The net selling price for gas used for illuminating purposes was $1.70; the net selling price of gas for fuel purposes, on consumption less than 10,000 per meter per month was $1.50; the net selling price for gas for fuel purposes over 10,000 per meter per month was $1.25. Those three prices were combined at the end of '95, and one price of $1.30 was established which was maintained for one year. Then the price was dropped to $1.25, and this price was maintained for two years, when a drop to $1.20 was made, and this was maintained for two years; and then it was dropped to $1.15 and this price was maintained for three years; then it dropped to $1.10 and one year later it went to $1 per thousand, which is the rate which has since been maintained.

Q. So beginning with the three arms we go down by steps showing the net selling price?

A. Yes, sir.

Q. Then there is another curve at the left there—revenue per thousand cubic feet?

A. Yes, sir.

Q. That indicates what?

A. That indicates the actual income per thousand cubic feet of gas sold and is ordinarily somewhat higher than the net selling price, because the gas is sold at a gross price above the net

994 there being a penalty or discount, as you may call it; this discount is thrown off in case you pay your bill on or before a certain date. A good many people fail to do that and they have to pay the penalty; that brings the revenue per thousand cubic feet somewhat above the net selling price per thousand cubic feet.

Q. This curve marked—revenue per thousand cubic feet—begins about the middle of '86 and shows the actual revenue per thousand cubic feet from that time down to 1910?

A. Yes, sir, from the middle of the year '86 to 1887, the revenue per cubic feet was about $1.95. Now the corresponding figure for the year 1910 was a trifle over $1.

Q. Now the next curve is the revenue per mile of main; that begins when?

A. That begins between the year 1887 and 1888 at about $32.

Q. Not $32 per mile of main?

A. No, the revenue per mile of main, no. It is almost, about $3,200, there is a misprint there.

Q. That reached a minimum in 1898 of what?

A. About $1,800.

Q. And in 1910 it was back to about where?

A. $2,800.

Q. Now, as extensions of the plant are made from time to time, for instance, suppose this year the company should lay fifteen or twenty miles of main; the next year it should not lay any; the year after it should lay quite an amount; how would that effect this?

A. That would produce the irregularities of the curve shown here. It is impossible to maintain a uniform curve and the revenue per mile of main, because prudence in the investment of your money will demand that you make extensions in certain minimum
995 amounts. You can't come along and add a hundred feet at a time without increasing your investment in a way not warranted.

Q. It would be an extravagant way of making extensions?

A. Yes, sir; it is cheaper to run more pipe at a given time and pay interest on the additional investment, than to wait a while and go back and do this little job by itself.

The MASTER: Dependent, of course, on the future demand of your customers?

A. Yes, sir; looking to the future, of course where you have reason the town is growing.

Q. The next curve is the revenue per meter. That began with what in 1886 and 1887?

A. That began at about $65.

Q. And where was it in 1899?

A. At about $26.

Q. How does it stand today?

A. About $26 or $27.

Q. There have been fluctuations between this as shown by that curve?

A. Yes, sir.

Q. The next curve I think is the revenue per capita, which begins between 1887 and 1888; taking that out to 1910—what was the revenue per capita back there in '87 or '88?

A. About $1.70.

Q. And that is about what now?

A. About $6.15.

Q. Since when has there been a gradual increase in that?

A. The lowest point of which we have a record, between 1888 and 1889, the revenue was a trifle over $1.50—no in 1892 it was a trifle less than $1.50 about $1.45. Since then there has been more or less of a consistent increase up to the present.

996 Q. Now the next curve is marked gross revenue actual; you have taken that from the middle of 1886 or 1887?

A. From the middle of 1887.

Q. And that shows what?

A. That shows the total money received by the company up to 1910.

Q. Your last curve is what?

A. Total operating expenses of the company, including taxes, but

not including depreciation, from the middle of 1887 up to the end of 1910.

Q. Now referring to those curves generally. I wish you would state where you received the information, from what sources you derived the information from which these curves are made up, up to and including 1910?

A. I have asked the officers of the company to supply me with this information up to 1910.

Q. That is based upon the records of the company up to that time?

A. Yes, sir.

Q. You have projected some of those curves up to 1918; for instance revenue per capita, gross revenue and the operating expense and the revenue per meter?

A. Yes, sir, all the extensions beyond 1910 are mine, as based on the history of the company and on my own calculations.

Q. And what is your judgment as to whether they with substantial accuracy show what the result of the operation will be?

A. I believe they do.

Q. Now, you have here a curve that is entitled, gross revenue hypothetical plant, that begins when?

A. That begins with the beginning of 1911.

Q. Well, look at it?

A. At the end figures of 1910.

997 Q. Now that plant began operating when?

A. In 1912.

Q. How did it get any revenue before it began to operate?

A. This revenue is the credit which has been made to the hypothetical plant, thereby reducing the going value, because of the fact that the man who is to build this plant must have the money with which to build it, and having the money and being unable to use it all, he is certainly entitled to interest which he would draw on that money while waiting on the construction.

Q. Then during the period between 1910 and 1912— I am using 1910 instead of first of January 1911, to fit the figures here—what this curve represents is the revenue in the way of interest on uninvested capital?

A. Yes, sir.

Q. Why does it run down in 1912?

A. Because the amount creditable in 1912 is less; the money has been used in the plant.

Q. Now taking this curve from 1912 showing the gross revenue of the hypothetical plant on page 96, how does it compare with the curve showing the sales of the hypothetical plant on page 95 of your exhibit?

A. They all agree.

Q. In other words, this revenue is the revenue derived from the business indicated by the total at 95?

A. Yes, sir.

Q. And you have shown also here an estimate of the operating expense of the hypothetical plant?

A. Yes, sir.

Q. Now, as to the actual plant you show here operating expenses actually including taxes, but not depreciation; what is the
998 fact as to whether that is true or not?

A. In my projection I have included depreciation in both plants.

Q. And this period here where the operating expense of the hypothetical plant on page 96 of the pla-t runs above the curve, corresponding curve for the going plant is explained, as you explain it, on the other plat by the abnormal expenses of acquiring new business?

A. Yes, sir.

Q. I wish you would state whether in making your estimates which are show upon the plat to which I first called your attention, which appears on page 94, you took into account all of these historical matters which are shown on the other two plats, which I have referred to as on page 95 and 96 of this report?

A. I did.

Q. Now what did you do; I wish you would explain to the Master what care you took, what you did in order to determine just how much money would be expended in each year and how the progress of the construction of the new plant would go in each year in connection with this matter?

A. It is important to note just how this work would be handled, not only that you may make your plans and get your materials in proper sequence, but that you may know beforehand what your total tax during construction will be and what your loss of interest during construction will be. So the first thing we did was to take a large map showing all the street mains in the city and asked the Gas Company to divide that system into three districts. We took three districts, because one-third of the total street main system here is about all you would be warranted in laying in one year. If you attempted to lay more than that it would be an extraordinary expense, and you can lay one-third economically. Then we
999 asked the engineer of the Gas Company who is very familiar with the local conditions, to work out on that map for us the three areas which would be represented, which would approximately represent the same amount of work in the laying of street mains. Then we asked the Gas Company to take all the meters within each of those districts, and tell us how many meters of a given kind there were; what the average annual consumption per meter was at this time in each of those three districts. That was very important because the districts are different; the amount of consumption of gas per meter in the districts varies, and as soon as we were coming into these districts, one at a time, it is essential that we know the actual consumption in that district before we can determine the acquired given amount of business in that district.

Q. Referring to the plat, please state whether or not these districts are there indicated and how?

A. District # 1 is the district we would naturally supply first, because you go through it to the third district. Number two would be next; you would have to go through it to reach district three.

District number one is the down town commercial district. Number two comprises the principal residence territory and rather closely built up; district number three is the outlying loosely built territory which you would naturally go to last. Now having the three districts laid out, the maps were again scaled to find how many feet of each kind of existing main under a given pavement were found in each of these districts, and the first tables I have show these amounts. They also show the net construction.

Q. You mean the table headed as assumed construction
1000 distribution system, mains, district one; that is page 97 of Exhibit 20 of your report?

A. That page and the page following show in detail the total net construction cost and the net construction cost plus engineering, etc., of the mains to be laid in that district in that year. The following page, 99, shows the corresponding information concerning the mains in district number two, which would be laid the following year, 1913. Page 100 shows the corresponding information concerning the mains to be laid in district number three during the year 1914. Page 101 gives a summary of the preceding figures as to mains laid.

Q. This page, 101, shows the aggregate amount on account of mains which would be spent in each one of the three years?

A. Yes, sir.

Q. Let me ask you another question—and you needed this information for what purpose?

A. To find what the taxes would be and what the loss of interest would be on the investment you are making in the hypothetical plant.

Q. What bearing would it have on the interest earned by unemployed capital?

A. It has a very direct bearing. The hypothetical plant is credited of course with all the interest it can earn on the money which is not needed. Then you have got to know when that money will be required, because at that time that money comes out of the bank and goes into the plant.

The MASTER: If it was all reproduced at once, that would eliminate the question of interest and taxes?

A. Oh, yes sir; if you could build it at once there would be no taxes and no loss of interest.

1001 The MASTER: The plant as it now exists pays its taxes and it is allowed out of its income?

A. Yes, sir.

The MASTER: The same as with the question of interest?

A. Yes, sir.

Q. Did you take into account the tax which a going plant pays in making these computations?

A. No, sir.

Q. In your computation of the going value?

A. They are not in the hypothetical plant. In the going plant I have not allowed the amount of tax as shown by the Company's books, because I do not believe the company is paying as much taxes as it should.

The MASTER: That is its good luck?

A. I cannot allow it in my report.

The MASTER: To that extent the taxes are an asset rather than a liability?

A. To that extent.

Q. Now, then, taking the next page, you have made there, have you not, a like computation showing when the money would be expended for service, on page 102?

A. Yes, sir.

Q. You don't have anything there in 1911?

A. No, services are laid in 1911.

Q. And this is continued on the next page with a summary of the mains extended in these various districts?

A. Yes, sir; these summaries of course give the figures corresponding with the figures appearing in the reproduction cost of the existing plant for that corresponding amount.

Q. On page 104 have you the corresponding information
1002 concerning the installation of meters?

A. This page covers each of the three districts to be installed during the years 1912, 1913 and 1914 respectively.

Q. What have you on page 105?

A. That is a chart showing the year during which the expenditures would be made and the amount of such expenditure.

Q. Now, take first your 1911; you have various items, organization and legal expenses, I see.

A. Yes, sir.

Q. Now you have under the head of taxes nothing?

A. No tax during 1911.

Q. Then you have—what is your next item there?

A. Loss of interest for one half year, and the amount $760.

The MASTER: Figured at what rate?

A. Six per cent.

Q. That is computed on what amount?

A. The total amount of money to be spent during 1911 under the head of organization and legal expenses I estimate at $25,334.

Q. But that amount would be spent during various periods throughout the year, so that at the end of the year you would have equivalent to one half of this amount invested for the full year. I have therefore allowed a loss of interest for one half year at six per cent per year, making a total of $760 which added to the $25,334 gives $26,094, reproduction expenditures for the year 1911 under the head of organization and legal expenses.

Q. Then it is figured on that one item—organization and legal expenses.

A. Yes, sir. I might explain here—if you will take the totals shown under the years 1911, 1912, and 1913 for the organ-
1003 ization and legal expenses, without any additions for taxes or lost interest, you will get the total which I have previously shown in my reproduction values.

Q. You take up what next for 1912?

A. Those items under the same head of organization and legal

expenses, which I estimate would be called for during the year 1912.

Q. What is your item of tax there for 1912?

A. The taxes of 1912 are based upon the investment of the previous year, for the full year of 1912, and upon the investment made during 1912 for one half of that year, making a total of $793.

Q. And your interest includes what in 1912?

A. The lost interest for 1912 covers lost interest on the full amount represented in the year 1911 plus interest for one half year on the amount expended during 1912.

Q. In other words what had been invested in 1911 was in for all of 1912?

A. Yes, sir.

Q. And what was invested in 1912 you treat as the 1911 investment?

A. Yes, sir.

Q. You have gone on in the same way and computed the investment on organization and legal expense for 1913?

A. In 1913 I have charged only one half lost interest and taxes, because during that year the plant begins to make gas. The other half of that charge has gone against operation. This first half went against construction, and the other half against operation and remaining against operation for all future time.

Q. So that to that extent you have decreased your investment of your reproduction cost?

A. Yes, sir.

1004 Q. The next item you have is real estate?

A. Yes, sir.

Q. You have treated that in the same way, showing the amount of the investment, lost interest and taxes in the various years?

A. Yes, sir.

Q. Now the next item is buildings, with reference to buildings you have shown the amount expended each year, with taxes and interest treated the same way?

A. Yes, sir.

Q. Then you have taken up each item of the works equipment in the same manner?

A. Yes, sir.

Q. Showing the year in which the expenditure is made?

A. Yes, sir.

Q. And that goes over into the next page, 106, near the bottom of that, you reach the distribution system?

A. Yes, sir.

Q. You treated that in the same manner?

A. Exactly; except it runs over into 1914 and does not begin until 1912.

Q. Then your analysis of the expenditures with reference to the year is completed on page 107 of Exhibit 20?

A. Yes, sir.

Q. And these aggregates include total expenditures you computed as necessary to reproduce this physical property?

A. Yes, sir; you will find at the bottom of the page the total of the above expenditures for each of the years.

Q. I wish you would turn to the next page, 108,—assumed acquisition, hypothetical plant; explain it fully and state the reasons for making this calculation?

1005 A. A while ago I referred to a map of the city which was divided into three districts, number one, two and three. The number of meters in each district was actually counted by some of the clerks in the office of the Gas Company, and it was found that in district number one, which is the district we would first go through, contains 4,995 ordinary meters, and 4,506 prepayment meters. It is also learned from the records that the actual average consumption per meter per year in that district was a certain specific figure: I don't recall it now, but which I have in my records. The first of January 1911, the idea of rebuilding this plant is conceived; but there is no working distribution system until 1912; at the middle of 1912 I estimate that in district number one there will have been connected fifteen per cent of the number of meters now in that district; that is by now I mean the first of January 1911. In other words, that by the middle of 1912 there will have been connected 749 ordinary meters and 676 prepayment meters.

Q. Referring to this page to identify that, those figures appear under what?

A. Under 7-1-12.

Q. That indicates the date?

A. Yes.

Q. And aver. 15?

A. That means average fifteen per cent the middle of the year.

Q. And following that is the specific number of meters?

A. Yes, sir. Now jumping forward one year, 7-1-13, I estimate by that time 80 per cent of the total number of meters in that district will have been connected up. Now gas is being sold in district number one, but a meter newly installed does not pass as much gas per year as a meter that has been in use for a long time, be-

1006 because the consumer has not taken on all the appliances for the burning of gas. In other words, a town selling gas for ten years will have a larger consumption of gas per meter than one that is selling gas only one year. People start out with one device for the consumption of gas and from time to time add additional devices. I estimate it would be impossible by the middle of 1913 to get more than 45 per cent of the going plant's consumption per meter on each of the meters connected in district number one. Forty-five per cent of that business on the number of meters which I estimate could be connected at that time would give a consumption in that district number one for the year 1913 of 153,945,000. cubic feet. Now during this year we have not worked district number two and of the total number of meters in that district we will have by the middle of the year placed thirty per cent.

Q. Where does that appear?

A. Over in the same column, opposite district number two. By the middle of the year 1913 we could have placed in district number

two 897 ordinary meters and 978 prepayment meters. On the meters there installed the consumption for that year I estimate will be 22½ per cent of the present consumption per meter in that district, and that would result in sales of gas for the year 1913 in district number two of 39,186,000 cubic feet, which added to the sales of district number one for the same year would give you the total as shown in the bottom line, 193,131,000 cubic feet for the year 1913 in the hypothetical plant. Now the same method is followed through each of the districts through each of the following years, and the totals in the bottom line are arrived at exactly in the same way, by the additions of the sales obtained by this method in
1007 each of the districts for the given years, I arrived for the year 1917 at a total sale of 731,876,000 cubic feet of gas for the hypothetical plant.

Q. Now let me ask you one or two general questions. In district number one you began in 1913?

A. Yes, sir.

Q. And you sell forty-five per cent of the going plant's output through the same meters?

A. Yes, going plant's output per meter.

Q. And the next year it amounts to 82½ per cent?

A. Yes, sir.

Q. And 92½ the next year?

A. Yes, sir.

Q. And then 2½ per cent, and 2½ per cent more of the going plant?

A. I estimate that in district number one through these meters we will sell in 1917 as much gas per meter as is now being sold per meter in that district.

Q. At first your percentage increased very rapidly?

A. Yes, sir.

Q. And is slow in filling up the last five per cent?

A. Yes, sir, that is because of the fact that the gas appliances first installed is the gas range and it represents a very large percentage of the total average consumption per meter.

Q. I will ask you Mr. Lea, whether this curve I called your attention to on the sales of the hypothetical plant which appears on the second chart on page 95, you made all these computations had those meters counted, and estimated your construction and so on in order to obtain that data shown on that curve?

A. Yes, sir; that curve is made from these figures.

Q. As to the various items the amounts shown by that
1008 curve will correspond to your computation?

A. Yes, sir.

Q. Now before you could compare these two plants during the period of reproducing the business it was necessary to have what in addition to the sales of gas?

A. I had to know what it was going to cost to manufacture, not only in the going plant but in the hypothetical plant. So I first worked out a series of tables showing the operation and maintenance

cost per thousand cubic feet, cost in total dollars for the going plant for each year from 1911 to 1917 both inclusive.

Q. I wish you would refer to pages 109 and 110 which are headed operation and maintenance going plant in your report Exhibit 20 and state whether these are the detailed estimates which you made of what it would cost in getting the plant in its operation and maintenance during this period?

A. These are my detailed estimates of the cost I would expect the Des Moines Gas Company would have during the next several years for each item indicated.

Q. You have taken these up by each item that goes into the cost of the manufacture and distribution of the gas?

A. Yes, sir; manufacture, distribution, commercial expense, new business and general expense.

Q. What is the fact as to whether that is the manner in which these accounts are ordinarily analyzed and distributed?

A. It is the customary method of analyzing costs.

Q. Now you have at the bottom of page 110 total operation and maintenance for each year and then you have total operation per M accounted for?

A. That means total operation maintenance per thousand
1009 cubic feet accounted for.

Q. What does accounted for mean?

A. When the gas leaves the plant it contains still some water vapor and a few other vapors which will condense at various points in the street main system and is taken out through the drip pots; that reduces the volume of the gas and leaves us with less than we started with. Besides from some joints leaking or an occasional break in the street main or service, some gas will be lost through that sort of leakage; and the meters placed in the houses of consumers all through the city, as they get older, tend to register less than they actually pass which again tends to increase the amount of gas which we are unable to account for?

Q. What does accounted for mean?

A. That added up with the total of the readings of the meters used by consumers and an estimate of the amount of gas used by the street lamps and adding the amount of gas used in the office and works, to get a total, and this total is subtracted from the amount of gas shown by the station meter at the works as having left the plant, and the difference is the gas unaccounted for, usually called leakage, but it is not actually all leakage; part of it is.

Q. I notice this total of operation and maintenance per thousand accounted for gradually decreases a little?

A. Yes, sir.

Q. Why is that?

A. That is because I expect the company to reduce its total operation and maintenance cost as the volume of its business increases and there will be some elements of cost which cannot be reduced,
because they will maintain a fixed amount per thousand. But
1010 some of the elements of cost are not affected directly by the increased business, and therefore represent a decreasing cost

per thousand feet. As the business grows the result is a reduction as the years advance to a certain point in the total cost for operation and maintenance.

Q. Now, Mr. Lea, in the diagram or plats I refer to there are various curves showing the estimated operation and maintenance cost of the going plant for these years. I wish you would state whether or not these curves are based upon these computations and whether you believe them to be correct?

A. All of the curves I have shown are based upon my computation and I believe them all to be correct.

Q. It is necessary in order to compare the two plants to also have the operation and maintenance of the hypothetical plant and if so, have you made an estimate of that head of operation and maintenance of the hypothetical plant shown on page 111?

A. I have.

Q. I do not see anything here in 1911 and 1912; why not?

A. Because there are no such expenses in the hypothetical plant during those years. You do not begin to make gas until the year 1913, consequently you would not be warranted in charging any operation or maintenance expense to gas manufacture.

Q. You begin with 1913, and there is a notation of costs twenty per cent above the going plant costs for 1910, which seems to follow down through the various items that you take in getting your cost of manufacturing and distributing, or your operation and maintenance of the hypothetical plant; why do you make that twenty per cent above the going plant?

A. That twenty per cent applies only to those columns to which it is attached. It does not apply to new business nor to expenses generally. I put that twenty per cent on those portions of
1011 the cost, because it is my judgment it will be impossible to begin the manufacture of gas in a plant on this scale under the conditions existing in Des Moines without having the operating expenditures for manufacture and distribution, and for commercial expenses at least twenty per cent higher than the present costs, which of course are the result of long operation with good organization.

Q. Take for instance the volume of business there?

A. That has a very important bearing on it.

Q. What is it in 1913 in the going plant and what is it in the hypothetical plant?

A. The gas accounted for in the hypothetical plant during 1913 is a little over 193 million; in the going plant the gas accounted for during the same year I estimate will be 621 million, over three times as much gas. The going plant I estimate will make over three times as much gas as the hypothetical plant. The hypothetical plant making only one third as much gas, certainly will have costs twenty per cent higher than the going plant on the items I have shown the totals; that is to say, the total manufacturing cost in the hypothetical plant will certainly be twenty per cent higher than the total of the going plant for that year.

Q. Now, in the year 1914, what percentage have you taken as the excess of manufactured gas of the hypothetical plant?

A. 1914 will be the second year of operation. The hypothetical

plant will be getting its organization in much better shape; they will also be making a considerably larger volume of gas. I estimate that year the costs for manufacture for distribution and for commercial expenses of a hypothetical plant will be only ten per cent per
1012 thousand cubic feet higher than the corresponding costs of the plant for the going year 1910.

Q. And then for the year 1915, what basis do you take in the hypothetical plant as compared with the going plant?

A. During the year 1915 the hypothetical plant will be accounting for 619 million cubic feet of gas. During the year 1913 the going plant will be accounting for 621 million cubic feet. I estimate therefore that the hypothetical plant will by this time have such a developed organization that it will be almost able to reach the cost per thousand feet of the going plant during the year 1913, and I have taken for 1915 the hypothetical plant costs under the heads of manufacture, distribution and commercial expense, the same units per thousand cubic feet of gas accounted for as I have for the going plant for the year 1913.

Q. Under the other headings, why did you not take the same units, if you did not?

A. The first other heading is new business. The new business expenditure is one which in the hypothetical plant does not bear a fixed relation in the other manufacturing costs. It is subject to a much wider variation tha*h* the manufacturing cost or distribution cost or commercial expense. You have got an*d* extraordinary condition, having piled on a great lot of business in a very short time, where it is going to pay you to spend a lot of money for new business in order to get a return early established. I have made my assumptions as to new business on the basis that it does not follow a fixed percentage for each of the items indicated.

Q. Now, for the year 1916, you say you take the same costs as for the going plant in 1915, is that the reason you just state in this manufacturing part?

1013 A. That would be the fourth year of operation of the hypothetical plant, and by that time its organization will have been so well developed that its costs have come almost as low as the going plant at that time, but not quite; there will be about a year lag there. I therefore credit the hypothetical plant with the efficiencies and low costs equivalent to those of the going plant for the previous year.

Q. What are the total operation and maintenance per thousand feet accounted for in the hypothetical plant for the year 1913 and so on as shown by page 113?

A. For the year 1913 the total operation and maintenance cost of the hypothetical plant per thousand cubic feet would in my judgment be $1.05.71; for the following year the corresponding figure is 79.33 cents; for 1915 the corresponding figure is 65.5 cents; for the following year 1916 the corresponding figure would be 59 cents, and for 1917 the corresponding figure for the hypothetical plant would be 54.14 cents per thousand cubic feet of gas accounted for.

Q. Now, Mr. Lea, asking you generally, I wish you would state whether all of these computations that you have referred to since

we left those charts or maps or diagrams, have been made for the purpose of enabling you to accurately estimate the matters that are contained in them or used by you in computing this going value?

A. They have. I can go further than that and say, going value has been arrived at previously in a lump judgment; in nearly all cases engineers would say, it is my judgment the going value of this property is so and so; rather than make that one general judgment, I would rather exercise my judgment on the very many details
1014 involved and leading up to a composite judgment. All of these figures are made for that purpose.

Q. Now, after you have these factors, that is, the business of the going plant and hypothetical plant, and your operating expenses for each plant during the period it will be necessary to reproduce the business, how do you proceed to ascertain what the measure of this going value is?

A. By making a comparison of the net operating results of the two plants during the period between the conception of this plant and the time at which the plants will be in parallel operation.

Q. Do you take that up forst on page 114, which is headed hypothetical plant, first trial, etc., as to the amount of going value?

A. Yes, sir.

Q. I wish you would take that, beginning there and explain just what you do and what these various items and amounts set down here are with reference to this computation?

A. This table has seven columns; the first being for the year, the second column is headed total investment made at the end of the year; that amount shown opposite the year 1911, for instance, $279,192, is taken from this construction chart back here, called reconstruction expenditures. If you will look at that chart you will find the total expenses, plus taxes and lost interest for the year 1911 to be $279,192; that is the amount of money which will be called for during the year 1911. From that same chart and the previous records as to the working capital and preliminary organization, we have found the total investment necessary. Now it is assumed that the man making this calculation is considering whether he will buy the existing property or build a duplicate of it. He has the money with which to buy the property; he puts that in the bank he draws on it as he needs money for the building of the hypothetical
1015 plant. But his money while it is in the bank awaiting use is drawing interest. This first table then is an interest table made for the purpose of determining accurately the credit which must be given to the going plant because of this money awaiting investment. The money held for investment in column number two during the year 1911, but not called for during that year, would therefore be the difference between the amount drawn during that year and the total awaiting investment at the beginning of the year. The third column, money withdrawn for construction, corresponds for the first year with the first item in column number one. The second item in column number one is a total of the first and second items in column number three.

Q. The first item in column number three is the investment for 1911?

A. Yes, sir.

Q. And the second in column three is the investment in 1912?

A. Yes, sir.

Q. The second column which is the total investment up to that time?

A. Yes, sir.

Q. That is why it is the sum of those two items?

A. Yes, sir; and that method is followed through each of the years, to find the interest credits we refer back to column number two and we find that during the year 1911 there were left in the bank awaiting investment, but not called for during that year, $2,779,522, on which it would be possible to earn a net return of two and one-half per cent per year, or for the year 1911, $69,488.

Q. That is in what column?

A. Column four. Now, referring again to column number three, showing the amount of money withdrawn during the year, we find that during 1911 we will have to call for $279,192. This
1016 money will be drawn from the bank at various periods through the year; but it is fair to say that the amount withdrawn will average approximately a uniform rate and allowance of interest for a half year withdrawn, but you wouldn't be able to get as much of a return on the money as you would for money left intact throughout the year. I estimate on money you are going to call for some time during the year, you could not get in excess of two per cent; I therefore allowed in column number five, first line, the sum of $2,792, which is the interest on the money withdrawn during that year at the rate of two per cent for one half year. The first column number six, the first item in that column is the total of the first items of columns number four and five, being the total interest with which the hypothetical plant should be credited during the year 1911, because of the money awaiting investment. That plan is followed throughout the table, showing for each of the years proper credit because of money awaiting investment. The following table shows columns number 7 to 16 both inclusive.

Q. That is page 115?

A. On page 115 comes in addition a column showing the gas sales in cubic feet for the hypothetical plant, and a column indicating the years. This table is made up in part from the previous records; for instance, gas sales shown in 1913 are taken from the table called assumed acquisition of business.

Q. This table relates to the hypothetical plant?

A. This is a continuation of the previous table referring to the hypothetical plant. Note the gas sales for the year 1913 in the hypothetical plant will be 193,131,000 cubic feet and the revenue from the sales of gas, the revenue being $1.68/100 cents per
1017 cubic foot, which will amount for the year 1913 $194,444. The interest on the unemployed capital carried forward from the previous page, column six for the year 1913 would be $24,610. The gross revenue of the hypothetical plant therefore the first year

of gas manufacture would be $219,054. The table of operation and maintenance of the hypothetical plant for the year 1913 will be found on the pages foregoing and is represented by the total figure for the year 1913 of $204,186. Now the tax of the hypothetical plant during the year 1913 is charged against operation in part, that is, one half of the taxes chargeable to that year for the hypothetical plant are charged to operation, and the balance to construction, as explained before. But the tax of 1913 includes something more than that. There is a note here "A" showing the taxes which I have charged the hypothetical plant with covering an amount equal to the tax on construction for 1913, plus a revenue tax of two per cent on the gas sold during the year 1913 by the hypothetical plant.

Q. Why do you put that in?

A. Because that is a tax the company has to pay the city on the gas sold. Now, the depreciation annuity for the year 1913 of the hypothetical plant would be $22,444, and that is obtained by using the depreciation factor. The plant is in course of construction at this time and the estimate is to be made on the correct proportion of the plant; you cannot itemize it as to machines. The total operating expense is therefore the sum of the costs of operation and maintenance and of taxes and of the depreciation annuity, and amounts for the year 1913 in the hypothetical plant to $240,618.

1018 Now the gross income of the hypothetical plant for the year 1913, the gross revenue, I find to be only $219,054. In other words, the hypothetical plant during the first year it makes gas will lose money. It will lose $21,564. Its net earnings will be a negative amount. Now, we find the going value at this time, not at some other time, not in the past nor in the future. We therefore have got to reduce*d* the net earnings of the going plant as well as the net earnings of the hypothetical plant to their present worth. If I am going to earn a dollar, one year from now it is worth less to me than five years from now. We therefore reduce each of the future net earnings by that factor for present worth, and the loss during 1913 of the hypothetical plant, of $21,564 is the equivalent today of a loss only of $18,111.

At this time an adjournment was taken until 1:30 P. M.

1019 1:30 P. M., WEDNESDAY, *July* 26, 1911.

HENRY I. LEA continued on direct examination by N. T. Guernsey, Esq., testified as follows:

Q. Mr. Lea, you had just taken up in the computation which appears here on page 119 of your report the year 1913, showing the gross revenue and the items making it up of that hypothetical plant then the total appearing of the items making that up of that plant and the deficit and present worth of that deficit. Will you please continue the explanation of this table?

A. I took first the year 1913 because it is the first year in which gas is being made and sold in the hypothetical plant and you will notice on this page that in columns 6 and 9, that there are credits as shown to the hypothetical plant during the years 1911 and 1912,

although there is no gas being made during that period. Those credits are accounted for in the interest table which is the preceding table where it is shown that in the year 1911 the total interest, column six, which is the sum of the interest amounts shown for that year in columns 4 and 5, is $72,280. That amount $72,280 is carried forward to column 8 where it appears as the total interest on unemployed capital.

Q. How much was that?

A. $72,280. There being no gas sold——

Q. You are referring now to page 115 instead of page 119?

A. Yes, page 115.

Mr. GUERNSEY: I would like to have the record show my reference to page 119 is an error, it should be page 115, I got the wrong page.

1020 A. On page 114 for the year 1911 you will find total interest $72,280. That is carried forward to page 115, column 8, on the line for the year 1911. Interest on unemployed capital $72,280. Now there is no gas being made in the hypothetical plant that year, consequently the only revenue the hypothetical plant has is the revenue from this money which is a waiting investment. The gross revenue is therefore the same as the total of interest on unemployed capital. There being no gas main there is no operation and maintenance expense. As the plant is being built and no gas being made all of the taxes are charged to construction and consequently do not appear here. This applies also the first year on the depreciation annuity. The total operating expense therefore is nothing. The net earnings from column 8 $72,280, and these net earnings are the earnings to be realized at the end of one year, consequently they must be reduced to their worth at the beginning of the year which is the time of valuation. The six per cent factor for present worth for amounts due one year from date is .9434. Applying this factor to the net earnings shown in column 14 you arrive at the present worth of the net future return for the year 1911 in the hypothetical plant of $68,189. Now the second year of operation of the hypothetical plant is followed through in the same manner as the first year with the exception that this year there is a depreciation which can be accounted for and the depreciation allowance for that year is the only operating expense during that year. The gross revenue for that year is as in the year *g*efore, the total of the interest on unemployed capital alone. The net earnings for the year would therefore be the difference between the interest on unemployed capital and the depreciation. The net earnings as shown in column
1021 14 is $44,097. Now the factor for present worth at six per cent on money coming two years from date is .89. Reduce the net earnings shown in column 14 by the factor for two years in advance would give you the present worth of net future returns for the year 1912 on the hypothetical plant of $39,246. Now the operation for the year 1913 I have explained. In 1914 gas is being made as in 1913, but in larger amounts. During the year 1914 the

investment will have been completed, that is at the end of 1914 the total investment in the hypothetical plant will have been made for all of its physical equipment, working capital, organization and legal expenses. During that year there will be no money held for investment as indicated in column 2, the money withdrawn during the year will have been $566,846. There *are* will therefore be no interest carried forward from column No. 2 but from column No. 3, there will be the interest on the amount there shown at 2 per cent for one half year which amounts to $5,668. That is the interest on the amount withdrawn for investment during that year. The total interest in therefore the same as that amount just named. Now going forward again to the year 1914, the next page, the hypothetical plant will account for 460,638,000 cubic feet of gas. The revenue from that gas will be $463,770. The total interest on unemployed capital carried forward from column 6 on the previous page will be $5,668. The gross revenue will therefore be the total amount of the gas sales and the interest shown in columns 7 and 8, or $469,438. The operation and maintenance for the year 1914 of the hypothetical plant will be $365,440 as worked out in detail on previous pages.

The taxes will be $46,830. The taxes for the year 1914 on
1022 the above total are arrived at by taking 2 and one fourth per cent on the construction expenditures for the years of 1911, '12 and '13, minus 18,512 which has already been charged to construction for that year and then adding to that result two per cent of the revenue from gas sales for the year 1914. The result is as shown, taxes for the year 1914, $46,830. The depreciation annuity will have increased because more of your plant will not have been completed and in commission, the total operating expenses as before is the total of the operation and maintenance plus taxes, plus depreciation and for the year 1914 amounts to $445,548. This year therefore the gross revenue exceeds the total operating expenses by $23,890 which is the net earning of the hypothetical plant for the year 1914. Now that amount must be reduced to its present worth and the six per cent factor for present worth of money to be obtained at the end of 1914 is .7921. Therefore carrying this reduction forward into column 16, we find the present worth of the net future return of the year 1914 of the hypothetical plant to be $18,923. Now each of the following years up to and including 1917 of the hypothetical plant is handled in the same way, the same detail being gone through with the proper allowance for each year under each head.

Q. There is one thing there *there* are no entries of these years *19* 1915, 1916, or 1917, shows no credit on account of interest. 1914 did, under column 8?

A. You mean none of the last three years due?

Q. Yes, sir.

A. That is because all of the money which was available at the beginning has been put into the plant or is no longer drawing
1023 interest at the bank.

Q. One other question before you leave that. Why did you use two and one fourth per cent as a basis for getting taxes?

A. Because that is the current tax rate in the city of Des Moines.

Q. Now will you proceed?

A. The following page 116, shows figures for the going plant which correspond with the figures on page 115 in the hypothetical plant. All of the figures shown for the going plant are figures which relate to the city of Des Moines alone, Valley Junction has been excluded throughout.

Q. Now take one of the years there will you please and go through it and explain it.

A. The year 1911 I estimate the gas accounted for in the city of Des Moines will be 5586 million cubic feet. That the population of the city of Des Moines will be 89,000. That the gross revenue will be $561,794.00. That is that the revenue for the year 1911 will exceed the revenue for the year 1910 from gas sales within the city of Des Moines by $33,121. The increases in percentage being 6.2 per cent. This morning your honor, you figured it about 30 million increase and about 6 per cent and 30 million would be approximate to this sum in $33,121. I also estimate that the operation and maintenance of the going plant for this year of 1911 will be $333,828. That the taxes will be $38,581. That the depreciation annuity will be $37,385. That the total operating expenses will be the sum of the figures in columns 20, 21 and 22, for the year 1911 or $409,795. The net earnings will therefore be the difference between the gross revenue shown in column 17 and the total operating expenses shown in column 23, or $152,000. But this
1024 sum is also an amount which is to be realized only in the future and it must be reduced by the six per cent factor for present worth to find out what the earnings for the year 1911 were worth at the first of January of 1911. Applying this factor we arrive at the amount in column 26 of $143,397 as the present worth or worth as of January 1, 1911, of the net returns for the year 1911 of the going plant. Now it is necessary to go through all this calculation for each of these plants for each of the years because we have got to see what the total difference is and I speak there of each of the years 1912, 1913, 1914, 1915, 1916 and 1917, exactly as explained above for the going plant. On the page following, page 117, I show a summary of the two plants, the three columns number 27, 28, and 29. The first column No. 27 is labeled present worth of net future returns of going plant and in parenthesis from column No. 26, referring to the preceding page, column 26, you will find each of the amounts set forth in this column No. 27. The next column 28 contains the corresponding items for the hypothetical plant taken from column 16 of the second page preceding. Column 29 is the difference or rather in column 29 is shown the difference for each year in the earnings of the going plant and the hypothetical plant. Taking the year 1911 for instance the preceding calculation has shown present worth of the net future return of the going plant to be for that year $143,397. Previous calculations have also shown the corresponding figure for the hypothetical

plant to be $68,189. In other words during the year 1911 the going plant would have had at the first of January this year a present worth of net future return exceeding that of the hypothetical plant by $75,208 for the year of 1911. The corresponding
1025 increase of the present worth of net future return of the going plant over that of the hypothetical plant for the year 1912, would be as shown $107,538. Now during the year 1913, the going plant is shown with a present worth of net future return of $154,046 while the hypothetical plant that year will have a loss of $18,111. The amount for the year 1913 appearing in column 29 is therefore in this case arrived at by adding the amount in column 28 and the amount in column 27. In all the other instances of course the amounts in column 28 are deducted from the amounts in column 27 to arrive at the amounts in column 29. Having gone through each of these years in this manner, having arrived at the difference between the present worth of net future returns for each of the years under consideration for each of the plants the sum of these differences is the going value figure subject to one further correction. The total of the items in column 29 would show a going value of $617,666 but that amount should be reduced because of the fact that we must assume that the man who is about to build this property who is to build a duplicate or buy the existing property has enough money to buy the existing property. Since that money or money required to buy the existing property must of course cover going value he should have after consideration of the amounts which we have already accounted for still some money lying in the bank during this construction period which we have discussed and he would have been drawing interest on the money, consequently the apparent going value shown here would really be reduced by the additional credits due to the interest this man would draw on his money through the bank. It is therefore necessary to take this amount shown here and to proportion it
1026 through each of the years considered in order that the hypothetical amount may be properly credited. In other words this will tend to increase the earning capacity of the hypothetical plant and consequently to reduce the going value of the existing plant because it will cost that much less money for the hypothetical plant to catch the going plant. On the page following therefore is another calculation of the interest produced which the hypothetical plant would properly have. You will notice that at the top of this page, near the top of this page in parenthesis are the words second trial, going value taken as $583,000. On the previous page we found an apparent going value of $617,666. Now notice that the hypothetical plant must carry that additional interest on the money laying in the bank, knowing that such credit will tend to reduce the going value of the going plant it becomes a matter then of arithmetic to determine how far the going value has to be reduced in order that the credit or additional credit given to the hypothetical plant will restore the balance, and that is made independently of this sheet. It is a little detail. $583,000 is shown to be the amount which you have been given before which you are

to equalize and the figures shown here are merely in proof of that statement. Now the calculations shows here that the hypothetical plant is the same as previously shown except that the amounts invested during each of the years of course have been made and correspond with the addition of the going value amounts.

Q. I wish you would go into that a little more in detail.

A. In the previous calculation in finding out how much interest the hypothetical plant would be credited with we take certain expenditures for each of the years which we arrived at through
1027 the reconstruction chart or table of reproduction expenditures. Now then having proportioned this apparent going value $617,666 over the several years these amounts are added to each of the years indicated and increased by these respective amounts the totals going into the plant for each of these years. Consequently the interest credit is properly apportioned and worked out.

Q. I am not sure I understand you. Will you let me ask you one or two more questions about that. Your first computation simply includes the expenditures for reproducing what they call the bare bone of the plant, the mere physical property and at the same time this additional money is being expended to reproduce the going value.

A. Yes, sir.

Q. So that you have added in this last table after you have approximated your going value you have added these additional expenditures to the various years?

A. Yes, sir.

Q. Because you must have them to make your interest calculations correctly, both debits and credits.

A. Yes, sir. Now you will see that shown very clearly in the money held for investment in the previous calculation the hypothetical plant in column No. 2 it is shown that no money is held for investment after the year 1913. But with this calculation it allows the additional credit, there is money held for investment in the plant up to and including the year 1916, three years later. All that time the hypothetical plant is being credited with the interest on the respective amounts held in the bank as well as on the amounts withdrawn during the year as in the previous calculation. Now
1028 in the previous calculation the hypothetical plant as shown in column three there was no interest on unemployed capital during either of the years 1915, 1916, or 1917. With the correction we are now going through there are allowances made for interest on unemployed capital during each of the years up to and including 1917. Now the calculation for the hypothetical plant is the only one that is benefited by this change and it is only effected because of the fact that an additional allowance must be made for interest to the hypothetical plant, thereby reducing the going value of the existing plant. I therefore have gone through the calculation for the hypothetical plant on this and the succeeding pages.

Q. Page 119 is the page.

A. 119. This allowance to the hypothetical plant does not affect the calculations of the going plant in the least and this second calculation for the hypothetical plant is therefore to be compared with

the calculation for the going plant the same as the first hypothetical plant calculation was compared and that comparison is shown on page 120 in which we arrive at the actual going value of the existing plant for each of the years 1911 to 1917 both inclusive. The total of these several yearly going values being $583,001.

COURT: If I understand you right you find the difference in the earnings of the plant that is to be constructed from the ground up running up for seven years and the earnings with its increase of the present plant and then ascertain the present value of its difference in the earnings.

A. Yes, sir.

COURT: And that is then what you regard as the going value of the plant.

1029 A. The difference of the totals of these two items for the two plants. For the going plant will during these seven years have earned a certain sum of money more than the hypothetical plant could possibly have earned in catching up with it in that period and the man who is going to build the hypothetical plant or buy the existing plant would be willing to pay that addition and take the existing plant.

COURT: You claim that to be the going value?

A. Yes, sir. That is what a man would be willing to pay rather than build the hypothetical plant and catch up.

COURT: Another question I want to ask, your figuring is all done upon the idea of reproducing the plant from the ground up and that it would take seven years to get a revenue equal to what the revenue of the present plant would be at the end of that seven years?

A. Exactly.

COURT: Would it make any difference now if there was no loss of revenue and this plant could be reproduced instantly, would there be any difference in the present value?

A. There would be a very material difference in the going value if you could reproduce instantly a plant of this kind with its business. It would not have any going value at all. Because if you could reproduce this plant with all its business immediately and I could buy the existing Des Moines Gas Co. for so much money or could duplicate it for a great deal less there would be no object at all in my taking the Des Moines Gas Company. The Des Moines Gas Co. would have no going value.

Q. Now this second estimate or computation proves out a going value within what of the going value which you started with there?

1030 A. $1.00. That is the amount started with on this second calculation which I understand you to mean.

Q. Yes. Now you said that — the result of these additional credits to the hypothetical plant if I understand you? Take this year where there was a deficit and on your first computation which you made for the purpose of getting a basis for this going value that deficit was $18,111 wasn't it?

A. Yes, sir.

Q. And the present worth of it was——

A. $18,111.

Q. After you have made your computation that item is reduced to what?

A. To a minus $11,535. In other words the hypothetical plant will lose about $6,500 less with this allowance than it would before.

Q. So that a man who is determining whether or not he would buy the plant or build one would have to put up $6,500 less if he built the plant instead of buying?

A. Yes, sir. Consequently the going value of the existing plant is reduced proportionately.

COURT: That last column is simply giving the present worth of the income you would have when you got it.

A. That is finding out what you would pay for this dollar today rather than wait a year to get it.

COURT: You go more than a year there don't you?

A. Collect one year for 1911 two years 1912 and so on down. Money you are going to get in 1916 is worth only .6651 on the dollar today.

COURT: You have $49,284 and $975,000. Is that where
1031 that loss came in?

A. That was interest earnings the first year $49,284 and the second year and third year the interest is less again, began to make gas and lost money and that loss is added to the profit of the going plant.

COURT: How do you get the present value as $97,500?

A. That is the difference between the estimated hypothetical plant and this going plant. The hypothetical plant made during that year $156,784 and the hypothetical plant made $49,284 the going plant therefore made $97,500 more than the hypothetical plant and this 97,500 would be the going value of the going plant for that year.

Q. Follow that up for a month Mr. Lee, these two columns, 27 and 28, on page 120 you have just referred to are the present worth computed earlier?

A. Yes, sir.

Q. The present worth computation is made before you get to these columns?

A. Yes, sir.

Q. Now referring to your letter of June 24, 1911, to Mr. Haines which begins this report or precedes it, Exhibit 20, what have you taken there as the going value of this plant?

A. $583,000.

Q. Was that amount ascertained by you in the way that is explained in your report and in your testimony here?

A. It was.

Q. Now I wish you would explain why you adopt this method rather than simply making a general estimate of so much for going value.

A. For the same reason that causes me to go into details
1032 on estimating the building. I can look at a building and form some sort of judgment as to what that building is worth just by looking at it the same as anybody else can, but if I am going to buy that building or if I am going to give a contract to

you to reproduce that building for me, I want to know something about the dimensions, the quantities, the costs of the raw materials entering into that building, before I will take any action I will acquire the information covering these points. I will find out all about the quantities, the local costs and kinds of material, the labor, and all of the elements of cost entering into that building. There will be a great many places in working out the details of those costs where I will have to exercise my judgment as to whether lumber will cost so much or so much, whether labor will be so much a day or so much and I would very much rather have my estimate covering the total reproduction cost of the building based upon my judgment of the many items entering into that building, than to have it based upon one big judgment based on the building as a whole, and this is the method of arriving at my composite judgment through working out the various details.

COURT: Only a matter of judgment and may be varied greatly by future results.

A. Oh yes. This applies only to conditions as they already existed the first of January of this year. The going value might go up or down during the year but at the time of taking the inventory this is what I believe is the true going calue.

Q. Now then Mr. Lea, I wish you would state what in your judgment was the total reproduction cost as of January 1, 1911, of the plant of the complainant, the Des Moines Gas Co. used and useful in its business of manufacturing and distributing gas in the
1033 city of Des Moines, including going a value.

Objected to as incompetent and irrelevant and object to the competency of the witness.

A. $3,641.714.

Q. I wish you would state whether or not you have reached a conclusion as to what was the reasonable actual value of the property of the Des Moines Gas Company in the city of Des Moines used and useful in its business of manufacturing and distributing gas on January 1, 1911.

Same objection.

A. I have.

Q. And what is that value?

Same objection.

A. $3,261,705.

Q. Now Mr. Lea, I wish you would state what difference there is if any in the present actual reasonable value of the property that I have referred to and its value on the 1st of January 1911?

A. There is some difference in value. I understand that some extensions have been made since the first of January but I don't know what they are no- the extent of them. The value today of this property would in my opinion be the value I have shown here as present value as of January 1, 1911, plus the extensions that have been made since that time.

Q. Now Mr. Lea, I wish you would state whether you have made

any examination of this plant with a view to determining in a general way its adaptability to the city of Des Moines and the demands that would be made upon it here.

A. I have.

Q. Please state what your conclusions are as to that matter.

1034 A. Well the plant as a whole it would be rather difficult to discuss in answering that question. You better take it a portion at a time I judge because it is not of the same capacity throughout.

Q. Answer it in your own way. I don't know enough to suggest how to answer it.

A. Well the maximum daily sent-out which has been made here up to date is about two and one fourth million cubic feet. That means that a plant to take care of a send-out having a maximum day of that size should have a capacity of 3 million cubic feet per twenty four hours for short periods. This plant is capable of turning out three million cubic feet of gas a day of twenty four hours for a few days at a time, but it is not capable of keeping up that rate. I would not dare to operate this plant with a demand exceeding 2,400,000 cubic feet per day if I had to keep it up. I would not consider the plant safe for any capacity beyond that as an every day demand and I would not consider it safe for any demand beyond three million feet per day for a period exceeding four days or five in succession. That is due to the fact that the capacity of the generating plant itself is only five million cubic feet per day when all of the machines are in use. Now no conservative operator will try to run his plant at a capacity which requires the use of every machine he has. He must provide for the shu- downs that every plant finds necessary and in this case one of the five water gas sets has a capacity of two million cubic feet. That is a very good size set for a plant of this capacity because it is very economical but if that set happens to be out of commission then your net effective working capacity at the maximum production is only three million cubic feet. Consequently the maximum safe rated capacity of the

1035 generating portion of this plant is only three million cubic feet per day.

COURT: That is it is only the capacity of the weaker plant?

A. It is the capacity of what is 1 ft. after your biggest unit is down. That would be three million cubic feet per day. They have four one hundred and twenty five horse power steam boilers down there and keeping one of these boilers in reserve, for you must always have allowance of at least one boiler to provide for cleaning the boilers, they have an effective boiler capacity of 375 horse power. That is exclusive of the 60 horse power boiler which is used only for the heating of the large holder and could not be used for a supply of steam to the water gas sets. Now 375 horse power in steam boiler capacity is not at all in excess of the demand of this plant even when the large generator is out of commission. In other words, you would not dare to have less than 375 horse power steam capacity to operate this plant when you were being called on for three million cubic feet per day. The boiler capacity is not as great in

its rating as the generators are. Now the generators and scrubbers had a capacity of three million cubic feet per day when they are operated as they now are with a large portion of the gas going into the relief holder before it goes to the condensers. They would be below a capacity of three millions if the relief holder was not used to do a large portion of the condensing work. The plant has three exhausters which may be used for the taking of this gas from the relief holder which are used to push gas on through the purifiers and meter and into the holder. Two of these exhausters have a daily capacity of a million and a half each or three million cubic feet per — for the two. The third exhauster has a capacity of
1036 two and one half million cubic feet capacity per day or a total of five and one half million cubic feet capacity in the exhausters and here again you are compelled to provide for one unit idle because exhausters go wrong, bars get out of line and they must be rebeveled, things happen to the engine and at any time one of these exhausters is apt to get out of commission. Suppose it is the largest one of them, you must in safety deduct two and one half million from the maximum rate of capacity or effective safe working capacity and of the exhausters it is again only three million cubic feet per day. But the one thing which you cannot get by in any plant is the purifying plant. You can crowd other portions of the plant, can crowd the boiler sometimes twenty five, sometimes 50 per cent about the rated capacity. Crowd the water gas generators above the rated capacity under some conditions and you can crowd the condenser, but you cannot crowd the purifyer. The purifyer is absolutely limited by the fact that the sulphur compounds cannot be removed from the gas except when the gas is traveling at a rate below a certain specified point. That is because the chemical action which is necessary in removing the sulphur from the gas requires time, requires a proper time for contact between the sulphur and the oxide and you cannot pass the gas through that box any faster when there is only a little sulphur in the gas than when there is a whole lot of sulphur in the gas. You have to pass gas at or below this rate to have action in the purifiers take place and the capacity of the purifiers has been very closely determined in a great many cases and it has been found that with purifiers of this size and with the number and depth of layers of oxide it is possible to use in these boxes that the maximum safe working capacity of these puri-
1037 fiers is only 2,400,000 cubic feet per 24 hours. That is the point at which is determined the maximum safe working capacity of this plant, the purifiers. The station meters are essential in maintaining your records as to gas made and costs of gas made from day to day, but in emergency you could dispense with them without wrecking your company or anything of that sort *of* affecting the public as a shortage of gas would. But the total capacity of the meters all put together, the three of them is only 4,932,000 cubic feet. And the new meter has in its capacity of 3,072 000 cubic feet. Station meters may also get out of commission, the drums are made of light material, sometimes have to be calibrated and sometimes have to be cleaned and if that large meter got out of commission for

any reason the effective storage meter capacity would be only 1,650,000 per day. But I do not consider that as determining the effective capacity of the plant because a man would by passing his meter if he got in trouble with it, he would inflict no troubles on the community and nothing serious with himself for a short period. The payment the company gets is determined by the reading of the consumer's meter. This other meter is used primarily to check up deficiences in the distribution system, to find out whether leakage is increasing and if so the best way to check it, to keep a record at the plant of the quantities of gas made out of given quantities of raw material, so one man's work may be checked against another, in an effort to improve the economy of the plant.

COURT: Does the photometer show continuously the candle power of the gas or only occasionally.

A. It shows only when a man goes in to operate it. That
1038 is done several times a day, I don't know just how many. It is not an automatic instrument, it has to be operated by a man. Now, the only other elements that would effect the capacity of this plant are the holders. The relief holder has 175,000 cubic feet capacity and that is safe for a manufacturing capacity up to three millions per day. It would not be safe for a larger output than that. The storage holder, the small one, has 309,000 and the large one has 1,132,000 making a total of 1,441,000 cubic feet per day and this storage holder capacity would be safe for two and a half millions to three millions per day in a water gas plant. It would not be safe for that capacity in a coal gas plant. The coke shed and the coal sheds and oil storage are also safe for three million cubic feet per day. In other words, it is my opinion that the maximum safe working capacity of this plant would be three million feet per day for a few days or 2,400,000 cubic feet per day as a regular send out. That would show that with a maximum day already experienced of two and one fourth million feet that the plant certainly is not overbuilt and will before long require very important extensions in order to safely and economically take care of and handle increase in gas sales.

Q. Have you given any attention to the general arrangement of the distribution system besides the pipes and things of that kind?

A. I have. I have not made a study of the detail of the distribution system to learn whether there is any particular locality where one sized pipe might better have been replaced with another sized pipe, but I have obtained records showing what the variation in pressure throughout the 24 hours of the maximum days of last year were in many parts of the city, particularly in the outlying sections. That is the first indication we look for when it comes to determining which portion of the distribution system needs rein-
1039 forcement. We put on pressure *guages* which have dials actuated by clock work, they run twenty four hours a day and they indicate with a little pencil arrangement the variations in pressure at all times throughout the twenty four hours as they occur at the point to which the*is guage ke* connected. These *guages* are movable and a man may easily carry one from place to place and a

number of them are being kept in commission moved around from one place to another the year round all over the town. These records are made part of the permanent records of the company and are the guides which the engineer refers to in planting his distribution system expansions. I have seen these charts from many parts of the city for the days representing the maximum send out of last year. These heaviest days, that is the heaviest group of days will come along in the winter near Christmas time and these charts indicate that there is no part of the city—that none of the parts of the city represented by the charts shown me were insufficiently supplied. On the other hand the danger is that you may have too many street mains and this I checked up by working out the average size of street mains now in use in the city of Des Moines. I have made a careful calculation of this matter and find that the average sizeed main in use in the city of Des Moines is not in excess of what we ordinarily expect to find in supplying gas throughout the country.

Q. You have refer-ed to the necessity of surplus apparatus or reserve apparatus so as to furnish a continuous supply of gas. What are some of the practical reasons for this aside from the question of good service.

A. Well the most important consideration is not aside from good service. It is very directly connection with good service and *and* that is a matter of life and death that is involved. If you
1040 operate your plant on so small a margin of capacity that an unforeseen period of cold weather or of dark weather creates a demand for gas which is beyond your safe working capacity, so that any break at the plant will cause the supply of gas to be shut off you then find where you have scattered throughout the entire city in all buildings and homes where gas is used a number of gas jets which were burning at the time the gas was shut off and which of course went out almost immediately after the supply was shut off and which in a great many cases have been forgotten by the people in whose hourses or store- they were. People will have had lights burning in their bedrooms which have been forgotten by them or perhaps gone to sleep with the lights burning. The supply is shut off and the gas goes out. After awhile you come along and turn the supply on again. It would almost certainly be the case that some of these open burners have been forgotten and would be pouring gas out into rooms where people were living and this gas is poisonous. All commercial gases are poisonous they are not made to breathe, they will kill you. You would in all probability have the full responsibility for a number of deaths. That is in my opinion the principal, the greatest point in connection with maintaining a reasonable reserve of capacity, of course you have to have reasonable -eserve for the further fact that your product must be distributed at all times under as nearly uniform conditions as it is possible to reach and that cannot be done if you are working at your maximum capacity at all times.

Q. Do you know during how much of the 24 hours in each day in this plant — is manufactured?

A. I presume the average is 22 hours actual gas making, that is blasting, making the gas and blasting and making the gas that is the average for each machine. If they are running more
1041 than one machine naturally it will overlap and there will be no period in the day when gas is not being made at intervals of a few minutes.

Q. By blasting and making gas you refer to what you describe more in detail some time ago as the fact that the making of gas was intermittent while your generator was running.

A. Yes, sir.

Q. How often during the day is it necessary to shut down a generator?

A. It is necessary to shut down at least every 24 hours and frequently it is the best practice to shut down twice, depending largely on the kind of fuel you are using.

Q. What is the purpose of this shut down each day?

A. To restore the fuel to a good workable condition so gas can be made economically.

COURT: What is the fuel that is used here?

A. Coke at this time. It has to be either coke or anthracite coal and anthracite is too expensive.

Q. Pursuing this digression a little further what kind of fuel is used in the boilers?

A. Steam coal.

Q. That is a local coal?

A. Yes, that is a low grade bituminous coal.

Q. In addition to this shutting down on-e or twice a day to clean the fires that you have referred to what if any necessity is there for shutting down periodically?

A. It becomes necessary to shut down every water gas plant at intervals ranging from sixty to ninety days for periods of five to nine or ten days for the purpose of cooling off the carburetor and super heater, taking out the checker brick with which they are
1042 partially filled and replacing this checker brick with other clean brick. The oil injected into the carburetor with which they are supplied fill the pores of the fire brick with carbon and carbon is a very low heat conveyor and heat won't go into the brick fast enough to meet the demands when the pores are filled with carbon and the brick has to be replaced on that account. It is very important that the brick heat up and give out the heat quickly. Brick is the only thing that will stand the strain and still come within out reach.

Q. What do you mean by come within reach, fin--cially?

A. Commercially, yes.

COURT: What is it the bricks absorb?

A. Carbon. It is supplied by oil to the fire making hydrogen gas and lamp black or carbon and that carbon gets into the pores of the brick and causes it to become so heat cannot get into the brick rapidly nor get out rapidly. The function of the brick is to absorb heat and release it as quickly as possible.

Q. Is it more economic to have a surplus generator capacity or surplus holder capacity?

A. Well the particular plant of course would have to be considered in answering a thing of that sort.

Q. Take this plant?

A. If you were to take this plant and were to provide with the present generator capacity enough holder capacity to carry you over such times as you might expect to have to tide over and if on the other hand you could put in water gas generating capacity to tide you over that same time, requiring no additional investment in the balance of the plant the installation of generating capacity
1043 would be very much cheaper than the installation of the holder capacity——

COURT: I think you gave the proportions of the gas, but I have forgotten.

A. The proportion of the gas leaving the generator you mean. There are about equal volumes of carbonmonoxide and hydrogen at that point, they are about five per cent each of the total volume of gas leaving the generator. An amount -qual to that of carbon monoxide and hydrogen is added in the carbureter from the oil so the finished product has about one third of its total volume made up with gases from the oil. These proportions of course will vary with the conditions of local operation always.

Q. I wish you would state what if any additional investment will be necessary in the near future if the company is to maintain the efficiency of its service here in Des Moines. State generally or in detail as you prefer.

A. Well in connection with my giving the full calculations I have gone very carefully into the probable increase in gas sales in this city and I estimate that during the next seven years there will be required approximately 40 per cent more gas than is now that is there will be sold approximately forty per cent more gas per day than is now being sold. This plant now has a reserve capacity which is so small that within two years it will be necessary to make additions and at that time it would not be good business to make a small-addition than two million cubic feet per day in capacity at the works. The reserve capacity required in a water gas plant will decrease in percentage of the total capacity as the plant increases in size. In other words, this two million feet water gas set which may now be considered reserve of a plant of three million capacity is also ample as reserve for a plant of five million safe working capacity.
1044 So to give this plant an additional capacity of two million feet per day it would be necessary to add only the two million feet. But you would have to add it in the water gas generating plant and in the condenser and in the scrubbers and in the exhausters and in the purifiers and in the buildings proportionately and possibly some additional real estate will be required for that portion of the plant and you would need in addition I should say about three years from now, within three years additional holder capacity and that holder capacity should be certainly a minimum of two million cubic feet. Then for an increase of forty per cent in sales I would judge that you would have to increase the investment

in mains by twenty per cent over the present reproduction cost. To take care of forty per cent increase in sales you would also have an increase of services and the number of meters by approximately forty per cent of what they are now. The total of all of these extensions would approximate something over one million dollars. And some of this money would have to begin going into the property I should say certainly within eighteen months some of it and be spread over a period of perhaps over four or five years.

Q. Can you tell us what must be the per cent of condition of a plant in order to permit it to render efficient service?

A. Well that will again vary with the different parts of the plant. A scrubber for instance might be almost ready to go out of commission and still be capable of holding the trays and retaining the gas as effectively as a new scrubber. But that would not be true of the water gas plant or would not be true of the holders because there would be such an element of danger involved there you would be compelled to take them down. I should say that a plant having as a whole, that is the works themselves having as a whole a per
1045 cent condition below seventy was getting into the dangerous region and I would not — to operate it. On the other hand you might go too far and spend money unnecessarily in maintenance. For instance it is not at all necessary to have the present value of the plant 95 per cent say. If you were to keep all your plant up to 95 per cent you would be wasting money. Between these two points is the per cent condition in the average plant which will yield the greatest net return without taking any chances with the interests of the community or of the company.

Q. You are familiar with the location of the real estate used by this *property* in connection with its manufacturing plant.

A. Yes, sir.

Q. I wish you would state what if any factors there are which render the location of this real estate especially adapted to the uses of this company manufacturing and distributing gas.

A. I would say that this is one of the very best if not the very best locations within the city of Des Moines for a gas plant. I say that in view of the effect which other locations would have upon the cost of manufacture or distribution or both and of such other items as complications arising from being too near to the center of the city. The location of this property is very advantageous from a transportation standpoint. It is advantageous with respect to the river which affords convenient drainage facilities. It is as close to the center of distribution as you can go and still remain on low ground with trackage facilities without being in constant danger of suits because of nuisance.

Q. What do you mean by that?

A. A gas plant located in the midst of the best residential district is always subject to complaint and frequently to legal action because of the smells coming from a gas plant. The plant is located on ground which is lower than the major portion of the district
1046 to be supplied and that is an advantage because it reduces the necessary investment in street mains due to the fact gas is lighter than air. It is also advantageous in view of the fact

that it is not surrounded by industries or residences or mercantile places that would be seriously affected by proximity to a gas plant.

Q. You speak of trackage facilities. What materials that the company uses come in by the carload?

A. Coal, coke, oil, pipe, all the fixtures and appliances, gas consuming appliances, all of the gas making material and practically all the material which the company uses in extending and developing its business come in by rail in carload lots. And the tar which the company ships away is handled the same way.

Mr. GUERNSEY: We offer in evidence Exhibit 20 in connection with Mr. Lea's testimony concerning it.

Mr. BYERS: Exhibit 20 is objected to as incompetent, immaterial not rel/evant to any issue that is involved in this controversy. We make the further objection to all of that part of Exhibit 20 which has to do with the so-called hypothetical plant and the item of going value and all the other items involved in the schedules and tables going to make up this socalled hypothetical plant and going value as entirely irr-levant to any issue in this case, incompetent and immaterial. We make the further objection to all that part of Exhibit 20 which refers to the going plant for the reason that it appears from the testimony of the witness by whom the exhibit is sought to be identified and qualified that the schedules and tables of figures and all the figures contained in that part of Exhibit 20 are mere estimates and nine of them purport to be the facts and figures as shown by the records and books of the company which it appears
1047 from the witness' testimony was in a measure used as a basis for his computations and schedules and tables of figures. We make the further objection to that part of Exhibit 20 in which the computation and tables and schedules of the so called going plant are set out that it appears from the testimony of the witness that the exa/t figures as to all of the problems involved in this part of Exhibit 20 as to the questions of cost and the questions of lineal feet and size of pipe and all other important items entering into the valuation of the property of this complainant is found and can be found in the books and records of the company and were within reach of the witness and are now in reach of this court and for that reason the estimate of the witness is incompetent and immaterial and irrelevant and for this and the reasons heretofore stated in the other objections, the defendant objects to any testimony being received upon the theory of replacement or reproduction. Defendant objects to all that part of Exhibit 20 and to all testimony given by the witness, Mr. Lea, with respect to mains under paving for the reason that the same is incompetent, immaterial, irrelevant, not the best evidence and it already appearing from the testimony of the witness that wh-ever facts are necessary to ascertain the value of this complainant's property with respect to mains and pavements are matters of record in the books of the company. For the further purposes of the record I would like to have the record show the same objections made to the matter in Exhibit 20 as are covered by the preceding objections shall stand as to the items of estimated value given by the witness Lea, in Exhibit 20 and also as to the testimony

as to crossings under railroad tracks and street railway tracks for the same reasons.

1048 Cross-examination by Hon H. W. Byers:

Q. You started your examination several days ago with the suggestion, Mr. Lea, or statement rather, that you were 33 years old and a consulting engineer. Where is your present residence?

A. Chicago.

Q. And your business, Chicago?

A. Consulting Gas Engineer.

Q. I mean you have your headquarters in Chicago, your business headquarters.

A. My office you mean, location of my office?

Q. Yes.

A. In Chicago, corner Adams and Michigan Boulevard.

Q. Is that the People's Gas Building?

A. That is the name of the building.

Q. How long have you been in that building?

A. Since the building was ready for occupancy, about a year and a half ago I judge.

Q. And you have been more or less interested in the gas business since 1896 I believe you said?

A. Yes, sir; continuously.

Q. Always as an employé?

A. No, sir.

Q. Part of the time as owner or interested in the business yourself in a financial way?

A. Well not interested in the ownership to any extend, but I was thinking of salaried positions. I have not been on a salary for nearly five years.

Q. I used the term employé in a general sense.

A. Oh yes, always been working for somebody on some basis.

1049 Q. Never operated a gas plant yourself?

A. Yes, I have done that.

Q. As the owner?

A. As the part owner.

Q. Where was that and when?

A. That was in a town of about 7000 people in Illinois.

Q. How long ago?

A. Well I got the plant about two and one half years ago.

Q. Do you have it now?

A. Yes, sir.

Q. You are operating it right now?

A. Yes, sir.

Q. What kind of a gas plant is it?

A. Coal gas.

Q. What do you say the population of the city is?

A. About 7000 I understand.

Q. What town is it?

A. Duquoin.

Q. How far is that from Chicago?
A. About 280 miles.
Q. South?
A. Yes, sir.
Q. How far from east St. Louis?
A. I would judge about 65 or 70 miles.
Q. Is anybody else interested with you in that gas plant?
A. Yes, sir.
Q. Who?

Mr. GUERNSEY: I don't know of there is any objection to disclosing this, but I think it is not cross examination and wholly immaterial. I don't know whether Mr. Lea has any business rea-
1050 sons for not wishing to disclose it or not.

Mr. BYERS: Perhaps he better suggest it if he has.

A. There is not the slightest objection in the world to telling who is associated with me if it is of any importance in the case. The people are not in the gas business at all aside from this one venture. If there is any importance or any reason why the name should be given, but I don't see that it is of any importance.

Q. Of course you may not see that but it may be possible when you don't see it, that when we know we won't see it, but now we don't know it.

A. There is no other owner of any part of this Duquoin Gas Co., who is in any way connected with any other gas company as owner as part owner or officer or employé.

Q. That is a very proper statement, but if you will just tell us who it is.

Objected to as not proper cross examination, irrelevant and immaterial.

A. Frank M. Elliott, real estate dealer of Chicago, Frederick W. Harnwell, a corporation counsel, in the city of Chicago.

Q. Anybody else?
A. That is all.
Q. Now have you any interest in any other gas property or gas plant anywhere?
A. No, sir.
Q. Have you had?
A. No, sir.
Q. Ever operate any other plant but this one?
A. I have operated other plants but not as owner or part owner.
Q. I mean as owner?
1051 A. No, sir.
Q. What did you say was the population of the city where this plant is located?
A. I have never seen the census figures. I am told it is 7000 and it looks about 7000 to me.
Q. What is the gas rate there per thousand feet?
A. I don't remember.
Q. Don't you know what you get?

A. I know how to find out what I am getting, but I don't remember.

Q. How long have you owned the plant?

A. About two and a half years.

Q. Are these other men gas experts?

A. They have never had any experience before or been in any way connected with gas. They have no connection now with the plant except one is called vice president and one called secretary and the secretary's bookkeeper writes out the vouchers, that is the only connection they have.

Q. What is your title?

A. President.

Q. Manager?

A. No. A local man is manager.

Q. A local man operates the plant?

A. Yes, sir.

Q. To whom does he report.

A. To me.

Q. Don't you know at this moment what price you are selling your gas for there?

A. I do not.

Q. What were you selling it for there last year?

A. I believe it was 1.50, but I am not sure of that.

1052 Q. And the year before?

A. I don't remember.

Q. Do you know what you were selling it for the first of this year?

A. No, sir.

Q. Say the first of January 1911?

A. No, sir.

Q. You don't know what you are selling it at now?

A. No, sir.

Q. From whom did you buy the plant?

A. From the then owners, but I have forgotten their names.

Q. Were they local people in that little city?

A. Yes, sir.

Q. Who did you buy your material, your supplies and material for extensions of?

A. We don't buy it from any one person.

Q. From whom do you buy the larger part of it?

A. If you will specify the material I will try to tell you.

Q. Such as your mains and service pipes and that class of goods?

A. We haven't bought any mains, if we had we would have bought them probably from the U. S. Cast Iron Pipe & Foundry Company.

Q. Where are they?

A. Chicago, one office. I say probably, that is just because they are usually able to name better prices in the vicinity of Chicago than the other pipe people.

Q. Have you bought any new apparatus since you have had it?

A. Mone complete apparatus, we have had some refilling of benches done.

Q. What is the apparatus that is used in the plant, that is whose make is it, give us the name of some of the important parts of the apparatus.

1053 A. The benches were originally built I think by the Laclede-Christy people. I believe they built the first two benches and I believe the Walker-Russell Main manufacturing Company built the third bench. And the refilling which I have just named was done by the Gas United Construction Company of St. Louis.

Q. When did you first become part owner of that plant?

A. About two and a half years ago.

Q. That would be some time in 1908?

A. I believe that is correct yes.

Q. And you have owned as interest in it ever since.

A. Yes, sir.

Q. You began by saying other things you opened your office in Chicago in 1907.

A. Yes, sir.

Q. Now was it, to fix this time of purchase of this plant, a little more definitely, how long was it after you opened your office in Chicago?

A. I don't remember, it was in the neighborhood of two years.

Q. After you located?

A. In the neighborhood of two years, yes.

Q. So it would be perhaps safer to say some time in 1909 then that you became interested in the gas plant.

A. I can get the record if necessary.

Q. It is not so important but I want to get your best judgment about it.

A. It is between two and two and one half years as I remember it since I got the plant.

Q. What was the Daws syndicate you referred to?

A. That is a group of men represented usually by one or more of the Daws Bros. of Chicago.

Q. Is this Charles Daws the man who was formerly at

1054 Lincoln, Nebraska is that one?

A. He is one of the brothers.

Q. What is the practical business of the syndicate?

A. I don't know except in a general way that they operate gas and electric properties.

Q. Throughout Illinois?

A. I don't know where they are now I have not been with them for several years, know nothing about their business.

Q. Were you ever employed by them?

A. Yes, sir.

Q. When?

A. At five or six different places.

Q. When?

A. I don't remember the years. You will find the name of the cities in the record.

Q. I think you said there were two cities that you had made an inventory or was interested in either making an inventory or—one was Buffalo and the other Beatrice, Nebraska.

A. That question referred to work which I done for municipalities recently and those are the only two municipal jobs I have had recently.

Q. How recently were they?

A. Within the past year, past six months you might say, within the past six months I believe both of them.

Q. Were you employed by the Daws Syndicate in 1907 at the time you opened your office in Chicago?

A. No, sir.

Q. Have you been since?

A. No. sir.

1055 Q. Then your employment with that syndicate was all prior to 1907?

A. Oh yes, a long time prior.

Q. You spoke about your having some employment by a committee in Chicago under which you worked or made a partial estimate of the value of the Chicago Gas plant, I have forgotten the name of it.

A. No, I didn't refer to any committee, I said by interests antagonistic to the company.

Q. What do you mean by that?

A. Just that. Interests antagonistic to the gas company.

Q. You mean the community, interests in the community there, or do you mean some gas manufacturing Company?

A. This interest was in the community, yes.

Q. Was it a gas concern?

A. No.

Q. Wasn't the city of Chicago?

A. It was not.

Q. When was that employment, when did it begin?

A. About the first of last year as I remember it.

Q. About the first of January 1910?

A. I believe that is right.

Q. What was the character of that employment, what were you employed to do?

A. Make a complete valuation of all gas property in the city of Chicago used and useful in the manufacture and distribution of gas in Chicago.

Q. Now if you have no objection I wish you would tell us a little more definitely who your employers were?

A. I would like to know whether it is important that I answer these things. This work comes to me in a confidential way. People do not employ consulting engineers to handle work and expect

them to announce that around what they are doing and who
1056 they are working for and all that and if it is not necessary I don't want to answer this. I have objections to answering.

Q. You don't wish to state who your employment was by?

A. I do not wish to violate the understanding or agreement under which the work was given to me. It was not supposed that I would make public matters of that sort when the work was turned over to me.

Q. Of course you understand Mr. Lea I am not asking you for the details of your employment at all or for the result of your investigation, I am simply asking you now is you are not willing to give us the names?

A. I am not.

Q. The name of the individual or corporation or interest that employed you?

A. No, sir; I am not.

Q. How did it come that you did not complete your work for that interest?

A. Two of the men in the board of directors of the company by whom I was engaged to do this work died within a period of thirty days of each other and it happened that these two men between them had controlled the policy of this concern. On the death of the second of these two men the next strongest man came into the control and his policy was directly antagonistic to that of these two men who had died and he was not in favor of continuing this work and it was at that time stopped.

Q. Now up to that time in pursuing your employment had you spent some time in the offices and about the plant of the Chicago Gas Co., that you were investigating?

A. Oh several years before that.

1057 Q. No, as part of that employment. I am referring now to the employment of this company two members of which you say died. I understood in your examination in chief you said that you got about half through with making this valuation of that gas property when your employment ceased. Now this question goes to that employment and not any former employment?

A. While I was making that examination I had naturally to go to the properties of the company and I had completed my examination of several of the plants in Chicago at that time.

Q. And had you gone through any part of the books and accounts of the company?

A. No, sir.

Q. Had you spent any time in the office of the company?

A. No, sir.

Q. Your work then up to that point had been confined to the physical property, that is the plant and the mains and services, etc.?

A. Had been confined exclusively to the plants. There were several plants in Chicago, several manufacturing stations in Chicago.

Q. Of course I am confining myself or trying to to the concern that you were examining ?

A. Well I had examined several of the gas plants in Chicago for that concern before the work was stopped and had reported to them on the plants.

Q. That is several plants owned by the gas company?

A. By plant I mean in this sense, manufacturing stations owned by the people Gaslight & Coke Co. in the City of Chicago.

Q. In doing that had you access to any records or books of that concern?

A. No, sir; I did not try to get any access to records or books.

Q. When you got about half through you then completed the work for gas company.

1058 A. After an interval of time.

Q. How long?

A. Perhaps thirty days, forty days.

Q. Just about when was your employment by the gas company, give us the date as near as you can?

A. I don't remember the date. Perhaps about the middle of last year.

Q. About the middle of 1910?

A. I should judge so.

Q. And when did your work cease?

A. When I finished the job along in the fall some time.

Q. How long before you came here?

A. Oh sixty or ninety days may be.

Q. That then would be some time in October?

A. I don't remember the date. I would have to look it up.

Q. You remember when you came here.

A. It may have been only thirty days.

—. ——.

A. Yes I gave that the other day the first part of January, January 13th I came here.

Q. You did have access to the plants did you?

A. Yes, sir.

Q. And spent considerable time in making up your report?

A. Naturally I had to examine the equipment and buildings myself.

Q. Referring now to the time when you were working for these hostile interests?

A. The same thing applies, I was doing exactly the kind of work for them on exactly the same basis when I finished later for the company.

Q. So you did have access to the plant while making the

1059 fore part of your report?

A. Certainly yes.

Q. And that work was going on as late as October was it?

A. I won't say that, I don't remember. I would have to look it up.

Q. When were you first interviewed with respect to the Des Moines situation?

A. 12th of January of this year.

Q. Was that the first time anything was said to you about it?
A. Yes, sir.
Q. And where was that interview?
A. It was in Chicago and in Des Moines. Mr. Haines was in Des Moines and I was in Chicago.
Q. It was over the telephone?
A. Yes, sir.
Q. Or by correspondence or how?
A. Telephone.
Q. That was the 12th of January?
A. As I remember it.
Q. At that time your work in making the inventory and valuation of the Chicago property had been completed as I understand it?
A. Yes, sir.
Q. So that you had no further employment at that time for the Chicago concern?
A. Not for the Chicago concern.
Q. What other employment do you have or did you have in the way of making valuations or invo-ces on gas properties at the time Mr. Haines first spoke to you?
A. Only valuations you mean?
Q. Valuations or any other information that you were to
1060 give about the cost of gas plants?
A. I had pending at that time the designing of a gas plant for Coshocton, Ohio, the designing for a gas plant for Brazil, Indiana, and there was still some loose ends on the appraisal at Freeport, Illinois. I think that is all I had on at that time.
Q. This appraisal at Freeport, who was that being made for?
A. The company.
Q. What company?
A. The Freeport Gas Light & Coke Co.
Q. Is that a local concern in Freeport?
A. Yes, sir.
Q. No connection with the Chicago plant.
A. Not the slightest or with any other gas company that I know of anywhere.
Q. You made an investigation and you know I suppose as a matter of fact from the examination of their books?
A. I never examined the stock certificates, I don't know who owns the stock but I was told locally that it was held locally. I don't examine the stock certificate record or bond holders in order to determine the value of property.
Q. You don't care anything about that in order to get at value.
A. Not the slightest thing in the world, no sir.
Q. Who were those other examinations being made for
A. The Coshocton was for the firm of James B. Clough & Sons, cast iron pipe manufacturers in Chicago.
Q. No gas concern at all?
A. No, sir. The Linton was being done for a consulting electrical engineer in Chicago who was not familiar with gas prices, he had

not had any experience in it and didn't want to take the
1061 responsibility so I handled the gas part of the work for him.

Q. The gas property at Freeport, was your investigation and examination there made with a view of being a witness in some controversy?

A. No, sir. There was no argument of any kind on at Freeport. The company had been running along for a very great many years with its original capitalization or at least capitalization was many years previous, the city had grown and the business grown to a point where the company wanted to reorganize and my report was made exclusively for the purpose of providing the owners of the company with a correct basis of reorganization as between themselves, not as between themselves and the city or any other opposition. There was no opposition about it.

Q. Is this the first time that you ever made an investigation of a gas plant for the purpose of making an estimate of value as a witness?

A. No, sir.

Q. In what other case do you remember now?

A. Well are you asking whether I appeared as a witness or whether the work was performed with that possibility?

Q. With a view of being a witness.

A. This is not the only one, no.

Q. When was the last case just prior to this present one?

A. The last one prior to this was Taylorville, Illinois.

Q. How large a place is that?

A. I don't remember. I think it is about 12000.

Q. And how long ago?

A. Oh four or five months, this year some time.

Q. By whom were you employed in that case?

A. By the ocmpany.

1062 Q. What is that company?

A. I believe the title is Taylorville Gas—I don't remember the exact title, the only gas company in Taylorville, Illinois.

Q. And is it a local company, the people who own it live there in Taylorville?

A. I don't know where the ownerhsip rests.

Q. You don't know what relation it has if any to the Chicago Company?

A. I have not the slightest reason to think there is any connection between them and the Chicago Company.

Q. Or the United Gas Improvement Company?

A. No, sir. Because the only interests I know of as being concerned there are interests antagonistic to both interests in Chicago and the United Gas Improvement crowd.

Q. Was that in a rate contro-ersy?

A. Yes, sir.

Q. Anywhere else just recently?

A. Well Beatrice, Nebraska was within the last, well say in this year.

Q. Was that a rate controversy?

A. Yes, sir.

Q. You appeared there as I understand it for the city?
A. For the city, yes.
Q. Beatrice is a town of about 15,000 people?
A. About that.
Q. More than one gas plant there?
A. No, sir.
Q. Do you know what that company is there?
A. What the nature of the gas is?
Q. No the company itself, is it a local concern?
1063 A. No, it is not a local concern. A man whose name I have forgotten, but who I remember is pastor of John D. Rockefeller's church in Cleveland is the principal owner. I think it is Eaton, is the principal owner and they have one or two other plants, one of which is in Canada.
Q. One in Canada?
A. Yes, sir.
Q. Now Mr. Lea, how long after you received your telephone communication was it before you came to Des Moines?
A. About ten hours.
Q. And when had you been in Des Moines just prior to that?
A. Severa- years, I have forgotten just when. The last time was at some gas convention here.
Q. Can you give us somewhere near the time?
A. Four, five, six or seven years ago, I don't know, I don't remember. I should say thought not less than four years nor more than seven.
Q. Had you ever lived in Des Moines?
A. No, sir.
Q. I think you said you were at Ottumwa awhile?
A. Yes, sir.
Q. How long?
A. Some few months, until my work there was done, I have forgotten just how many.
Q. Was that the only residence you ever had in the state?
A. Well I didn't claim it was my residence then.
Q. Anywhere else?
A. I was at Keokuk for a short while.
Q. Managing a property for somebody else?
1064 A. No not managing, my work was making changes in the plant so the plant could make coal gas or water gas or both.
Q. You were there as engineer?
A. Yes, sir.
Q. Is that also true of Ottumwa?
A. Yes, sir.
Q. While you were at Ottumwa were you in Des Moines?
A. I don't remember where I came from to attend this gas convention. I would have to learn the year and I don't remember what that was.
Q. If you were here it was just to attend that gas convention?

A. That is all. Just gave a cursory look over the plant while attending the convention.

Q. Then you came here the 13th of January was it?

A. Yes, sir.

Q. Then I suppose you had a personal interview with Mr. Haines?

A. Yes, sir.

Q. And what did he say to you about what he desired to have you do?

A. He told me that there was some question between the city and the company as to the price of gas and that he would like to have me make an appraisal of all of the property of the company used and useful in the manufacture and distribution of gas within the city of Des Moines as it was at that time or as it was on the 1st day of that month.

Q. Did he make a contract with you?

A. Nothing beyond a verbal contract.

Q. I am not asking for the terms but you made a contract did you of some kind?

A. Made a contract in the sense he told me what he wanted me to do and I said all right I will go ahead.

Q. Who did you understand was employing you to do the work?

1065 A. The Des Moines Gas Company.

Q. And are you in their employ now?

A. In the sense that I am being paid for my time here.

Q. Your employment has continued along until this time?

A. No, sir. I am in their employment when I am on their work. If I go on somebody else's work tomorrow and back here next day I am not on their pay in the meantime. I am on my own or some one else's time in the meantime.

Q. I suppose your employment then is perhaps by the day?

A. Yes, sir.

Q. Did Mr. Haines tell you at that time what the controversy was?

A. I don't remember that he did. I don't remember that he did not. I know it was not very long before I understood about where the case stood, but I don't remember exactly what he told me.

Q. He told you didn't he at that time that the controversy was over the charge for gas, that he was selling gas at $1.00 and $1.10 and the city had passed an ordinance reducing the rate to 90 cents, that is the way you understood it?

A. I understood that was what had happened or was about to happen. I don't remember now it was one or the other.

Q. Mr. Haines told you I suppose that he wanted you to place a valuation upon the gas company's property on the theory or at least on his claim that the valuation of the property and the cost of making gas here would not justify making the 90 cent rate.

A. He certainly did not.

Q. Well what did he say about that?

A. He didn't have anything to say about that, he could not have said it to me if he had.

Q. Did he say that the rate fixed by the ordinance was too low, they were not going to yield to it?

1066 A. He didn't say anything to me about the ordinance being too low.

Q. What did he say about it in explaining to you how the controversy arose.

A. I don't remember that he did explain how the controversy arose. I remember very shortly after I got here that the controversy was over a proposed or actual 90 cent ordinance and that the existing price was $1.00 net and I was asked to make an appraisal of the property of the company.

Q. What do you mean by $1.00 net?

A. That is the price of gas after the discount for prompt payment has been deducted.

Q. That is the company got $1.10 if the payment was not made within a certain time after the first of the month?

A. Yes, sir.

Q. And if it was made it would be but a dollar. Now what else did he say.

A. I don't remember anything he said beyond the statement that he would like to have me make a valuation of this property.

Q. Did he tell you what property?

A. Property of the Des Moines Gas Company.

Q. How long after that before you were furnished with the books and records and papers of the concern if you were ever furnished?

A. I was furnished with some material that same day, but I don't remember now just what it was and how much of it.

Q. Now in making up your valuation did you proceed wholly on your own theory or upon the theory suggested by anybody else?

A. I proceeded upon what I considered as the only theory that anybody can consistently proceed on that is formulated there as the only valuation to be reached.

(Question read.)

1067 A. May I ask now you mean theory as to the basis on which the value is to be made?

Q. The manner in which you made it and theory on which you based it.

A. You mean to say I commenced in my valuation by opinions or suggestions of other people, is that what you mean?

Q. No, what I mean Mr. Lea, did you proceed to ascertain first the physical items of this property and then proceed to put a valuation upon it upon your own theory or upon some theory suggested by somebody else?

A. I used no theories obtained from other people in the sense you are speaking of except that I have not evolved any theories out of my own consciousness as to the basis on which the appraisal should be made. I have followed what is recognized as good practice.

Q. After you had accepted your employment I wish you would tell the Master just what was the first thing you did to begin your work?

A. Went to the plant and looked around.

Q. Anything else?

A. Came back and got some details as to equipment and went back to the plant.

Q. What details?

A. I don't remember.

Q. In a general way.

A. Went over portions of what now constitutes the inventory. They were not at that time finished up as I remember it.

Q. You say the inventory was not finished at that time?

A. As I remember it. I may be wrong on that. I know I did not get a complete inventory at that time on my arrival.

Q. After you got through with your looking over the plant as you say you did, what was the next thing you say you did in the way of getting a basis for your valuation?

1068 A. The checking of the items in a portion of the inventory which I had to satisfy myself as to the substantial accuracy of the inventory.

Q. Checking it with what?

A. With the items themselves.

Q. The items themselves?

A. I had gone over the physical property, the plant and tools and apparatus.

Q. What next did you do in the way of ascertaining the necessary information upon which to base your value?

A. Well after I had obtained the balance of the inventory showing the distribution system and balance of the works equipment, I drove over all parts of the city to see if the indications I could locate of gas supply would agree with the extremities of the main system shown on the map.

Q. Who gave you the information upon which you could make your trip about the city, where did you get that?

A. The map itself you mean?

Q. Yes, you might have got it from the map, but who was with you to help you to locate these mains and services and all that sort of thing?

A. Well part of the time I was alone and part of the time Mr. Vinvent was with me.

Mr. GUERNSEY: Who is Mr. Vinvent?

A. Engineer of the gas company, he saved me some time showing me short cuts to the districts I wanted to see.

Q. What did you do next?

A. After satisfying myself that the works equipment, buildings, real estate and distribution system were as indicated in the inventory I set about learning the local factors as to prices of labor and

1069 raw materials entering into construction.

Q. How did you do that?

A. By asking questions.

Q. Yes, I know, and I want to treat you right Mr. Lea, and I hope you *you* will meet me half way on it. Now what I want to know from you about that is just where did you go to get your

information and who directed you to the places you went, who did you see?

A. Nobody directed me to most of the people I asked. I have some figures that were obtained before I came.

Q. Where did you get these figures?

A. These figures I got from the gas company.

Q. Here in Des Moines?

A. They obtained them from the contractors in the city, some of the contractors.

Q. And furnished them to you?

A. Yes. That is not saying those were the figures I used. I admit having received them from the company, but I did not use them as I received them.

Q. I wish you would state in the shortest possible way that it can be fully stated just what you *have* in your mind now after you had accepted this employment it was necessary upon which to fix a valuation of this property, just the items you had in your mind necessary to be ascertained?

A. I had in my mind one thing and that was the determination of that value upon the physical equipment of the property with allowance for working capital and preliminary organization expense and for going value which could be substantiated by the facts in any court and nothing else.

Q. You cared nothing about investment?

A. Nothing.

1070 Q. Cared nothing about original cost?

A. No, sir.

Q. You paid no attention to either of these items?

A. Except in a very indirect way I did not use them.

Q. You cared nothing about capital?

A. No, sir.

Q. You cared nothing about construction cost as it appeared in the books?

A. No, sir.

Q. You made no effort to ascertain any of these facts?

A. No, sir.

Q. And you proceeded entirely upon the theory it was absolutely immaterial as to what any of this property here cost or how much money had been invested in it or what operating expenses may have been?

A. I never said that.

Q. Which item do you cut out?

A. I don't say it is absolutely immaterial as to what these did cost nor as to what labor or other operating charges may have been, I said nothing of that sort. I said only this, I never considered the actual cost of any of the items as shown by the books of the company. In arriving at the present value of the property because I don't know that these records cover the actual present value, but I do know how to arrive at the present value by my own methods.

Q. You made no effort then did you to ascertain what the property cost the company to begin with did you?

A. I was not asked to determine what it cost.
Q. (Question read.)
A. No, sir.
1071 Q. You made no effort to ascertain what the present owners of this property actually invested in it did you?
A. No, sir.
Q. You made no effort to ascertain from the books of the company just what the labor cost that was involved in the plant at the time you began to investigate it did you?
A. No, sir.
Q. In other words, you paid no attention so far as fixing the value is concerned to any fact that could be ascertained from the books of the company except to check up the physical items of the prop'— is that right?
A. That is so, but it is so because I considered it——
Q. I am not asking why it is so, simply asking for the facts?

Mr. GUERNSEY: I think the witness has a right to add the explanation.
COURT: Well it is now adjourning time.
Here the further hearing was adjourned until 9:30 A. M. tomorrow.

1072 Thursday Forenoon Session.

JULY 27, 1911, at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of complainant resumed as follows:

HENRY I. LEA, Re-called for further cross examination, examined by Gen. H. W. Byers, testified as follows:
Q. Mr. Lea, I want to clear up one matter I thought about after we adjourned last night. I think you misunderstood one of my questions. Early in the cross examination you were asked, when you came here after a telephone communication, about what Mr. Haines said to you about the character of the controversy that was on, and the purpose of an inventory or a valuation of their property, and you were asked, as I remember it, what Mr. Haines said to you about the valuation of the property as to their wanting the property valued for the purpose of sustaining their position as to rates. Evidently from your answer, as I read it over, you got the impression from that question that I meant to inquire of you if Mr. Haines did not tell you just the kind of valuation he wanted made?
A. I thought that was what you were driving at.
Q. That was not it at all, what I was driving at. I don't want you to think that I would suggest that about Mr. Haines, and I do not want it to appear that way in the record. All I was trying to get at was just what information you had about this controversy when you made up your mind as to what method you would pursue in making the valuation, and what theory you would adopt in arriving at your valuation. Now, another thing I want to ask you a little

further about—did I understand you to say that you had
1073 made or placed a valuation on the gas plant at Beatrice for the city?

A. Yes, sir.

Q. You filed a report?

A. Yes, sir.

Q. When?

A. I don't remember the date; I have a copy of it in my office.

Q. About how long ago?

A. In the past six or eight months.

Q. Who employed you to do that?

A. The city council committee.

Q. Can you tell me the particular individual?

A. The city council committee, I have forgotten the name of the particular member.

Q. Were you at Beatrice?

A. Yes, sir.

Q. For how long?

A. One day.

Q. How long during that day?

A. Between the trains; I have forgotten.

Q. About an hour?

A. Oh, it was longer than that; I got there sometime in the forenoon and left some time in the evening.

Q. What that the first time you had ever been there?

A. Yes, sir.

Q. You went in from the east on the train that leaves Omaha about eleven o'clock?

A. I don't remember that.

Q. Anyway you left on the next train that came east?

A. I don't remember that; I was there something over a half a day.

1074 Q. But you don't remember the name of the individual who made the arrangement with you?

A. No, except he was the chairman of the committee of the city council having the matter in charge.

Q. Do you know that?

A. Yes, sir.

Q. Where did he meet you?

A. In Beatrice.

Q. This day you were there?

A. Yes. I met him in the store in which he was employed; I think it was the furniture store.

Q. Were you ever there since?

A. No.

Q. Were you ever back after that half day?

A. No.

Q. This individual who you say employed you, did he furnish you any of the facts and figures?

A. Yes. The city council committee had agreed with the Gas

Company as to the major portion of the facts concerning the property, and these facts had already been tabulated.

Q. The man furnished you this information?

A. The city council committee gave me a copy of that, and later in the presence of the manager of the Gas Company, I was advised that this was agreed to by both parties.

Q. Was there more than one of the council present when you got that statement?

A. I don't recall that. There were other men there but I don't remember whether one or more of the other two members of the committee were there or not.

Q. And you don't remember their names, any of them?

1075 A. No, sir.

Q. What was the Gas Company manager's name?

A. Rice.

Q. You met him over there?

A. Yes, sir.

Q. Was that the first time you ever met him?

A. Yes.

Q. Was that work going on in January last?

A. I don't remember.

Q. Was it since January?

A. I think so.

Q. Your report was filed since January?

A. Yes, I know it was since January.

Q. You came to Des Moines you said on the 13th of January?

A. Yes.

Q. In response to a telephone message?

A. Yes.

Q. Now, in the telephone message were you told the character of the work that was expected of you, the controversy that was on?

A. Not at all.

Q. You were simply asked to come here?

A. Mr. Haines asked me if I was so fixed that I could come to Des Moines that night for a matter he wanted to go over with me the following day. I asked him if it was urgent, and he said yes, and I came the same night. This telephone message was on the—and I arrived on the morning of the 13th.

Q. And your employment was arranged that day?

A. Yes.

Q. You began your work for the Gas Company then on the 13th?

A. Yes.

1076 Q. Do you remember having some correspondence with the city of Des Moines after that time?

A. I got a letter from somebody, I believe Mr. Brennan, asking me if I was available for work of this sort.

Q. That was some time after the 13th of January?

A. Yes.

Q. You wrote Mr. Brennan, did you?

A. Yes.

Q. Did you advise him you had been employed by the Des Moines Gas Company?

A. No, sir.
Q. Did you say anything about that in your letter?
A. I did not.
Q. Do you remember the date you got the letter first from the city?
A. No, it is in my office though, could be obtained easily.
Q. It was quite a long time after the 13th of January?
A. Oh, perhaps a month or two.
Q. I don't remember whether you stated in your examination whether you were a graduate of any school of engineering?
A. I am not, no.
Q. Your training along that line has been out of school?
A. It has been in school only so far as I could carry on school work in connection with the operation of plants.
Q. When did you come back to Des Moines after the 13th to go to work?
A. I went to work immediately.
Q. You didn't return to Chicago?
A. No, I stayed here something over two weeks before I went back.
Q. Then you were here in Des Moines at the time the city through Mr. Brennan wrote you, were you?
A. I don't know whether I was here at that time or not.
1077 I did not receive the letter here; that came to me while I was in Chicago.
Q. You went to work then on the 13th?
A. Yes.
Q. Did you at that time make any inquiry of the manager of the Gas Company about the property and about the investment in it and about the capital of the company?
A. No, sir.
Q. No questions of that kind were asked?
A. No, sir.
Q. Did you make any investigation of the Company's books or papers or records at that time for the purpose of ascertaining any fact with relations to the company's valuation of its own property?
A. No, I studiously avoided all that. I did not want to have any of the company's figures in my mind in any way concerning the value of the property.
Q. You did not care anything about their figures?
A. I wanted to make my own valuation.
Q. If I understand you, it made no difference to you at all, upon the theory which you pursued to make this valuation, what the company paid for their property or what the company considered it worth; you wouldn't give their valuation any weight whatever in arriving at your conclusion?
A. No, sir.
Q. In other words, you proceeded upon a theory of your own that had no relation whatever to any element or item of value that might appear from the company's books or records?
A. I took particular pains to avoid getting any information from the company——

Q. Please answer the question.

1078 Mr. GUERNSEY: I think the witness is entitled to complete his answer.

Answer continued: as to any value the company might place on its equipment and as to any indicated values of the property that might be taken from the books.

Q. But you proceeded upon a theory of your own that had no relation whatever to any element or item of value that might appear from the company's books or records?

A. I have answered it.

The MASTER: When you can answer a question yes or no, it is always best to do it.

Mr. BYERS: We will take an answer.

A. I cannot answer that by yes or no and make my answer complete.

Q. What part of it are you unable to answer by yes or no?

A. I have no right to claim some one theory under which I am making this valuation; it is not peculiar to me; it is a standard method recognized as being correct. I did follow this method which I recognized as standard and did not try to get from the Company any indication as to its information of the value of the property.

Q. In other words, to put the question to suit your notion, you proceeded to place a valuation upon the property without reference to any element or item showing the value that appeared upon the Company's books or records?

A. Yes, sir.

Q. Did you ever, in any of these other cases, where you have appeared as a witness, proceed in that way?

A. Yes, sir.

Q. In what case?

A. At Taylorville.

1079 Q. Have you been a witness at Taylorville?

A. Yes, sir.

Q. When?

A. Within the past few months.

Q. At Taylorville, Illinois?

A. Yes, sir.

Q. Where else?

A. That is the only place I have appeared as a witness.

Q. Have you ever made a report anywhere that was worked out upon the same theory and basis that your report in this case is worked out?

A. I have made a large number of reports, but never made any on any other basis; they have all been on this basis.

Q. All been on the basis of your report here?

A. Exactly.

Q. Including the going value?

A. I have not in all cases calculated the going value because I did not know how until less than a year ago.

Q. Have you in any case before worked out the going value as you have worked it out here?

A. Yes.
Q. Where?
A. In Chicago.
Q. In this report you made for the Gas Company?
A. It is a part of that report; it is not in the bound volume.
Q. It is not in the bound volume?
A. No.
Q. Is it a separate part of the report?
A. Yes.
Q. Any other place?

A. Not with the same detail as we have here. I have ap-
1080 plied it in other places.

Q. Well, give us the detail or rather the method in which you have applied it in any place where you say you have dealt with going value before.

A. Well, I applied it in a general way at Taylorville. I applied it in a general way at Omaha.

Q. What do you mean by general way at Taylorville?

A. I did not have the particulars required there, as to the records of the company in such detail as you would have to have to enable you to make a calculation in as great a detail.

Q. Then you did have the records of the company to work it out here?

A. That is admitted; of course that is shown by the calculation itself.

Q. You stated on yesterday you did not agree in all respects with the figures furnished you by the company and so in some cases you adopted your own; have you with you the itemized statement or invoice of fact and figures furnished you by the company upon which you base your report?

A. I am not sure. No, I have not; it is a copy of the inventory; the minor differences which are indicated here, is in my room.

Q. What is in your room?

A. The copy of the inventory on which my report is based.

Q. You have it here in Des Moines?

A. Yes, sir.

Q. I wish you would bring it in at the next sitting of the court and have with you all memorandums furnished you by the company, purporting to show the entries in their books with respect to the mains and services and operating expenses and all that class of figures.

A. I have no record purporting to show the entries in their
1081 books. The only figures I have are summaries.

Q. What do you mean by summaries?

A. The only figures I have, for instance, as to the street main system, for instance, would be the total number of miles at the end of a given year. I have not the detail as to the number of feet of each and the size of pipe at the end of that year.

Q. What I want is what was furnished you, if you bring that in that will be all that you can bring in. You stated in your examination in chief that the reproduction method was the accepted method;

who do you have in mind as having accepted that as the proper method of ascertaining the value, and the exclusive method?

A. It is the accepted method among the investing men of this country.

Q. Well, who do you mean by investing men, gas companies?

A. Not only gas people; people investing in utilities of all kinds, banks and bond houses and individuals.

Q. You stated too you had made an inventory and valuations for bond companies heretofore; can you give me the name of a bond company for which you prepared an inventory or valuation of gas property in which you dealt with the going value as you have here?

A. I can give you the name of a bond house in which I dealt*h* with going value, but not in the detail I show here.

Q. Give us the name of the company?

A. I would rather not do that.

Q. Why?

A. Because the business is of a confidential nature.

Q. The name is not confidential?

A. That is a part of the confidential relationship, I am not supposed to divulge.

Q. When was it?

1082 A. Well, several times; perhaps four times.

Q. When was the last one?

A. About a year ago.

Q. Now you say you did not deal with the going value in the same detail; how did you deal with it in that case?

A. It has been customary for a great many years to make an allowance for going value, but nobody has had in the gas industry any specific means to calculate the amount of the going value. It has been customary to take sometimes a year's gross income as the going value; sometimes a fixed sum per meter; like $30 per meter; sometimes a percentage of the reproduction cost of the property; and these methods are all more or less arbitrary and not specific enough to compare favorably in my opinion with the scheme we have followed here.

Q. You don't mean you have any better means or any more convenient way of getting at the facts and figures now than you had in years ago?

A. A very much more conclusive method than ever before.

Q. In what?

A. In that it shows all the elements which make up the total.

Q. You said a moment ago the reason you had not done it before was because you did not have the means; what did you mean by that?

A. The method itself is one which has not been used in the gas industry until within the past year. It has been used in other industries and has only recently been adapted to the gas industry.

Q. Do you know of any other consulting engineer that has dealt with going value as you have within recent months?

A. Oh, yes.

Q. Outside of any of the witnesses in this case?

A. Yes.

1083 Q. Who is one?

A. Leonard Metcalf of Boston.

Q. Who is another one?

A. John Alvord of Chicago.

Q. Those are both water men?

A. Exactly.

Q. Neither have worked out any such method in a gas case as you have here?

A. No, sir.

Q. Can you think of a single engineer dealing in gas other than yourself that has dealt with going value as you have here?

A. Yes, sir.

Q. Who is he?

A. Harry Abel, 40 Wall Street, New York.

Q. Anybody else?

A. Henry L. Doherty.

Q They have both dealt with gas cases and worked out the going value as you have?

A. Yes, sir.

Q. In any cases involving any court proceedings?

A. Not in any case which has yet come into court so far as I know.

Q. Do you know of any rate commission anywhere in the United States that has adopted your method and approved it?

A. I do not believe this method has ever been applied in a rate case before a commission in connection with a gas company; it has been applied on water companies.

Q. Do you know of any commission anywhere which has adopted this method as to water companies?

A. I know of commissions before whom the scheme has been presented.

Q. I am not talking about that. Do you know of any com-

1084 mission anywhere in any of the states that have adopted or approved your method of getting at the going value?

A. Not as a whole.

Q. In referring to your going value in your examination in chief, in trying to illustrate it to the Master you spoke about the grocery business. I wish you would tell the Master now what you understand the term good will means.

A. I understand good will to be that which prompts the individual buyer to go to one source of supply rather than to another when the prices of a given commodity and quality of that commodity are the same in the two cases or two places of sale.

Q. That is to say, take your illustration of the grocery store—if a grocer has spent several years in building up a trade and getting a large number of customers who confine their grocery business to him and buy of him, that is what you would consider the good will of that business?

A. I would consider it good will if there were some competing

grocer there who carried as good a stock as the other stock at the same price and there was some personal element that prompted the buyer to go to the man who sold the larger amount.

Q. What is your notion now of the difference now between good will as you have described it and the volume of business of the grocer?

A. I did not undertake to make any comparison between good will and the volume of business.

Q. Is there any?

A. Not that I know of.

Q. Then you want the Master to understand that there can be no such thing as good will unless there is competition?

A. I didn't say that.

1085 Q. What will you say about that?

A. There is a good will in a public utility, but not in the sense of a grocery store. A grocery store may carry exactly the same kind of a bean that the next grocer carries and may sell at the same price per pound or quart and there may be no one deciding factor as to which store will sell that bean except good will. The gas company is selling a product which has no exact duplicate in the city. It has competition. There is electric light, gasoline, kerosene, wood and coal, but there is no other supply of gas. Coal, wood and kerosene and gasoline may be used in place of gas for certain service, but there is no one other thing which will do all the things gas will do; consequently the competition is not exactly parallel.

Q. You knew, of course, when you came here to make this valuation that there was no other gas concern in the city of Des Moines?

A. Yes, sir.

Q. You knew so far as gas was concerned, for both illuminating and fuel purposes, the Des Moines Gas Company had a complete monopoly of the sale of this article for this purpose?

A. Yes, sir.

Q. So it was your notion then, since there was nobody else selling gas in this territory there could not be any such thing as good will and you would have to call it something else?

A. No, sir; there is a very distinctive element of good will in the Des Moines Gas Company.

Q. What is it?

A. It is not an item which I have tried to calculate or which I have included in any sense in any of my figures.

Q. Why not?

A. Because I don't know how to figure it.

1086 Q. What does it consist of?

A. You might say it is that attitude on the part of the public which prompts the public to use gas for lighting, when it might use electricity, kerosene or gasoline; it is that attitude on the part of the public which prompts the use of gas for cooking when it might use coal or coke, wood, kerosene or gasoline, and some of those things in some cases would do the work for less money than gas.

Q. Right at that point, how does that attitude come about, if it is

good will, who is it that brings about that attitude and how does that do it?

A. The company very largely brings it about through advocating its gas for fuel and educating the people to the use of gas for illuminating purposes and fuel purposes.

Q. Is not that exactly what you tried to work out here as to going value?

A. Not at all.

Q. No part of the education of the public to the use of gas is included in your so-called going value?

A. No, sir; I have very specifically assumed in that calculation that the state of education of the public with respect to the use of gas in the hypothetical plant is exactly as it is today in the city of Des Moines. If I were to assume that that education would have to be developed, I would have to add at least one hundred per cent to the going value shown in that calculation.

Q. Are we to understand that you assumed in your method as a basis of your calculation for going value here that all of that part of the work, of the gas company was already accomplished and existed here and did not belong to anybody?

A. I have assumed that the people in the second city in
1087 which the hypothetical plant is to be built already knew about the advantages of gas and were ready to take on the supply of gas.

Q. I thought you worked it out by saying that only a few used it the first year and then a few more the next year and so on.

A. Exactly so.

Q. Now if the Des Moines Gas Plant had blown up a day or two after you came here and the Des Moines Company had gone out of business and a new gas company started, do you think then it would take three or four or five years to get the people to using gas again?

A. It certainly would if you had to again begin to relay your entire distribution business and take on people who had not been used to gas and had only an education as to the advantages.

Q. That is what you call your going value, the difference between the number of people who use it in your so-called hypothetical plant and the number of people who use it in your going plant?

A. Distinctly not.

Q. Tell us more clearly what factor or weight, if any, the extent of the consumers had to do with your so-called going value.

A. That is shown very clearly in my calculation.

Q. I want to know what if any weight you gave to the question of the number of consumers?

A. What number of consumers; where?

Q. Where were you dealing with consumers?

A. This calculation shows clearly, I have considered the number of consumers in each of the three districts. I have considered the possible rate of development of the business of each of this class of consumers in each district.

Q. Development, who is going to develop them; what do you mean by development?

1088 A. You have got to admit that a consumer who has taken on a supply of gas today for the first time, does not, if he is an average consumer, does not equip his house with all the classes of appliances which he will have later. He first puts in one of the appliances and the meter goes in, and he runs along for a while slowly, and then he finds out it is an economical thing, and after a while he wants another kind, and so from time to time he adds appliances; as he adds appliances he naturally increases the gas consumption per meter per year. But that does not come instantaneously. If you had a community like Des Moines as to intelligence concerning the advantages of gas, but which had not used gas, and you were to suddenly turn on a supply of gas, these people would not immediately use gas at the rate they would ultimately use it. They would take on one appliance at a time. The consumption per meter would grow as they became more familiar. They might have known beforehand the advantages and economies; in a great many cases they might not have had the amount of ready cash; so the growth is gradual.

Q. So, then if I understand you, it is the difference in the earning power, or the actual earnings, if I may put it that way, between your so-called going plant and your so-called hypothetical plant, because of the necessity of this growth and development and this period of time that must elapse before the consumption will in the hypothetical plant equal the consumption in your so-called going plant, that you call going value?

A. It is not.

Q. Tell us what it is?

A. You mentioned one of the items only that enter into the going value.

1089 Q. How much of an element is that?

A. I can perhaps answer that better by showing what effect the rate of development would have if we assumed, instead of being able to catch up with the going plant in this case in seven years, that it would require ten years. Obviously the going plant would have a still larger lead over the hypothetical plant than it now has, and the going value of the existing plant would be correspondingly increased. By reducing the time required in the development of the business of the hypothetical plant you reduce the going value of the going plant. Now that is clearly only one of the elements entering into the calculations.

Q. How much of a figure does that cut in your final conclusion as to the amount of the going values; what part of it do you attribute to that?

A. Well, if we take a plant in which a ten year period is required, we arrive at a going value——

Q. You took seven years, didn't you?

Mr. GUERNSEY: I think the witness ought to be allowed to answer the question.

Answer continued: of say $1,400,000. This is not Des Moines

I am speaking of. If we assume a five year period for that same plant, we get a going value of about one million dollars.

Q. Let us assume a period of one year; let us take Des Moines, where we are, the place that we are talking about: the Des Moines Gas Company, we will say goes out of business, quits, plugs up their mains and quits business, say on the first day of January; now if I understand your testimony the Des Moines Gas Company, the going plant you talk about had some 19,000—we will use that number for illustration—consumers in Des Moines, people who know all
1090 about the advantages of the use of gas and knew all about what could be accomplished with it in their homes—now a new gas company is to take over this field and put in a plant; what would they have to do in order to reach these 19,000 consumers?

A. That is obviously not a fair comparison.

Q. Just answer the question; you are too much inclined to argue.

A. I can't answer it yet; he has not told me whether the new company had taken over the existing mains.

Q. The new company has taken over nothing, is just simply going to start in here to serve 19,000 people already educated to the use of gas, what would they have to do to reach that?

A. The parallel is not yet reached, because you are assuming a house fully equipped with gas appliances.

Q. I am assuming nothing; I am taking the situation just as you found it in Des Moines, with gas appliances in a certain number of homes and with gas being used by a certain number of the people, whatever that number is, as shown in your report and in the figures furnished you: that is all I am assuming; I want to know just what the company would have to do, what expenditures it would have to make before it could serve all of these people other than to just simply put the mains in and put in the services, install the apparatus at the plant, get their fuel, build the fire and start the machines and install their meters.

A. You cannot calculate going value on such assumptions; they are not fair.

The Master: Answer his question.

A. I cannot answer it; he is making assumptions that do not fit each other.

Q. In order to make your theory hold, you have to have a case to fit the theory?

A. No, sir, you have got to have conditions which can be
1091 reasonably and fairly assumed to be found.

Q. Now let us see if there is anything here that can be reasonably assumed. You knew before you got up this so-called hypothetical plant and carried out this comparison between the so-called going plant and the hypothetical plant, you knew you were making figures to be used in this lawsuit?

A. Yes, sir.

Q. You knew you were making your figures with reference to the situation existing in the city of Des Moines in January last?

A. As of the date January 1st.

Q. Now you knew at that time there were about 19,000 people in Des Moines, or 19,000 places where they were using gas?

A. Yes.

Q. So that you knew at least that many people had been educated up to the point where they knew what gas was and what they could do with it, and you knew there were about that many places being served with gas?

A. Yes.

Q. Now, then, there is nothing about any of those things that are assumed and unfair?

A. No, it is your next step that is unfair.

Q. The next step is that the gas company serving these people quits business?

A. Where are you going to allow the credit for the work already done by the Gas Company? You are taking advantage of work done by somebody else without making credit for it, which is unfair.

Q. I want to know now, take the new company, the hypothetical company that is going to start in here now and put in a plant and occupy this field of the Des Moines Gas Company, which it
1092 for some reason or other left; it is not important what the reason was; what would that new gas company have to do to reach those 19,000 consumers.

A. If it were humanely possible to duplicate the conditions which you have outlined, then of course, the going value of the existing plant would be less than it is; but it is not humanely possible to duplicate such conditions.

Q. You don't answer that question at all. What did you start out with in your report as the necessary thing to be done by your so-called going plant and so-called hypothetical plant?

A. I started out with the one purpose, of drawing a comparison between——

Q. I didn't ask you the purpose. I want to know what figures, what work you started with, whether the promotion of the company or whether it was putting in mains; what did you start with?

A. I started with the preliminary organization and expense of the hypothetical plant.

Q. That is what your new company had to do?

A. Certainly.

Q. And that covered the whole period of construction, didn't it?

A. Some of the expenses are spread over a period of three years.

Q. Your new company would have to do that thing and would have to put in those mains and put in the apparatus?

A. Yes.

Q. And make the connections at the houses, and as soon as that was done you would be ready to commence to serve these people.

A. As soon as they had the connections made.

Q. Would there be any going value there?

A. Very clearly.

Q. What would it be?

1093 A. Are you assuming now that each of the consumers at the present lines of the old company are also fully equipped with appliances for the hypothetical plant?

Q. Their houses were already equipped; you stated that you took Des Moines as it existed now, with its education and necessarily you must have taken it with its gas connections.

A. I did not so take it.

Q. You proceeded upon the theory that there were no connections?

A. I spoke specifically that I took Des Moines as it is in all respects, including the present state of education as to the advantages and use of gas, but without gas appliances in the houses; those appliances have got to come gradually; they cannot come instantaneously; they never do.

Q. If I understand you, the method you adopted, you proceeded on the theory that your hypothetical plant was going to be built in a town purely hypothetical, except that it had been educated to the use of gas?

A. I took an adjoining city exactly like Des Moines in all respects, including the education of the public as to the advantages of the use of gas, but omitting the gas plant and gas appliances in the houses of the consumer, what does it cost to reproduce the condition existing in the first city; that is what my calculation shows.

Q. You have been around the world a good deal—do you know of any such city?

A. I have not tried to find one.

Q. Do you think there is any such?

A. No.

Q. A city of that kind don't exist?

A. It is not necessary they should exist for the purposes of
1094 this calculation.

Q. Take your own city, which don't exist, and see where you come out—we will assume Des Moines is the kind of a city you are talking about, without any gas connections, but they are all educated to the use of gas, at least 19,000 of them are educated here; now what other than just the promotion expenses would the new gas company have to go to in order to reach these 19,000 consumers?

A. The promotion expenses are the new business expenses.

Q. I say other than promotion expenses?

A. That is all I have allowed for in addition to physical equipment.

Q. This so-called new plant—if the Des Moines Company would go out of existence, what would it have to do in the way of expenditure of money or time or anything else, other than the expense of installing and purchasing this apparatus, and installing its plant, putting in its mains, putting in the service connections and paying the cost of the expenses of all that work, and connecting up its machinery, or anything else.

A. It would have in addition the promotion or development expense required in bringing these people to the use of all the appliances they now have.

Q. But they are already educated to that?

A. They are educated as to the use of them, but they are not practiced in the use of them.

Q. They never used gas?

A. You may have lived in a city all your life and know all about the use of gas, and if tomorrow you moved into a residence and you begin to use the residence for the first time, you will not begin on a scale which you will finally reach.

Q. You take out somethng else besides the service con-
1095 nections; now you say it must be a city with people in it who have never used gas?

A. I didn't say they had never used gas; I say they must be educated to the use and advantages of gas.

Q. How, what sort of an education?

A. Well, some of them may have lived in other cities where they may have had gas, but the major portion in every city become acquainted with the advantages of gas through the development work of the gas company.

Q. Well, then, to make your theory work out now, give it the credit that it ought to have in the mind of the Master and the people involved in this controversy, you have got to have a hypothetical plant worked out as you worked it out, and you have got to have a hypothetical city where the people are not using gas and where some of them have found out how to use it by living somewhere else?

A. The city as a whole must have the present state of education of the city of Des Moines with respect to the use and advantages of gas.

Q. And those that never have used gas, you have got to have that?

A. That doesn't follow.

Q. If they use gas and know all about it because they use it that ends the proposition to educate them?

A. If you take a city exactly like the city of Des Moines, you will find lots of people fully acquainted with the theoretical advantages and with the costs and use of gas, who have never used gas.

Q. Then none of these people in this hypothetical town have ever used gas?

A. No, I didn't say that.

1096 Q. How many have used it?

A. I don't care how many of them.

Q. You don't care if none of them have used it?

A. All I want them to have is the present state of education in the city of Des Moines as to the advantages and economies of gas. If they have used gas before they are not going to jump in with a full complement of gas appliances right off the bat; most of them haven't money enough to buy it.

Q. Do you know of a single city anywhere in this country now, that in the constructions of its buildings, its new homes and its new business houses those appliances are not all put in with the construction of the house or homes?

A. I don't know of any city anywhere where those appliances are all put into any district, and it is not to be found.

Q. What part don't they put in?

A. There is no city in the world that installs all of its gas appliances when the buildings are put up.

Q. What do you mean by gas appliances?

A. Some new houses are piped for gas.

Q. What do you mean by some new houses?

A. Your question covered the situation in which all the work was done in all the houses.

Q. What proportion of the houses is it not done in?

A. It varies widely with the character of the cities. There are a great many cities in which it is a rare case to see a house piped when it goes up.

Q. Do you know a single modern residence built in Chicago recently which was not all fully piped for gas?

A. It is the exception to find a modern house fully piped for gas and electricity.

1097 Q. Then you have got to have a city with homes in which necessary plumbing for gas has never been made?

A. Have you; I didn't say that. This second city is to be identical with Des Moines in all respects, except that it has no gas plant and has no gas appliances in the houses.

Q. And never had any?

A. Never had any.

Q. What do you mean by gas appliances in the houses, piping?

A. Devices for consuming gas.

Q. You mean stoves and lamps and such things as that?

A. Yes.

Q. The piping is to be there then in your hypothetical plant?

A. If you do not grant the piping is there you are going to involve the period of construction, which would be reasonable.

Q. If the piping is there, the gas company has covered, of course in the laying of the pipes and the making of connections and installing of all its parts, that has all been covered in your construction account?

A. Yes, the account shows exactly what it is.

Q. So that everything up to the very point of turning on the gas, at the wall, if I may use the term, is there in your hypothetical plant?

A. My construction figures go to the outlet of the meter, because that is as far as the company goes. House piping is the work of the house owner and house piping belongs to the owner.

Q. In your hypothetical plant that is all there?

A. Yes, the piping is there. I am trying to arrive at a fair basis and it is necessary in order to be fair to assume that those pipes are in there, because if you do not do that you are going to assume that the gas company are putting in that piping, and you are

1098 going to increase the period of construction and increase the going value.

Q. In order to make your theory work at all you have got to assume just what you now stated, and at the same time assume

these other things that people never use gas in their homes, although they are piped and all that sort of thing?

A. The house piping is omitted from the calculation; it is not a part of the property of the company.

Q. Does the gas company own the gas stoves?

A. No, sir.

Q. You assume that there were no stoves in those homes?

A. There will be before the plant is thoroughly in operation.

Q. Your hypothetical plant would not run at all without appliances in the house?

A. These appliances go in as the work is indicated to progress in the figures.

Q. How do they go in?

A. The gas company puts in the stoves and appliances.

Q. But in your figuring out this so-called plant you assume those things get into the house by request of the owners or does the Gas Company put them in?

A. The Gas Company sells them to the house owners at a price which barely covers the stoves and appliances, whatever they may be.

Q. So you have assumed in your method of arriving at this going value that the supply here in Des Moines would only take these things gradually, covering the period you figured out?

A. I assumed that because that is the history of every Gas Company in the world.

Q. You have to assume that here in order to make your plan work, don't you?

1099 A. This plan will not work unless you stick to conditions humanely possible and in accord with practice.

Q. Please answer the question.

A. You don't assume it in order to make the plan work.

Q. Where is there a typical city, then, such as you have worked out, if you don't have to assume it?

A. I didn't say you don't have to assume it.

Q. If you didn't assume it, the plan wouldn't work?

A. This plan wouldn't work unless the things you assume are reasonable and within the limits of human possibility.

Q. It won't work there unless all those elements we are talking about are assumed to exist?

A. It is a hypothetical plant and you naturally have to assume each of the elements in it.

The MASTER: If you can't answer the question, say so.

Q. In order to cut this short, Mr. Lea, just tell the Master what you have assumed in making up your hypothetical plant, was the condition of the hypothetical town in which the plant was to work with reference to the use of gas; just state it.

A. I have assumed a town of the same size, and kind, and each of the characteristics throughout as the city of Des Moines; that there isn't any gas plant in the town; that there is none of the property which belongs to the company in this city, in this hypothetical town, that none of the gas appliances to be found in Des Moines are in this hypothetical plant, but that in other respects the towns are

identical. The gas ranges and meters and the piping is not the property of the company and is assumed to be in the houses, but the fixtures and stoves and water heaters the company puts in are not there.

Q. Now in making up your figures for the purpose of
1100 finally arriving at your conclusion, that is taking the figures as you worked them out, in a hypothetical plant from the sum total of the going plant to arrive at this so-called going value, you have worked out this scheme by which the hypothetical plant after its installment gradually grows up to the point where it will be furnishing about the same amount of gas and about the same number of consumers as the going plant, is that right?

A. Yes, sir.

Q. And in doing that now, making your figures on your hypothetical plant, you have figured every single item of cost?

A. Not every item.

Q. Every single item of cost, or rather you have placed a value yourself upon every single item of material and labor, and machinery, use of money, that is required to bring the plant up to a point where there is nothing to do on the part of the consumer but to attach his house appliances, is that right?

A. That is not quite right. It goes beyond that necessarily, to the point at which these appliances are connected up and in use to the extend now found in the city of Des Moines.

Q. Last question repeated.

A. That is not right.

Q. What have I left out?

A. You have to develop the business until it will bring about the demand.

Q. Develop business how?

A. You are ready now to supply the gas appliances in the average consumer's house, and the average consumer, we will say, is ready to put in one of the appliances, but the average consumer will not put in any more than one, and a period of development is re-
1101 quired before he will have taken on as many appliances as he will have to-day in the city of Des Moines.

Q. You get at that period of development by a process of reasoning and figuring that must necessarily be based upon a town of the size of Des Moines, without anybody in it?

A. That is not so.

Q. Without anybody in it that has been educated up to the use of gas?

A. No, sir.

Q. What do they have to do in order to get them to use gas other than what is covered when they get the gas piped up ready for the house fixtures?

A. As I understand it that is not what you started out to say.

Q. Well, that is what I tried to say.

A. I will answer the first of these two questions. You do not arrive at the rate of acquisition of business in the hypothetical plant by studying nor making figures concerning the hypothetical plant.

You apply your judgment in the matter through having had experience in smaller towns and larger towns in exactly that kind of work.

Q. That is what I wanted to get at; what do you mean by that kind of work?

A. The development of business.

Q. Well, how?

A. By advertising, soliciting and demonstrating.

Q. Advertising what?

A. The use of gas and gas appliances.

Q. To those people who ought to know all about it?

A. Yes, sir.

Q. You have to go through an additional process of education through advertisement and so on?

1102 A. You have to maintain that work. Even the Des Moines Gas Company, with all its present connections, cannot afford to stop advertising.

Q. The kind of education you are talking about is theoretical and not practical?

A. Distinctly not.

Q. The education you think they already have is a practical education that comes from the use of gas?

A. I am not saying that a person already educated must be again educated to that same stage.

Q. What do you mean?

A. He must be carried along and advised as to the new developments that come on and his neighbors have to be advised about this intelligence.

Q. That is the new population?

A. You have to keep advising them always.

Q. It is for that advice you figure out this $583,000?

A. Distinctly not.

Q. What part?

A. A small part, which you can find by looking at the figures.

Q You find it?

A. I cannot without going through some calculations there.

Q. Give me your best judgment about it, I'll be satisfied without your going through it.

A. By that you mean to ask me what proportion of this $583,00- is required for the additional education of the community?

Q. Not additional education, the education you say is necessary to bring about the sale of gas.

A. The education as such represents a very small fraction, but I should say the total education which you are describing would be covered by five thousand dollars through this period of seven years.

Q. Five thousand dollars, you think that would be about

1103 right?

A. I should judge so for the feature you are describing.

Q. That would be for the advertising?

A. Distinctly not.

Q. How would it be expended?

A. That is for the—as you choose to use it, education of people who already have this education.

Q. What does the company do?

A. The company spends the money for advertising, solicitors, and demonstrators, people to go around from house to house to educate the cooks and housewives to the exact manipulation of these appliances.

Q. When they spend money for advertising what account does that go to?

A. That goes to new business.

Q. How is it charged up on the books, as operating expenses?

A. It is a legitimate operating expense.

Q. The consumer pays that right along?

A. Yes.

Q. Then on top of that he would pay the other five thousand dollars?

A. If he didn't pay that, he would never get the reduced prices in gas.

Q. On top of that you figure he must pay this additional five thousand?

A. That is my rough estimate, what you might possibly squeeze out of this thing in seven years. It is not an item I had thought of at all.

Q. This five thousand dollars—what is involved in the balance of it in a general way?

A. The figures will show a whole lot better than I can say off hand.

Q. We do not really understand your figures.

1104 A. If you ask specific questions, I will explain them.

Q. Question repeated?

A. I can only answer that by referring you to the figures.

Q. I don't want to be referred to the figures, I want you to refer to them and tell me after you refresh your recollection from them, if you have to do that, then give me the information the question asks for.

A. You want to know what makes up the balance of the development expense?

Q. Yes, in a general way.

A. There would be the cost of the salaries in the new business department.

Q. That would be charged to operating expenses?

A. Certainly.

Q. What next?

A. The cost of advertising.

Q. I have just covered that—five thousand dollars.

A. You have not.

Q. That wasn't any part of this five thousand dollars?

A. You might take it out of advertising if you want to. You haven't covered the period of seven years.

Q. What did you intend to cover?

A. I didn't intend to cover any such item as you bring up.

Q. What did you intend to cover?

A. Just advertising.

Q. How much would you say for advertising now?

A. That is spread through a series of years shown in the report under the head of advertising.

Q. What is the sum total?

A. I don't know.

1105 Q. If you don't know, the Master don't know, and neither do the rest of us know.

A. It is not shown that way. The unit cost cer thousand feet of gas sold for the year——

Q. I am talking about the advertising item?

A. That is exactly what I am talking about. I can figure it out but it will take me about an hour to do it.

Q. Well, figure it out.

Witness makes calculations.

A. As I understand you, you want the total figure I have included for advertising by the hypothetical plant during the period covered by this calculation. That total is for the hypothetical plant $67,802, as near as I can calculate it from these units.

Q. Now, if the Master or counsel desire to separate these items they will have to do as you have taken them up and figure it out?

A. In the absence of the figures I have in my office they will have to.

Q. Can you bring them?

A. I used the units wherever it would save time.

Q. Give me those figures again?

A. For the going plant $47,964. In other words, according to my figures the hypothetical plant will spend for advertising through the period under consideration $19,838 more than the going plant will spend for that same item through the same period.

Q. The going plant was how much?

A. $47,964. You will please remember I am working that with four decimal places here, and it might not be absolutely accurate.

1106 Q. That figure is reached by the process of percentages and not by the actual figures from the books?

A. That is reached by an allowance per thousand cubic feet of gas sold.

Q. It is not figured in the books?

A. No.

Q. It is your own estimate of what the advertisement expense of the going plant is?

A. It is based primarily of course on what I would judge the existing company is spending at this time.

Q. But you made no effort to ascertain what the existing plant was paying?

A. Yes, I did, but didn't use those figures.

Q. The figures you got were much less than those used?

A. They were not the same: I don't remember whether they were less or more.

Q. At any rate, you disregarded them?

A. Yes, sir.

Q. Of course, to arrive at the $47,964, you adopted some method of percentages?

A. You might call it percentage. It happens to be based on percentage. My units is so many cents or parts of cents per thousand cubic feet.

Q. In all of your computation wherever the question of rate enters into it at all, you proceed on the theory that the rate was a dollar?

A. Oh, yes.

Q. The hypothetical plant was how much?

A. $67,802. That is the total expenditure I estimate will be necessary for advertising the hypothetical plant throughout the period of seven years.

1107 Q. Now, Mr. Lea, I notice on page 112 of Exhibit 20—operation and maintenance hypothetical plant. I notice the tables there on that page under the head of new business, you say it is based on cost per thousand accounted for; that means these figures rest upon the sale of gas, that is, the gas that is actually received by the consumer at a dollars per thousand?

A. I have explained what gas accounted for means; it is not just what you said, but I presume what you mean. Gas accounted for is the total of gas that passes through the consumers' meters, plus the gas used in the office of the company and works of the company and plus the gas used on the street lamps.

Q. And at a dollar per thousand where the consumer gets it?

A. Yes, sir.

Q. Under that head you have advertising, appliances and demonstration; just what do you mean by that?

A. It is necessary in order to get those appliances in use generally to have people come along who are familiar with them to demonstrate the use of those appliances, either in the show room of the company or specially rented halls. There are demonstrators who make their living going around the country and teaching the people the use of those appliances.

Q. That sort of business is being done by the present Company?

A. Yes, sir.

Q. In its retail office or the room up on Seventh Street?

A. Yes.

Q. They carry a stock of fixtures and stoves and appliances used in connection with the gas heaters and gas lighters, do they not?

A. Yes, sir.

Q. And do a regular retail business?

1108 A. Yes.

Q. Now it is for demonstrating the use of these appliances in the store that this item is applied *to* if it was applied at all to the going plant?

A. Yes, of course in the hypothetical plant we would have to do more demonstration than a plant which is already going through many years. You are taking on a very much larger volume of business per year and you must consequently deal with a very much larger number of prospective consumers in the year.

Q. But however that may be, it is for that same work you have allowed this in your hypothetical plants, this figure of .1499 on page 112?

A. No, that figure is .0177 for 1913.

Q. It is .0177?

A. Yes.

Q. Now, the next thing is expense soliciting; how do you distinguish that from appliances and demonstration?

A. The appliances and demonstration is handled always in the office of the company, or in some other place rented for the purpose, and the demonstrator stays there and the people come and listen to this lecture and demonstration; usually a woman is the demonstrator; the solicitors or canvassers or new business representatives of the company go from house to house throughout *that* various districts of the city explaining and arguing with prospective consumers the merits of the gas and the reason why they should put it in and all that.

Q. I suppose a good deal of this demonstration is done in the homes?

A. Some of it is done in the homes. They have some women who go from house to house and explain even beyond the lectures and demonstration down town, explain in the kitchen to the con-
1109 sumer a great many details and methods.

Q. This expense of soliciting you have in your hypothetical plant for the year 1913, if I read it right, .1499, is that right?

A. That is right.

Q. That I suppose is reached in the same way you reach your advertising figure?

A. By the exercise of my own judgment as to the amount of work required in that department for that year.

Q. Well, now, I would like to stop there long enough to ask you, Mr. Lea, for the basis of that judgment; how do you arrive at those figures—I don't mean how you figure it out here, what information do you have, what experience do you take upon which you rest figures of that kind?

A. I have been connected very directly with the development business of exactly this character in six, seven or eight different cities.

Q. Yes, I know, but you are dealing with Des Moines now, and there was but one gas plant here and you knew that when you came here?

A. Yes.

Q. And you knew too that it had been the only plant here for a good many years?

A. Yes.

Q. Why didn't you, in order to assist you in arriving at the cost or expense of that kind of work in Des Moines, go to the figures of this concern itself and see what is had been paying?

A. Because, before I made any of those figures I had made a study of the town that had satisfied me there were no conditions in Des Moines that were peculiar to Des Moines, that the obstacles and

expenses to be incurred in the development of the gas business in Des Moines were approximately those of other cities of like kind throughout the country, and I had sufficient experience of
1110 my own on which to base an estimate.

Q. Where had you ever operated a gas plant in a city like Des Moines?

A. I didn't say I had.

Q. In what way did you get this experience?

A. I have operated plants in cities larger and smaller than Des Moines and have the expenses for corresponding work.

Q. In other words, you fixed just such a figure as you in your own judgment would have expended if you were operating a plant in the city of Des Moines up to that per cent of efficiency or condition that in your judgment would serve the town or city?

A. I placed such a figure as appeared to me fair and reasonable, covering the point involved; such a figure in other words as I would explain to a prospective buyer of this plant that he might have to provide for in his future operations.

Q. Now, Mr. Lea, you started by saying, or started out to put a value on this property, such a value as in your judgment a purchaser would want to pay for the property of he was going to buy it?

A. Yes, sir.

Q. You also included or had in your mind at that time that the plant if it were bought would be operated in Des Moines?

A. Certainly.

Q. And under Des Moines conditions?

A. Certainly.

Q. Now, then, this plant had been in operation according to your figures and some maps you make here which you furnished to the Master as showing the growth of development of the Gas Company; now during those years that you covered in your maps and in your figures the development and growth of the Des Moines Gas Company was about the usual development and growth of Gas
1111 Companies in towns of this size?

A. In some respects; in other respects it has been abnormal.

Q. Of course you knew, didn't you, that you could go to Mr. Haines, the manager of the Gas Company, or to the bookkeeper and ascertain just what amount the Des Moines Gas Company had been expending or paying in expenses for soliciting to acquire the business that they had acquired in Des Moines?

A. I did not know that at that time. I did not understand the method under which the books were kept, consequently I did not know what they meant by the headings employed.

Q. Did you make any inquiry?

A. Not at that time?

Q. Suppose if you had gone to Mr. Haines or his bookkeeper and inquired of him—take the last five or six years growth of the Des Moines Gas Company business has been quite large in the last five or six years?

A. Yes.

Q. Now, if you had gone to Mr. Haines or his bookkeeper and they had advised you that their total expense for soliciting the business for these years was about one twentieth of what you figure——

A. For what years?

Q. For these four or five years growth?

A. You are assuming that?

Q. If they had said to you that the expense of soliciting this business in Des Moines, the money they had acqually paid out was one twentieth of what you figure in your hypothetical plant, would you have accepted their figures, or would you have gone on in the way you did?

A. I would certainly have accepted their figures if they
1112 could have shown me they were correct.

Q. What do you mean by that?

A. I would have to admit my judgment had been very erroneous.

Q. If as a matter of fact—take the last year for instance—let us assume it was an average of the five recent years—suppose their books had shown that for this item of expense they had only paid out one-twentieth of what you figure would be necessary in your hypothetical proposition, which figure would be correct and which figure ought the Master to take, your figure here or what they actually paid, as being the measure?

A. If the books had been accurately kept covering all the elements of this item and the books did show the total cost of this work to have been one-twentieth of what I said, then the Master should take the figures from the books and so should I.

Q. You made no attempt to get at that as I understand it?

A. I didn't consider that necessary.

Q. You made no attempt to get at the actual figures?

A. I did not at that time, no sir.

Q. Going back just a minute to your advertising, you have assumed here, and I want to go into this to test your so-called comparisons, you have assumed that the poing plant which is the existing plant, the Des Moines Gas Company, spent $47,964. for advertising for the first five years?

A. No, sir; I have not.

Q. Well, how is that?

A. I have assumed that during the years 1911, 1912, 1913, 1914, 1915, 1916 and 1917, seven years immediately following the *the* date of this inventory, the Des Moines Gas Company will have spent in the exercise of good business judgment a total of $47,964. for advertising.

Q. As I read the figures the hypothetical plant you begin
1113 with in 1913?

A. No, there is an advertising expense prior to that.

Q. Do you count seven years for the going plant and five years for the hypothetical plant?

A. Certainly, because seven years is the figures of the hypothetical plant in catching up with the going plant.

Q. The hypothetical plant according to your information, not

what the experience of the Des Moines Gas Company shows in its past history in Des Moines, or any other gas company in Des Moines, you base simply upon your judgment as to what would be a proper business management, and you say the hypothetical plant ought to spend $67,822. in these five years?

A. That total is based on my judgment.

Q. Without reference at all to the experience of the gas company that is the subject of inquiry here, or any other gas company in Des Moines?

A. I can't say that.

Q. Without any reference to the actual amount that has been used for that purpose?

A. Of course, before I made my figures I familiarized myself with the operation here.

Q. How long have you spent altogether in Des Moines?

A. I suppose five or six weeks.

Q. In that time you acquired sufficient information and knowledge of the value of real estate and buildings and the value and cost of labor, laying brick, excavating in sand and clay and all that sort of thing?

A. With the qualification I have given in the record that I did not state my valuation of the real estate was an expert valuation.

Q. What kind of valuation was it?

1114 A. It was based on the investigation I could make in the time I had.

Q. Was it a mere guess?

A. No, it was my estimate. I don't claim any specific value for my estimate on real estate.

Q. If you will pardon me for going off on real estate for a minute, you knew how much ground they had?

A. Yes.

Q. Now if you had wanted to be entirely fair to both sides, don't you think you would have made some inquiry of the company as to how much they paid for the land, and how much money they actually had invested in it, in order to help you in arriving at a fair judgment as to its value?

A. I made such inquiry.

Q. What did they tell you they paid for it?

A. I don't remember.

Q. You have it in your figures?

A. I have some data of what they paid certain individuals, and perhaps seven, eight or nine men I consulted around town as to the value of real estate.

Q. Who were they?

A. I would have to look into the record; I don't remember the names.

Q. I wish you would bring in with you in addition to the figures and records I have asked for, the names, if you can get them?

A. They are in Chicago.

Q. Of the parties you consulted about the value of real estate,

and also bring us the figures of the company given you as to what they paid for the real estate?

A. If I can find them.

Q. You have all those figures yet?

1115 A. I did have them.

Q. You don't want the Master to understand that any data now, upon which Exhibit 20 is based, is not where it can be promptly produced?

A. It might be that some of the notes I had on real estate cannot be found; I may have thrown them away, because I found some real estate down there was valued higher than I thought this property was worth. I put it in at a dollar a square foot and I thought that would meet all the requirements. I found the property worth a great deal more than that from the reports.

Q. Who gave you a report of any property down there?

A. The owners of property located almost identically to some of the property of the Gas Company, except it is on the west side of the river.

At this time an adjournment was taken until 1:30 P. M.

1116 1:30 P. M. THURSDAY, *July* 27, 1911.

HENRY I. LEA, being continued on cross examination by Hon. H. M. Byers, testified as follows:

Q. What I was inquiring about at the time of the adjournment was the information that the company gave you with respect to the original cost of this real estate?

A. Your questions I understood it was concerning property which I stated I found to be more valuable than the figure I had used and this figure covering property located under practically under same conditions as that of the company.

Q. That particular question, of course I remember your answer was that the property that you found was more valuable was somewhere in west Des Moines?

A. It was that piece of ground which is most nearly identical with that of the company of all of the property in the city of Des Moines.

Q. Now where was that?

A. It was on the west side of the river directly opposite the company's property and between the same tracks that Block "C" lies between.

Q. Where did you get your information about that?

A. That is Block 36 between southwest First street and southwest Second street and between Vine street and Market street, lot No. 6 in that block is the Kratzer property.

Q. Kratzer Carriage Co.?

A. Kratzer Carriage Co., and I was informed by an officer of that company that that piece of ground 66 feet by 132 feet was

1117 worth $20,000. That is $2.29 per square foot. I asked Mr. Mills, of the White Line Transfer Storage Company

what that particular lot was worth and he said it was worth $25,000 or $2.86 per square foot.

Q. Just as it stood?

A. The property with no buildings.

Q. Just as it stood?

A. I have forgotten whether there are buildings on it or not, but my price is based on the ground alone. The lot adjoining No. 6 is No. 7, the same size as No. 6, which was held by Mr. Walker of the Kratzer Carriage Co. at $15,000 or $1.72 per square foot.

Q. That is what he asked for it?

A. That is what he said it was worth. Mr. Mills said that same Lot was worth $20,000 or $2.29 per square foot. Across the alley is Lot No. 8 which the Kratzer people through Mr. Walker said was worth $15,000 and which Mr. Mills said was worth $20,000. Lot No. 9 Mr. Walker said is worth $20,000 and Mr. Mills says is worth $25,000 $2.29 and $2.86 respectively per square foot. Then I learned that the government had paid $150,000 for the post office site. That is all the information I had on that, I didn't get the area.

Q. So then you were anxious so far as the real estate examination anyhow you did make a- effort to find out something about local conditions and local valuations?

A. Oh yes, but I did not make enough of a study of it to qualify.

Q. Now did anybody tell you—I presume after you got these figures you consulted with Mr. Haines and the other managing officers here of the the gas company about these values?

A. I asked them concerning some values and asked them whether they knew of any sales in that neighborhood. I asked each of the men with whom I talked things of that kind and the general
1118 impression I got was that this property should be worth certainly at least as much as correspondingly located property in other cities which I knew to be worth a dollar a square foot as the minimum.

Q. Did any of these people tell you, the managing officers of the gas company or anybody else for that matter that values in West Des Moines were no criterion whatever as to values in East Des Moines?

A. I did not ask them as to that.

Q. Did you find out while you were making your inquiries that the values in west Des Moines were from three to twenty times as high as similarly situated property in east Des Moines?

A. I was making a study of the values of the property used by the gas company in view of its use and the next most attractive piece of ground that I could find in the study I made was this piece directly across the river and I took particular pains to find out who owned that property. I think the gas company told me who owned it, or perhaps they didn't I don't remember that. I know I went down there personally and seen Mr. Walker.

Q. Did you make any inquiry as to the holding value or selling value or selling price of property around the gas company?

A. Yes, sir.

Q. Were you furnished with the information that the property that the Letcher-Jaeger Manufacturing Company—that is not the correct name, but a manufacturing concern just east and north of the gas plant, what that sold at recently?

A. I don't remember that name, but I did go to each of the surrounding establishments and did get what I could in the way of information on real estate values from these people. Each
1119 of the surrounding industries I went to.

Q. You found it very much lower, the asking price over there than on the west side?

A. I found the asking price lower but found some asking prices more than I have used on the east side.

Q. Where?

A. I would have to get the records from my office, I just remember I found some values higher than I used on the east side of the river.

Q. And so you finally, from what information you have stated to the Master, you came to the final decision that $215,000 was a fair price is that the amount?

A. A dollar a square foot whatever the area is, is what I consider a fair price for the real estate, fair value.

Q. You figured it $215,993?

A. $1.00 a square foot is the price I put on the real estate. I have forgotten what the area is. There was $1.00 per square foot makes $196,358 and to that I have added ten per cent for the difficulty of obtaining contiguous lots at this time, $19,635. Then I have added for sinking test holes, grading and filling $5,000 more making $220,993 for the real estate, with- the addition of taxes during construction nor the loss of interest during construction.

Q. You have told now how you arrived at that value?

A. Yes, sir.

Q. Did you have anything else at all that you considered as an important element in arriving at that value than what you have already stated?

A. Nothing more than I have covered in a general way.

Q. What did the company tell you they paid for the property?

1120 A. The company didn't tell me what they paid for this property.

Q. They furnished you with figures?

A. I got from the officers of the company some records or at least some figures as to what some pieces in this neighborhood have sold for.

Q. You told me before dinner they furnished you figures, showing what this property had cost them?

A. No, I didn't mean to say that. There may be in the list they gave me a record of one or more of the pieces, the prices the present property of the gas company, but I did not receive from the company any statement showing the total cost of its real estate or the cost of each of its pieces of real estate.

Q. Didn't the company at some time earlier in the period of your

investigation furnish you an itemized list of all their property, that is all of their physical property if I may use that term?

A. Yes; they gave me this list.

Q. I hadn't quite finished the question. Or such other information with respect to its cost as they had as you understood it?

A. No, sir.

Q. I thought you stated in your examination here the other day, you did state it I am sure two or three times that in the list of property that was furnished to you that the figures furnished by the company there were several items that you did not agree with the figures

A. There were.

Q. And prices and values and that you disregarded them and took your own?

A. That is correct.

Q. That is the list that I should like to have. Have you got that with you?

1121 A. That is this list, the inventory.

Q. Is that the only list they furnished you?

A. That is. This inventory and here are some additions to it covering works tools, distribution tools and office furniture and stable equipment. These separate additions were given me later.

Q. I know, but I am getting at the list of property which was furnished you first. Not this completed book you have now because as I understand it you didn't get that until a long time after you had been at work?

A. I got first a book about the same as this but in which it was discovered some errors had been made in the calculation of the amount of brick in some of the buildings and that book was taken back and this one substituted and this is the book on which my report is based as to the dimension of buildings and characteristics of machinery and holders, etc.

Q. What else was it. Some time before dinner you remember I was inquiring about figures and the list that was furnished you by the company and you said you didn't have it here, but you would get it?

A. Yes, sir.

Q. Well that was here wasn't it?

A. That was not here.

Q. Copies of it were here?

A. No, sir.

Q. That is different from any list we have here is it?

A. This is the same as you have with the exception of some of these items we found upon going over where the number of brick were in one case figured on the wall measure and in another figured on cubic contents and where these differences have not been checked.

1122 Q. That book which you have there from which you made the valuations then is not like Exhibit No. 15 in all respects.

A. This is the book having the differences as compared with the copy of the inventory given the Master, the net result of these differ-nces being a sum of $14.00 approximately against the company.

The items are all very small and inconsequential, not enough to affect any figure that I have submitted.

Q. Then if I understand you, and this is a diversion due to that particular answer, if I understand you then after a complete checking up of both items of property and quantity of property and the figures that were made to represent items and quantities you found a difference of $14.00?

A. That is the net result of the differences, some of these differences were against the company and some were for it, but the net result was $14 against the company.

Q. The net result of a careful painstaking checking up of all these things I have mentioned finally resulted in a net difference of $14.00.

A. Yes, and I can show you what these differences are in detail if you want them.

Q. In that connection I do not quite understand your former answer in which you said you had made an over estimate in some matter of $10,000 or such a matter?

A. An over estimate?

Q. Yes.

A. What was that?

Q. Well I don't remember. Mr. Brennan suggests it.

A. I don't remember either.

Q. Didn't you say in one of your answers this forenoon or on direct examination you had originally estimated the cost of
1123 construction something like $10,000?

A. This morning?

Q. No in your direct examination.

A. If you might recall the item it was maybe I could remember.

Q. I don't remember it, Mr. Brennan called attention to it. Anyhow after a thorough and complete checking up you found the result you have just stated?

A. Yes, sir.

Q. Then if I have your testimony right in my mind *yp* to this point on this question the list of items of property, the quantity and so forth that was furnished to you by the gas company?

A. Yes, sir.

Q. And was not taken by personal examination of these items and the personal making of the inventory.

A. I did not personally make the inventory. I did personally check all of the prinsipal items.

Q. Not for the purpose of making it personally?

A. No, sir; for the purpose of seeing there was nothing in the inventory that could not be shown on the ground.

Q. And it was all furnished by the company or somebody for the company in the first instance?

A. Yes, sir.

Q. Then if I understand you you did at some time take time to at leasr make a careful and painstaking examination in so far as it was possible to be done to satisfy yourself that there had been no padding of the inventory either inadvertantly or any other way.

A. I made an examination which did satisfy me there had been no padding, but it was not made for that purpose.

Q. But you made the examination and for the purpose of satisfying your mind now as an impartial expert in engineering
1124 matters that the measurements that were furnished to you were generally correct.

A. I checked enough of the measurements to make me believe that the balance were correct.

Q. And you pursued that method as to practically every bit of this property that you placed a value on didn't you?

A. I could not follow the same method in detail on the distribution system.

Q. No, but as far as you could.

A. Yes, as far as I could.

Q. And it is your personal judgment isn't it and you are *so* willing to go on record here that the list as furnished you was correct?

A. Substantially correct yes.

Q. Now just at this point to satisfy my curiosity than to have a connected cross examination here. I wish you would turn for me to page 95, the second chart in Exhibit 20. Now if I understand this chart—you call it a chart?

A. Yes, you might call it a chart.

Q. What would be the correct term for it if there is any?

A. Probably more often call it a curve sheet.

Q. Then I will use that term, the second surve sheet as my book is pages on page 95. Now if I understand that sheet as it has been worked out here by you it purports to show the development and growth of the Des Moines Gas Company up to 1910?

A. Yes, sir.

Mr. GUERNSEY: What part of 1910.

A. The end of 1910.

Q. And it shows it in all of the plant's relation to population, mains, meters, and sales per meter and sales per mile of main
1125 and sales per capita and total sales.

A. It gives some information concerning each of these items.

Q. You exhibit the growth and development of the plant by these curve lines and represent population and years and so on by figures at the margin of the sheet?

A. Yes, sir.

Q. Now did you make that chart or that sheet after a personal examinarion of the records of the company upon which a truthful sheet showing the development and growth of the company—now I mean truth in the sense it would represent actual figures and facts—did you make it from an examination of the books and records that show these facts?

A. I didn't make any of the original cur*b*es shown leading up to 1910, up to the line showing 1910. I may say that these particular curves which were photographed to reproduce these sheets were made in my office and under my direction but they were taken from material supplied to me by the gas company. The curves beyond the line 1910 are my curves, all of the extensions.

Q. Now to get what I want before you—in order to make up a curved sheet such as this one to represent a real gas plant, one of the things that would be necessary for you to have would be the annual construction account wouldn't it?

A. No, sir.

Q. Another of the things necessary for you to have would be the annual operating expenses wouldn't it?

A. If I were making the lower curve on the third sheet I would have to have the operating expenses.

Q. There is nothing of operating expenses on the second sheet. I want to confine myself now to the second sheet. The second sheet purports to show the total sales and the sales per meter and

1126 sales per mile of main.

A. Yes, sir.

Q. Now in order to reproduce by the curve sheet method the growth of the sales of the Des Moines Gas Company from 1888 to the latter part of the year 1910, it would be necessary for you to have the gross annual sales.

A. Yes, sir.

Q. Did you have them?

A. I didn't have them as a separate statement. I didn't have the—I am not sure that I had all of the figures back to 1888, but I had them back for quite a ways, fifteen years or more I am pretty sure.

Q. How could you make a truthful representation upon a sheet of this kind by the curve sheet method of the growth of the sales of a plant covering a period of years without having the annual sales?

A. I didn't say I made the curves for years preceding 1910. I checked them with such material as I was able to get and found on every point I checked they were correct.

Q. They were made in your office were they not?

A. These particular curves which were photographed in making this sheet or any of the sheets in the these reports were made in my office, but they were copied from curves submitted to me and a great deal of the data from which curves were made I had previously in checking the curves established my own confidence in them.

Q. Do you mean you didn't make any of these sheets at all?

A. I mean I made everything on these sheets beyond the line of 1910.

Q. But nothing before 1910.

A. And that I checked the material befo-e 1910 with such data as I had and in a sufficient number of times to satisfy myself that the curves were correct.

1127 Q. Let's take sales, since this sheet was made by somebody else, and therefore if you testify about it at all, it must be upon the correctness of your checking. Now you are going to check the total sales say from 1880 to 1891 because that seems to be about the point where there is a substantial rise in the line.

A. You are looking at the population line?

Q. I want the sales line, that begins with 1880 doesn't it?

A. 1888.

Q. Begins at 1888?

A. Yes, sir.

Q. I suppose in order to check this you had the gas company's statement of their gross sales for the year- 1889, 1890 and 1891.

A. Yes, I believe I did.

Q. Do you still have those?

A. I believe so.

Q. Then to check further you of course had the statement *ff* the company showing their annual sales for 1891, 1892, '93 and '94 did you not?

A. I believe so.

Q. Then it is true isn't it, that you had the company's statement of the annual sales for each of the years from 1888 down to 1910?

A. I am not sure I had them back as far as 1888. I am not sure how far back they did go, but it seems to me I did have them back to 1888.

Q. Where is this material?

A. Chicago.

Q. Didn't you consider that as an important part of your exhibit here No. 20 that you produce as being the result?

A. No. I considered that as matter that might easily be proven on the ground at any time.

Q. But suppose what we should develop on the ground was
1128 not w*ah*t you had. Then would it be important to have it here?

A. Not at all in this respect because this curve back here is no portion of the curve that is used in determining the extension. These lower portions of the curve are not portions used *in* determining extensions. What we need for extensions is a history say of the last ten years.

Q. Well did you have the figures for ten years?

A. Yes, sir.

Q. Will you produce them too?

A. I can get them from Chicago I believe.

Q. The figures you used are what we want. You will have those brought in will you?

A. If I can locate them yes.

Q. I don't know just what you mean, if you can locate them. You don't mean that they have been destroyed at all do you?

A. They are in Chicago in my files, but I don't know whether I can get my stenographer or either of the men in the office to find them, whether they can know exactly what they are getting or what I want or not, but I believe they can.

Q. I suppose it would be equally within the truth for me to say that in your office you regard it as highly important to preserve all of the memorandum or figures and facts upon which you base this kind of a report do you not?

A. Yes, sir.

Q. And they are all properly filed and preserved?

A. There is an attempt made always to properly file them but

they are not always properly filed, we slip up on some of these things, get them in the wrong place.

Q. Do you think you slipped up on any of this, is that what you have in mind?

1129 A. No, I don't thi-k so.

Q. So you didn't being with you and haven't with you now the memorandum that would have to be used to check the correctness of the matter that appears in this Exhibit 20?

A. Not of the matter back of the line *on* the year 1910. All of the matter from which the curves following the year 1910 are made will be found in my report.

Q. All of the matter following 1910 is speculative is it not?

A. It is speculative but based on history.

Q. There are no facts or figures anywhere except as you take them from your mind upon which any of the information in Exhibit 20 after 1910 was made.

A. There certainly are no facts on future developments.

Q. That is all purely speculative. The memorandum back of 1910 none of it is here as I understand you.

A. I presume all of it is in the office of the companny but I don't know that.

Q. What you used yourself, I am not talking about what may be found in the company office, but what you had.

A. No, what I used is not here.

Q. None of it?

A. No.

Q. I wish you would see it is all forwarded here, the memorandum you used in preparing Exhibit 20. Now going to the next page which is paged in my book as 96, and is a curve sheet I suppose the same name applies to it that applies to the other?

A. Yes, sir.

Q. Now I notice on this curved sheet among other things gross revenue beginning somewhere at a point near midway between the year- 1886 and 1887 and proceeding by years with an upward

1130 tendency on your curve line until it strikes or intersects the line upon the margin of which is found the year 1910?

A. Yes, sir.

Q. Now that is supposed to represent—that line between these points was intended by you to represent to the Master and counsel here the actual annual gross revenue of the Des Moines Company, isn't it?

A. Yes, sir; as applied to the city of Des Moines.

Q. *Q*ell the Des Moines Gas Co. don't have a gas plant anywhere else do they?

A. I understand they supply gas in Valley Junction.

Q. When you say applied to Des Moines you simply mean you do not take in Valley Junction, that is what you mean?

A. Yes, sir.

Q. Who made this curve sheet?

A. It was prepared from the record of the company by some of the company's engineers, I don't know which ones.

Q. Some of what company's?
A. Des Moines Gas Co. And I likewise checked these curves with information given me.
Q. Where was this made do you know?
A. You mean the original curve I presume?
Q. Yes, I mean the original curve?
A. I believe it was made in Des Moines.
Q. Or was it made in Philadelphia?
A. I don't know.
Q. I have got a wrong impression of your original testimony. These curve sheets are not yours?
A. Only as I have said repeatedly the extensions beyond the year 1910. The historical matter is obviously not mine, it
1131 is from the records of the company.
Q. You didn't make them from 1910 did you, you simply furnished the information for somebody else.
A. I didn't make the marks myself, but I had men in the office who made them, I gave them the figures and they made them. Figures upon which these various dots were to be located and then a line run from them.
Q. Let's see if I get this right. Of course this sheet was not prepared by any person until after all of the necessary basic facts and information had been gathered up?
A. No, sir.
Q. You made up the information that was to be used beginning with the end of the year 1910?
A. Yes, sir.
Q. That is the beginning of 1910 here as it appears on this chart where the figures 1910 are is the beginning of your work, that is what I speak of rather than 1910?
A. Yes, but it represents the end of the year 1910.
Q. The information you got begins on this curve?
A. Yes, begins on the 1910 line.
Q. That information you m-de up?
A. Yes, sir.
Q. Then the information with reference to all of these lines back of the year 1910, using the word back in connection with the sheet itself, was prepared by somebody else?
A. Yes, those curves are the result of figures taken from the -ecords of the company.
Q. Now what I want to get at is this. This Exhibit 20, the business of making this up was turned over to you was it not, I don't mean the mechanical work.

—. ——.

1132 Q. Putting it together and making the report.
A. My work covered the making of the report in which it was incidentally that I should include some of the detail. I have not included all of the detail of the inventory for instance.
Q. In other words we are not to understand are we that one part of this Exhibit 2- is your report and part is somebody else's?
A. You are to understand that wha-ver appears in this report is

what I believe to be correct after my own investigation and calculation, but obviously what is taken from the records of the company I cannot say is my own work.

Q. Either you don't understand me Mr. Lea, or we don't get along very fast. Here are some sheets, curve sheets made up by somebody and cresented here by you for the purpose of being used by the Master in this case and from which inferences may be drawn and conclusions reached. You presented them.

A. Yes, sir.

Q. Now I want to know how much you had to do with this Exhibit 20 in its preparation, whether you had the entire supervision of it or whether you just made part of it and somebody else made part of it and you finally at the end concluded it was right and presented it as your report?

A. It is in every sense my report but the material from which the curves shown on these *plates* were made comes to me just exactly as blue prints describing a building company and I used them in that same way. They are not my curves any more than blue prints are my blue prints but they represent what is there and from that I build on these following years.

Q. Whose plan is this that appears on these three sheets, yours or some engineer's?

A. This was made in my office.

1133 Q. No, that is not the question. Now whose plan is it to work this out, who proposed having this sort of a representation made here in the first place?

A. I don't know whether anybody else proposed having anything else like this in his report or not. I know — proposed putting it into my report.

Q. Then you originated it?

A. Certainly.

Q. It originated with you so far as this lawsuit is concerned?

A. Certainly.

Q. If that is true then you did have furnished you by this gas company a statement of the annual gross sales of the company beginning with the year or about the year between 1886 and '87 up to the year 1910?

A. I am not sure that the figures I have of gross revenue run back to 1887. I am sure that they run back far enough to satisfy me as to the accuracy of the curves during the past ten years and that was all I wanted in making my extensions.

Q. That is to say if you just had the material or figures that cover any ten year period——

A. On such an item as gross revenue.

Q. On such an item as gross revenue you would then through some percentage method be able to continue a showing up to the point you wanted carried out whether you had the real figures or not.

A. Not if all I had was gross revenue figures. I would want additional figures.

Q. But you would want gross revenue figures?

A. If I gave my gross revenue on such items I would want for the past ten years I would be perfectly safe in making my estimates of next succeeding several years.

1134 Q. What would be some of these other things you would want in addition in order to make up these three curve sheets so that they would represent the true development and growth of this plant. You would want the annual extension of mains with the annual cost or expenditure for mains would you not?

A. No, sir.

Q. And you would also want the annual per capita information upon which you could figure out per capita sales?

A. Would want information on which you could figure per capita sales yes.

Q. But you would not need mains?

A. I would not need to know the number of feet of each kind and size of main laid each year.

Q. Would you want any information about the mains or what was done about them?

A. I would not need for example some of the figures which are not of the greatest importance here for instance, revenue per mile of main. That is not really an important figure.

Q. Well but it is here?

A. It is here.

Q. You have undertaken to figure it out for me?

A. Yes, sir.

Q. How could you do that without knowing all about it?

A. You don't need to know all about the mains, all you need to know is the total mines of mains in use at the end of any year. That information I have.

Q. Does that simply state the number of miles of mai- without anything in the way of discriminating between large or small?

A. It does.

Q. Was that information furnished you by the company?

1135 A. It was.

Q. Before these sheets were made up?

A. It was furnished to me before I checked these curves. I don't remember whether the information was given to me before I saw the curves or not. It was certainly made up or compiled before the curve was made because the curve could only be made from such data.

Q. Don't the development and growth of an industry of this kind depend to some extent on the net annual income of the company?

A. Does growth depend on the net annual income?

Q. Yes.

A. In what way?

Q. Every way. Could it grow if it did not have a net annual income?

A. I am afraid you will have to try that again, I don't get it.

Q. That is too cloudy for you?

A. Yes that is too cloudy.

Q. Well does it cut any figure at all in making up a sheet of this kind where you are attempting to show the growth and development of a manufacturing plant as to what the net annual receipts of the company out of the business are?

A. This does not purport to show the net annual receipts.

Q. I didn't ask you that. (Question read)

A. That is not one of the things considered or shown here.

Q. (Question read)

A. No, it is not necessary.

Q. Now beginning with the line on page 96, that is the second sheet where the year 1910 appears on each of these sheets, I want to ask you if you made them up on the theory of dollar gas?

A. You are speaking now of the second chart?

Q. All three of them.

1136 A. Well some of the figures on these charts were made while gas was being sold at a dollar net. The charts show which years I think.

Q. Well tell us.

A. The third chart shows that the price of gas in Des Moines went to a dollar.

Q. (Question read)

A. Not on the theory but on the fact of dollar gas.

Q. That is from 1910 to 1918?

A. Yes; from 1910 to 1918 I naturally worked on the theory the price would be a dollar or assumption. 1910 is on the fact of dollar gas.

Q. Now you stated as I remember it that these charts would work out or show about a 40 per cent increase in the growth and development of this company as measured by these items which you show on here from 1910 to 1918.

A. Approximately.

Q. Now will you figure out for the master what it would be at say 90 cent gas?

A. What what would be at 90 cents? What do you want to know?

Q. I want to know where these lines would probably strike if gas were sold at 90 cents?

A. The line showing gas sales you mean?

Q. This line showing gross sales and the line showing total revenue?

A. I can figure it out to show what I believe to be the result.

COURT: How long will it take to do that?

A. About three hours.

Q. Is it necessary to take three hours?

A. Yes, sir.

Q. You can figure out the sales within these years within a

1137 minute or two?

A. What time?

Q. Within these years, what the sales would be at 90 cents instead of the figure here?

A. No I can't figure that in a few minutes.

Q How long will it take approximately?

A. I haven't got the figures on it, to figure the changes of all things entering into the price change?

Q. Consider all the things there that affects the rise of gas.

A. It will take a great deal of time to get it for you if you want to know.

Q. Take three hours to get the sales?

A. I believe so and have it in such shape as I could testify to it.

Q. This is part of the information from all this memorandum and you work out this curve sheet from 1910 to 1918 yourself.

A. Yes, sir.

Q. And it would take you three hours to tell us from your own sheet.

A. To tell you in a way I want it to appear in the record to stand on.

Q. To take your own method of approximating what the difference would be in 90 cent gas and dollar gas?

A. Yes, sir.

Q. All right you figure that out for us any time you will and have it for us tomorrow and we will be obliged to you if the Master does not want to stop now and have it figured out.

COURT: No it consumes too much time.

A. In figuring this 90 cent consumption you want to begin at the end of the year 1910 as I understand it. Assume that the price went into effect at the end of 1910?

Q. Yes, January 1, 1911.

1138 A. Yes, sir.

Q. Now Mr. Lea Mr. Brennan has called my attention here to your statement of over estimate and it is as he suggested, it is on page 772 of the transcript?

A. In connection with the working capital.

Q. Yes. You stated there, those figures as to working capital with the one exception of the item of $142,000 which I used instead of the $141,770, I obtained from the company. I had made my own estimate of the amount of working capital required in a case like this and had arrived at $160,000 but when the company's books were shown me I found I was too high and I put it back to exactly what I have here. Then you did examine the company's books for the purpose of ascertaining whatever facts were necessary for you to know to begin your work of fixing the value of this property?

A. I did on some such things as this for instance. That is the only thing like this of course. Here is money which has no appreciation or depreciation and is fixed by the books of the company and nothing else.

Q. Do you mean to have us understand here that you are testifying that from an examination of the company's books you found that it actually had a working capital of $150,000?

A. I am testifying the records of the company shown to me contain those amounts.

Q. That is not the question. (Question read)

A. Yes, sir. That is $150,000 after you have substracted the ad-

ditions I charged there in the taxes during construction and loss of interest during construction, and the difference between $142,000 and $141,770.

Q. Then if I understand you now, you are testifying that from an examination of the company's books you found aside from
1139 interest and taxes that it had an actual working capital of $141,000.

A. I am not testifying that the gas sales for instance, the gas sales item was obtained by me through study of the ledgers and addition of the individual items outstanding on that account. The summary which I have shown here is a copy of the summary which I received from the company and which I have reason to believe is correct.

Q. Why did you change your estimate?

A. Because on a question like working capital the money actually used is subject to neither appreciation or depreciation if you can get the actual figures they are what the actual present value is obviously, the present requirements.

Q. You had then got the actual figures?

A. Really I considered it was the actual figure that should be used.

Q. And it showed the working capital aside from these items interest and taxes you have referred to of $141,000?

A. Yes, sir.

Q. So you changed your figures from $160,000 to $150,000?

A. Yes, sir.

Q. That is the reason you did it?

A. Yes, sir.

Q. Now this morning, Mr. Lea, you said in explaining your hypothetical p-ant theory that the town in which your hypothetical plant is to operate would be piped, that is that piping to the houses and in the houses would be there, you assumed it was all there?

A. Yes, sir.

Q. Now why didn't you assume too that the gas fixtures, stoves and heaters were all there?

A. Because these are ordinarily put in by the gas company.

Q. But the gas fixtures are owned by the consumer?
1140 A. Yes sir.

Q. Gas stoves are owned by the consumer?

A. Usually they are but the work involved installing -hem, selling them putting them up and connecting them is ordinarily done by the company

Q. The consumer buys those things where he pleases?

A. He does but ordinarily he buys them from the company.

Q. Is that true?

A. That certainly is true.

Q. Where do you know of another gas company that is operating a retail gas fixture store such as they are here?

A. I don't know of any gas company that does not sell retail fixtures.

Q. I know they may have them——

A. And they sell them and they connect them up.
Q. Is that the only place that consumers get them?
A. Certainly not.
Q. So that a consumer owns the gas fixtures?
A. Yes, sir.
Q. In 95 out of 100 cases?
A. I presume they own them in a hundred out of a hundred cases.
Q. The consumer owns the heaters and stoves?
A. Yes, sir.
Q. And buys them where he pleases?
A. Certainly but ordinarily he buys them from the company because the company sells them for less than other people will sell them.
Q. You know that?
A. I know that.
Q. Did you make any inquiry here as to how gas fixtures sold?
A. No, I am saying ordinarily that is the case.
1141 Q. You have to find out ordinarily by inquiry for specific cases?
A. I don't know whether in this particular time the plumbers sell stoves or not.
Q. You really don't know anything about the local situation regarding the sale of stoves?
A. Not in that -espect no sir.
Q. I did ask you Mr. Lea and I want you to rep*ate* so there will be no misunderstanding about it to supply for us at the next session if you can or at as early a time as you can the tables and figures and lists from which you made up these diagrams and curved sheets and other memorandum here that works out this going plant up to the latter end of the year 1910. Now in Exhibit "I" at page- 90 and 91 will you please give me the amount that you have allowed for paving over street mains and services, it is Exhibit "I" of Exhibit 20?
A. These items are shown separately for mains and services.
Q. Just give me the total amount as you have them figured?
A. The total net construction cost of tearing up and replacing pavement over mains and services in use the 1st of January 1911, is $330,558. This is shown by my report.
Q. That is to say now if it should be determined or if it should so happen that within the next few weeks or months all of the present mains that are beneath paved streets as you describe them in your report should be found to be work out and it should become necessary to lay them now it would cost $330,558 to go through the pavement.
A. To tear up and replace existing pavement over existing mains and services, yes.
Q. Now that as I understand you, would be simply the cost of the labor and material in taking pavement up and replacing
1142 it after the pipes were laid?
A. That represents the net construction cost which is the cost of labor and material of taking up and replacing these pave-

ments after having credited to such cost the material recovered from the old pavement when it is taken up in such cases as it is possible to us- the old material over.

Q. Now to make it free from any complications of that kind——

A. It is the net construction cost.

Q. The net construction cost is $330,558?

A. Yes, sir.

Q. In arriving at that figure of course and in giving these figures at all in your report you have assumed that these pipes will be laid under the pavement that is between the curb lines?

A. Where they are so laid now.

Q. Is there any reason why they could not be laid between the curb and the parking?

A. There is so far as this calculation goes because we are reproducing the existing property, not some other property.

Q. Reproducing it exactly the same place?

A. As it is today.

Q. Whether it is the most economical place?

A. Certainly.

Q. I thought you were starting out to make a plant here that would be built upon the most economic plan and of the highest efficiency which could be built?

A. If you read my testimony you find I start out to build a plant as quickly and efficiently as possible and exactly of this type size and characteristics.

Q. You could lay these mains a great deal quicker by putting them und- a part of the street where there were no pavements?

1143 A. But I have no right to figure on reproducing anything except what is here.

Q. Do you build the identical plant, is that the theory?

A. Certainly.

Q. Put your pipes at the most expensive place?

A. No, I put them where they are.

Q. Why do you do that?

A. To reproduce the system where it is.

Q. You are making a new system.

A. It is a duplicate of this.

Q. A duplicate of this in everything except earnings?

A. Everything except what?

Q. Earnings?

A. And it will be a duplicate of earnings if you follow the calculation up there to 1918.

Q. Any way you don't take into consideration the fact that these mains could be laid just as well outside of the curbs as between them?

A. Certainly I consider that just as I have considered that a plant of this capacity which would be possibly built today in view of the modern developments, it would be possible to build a plant having the capacity of this one at less money than this one cost.

Q. That is important, I am glad to have that suggestion. As an expert on gas and you present yourself here as one, you don't want to be understood as saying that these gas mains cannot be just as

serviceable and laid with much less expense and trouble outside of the curbing than they can in the street between the curb.

A. I don't say that.

Q. It is a fact isn't it that they can be laid for much less money?

A. It is a fact sometimes they can be so laid for much less money.

1144 Q. In your hypothetical plat and in your estimate of values of the so-called going plant if I understand you now, you proceeded upon the theory that both your going plant and your hypothetical plant were constructed upon exactly the same lines and in the same way no matter what changes or modern methods might have come in since the organization of your going plant, is that your idea?

A. I made this calculation with the view of determining the present value of the existing property on a reproduction basis which precludes the taking of the reproduction cost of some other kind of property.

Q. (Question read.)

A. In my conclusions covering the hypothetical plant I assume the reproduction of the property as it is.

Q. You can answer that question by yes or no.

Mr. GUERNSEY: He has answered it completely and concisely.

Mr. BYERS: That is your judgment but it is not mine. I prefer to have an answer to the question with the qualification the witness puts on the answer.

COURT: I do not consider that he has answered the question.

Mr. GUERNSEY: I object to the witness being required — just yes or no, because the question carries with it an assumption that there is out of date old fashioned stuff here and the witness by answ-ring yes or no would be compelled to admit that assumption which he should not be required to do, but he ought to be permitted to answer and tell just what he did.

Mr. BYERS: This question simply goes as to whether he proceeded as I asked him, that can be answered yes or no.

COURT: If you can answer yes or no do so.

A. I can't answer yes or no.

Q. If you were building a new plant in Des Moines for the
1145 purpose of serving the gas consumers of this city, in other words, if you had been employed to furnish plans and specifications for a new gas plant with your estimates of cost, would you have furnished to your employer the plans and specifications and figures that you set out here in your hypothetical plant?

A. Do you mean if I had to design a plant to supply the present demand in the city of Des Moines?

Q. The present and the future demands?

A. No, I would not.

Q. Then if I understand you, you don't pretend now or claim that this hypothetical plant that you have worked out here on paper would be the kind of a plant that ought to be construct- and operated to serve the people of Des Moines?

A. To answer that I would have to say first that all gas plants as

old as this have passed through several periods of necessary extensions and there comes a time when they contain units which are not of the size which would best be installed at a later date. If I were desig-ing today a plant to supply the city of Des Moines for instance I would not put in a six foot six water gas sets. Now there are two such sets here. I would put in larger sets. These sets today have a value but they have not the value in their producing capacity as larger units would have. On such items as that the plant which I would design would differ from this. I would have for instance instead of one three hundred thousand foot holder and a million foot holder both for storage I would have one of more than a million and which would be more effective than the two. The million foot holder now in this plan is the natural result of the growth of the plant but if it had been installed at the time of the building of the 300,000 it would have been an unwarranted expense in the maintenance of the property and the price of gas would neces-
1145 sarily have been affected.

Q. Then if I understand you, you do not consider the present plant of the Des Moines Gas Co. as it is now organized as a proper and economic plant for the furnishing of gas in Des Moines at this time and for the future?

A. I don't believe it is quite as economic as a new plant built for this capacity would be.

Q. Now which plant would be the most expensive, or let me put it a little different way. Which of these two plants now, your so-called hypothetical plant that you have worked out or the plant you think we ought to have here would cost the most money?

A. I have made no estimates on the——

Q. Oh, well you can give us that in a general way?

A. No, sir.

Q. You won't even venture a guess?

A. I will not without calculation.

Q. If you come within a million dollars we will be satisfied.

A. No, I can't give any answers on that.

Q. Can't you give the slightest opinion?

A. No, sir. I want to figure these things, I don't want to guess at them.

Q. How long would it take you to figure that out in your mind.

A. Oh I might get it for you in a day or so.

Q. You would have to get some figures you haven't here?

A. I have a lot of records in my bag which I would use.

Q. You can't even approximate what the proper gas plant would be worth as compared with the hypothetical plant?

A. No, sir; I have not even laid the thing out in my mind, I don't know what I would put in.

1147 Q. Then we reach this point don't we that the only purpose you had in your mind when you worked out this so called hypothetical plant and the express purpose for which it was worked out was simply to get at this so called going value that you have estimated at over $600,000?

A. No, sir.

Q. What other purpose.

A. Well the purpose of figuring on the property as it stands so that I might obtain a reproduction value of the property as it stands, not on some other property. You are not valuing the hypothetical plant, valuing the actual plant.

Q. You have given the reproduction value of this going plant. Now what was the purpose of having this hypothetical plant worked out when you already had the reproduction?

A. Perhaps you misunderstand. I have not made two calculations of reproduction value. The reproduction value made of the going plant is the same as used in the going value calculation. There is no separate calculation for the hypothetical plant.

Q. Aside from this one item of going value when you had worked out your reproduction value of the going plant, you could have stopped so far as your report was concerned?

A. Without any allowance for going value you mean?

Q. Yes.

A. Why certainly not. The going value is an attribute of the physical property.

Q. The way you got at it so far as your report is concerned is by working out this hypothetical plant and figuring out a per centage of expenses and cost and growth and making certain credits which you figure out and the so called returns or earnings from the hypothetical plant and the going plant and the difference between
1148 the two finally makes your going value.

A. The reason I used this calculation is that it is the only method I know of for specifically arriving at the accurate amount of going value.

Q. Yes, you told us that this morning several times. We will go back to these figures for paving. That was $330,558. Now does that cover any streets in which the pavement was down before the mains were laid?

A. I presume it covers some, I don't know about that.

COURT: You give $330,558 for tearing up pavements and laying mains including the services, where do you get that?

A. The grand total given here is $277,574 for mains and then you add to that the total net construction cost of house services plus lamp post services and it will give the figure I gave you.

—. There was no trouble to you to ascertain whether or not any of these streets that are included in these figures were paved before the pipes were laid was there?

A. Would not have been any great amount of trouble I presume.

Q. You proceeded on the theory that they were not, that is that these pavements were laid substantially all of them after the pipes were originally put down?

A. I did not. I went on the theory that it was of absolutely no consequence so far as my calculations are concerned whether these pavements were laid before or after the laying of the main.

Q. Can you give us any idea how many were laid before or after?

A. I don't know.

COURT: If I understand you correctly you made your calculation as though the streets were in the condition they were on the 1st day of January?

1149 A. As to paving and the reason back of it was this——

COURT: I understand the reason. I only wanted to know what the fact was?

A. Yes, I took the streets which were paved the 1st of January in which were gas mains and services and have estimated what in my opinion would be the net construction cost of tearing up and replacing the pavement in so far as it would be necessary in reproducing these mains and services.

Q. Now another word or two about the pavements. Do you know about the condition of the alleys that run parallel to these streets that are now paved and for which you have figured the cost of tearing up and replacing?

A. No, I don't know anything in particular about them, I have seen a lot of them but I have not examined them.

Q. Any reason you know of why the mains could not be in the alleys.

A. I know cities that are using it where the cost to run mains in the alleys will be more expensive than running them in the street except where paving is expensive.

Q. Why?

A. Because the risers ordinarily are in the front of the building and you have got to run that much additional if you run from the back in addition to running through the back yard.

Q. That all depends on the character of the building and the occupancy?

A. I have not considered replacing the alleys because they are not in the alleys.

Q. If the Des Moines Gas Co. were required in the carrying on of its business to lay down a main between 7th and 8th street here on Wanut street and that work should be carried on say this week the pavement torn up, the ditch dug and the main laid and

1150 the pavement replaced, all of your expense, so far as the pavement is concerned, and so far as labor is concerned and cost of new material, if any had to be used in the pavement all of that is charged to operating expenses is it not?

A. Certainly not.

Q. What part of it is not?

A. None of it.

Q. What is it charged to, the construction expense?

A. The new work charged to construction.

Q. Suppose it is repair work, where did it go?

A. If repair work charged to repairs.

Q. Finally what general account is repair work?

A. Such portion of the work as is repairs goes to repair account.

Q. In making up the balance sheet for the year don't all of these items go into the operating expenses of the plant?

A. Either as maintenance or as depreciation.

Q. And they all enter into the item of operating expenses when the balance sheet is struck?

A. None of this portion of the cost referring to new construction do.

Q. I am talking about repairs now.

A. Yes, all repairs go in either as maintenance or as depreciation.

Q. New construction like expending a line into some new territory, where is the cost of that carried to on the books of the company?

A. Capital.

COURT: Suppose they have to relay one pipe.

A. Have to take up a four inch and replace it with an eight inch?

COURT: No replace it with the same kind?

A. Then you would have to replace a four inch pipe be-
1151 cause it was worn out or something like that. If you take up one pipe and replace it with another pipe the same size and kind all of the cost of the new pipe plus cost of taking out the old pipe and putting in the new pipe, minus what you may recover from the old pipe if anything, is a legitimate charge against repairs or depreciation. It would go into one account or the other.

Q. That is part of the general item of operating expenses?

A. Whether it goes to repairs maintenance or depreciation it gets back into operation ultimately.

Q. In your Exhibit "E" of Exhibit 20 at page 13, you give the cost of the construction of the distribution system including paving as $1,549,871 do you not?

A. Yes, sir.

Q. Now if you deduct—I wish you would work that out for me if you will—if you deduct the paving from your distribution system as you make it, and give me then the value now as you figure it out of the distribution system without paving.

A. Well I can't arrive at the reproduction value of the distribution system without including paving.

Q. I want to get at it without paving, take that amount of paving out?

A. If I subtract $330,558 from $1,549,871 you will obtain $1,219,313.

Q. That would represent the amount now that you have carried into your figures showing the value of the distribution system less the $330,558 for paving.

A. I have carried the figure in for paving because paving is a legitimate part of the cost.

Q. I say if you take the paving out that is what the fig-
1152 ures would show with paving out, $1,219,213.

A. That would not be the reproduction cost of the distribution system.

Q. What would it be?

A. It would be the reproduction cost of the distribution system minus $330,558.

Q. What would the remainder be?

A. I don't know. I- would not be the reproduction of the distribution system, net construction cost.

COURT: Would it not be the reproduction if there were no pavements in the city?

A If no pavements in the city of Des Moines at all at the 1st of January, that might then represent the reproduction cost of the distribution system.

Q. Now then on this same page 13, of Exhibit "E" you find the cost only now without overhead charges real estate, $215,993. That is correct isn't it?

A. Yes, sir.

Q. Buildings $85,723. That is correct.

A. $85,723 correct yes.

Q. Works equipment, $420,428. That is correct?

A. Yes, sir.

Q. And distribution $1,549,871. That is correct?

A. Those are the net construction costs I have shown in my report.

Q. These figures are correct according to your judgment?

A. Yes, sir.

Q. Now if you add to these figures your item of working capital $150,896 you would get a total of $2,422,911 would you not?

A. I have not added it.

Q. Will you please do so so as to verify my statement
1153 about it?

A. These two figures added make $2,422,911.

Q. Now that represents does it not your estimate of the cost of duplication of this plant today without overhead charges?

A. You can't duplicate without overhead charges,

Q. I know you can't but I am getting at these figures, they would represent the amount you have worked out that it would cost to duplicate this plant less the overhead charges.

A. These figures $2,422,911 are only the total of the sum of the net construction cost plus working capital used in my report.

Q. And less overhead charges?

A. Only what I said.

Q. If you take from that total the $330,558 which you have allowed for paving you would have the sum of $2,092,353, would you not?

A. You would.

Q. As your value when new without paving or overhead charges?

A. Certainly not.

Q. Certainly not. Well why not.

A. You can't value the property of a gas company having the characteristics of the Des Moines Gas Company without including going value because it is an attribute of the physical equipment.

Q. I am not asking you to testify now with respect to going value.

A. You are asking me to state what is the value of the property without going value.

Q. You misunderstood me, I don't blame you much for that, because perhaps I have not used the right term but I think you know

what I am trying to get at. I am taking your own figures just as you gave them in court.

A. I am willing to stand on them.

Q. I may not be entirely clear, in the method I am trying
1154 to work this out, but I am trying to get at — so I will understand it as well as you do if I can. I take your figure of $215,993 for real estate without any of these overhead charges, the buildings $83,723, works equipment, $420,428 the distribution system $1,549,871 and your working capital $15,896, now these figures are correct are they not?

A. They are.

Q. They appear in your report?

A. Yes, sir.

Q. And they represent your value?

A. They do not represent the value.

Q. They represent the reproduction cost, you are playing on the word value.

A. No, not playing on it, it has a direct meaning.

Q. They represent the reproduction cost of these items read to you making a total of $2,422,911. Is that right?

A. The addition of the net construction cost to the working capital used in my report makes a total of $2,442,911.

Q. If you deduct from $2,422,911 the reconstruction cost of paving $330,558, you will have remaining as the reconstruction cost less the pavement $2,092,353.

A. No, sir.

Q. How much would you have left?

A. I would have to figure it out to see. I can't arrive at it from these figures.

Q. Well take $330,558 from $2,422,911 and what would you have?

A. I am not disputing the substraction at all. The figure you have stated is the result of the substraction of $330,558 from the $2,422,911.

Q. What does that represent?

1155 A. I don't know how to express it. Certainly has nothing to do with the present value of the property.

Q. Don't it represent the figures that work out from your report that would represent the reproduction cost less the paving?

A. No, sir.

Q. And these items that I have read to you, real estate, buildings works equipment, distribution and working capital?

A. All right now then, you are specifying the items. I am talking about the plant.

Q. That is your opinion of the right way?

A. That is not the right way.

W. Well take then your way?

A. What is the figure you want arrived at?

Q. I want to arrive at the remainder of these items I have read to you after taking paving out as you have figured it in your report.

A. That is not clear to me.

Q. Give me the figures shown as you work it out in your report of the reproduction cost of this property less paving and overhead charges, what is the amount?

A. I can't give that to you without a lot of calculation because that is a sort of item that is not carried through separately arrived at through taxes during construction and loss of interest during construction, it would have to be separately calculated to get that.

Q. What does $215,993 represent with respect to the real estate?

A. $215,993?

Q. Yes what does that represent?

A. That is net construction cost of real estate.

Q. All right now, we have got net construction cost of real
1156 estate.

Q. Now what does building $85,723, what does that represent?

A. That is the total net construction cost of buildings.

Q. That is net construction cost of buildings, all right that is $85,723. Now the item works equipment $420,428 what does that represent?

A. That is the summary of the net construction cost of works equipment.

Q. Now what does the item distribution, $1,549,871 represent?

A. That is the net construction cost of the items entering into distribution system.

Q. I wish you would put that item down also. The item $150,896 what does that represent?

A. Total working capital.

Q. Now will you please give the Master the sum total of those several items?

A. $2,412,911.

Q. You have made a mistake have you not of $10,000, $2,422,911?

A. $2,412,911, is what I get.

COURT: That would be the new plant throughout?

A. No, sir; that would be only the net construction cost plus working capital.

COURT: That is the new plant.

A. That is only part of the cost of course.

COURT: I am asking if that net construction cost would be a new plant?

A. Oh yes.

Q. Now will you please let me check up the items with you there?

A. $205,933 for real estate.

Q. No, $215,993. Now what is your total?

A. $2,422,911.

1157 Q. Now what does that represent?

A. That represents the total of the net construction cost of physical equipment alone plus working capital.

Q. Now then how much if anything is included in those figures for paving?

A. The sum we had before here.

Q. What was that?

A. $330,558.

Q. Now if you will please, deduct that from the other sum and tell us how much is left?

A. $2,092,353.

Q. Now what do these figures represent?

A. The total net construction cost of physical equipment alone plus working capital less net construction cost of paving alone?

Q. Now if you will turn to your letter to Mr. Haines on the introductory of Exhibit 20 and note down there and give to the Master the total cost new of the plant with all overhead charges and paving and going value?

A. That is you want the total reproduction cost?

Q. Yes, the total reproduction cost including all these items you work into it.

A. You don't mean that to be parallel do you to what you are getting here?

Q. No, just give me the amount there.

A. $3,641,714.

Q. That is your estimate of the reproduction cost with all of these overhead charges, paving and going value included.

A. Yes, sir.

Q. Now will you please deduct your value when new without paving or overhead charges from that item, the $2,092,253 from your—That is no such item———

1158 Q. Well deduct that item?

A. Can't do it, no sense in that.

Q. Deduct it from your total in your introductory letter to Mr. Haines and tell me what you have left?

A. Subtracting from $3,641,714 the sum of $2,092,353 leaves the sum of $1,549,361.

Q. That would represent would it not, that $1,549,461 would represent your estimate of the reproduction cost of this property—leaving out the paving—would represent the reproduction value including paving would it not?

A. No, sir.

Q. What would it represent.

A. I don't know sir. It represents nothing in my opinion.

Q. It don't represent anything.

A. Not in my opinion. It is not a fair method in arriving at anything.

Q. We had an item of $2,092,353 on your paper. Now what did it represent when you had it there?

A. That represents the total of net construction costs of physical equipment alone plus working capital minus net construction cost of paving alone.

Q. Now if you take that sum representing these items from your total what do you have left and what does it represent?

A. I don't know.

Q. Have you figures it to see?

A. I have figured it right here.

Q. What do you have left?

A. I don't know as to what the dollars are, I don't know what they mean. They mean nothing to me.

1159 Q. Well let's see if I can't brighten you up a little on that. How much does your report show you allowed for paving?

A. A net construction cost of $330,558.

Q. Put that down please?

A. I have it.

Q. How much do you allow for going value?

A. $583,000.

Q. How much did you include in these overhead charges?

A. I have not separated them.

Q. I wish you would do so?

A. Let me see if I understand the question.

Q. What I asked you is the amount that you have included into this general sum that is contained in your letter to Mr. Haines in what might be termed intangible values over and above the item of paving which you have already given as $33,558.

A. I understood you asked for the overhead covering loss of interest during construction and taxes during construction.

Q. Here is what I mean exactly, you have already given me the sum of $2,092,353 as the reproduction cost.

A. That is your figure, that is not mine.

Q. I got them from your figures, you figured them out yourself. Now there are three items, paving, and going value, these two you have given me, $583,000 and the paving you have given me. Now I want to know what is the sum total of all of the other items that you have included in this grand total here over and above the $2,092,333, call it overcharges or whatever you please, but what is that total?

A. I don't call it over charges.

Q. Overhead charges.

A. That is what I am working on now.

1160 Q. Do you have to go back through the book to find out?

A. Yes, sir.

Q. The only way you can do it?

A. Yes, sir.

Q. I think we can shorten this up, if you will take $2,092,353 add the paving $330,558 add your going value $583,000 and give us the sum total?

A. $3,005,911.

Q. Now if you will subtract that sum from the grand total which you gave Mr. Haines you will get the item I want which includes everything else which I term overhead charges?

A. You understand I am not telling you what this figure represents.

Q. I want you to answer the questions, I don't care what you tell me so that you tell me the truth.

A. Subtracting from $3,641,714 the sum of $3,005,911, gives you $635,803.

Q. Now then if you will take these three items I started to give you a little while ago, the paving?

A. $330,558.

Q. Now the going value?

A. $583,000.

Q. Now the balance between the grand total, $635,803, add those items together and tell me what you have?

A. I have the sum of $1,549,361.

Q. Now from your report, basing this question wholly on your report, that sum which you have just found, $1,549,361 represents the amount that you have added to the item of reconstruction cost and working capital for paving and these other intangible items like going value and taxes and interest, etc.

1161 A. I don't know that it does.

Q. Will you please ascertain whether it does or not?

A. I have got to continue this calculation if you want to tell me what my figures show. Those are your figures, they are not mine.

Q. These figures are all taken from your report.

A. But they are not construed properly in my opinion. I can't answer it without going over the calculation.

Q. Haven't you just gone through?

A. I don't think your method of calculating is correct. I know one correct way and that is the way I am following here.

Q. There is no doubt about the item $330,558 for paving?

A. If you will tell me the figure you want I will get it for you.

Q. No doubt about that figure?

A. No doubt about the figure $330,558 showing the net construction cost of paving, shown in my report.

Q. No doubt about $583,000 as showing your estimate of going value is there?

A. No, sir.

Q. Now is there any doubt about this $635,803 representing everything else?

A. That is the figure which you gave me and in which I have no confidence. I want to calculate it in my own way. I don't know how you figured it.

Q. How long will it take you to verify that?

A. I don't know. I will do it as quickly as I can.

Q. What do you mean by that, do it now or do it tonight or do it some other time.

A. Well I will do it as soon as I conveniently can or make an effort to.

1162 Q. I wish you would just give the Master and I know you can give it in five minutes if you wish, the amount that you include in your $3,641,714 over and above the amount that you set over as reconstruction cost of the physical property?

A. I have not worked that figure out separately and it can't be obtained from my report or my data except on this calculation on which I am engaged.

Q. In other words no one can work out from your report that item except yourself, is that it?

A. I didn't say that. I say except by going through the calculation like this.

Q. Suppose the Master desires to know that, how is he going to find it out?

A. He can make the same kind of calculation I am making here.
Q. What kind of a calculation are you making?
A. You may follow it if you wish?
Q. Do you use these total figures?
A. Use nothing but figures out of the report, the figure asked for does not show in the report as a separate figure and you must arrive at it from details.
Q. Taking $3,641,714, that is the grand total?
A. Yes, sir.
Q. Now take out the reproduction cost of the physical property, $2,092,353 and what have you got left? Don't that give you the sum of those three items?
A. I don't know, I don't see that figure.
Q. Well just figure it out there and see.
A. $1,549,361.

1163 Q. The sum of these three items, the paving, the going value and this $635,803 make the total of $1,549,361. Now does not that represent the difference in your figures as shown in your report between the grand total of $3,641,714 and the $2,092,353?

A. I will have to complete my calculation before I can answer.
Q. You can't even accede to that?
A. No, sir.
Q. I would like to have you furnish for the Master and the rest of us at the coming of court tomorrow morning in separate items the amount that you have allowed and have worked out in your report in value or in cost over and above the amount that you have figured for the reproduction cost of the actual physical property.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

1164 Friday Afternoon Session.

JULY 28, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of Complainant resumed as follows:

HENRY I. LEA, re-called for further cross examination, examined by Mr. Byers, testified as follows:

Q. One of the things I asked you for last night was to figure out for us your prospective business on the basis of ninety cent gas, did you do that?
A. No, sir.
Q. Why didn't you?
A. I didn't get time.
Q. Who paid you for your services in the Beatrice case?
A. I was paid through the council committee by the Gas Company.
Q. How much?
A. I have forgotten.

Q. The name of that company was the Gage County Gas Company?

A. I believe so.

Q. The Gas Company offered to pay you three hundred dollars?

A. Through the committee, yes.

Q. The money was from the Gas Company?

A. I suppose so; I don't know whether it was money that was due the city or not; but I was engaged by the council and through the council was paid by the Gas Company, as I understood it.

Q. You filed your report there about March 1st of this year?

A. I don't remember.

Q. You made it at the same time you made this report?

A. It was since I came here in January.

Q. You made it up at the same time you made up this report. worked on it at the same time?

1165 A. No, not at the same time.

Q. Then during the same period?

A. Yes.

Q. It was done in your office?

A. Yes, sir.

Q. Just as you may have been doing other jobs at the time?

A. Since I first came here.

Q. There was nothing paid by the city of Beatrice?

A. I understood the city was paying me.

Q. How did you understand that?

A. By being retained by them.

Q. How did you assume that when the Gas Company paid you?

A. When the Gas Company sent the money I assumed it was money owing the city.

Q. Have you got the Gas Company's letter in which they sent you the money?

A. No.

Q. What did you do with it?

A. It is in my office, if they sent a letter; I don't know that they did.

Q. They didn't pay you out there?

A. I have forgotten.

Q. Have you got a copy of your Beatrice report with you?

A. No.

Q. You have a copy in Chicago?

A. Yes.

Q. Do you remember the name of the city official you claim you dealt with out there?

A. No.

1166 Q. Do you have that in your office?

A. Yes.

Q. Now, Mr. Lea, yesterday we were dealing to some extent with your so-called value. What year did you begin in your computation with your going plant to get the basis for that end of your compitation as to going value?

Q. What year did I begin with the going plant—the date of the inventory is the first of January.

Q. I mean of the life and history of the plant, what year in the history of the plant did you take as the beginning from which you worked out this $600,000 going value?

Mr. GUERNSEY: It is $583,000.

A. The going value of the existing plant was calculated as the first of January, 1911.

Q. You don't understand my question. You don't mean $583,000 going value was all at once put into your plant on the first day of January?

A. I said $583,000 was in my opinion——

Last question repeated.

A. You mean the period covering the comparisons of the two plants?

Q. Yes, sir.

A. Well there was a period of seven years required.

Q. I am not talking about the seven years. I suppose you want us to understand that there was something, some service or expenditure represented by this $583,000?

A. My report shows clearly what is represented by that.

Q. What is represented by that?

A. If you will look at the report and follow me I can tell you.

Q. You can tell me in a general way?

A. I can't tell you as completely as I can by reading the report.

Q. Well, go ahead and read the report.

1167 Q. You want me to read all of the report?

Q. I don't think you understand the question, Mr. Lea, because I don't think it is necessary to read your report to answer what period was any part of this going value first earned or attached to this plant.

A. You are trying to ask me when was this going value accumulated?

Q. Yes.

A. It began when it began business.

Q. What year did you start with as the beginning of that business, to work it up?

A. The original company I think was started in 1864.

Q. What year did you begin with, the first figures you used?

A. You are not asking the question so that it can be answered by yes or no, certainly.

Q. No certainly that couldn't be answered by yes or no.

A. I am afraid you don't understand the calculation.

Q. What period did you begin to take this going concern—you accepted the situation up to some particular point?

A. Yes, sir.

Q. What was that point?

A. I came on this job to make the appraisal as of the first of

January, 1911. At that time the Des Moines Gas Company had acquired a certain going value; what that was I didn't know at that time. To find out what that going value might fairly be, I had to calculate what the other company would have to spend to equal the going company, what it would cost to duplicate the property and business of the going plant.

Q. When was the Des Moines Gas Company organized?

A. I don't know those dates.

1168 Q. I mean the present company?

A. I don't know.

Q. Didn't you inquire about that?

A. I heard some dates given, but they were of no interest to me; I didn't try to make note of it; the corporate title of the property has no interest to me at all.

Q. It didn't make any difference to you even in a rate case?

A. Doesn't affect rates.

Q. The organization of the company don't affect the rate either?

A. No, sir.

Q. If it should turn out to be true that this company was organized in 1906 and commenced to do business for the first time in Des Moines in the year 1906, would that make any difference?

A. Not the least.

Q. That wouldn't make a bit of difference with the question of going value?

A. No, sir.

Q. Now, if that be true, from your standpoint, on your theory, if it should so happen that the Des Moines Gas Company took over this entire plant in 1906 at less than the value of the physical property as fixed by you, and less than the reconstruction cost of it with the proper reduction, and then commenced its present business in the year 1906, would that make any difference to you?

A. No, sir; it wouldn't make any difference to me.

Q. Take the case we are trying and not a fictitious, hypothetical one, based purely upon theory, if it should turn out that the Des Moines Gas Company, when it was organized in 1906, took over the present gas plant at a valuation say of $1,750,000, and we will assume now for the purpose of this question, that according to your judgment and your valuation the physical, actual physical property which includes everything as you figured out the reproduction cost, leaving out all these items of going value and promotion expenses, and so on, just actual reconstruction cost of the physical property, and that amounts now to the figure you have there—will you give it to me again?

1169

A. What figure?

Q. The actual reconstruction cost of the physical property, the net construction cost?

A. The net construction cost of real estate plus buildings, works, equipment, plus distribution system I find to be $2,272,015.

Q. Now, in that item $2,272,015 there is no item of working capital is there?

A. No.

Q. And that item you figured at $150,896.00?

A. Yes.

Q. And the sum of these two items would be, as I make it, $2,422,911—is that right?

A. I haven't made those figures. I don't know.

Q. I wish you would; I want you to agree to those as we go along.

A. Are you trying to arrive at the total net construction plus working capital?

Q. Yes, sir.

A. Then you don't want to use the figure you have; you want to take $142,000.

Q. I don't care about that little addition—let it stand at $150,000 for the purpose of my question.

A. The total is $2,272,015.

Q. Now that would represent the net reproduction cost of the present plant on the first day of January, 1911, with $150,896. capital added?

1170 A. It would represent in addition $150,896 for working capital, to the total net construction cost to the physical equipment alone.

Q. The addition is in my saying reproduction instead of net construction?

A. Yes, sir.

Q. We call it net construction then; that in your judgment is what the physical equipment, the actual physical property, with this item of working capital added was fairly worth, leaving out these other factors, on the first of January?

A. No, sir, not on a net construction basis.

Q. Well, what was it; I don't want any of those additions; what I want is just the figures, the amount; I am trying to verify what you have given as the net construction cost of the first of January 1911.

A. You will get that if you stick to the books. According to my report the total net construction cost, acquisition of physical equipment alone, plus a corresponding allowance for working capital is $2,414,415.

Q. What did you add there?

A. I didn't add there.

Q. What did you take out of the $2,422,911.

A. I am giving you the net construction cost.

Q. What did you take out on those figures?

A. I say, instead of $150,000 $142,000.

Q. I told you that I wanted to use $150,000; you have taken out $6,000. the difference in working capital.

A. I have omitted lost interest during construction and taxes during construction on working capital.

Q. So you make then the amount $2,414,015.

1171 A. Yes, sir.

Q. Does that sum represent what in your judgment was the fair and reasonable value or reproduction cost whichever way you

want it of the actual physical property of this company on the first of January, 1911.

A. No, sir.

Q. What does it represent?

A. It represents only the total net construction cost of the physical equipment alone, plus the net construction cost of working capital.

Q. All right, have it that way. Now, then, assuming that that is the cost—you discriminate between cost and value?

A. Very distinctly.

Q. Assuming that was the actual net construction cost to this Des Moines Gas Company, what do you say the company has ever given to the community or anybody else, for this $583,000 of going value, if this statement now is correct, that the Des Moines Gas Company took over this property in 1906 for less money than what you have worked out here in reaching the net construction cost and the total net cost to them for the property, the total net construction cost did not exceed $2,414,015; you have worked out, what would this company give to this community or to its consumers in return for this $583,000 of going value?

A. What did it give?

Q. What would it give?

A. Haven't the community had a supply of gas all this time, satisfactory service?

Q. Has not the Des Moines Gas Company been paid for it?

A. I presume in part at least.

Q. What particular service would this company have given to this community for this extra $583,000 if my statement as
1172 to those figures is true?

A. It has performed all the work and made all the investment necessary in building up this business which cost money.

Q. What was it it has not been repaid for, what particular work?

A. I didn't say it had done the work it had not been repaid for.

Q. Now, Mr. Lea, if the Master should finally decide, the court should finally decide to accept your figures of going value, of $583,000 and add them to the construction cost, then it is your understanding, isn't it, that the company will be permitted to earn a rate or make a charge based upon that valuation, with the $583,000 added to it?

A. It is my understanding the company should be allowed a rate——

The MASTER: Please answer that question.

A. I can't answer it.

Mr. GUERNSEY: You mean you can't answer it yes or no?

A. I can't answer it yes or no.

Q. I will put the question in another way: you have included in your figures $583,000 as the so-called going value of this plant, and in your final summing up you add those figures $583,000 to the reproduction cost of this property, do you not?

A. Certainly, as a part of the reproduction cost of the physical equipment.

Q. And you understand when you do that that item of $583,000 is to be considered in fixing what would be a reasonable charge for furnishing gas in the city of Des Moines?

A. Yes, sir.

Q. And you made the figures with that in your mind?

A. Not with the fixing of rates in my mind.

Q. You knew it was a rate case?

A. I made it solely with the view of determining the
1173 present value of the property.

Q. You knew it was a rate case?

A. Yes, but that had no bearing on my valuation.

Q. You knew these figures you were furnishing to Mr. Haines were to be used for the purpose of convincing the Master that the rate fixed by the city in this ordinance was too low?

A. I did not know the rate was too low.

Question repeated.

A. No, sir, I did not.

Q. Now, then I would like to have you tell the Master just in your own way, just what service this Des Moines Gas Company, as it is now organized, has given to this community in return for the privilege of basing at least a part of the rate that they shall be allowed to charge for gas upon this $583,000, for all time to come; what have they given to this community for that in your judgment?

A. They have gone through a good many periods of uncertainty; they have sustained material losses in real cash; they have risked their investment in a business which is certainly not guaranteed by the community in the slightest degree; they have been under no protection whatever as to competing franchises, nor as to adverse action of the city council, nor as to competition from other sources; they have had no assurance as to the growth of the city; they have had net returns which certainly have not been excessive; they have maintained a satisfactory supply of gas and good service at all times.

Q. Anything else?

A. There doubtless are other things.

Q. It is your idea now that all these things enter into this going value?

1174 A. I didn't say that.

Q. What are you giving these things for?

A. They don't enter into my calculation of going value; I have shown you that.

Q. Now, this $583,000, what has this company given the community for it?

Mr. GUERNSEY: This question is objected to as argumentative, irrelevant and imaterial, because it is not contended here that the community has given the company or the company given the community anything on account of any property which the company owns. This question asks the witness what the company has given to the community on account of the element of the value of the property in the company's plant. The company did not buy the

plant from the community and did not give it anything for it; it is a mere matter of argument.

The MASTER: Let him answer the question.

A. This going value is not predicated on what the company has given the city nor what the city has given the company.

The MASTER: That don't answer the question.

A. I can't answer such a question.

Q. Let us see if you can answer it this way: You have already told me that you understand this rate controversy, the question to be determined here is the question of a reasonable rate to be charged this community for furnishing gas?

A. Yes.

Q. You also told me that that rate must be based to some extent at least upon the fair value of the property of the company?

A. Yes, sir, certainly.

Q. So that this so-called going value now is to be a part
1175 and is to — considered a part, on your theory, of the value of the property upon which the rate is to be fixed?

A. Necessarily so.

Q. You understand too, do you not, that that rate should be based wholly on the actual value of the property used in the business, don't you?

A. It should be based solely on the actual present value of the property used and useful.

Q. Now, then, if that be true, what I want to know from you, is just where this company is using in the business of making gas here now, and furnishing gas to the people, this item of $583,000 that you allow for going value?

A. I can't answer that without an argument.

Q. I wish you would tell us then—we will have to go back to your original proposition, it seems to be a little cloudy to me anyway—I wish you would tell us again in as brief a time as you can just how you arrived at your going value?

A. By finding out what a willing buyer would pay for that going value.

Q. How did you find that out?

A. By considering each of the items that make up the going value; the time required to reproduce the plant of the same kind of capacity in the same kind of a community; the expense required for the physical equipment, the purpose of the individual portions making up the total investment, the building up the business.

Q. Anything else?

A. That is enough.

Q. What part of that has this Des Moines Gas Company performed here in this community?

A. I can't answer that without argument.

1176 Q. Can you answer it at all?

A. Yes, sir.

Q. What have they done to earn this value?

A. I have answered that.

The MASTER: Suppose this plant, this new plant you are speaking

of was reproduced instantly on the first day of January, and the whole business had been developed, would that make any difference in your estimate of going value?

A. Oh, yes, that would reduce the going value, because the time required for building the plant would have been wiped out and you have only left the period required to develop the business.

Q. Then if it turns out that the correct theory is that the reproduction shall be instantly, then that would make a difference in the going value?

A. You mean the reproduction of the manufacturing plant on street mains and services but not the business.

Q. Yes, sir.

A. Such an assumption would reduce the going value. The fundamental method of calculating is that everything you assume must be humanely possible.

The MASTER: Suppose the correct theory of the law is that it shall be deemed reproduced instantly?

A. If the law were to hold that it would certainly reduce the going value.

Q. Have you given me every element you considered in arriving at the going value?

A. No, sir.

Q. What other element?

A. I haven't had time to think of them; I can't tell you off-
1177 hand; the calculation is before you and you can see it there.

Q. You don't consider anything except what appears in there?

A. All I consider are in there.

Q. I wish you would examine what the reporter has marked Exhibit 6 and state whether that is a copy of your Beatrice report?

A. I don't know, sir.

Q. Look it over and see?

A. I can't tell by looking it over. This is on the paper of an attorney and is not signed by me. I know nothing whatever about it.

Q. You can't tell whether it is your report?

A. I certainly cannot.

Q. Or whether it is one you have made in your office?

A. I don't know anything about the original of that copy.

Q. You don't know anything about it?

A. No, sir.

Q. Will you say to the Master that is not a copy?

A. I will say that is not a copy made under any authority of mine; nor have I ever seen this copy nor have I ever seen such a copy in existence. I will not say it is a copy of my report; it may be.

Q. You won't even tell us whether those figures are copies of figures you made?

A. Do you suppose I try to keep them in my mind?

Q. How did you work out the going value in Beatrice, Nebraska?

A. I would have to see my own report to tell you.

Q. Your report was filed out there, was it not, in February, 1911?

A. I don't know.

Q. And you say now you can't remember what plan or method you worked out?

1178 A. I wouldn't pretend to.

Q. It wasn't the same method you worked out here?

A. It was not; I did not know this method at that time.

Q. When did you first learn this method?

A. Early this spring, in this year, we discovered that this method had been used by water works companies in several cases.

Q. How did you discover that?

A. Through the fact that John W. Alvord of Chicago, consulting hydraulic engineer, had been using this system and used it in the Des Moines Water case.

Q. This was all worked out after you came to Des Moines?

A. No, sir; this has been in use for twelve years.

Q. I mean as far as you are concerned?

A. I never used this method of calculating before the spring of this year; I have determined going value before, but always by methods much more open to argument than this.

Q. About what time was it in the spring you found out about this?

A. I don't know.

Q. Can't you give us any idea except that it was some time in the spring; was it before June?

A. I don't remember.

Q. Before July?

A. I don't remember; it was before I made this calculation; that is all I can tell you.

Q. Are you acquainted with Mr. E. O. Kretzinger of Beatrice, Nebraska?

A. I don't remember the name.

Q. Is he the man you dealt with out there?

A. I don't remember.

Q. Do you remember the name of the manager of the gas company?

A. Yes, Thomas Rice.

1179 Q. But you can't remember any member of the committee of the city?

A. No, sir.

Q. I want to put another question to you, Mr. Lea, a hypothetical question in a sense—suppose that the Des Moines Gas Company, the complainant here in this case, had bought and paid for this plant, complete as it was in all its parts in 1906, and paid one million dollars cash, and then they had added in the five years since, five and a fraction years, the extensions and services and additions to the property generally that their books show has been added as a matter of fact, and the reproduction or construction cost of all that was added, I mean the net construction cost without any of those other matters, like going value, up to two million dollars, on the first day of last January, now would you still say that you would work out, or it would be fair to work out this going value in just the way you have

and add the $583,000 to that two million dollars, for the purpose now of arriving at a reasonable and just rate for gas in Des Moines?

A. I don't know that $583,000 would be the going value under the conditions you name; I couldn't tell you without working it out.

Q. How do the conditions I name affect it?

A. You are using different amounts.

Q. I have assumed now that the property had just the position of the property, just as it has been, the same business, the same town, everything in that respect the same, and the Des Moines Gas Company buys the business in 1906 for a million dollars cash; that is all they had to pay. Now since 1906 they have added just the equipment that their books show and which this onvoice shows,
1180 and we will say for the purpose now of the illustration—I simply want to test your notion or theory about it—that the construction cost, reconstruction cost would be just as you had figured it out, but for the purpose of the illustration we will say it was two million dollars, the company would have to pay for the property in 1906 and what they paid for additions and extensions since, and all of that amounted to exactly two million dollars; now would you say it would be fair to add a going value of $583,000 to that for the purpose of fixing rates in this community?

A. Are you assuming on the first of January, the property and business of the company and the characteristics of the city were as they were at that time?

Q. Exactly.

A. Then the same amount of going value would certainly be allowed in my report.

Q. So that then it is your notion and this would be the result of your theory, would it not, that if the condition existed just as I have supposed it and you add $583,000 for going value, then this community would be paying a return upon that $583,000 in the rates that were charged for gas for all time to come?

A. Not for all time to come, they would until further adjustments might be made.

Q. As long as there were no adjustments made that rate would have to be carried on?

A. Yes.

Q. So that I was right when I say they would be paying a rate upon this $583,000 for all future time?

A. They should pay a fair rate on the actual value of the property used and useful.

1181 Q. Even though this intangible thing of going value——

A. It is not intangible.

Q. Even though this going value was an item for which this company had never contributed a single dollar or single day's time to anybody in accumulating or creating it?

A. You are assuming a physically impossible condition. I have no answer to make to it beyond that.

Q. It would be physically impossible?

A. To reproduce the business without the expenditure of time and money.

Q. Your theory is, it don't make any difference what the property of the Gas Company, you would add it?

A. I don't care what it cost, if it cost money to develop the business and cost money to develop the plant, or time, then these elements would be considered.

Q. So far as your going value is concerned, you don't care anything about what the complainant, the Des Moines Gas Company invested in this property or what he paid for it?

A. No.

Q. You get at this going value and credit it to them just the same?

A. I arrive at the same reproduction of the present values of this property regardless of what the company paid for it.

The MASTER: Turn to the letter there of June 26, 1911; you figure the buildings $82,445.

A. Yes, sir.

The MASTER: And the works equipment is what?

A. $384,700.

Q. Now, omitting the real estate, is that what you estimate the present value of the equipments, including the distribution system works and equipment and the building of this plant?

A. No.

1182 The MASTER: I am talking about the physical equipment.

A. But the going value is an attribute of physical equipment.

The MASTER: I am not talking about that now. What I want to know is what is the actual present value of the physical equipment without considering the going value.

A. Do you went the total of those three items?

The MASTER: Yes, minus real estate.

A. $2,200,131.

The MASTER: You have it the same as I have except the going value there is a difference of one dollar.

A. Yes, I dropped it there.

The MASTER: Then you do not take into consideration in this the organization and legal expenses, real estate or going value?

A. No.

Mr. BYERS: I have been trying to get this for a day and a half, except that I was dealing with the reproduction cost. It simply shows that the witness will respond to the Master when he won't to me.

Q. Now, Mr. Lea, I think I have your notion of going value, and now just a little while on pavement. That $300,000 is that included in this $2,200,000?

A. Is that the total paving?

Q. Yes.

A. That is a part of the distribution system, present value.

Q. Now, you worked that out and included it in here, understanding that it also is to be considered as a part of the value of this property for rate making purposes?

A. I put it in there with the understanding it was an
1183 essential part of the reproduction value of the property for rate making purposes or any other purpose.

Q. What did you say was the life of the ordinary gas pipe?

A. I didn't say.

Q. Will you say?

A. If you name the size I will tell you.

Q. Well, beginning down with the small sizes, say 4 inch or 6 inch?

A. Cast iron?

Q. Yes.

A. Four inch cast iron I estimate the life fifty years.

Q. Six inch?

A. Seventy-five years.

Q. Eight inch?

A. Seventy-five years.

Q. Ten inch?

A. Seventy-five years.

Q. Twelve inch?

A. Seventy-five years.

Q. Sixteen inch?

A. Seventy-five years.

Q. Fourteen inch?

A. Seventy-five years.

Q. Twenty inch?

A. Seventy-five years.

Q. Twenty-four inch?

A. Seventy-five years.

Q. Now, what is the life of the ordinary asphalt pavement?

A. I don't know.

Q. What is the life of the kind of pavement you figured?

A. I didn't care what the life of the pavement was.

1184 The MASTER: If you know, say so.

A. I don't know.

Q. You didn't make any inquiry about that?

A. No.

Q. If it should turn out then, Mr. Lea, that upon these streets where you have figured out this $300,000—just assume for the purpose of this question one of those streets is Walnut, from the river on the east to say Thirteenth on the west, now if it should turn out that about the time that this gas — compelled to relay its pipes on Walnut street, and the pavement is ready to be relaid and the city is tearing it up for the purpose of relaying, and the Gas Company lays its pipe during the time that work is being done without having to tear up or replace the pavement, this complainant company then would have added to the value of its property and upon which the people of this community would be paying for that much pavement for which this company never would have to pay out a cent?

A. No, sir; if the truth were as you stated, there would be no allowance in the reproduction value. It is physically impossible to

relay mains as required if you only relay them when the streets happen to be torn open for repavement.

Q. If it should turn out that was done, as I stated, and the company had the advantage of laying the pipe during the time the city was relaying the pavement, then under your method of figuring this community would be paying upon a valuation enlarged by the amount you figured?

A. It would not. The reproduction value would be correspondingly reduced, the present value would be.

Q. How would the people get it back?

A. They would get it back right there in the reproduction cost.

1185 Q. Get what?

A. If you can show that it is going to be so, I will willingly make a reduction.

Q. But suppose it turned out to be the case, all the time between now and then the people have been paying upon this added value; how are they going to get that back?

A. If that were true, I would reduce my value.

Q. That is not a fair answer. I am assuming that Walnut street between the points I have stated, one of the streets now included in your $330,000, I am assuming that when the pipe that is now laid there must be relaid, the streets are torn up and the Gas Company—say it is twenty-five years from now—and the Gas Company lays its pipe while the pavement is torn up, under your theory and figures, if they are adopted by the Master and the rate is fixed on them with this pavement added, the people of this community will have been paying upon that added value for a full twenty-five years?

A. You are assuming a condition you are willing to say is existing?

Q. If it does exist?

A. If I have assumed this street is not to be open at the time of relaying this particular main, and have therefore included paving over that main as a part of the reproduction cost, and then when the time comes for the actual relaying, and the expense of tearing up and replacing the pavement is not borne by the company, then obviously my rate would be too high to that extent.

Q. Now, just one more question, and then I will pass that. Assuming the facts as I did in the former question, and it was twenty-five years hence, and the Master had accepted your theory and your figures, then the people of this community would have been paying for twenty-five years to this Gas Company upon that added

1186 value?

A. On that insignificant fraction of the value of the pavement.

Q. On that much of it anyway?

A. Yes.

Q. How do they get that back?

A. It would be so small, you couldn't find it in a cent.

Q. All Walnut from the river to Thirteenth street would be so small that you couldn't find it in a cent?

A. Certainly; figure it out and see how it would affect the price of gas.

The MASTER: You figure two per cent under this ordinance?

A. Yes.

The MASTER: You figure two per cent and the other taxes besides?

A. Yes, two per cent is on the revenue from the sales of gas, and the other is county, state and school. It is shown in the calculation.

Q. Now, Mr. Lea, you have made no deduction of any kind in your figures or in your report for any such contingency as I suggest with respect to the pavement, have you?

A. No, sir; because I don't expect it to occur.

Q. But you did add eight per cent to this enormous total value of this property for the company for any little omissions or contingencies that might be found?

A. Yes, sir.

Q. What amount did you figure that eight per cent on, what total?

A. It wasn't figured on real estate at all.

Q. Just tell me what total it was figured on?

A. I don't know the total amount; I could get it. Wouldn't you rather have the total of engineering and which includes the eight per cent, or do you want the eight per cent separately.

Q. Well, take the fifteen per cent?

1187 A. Well fifteen per cent on the entire plant, I used it on buildings, works equipment and distribution system only, on real estate $5,000 and total for engineering, casualty liability, etc., is $313,411.

Q. I want to get the figures you multiply by fifteen?

A. I haven't the total; I have the result which is $313,411.

Q. Now, if you take $5,000 out of that it will give what you allowed on everything except real estate?

A. Yes, sir; buildings, works, equipment and distribution system.

The MASTER: Right there, would it apply to the present value?

A. It would not because the reproduction cost has been depreciated on everything except real estate. I have that worked out I think in the form you would want it here.

The MASTER: If this eight per cent should be eliminated then I would have to go over all these items?

A. Yes, then you would have to take it out of such items as the eight per cent has entered, buildings, works, equipment and distribution system and deduct it from the total of each of those heads.

Q. You say the eight per cent is figured in what?

A. As a part of the fifteen, which is added to the net construction cost of the buildings, works, equipment and distribution system.

The MASTER: What effect does that have upon the present value?

A. That increases the present value, because it of course brings your reproduction cost up, but this reproduction cost is depreciated because of the present condition of the property. To bring you back to the present value. Here is the difference between the total of the amounts included in my report; engineering, casualty liability, omis-

sions, contingencies, tax during construction, loss of interest
1188 —there is a total of $582,699 in the reproduction cost. In the present value there is a corresponding allowance of $507,-141. Of the amount I have shown as the present value of the property $507,141 covers the items of engineering, casualty liability, omissions, contingencies, tax during construction, loss of interest during construction on the assumption that none of the going value has been credited to the physical equipment.

The MASTER: What is the present value of that?

A. That is the present value. The reproduction value of that corresponding item is $582,699. In other words, there is something over $75,000 less in the present value than in the reproduction cost for these overhead charges I have named.

The MASTER: I don't want to be understood as indicating any view on that eight per cent, the two per cent and five per cent that he has figured to get the exact amount of net construction cost, then he adds fifteen per cent to get the reproduction cost; that includes five per cent engineering, two per cent casualty liability, eight per cent for things forgotten. I recognize the fact there may be some dispute over these propositions and I want to get the figures, if I should hold one way or the other, I would know something about these figures.

The WITNESS: To these totals net construction cost, plus fifteen per cent, are added taxes during construction and loss of interest during construction in arriving at the total reproduction cost. You take out the item of taxes during construction and add it to these other items you have $72,759, my allowance for taxes during construction.

Q. That is new, you mean?

1189 A. That is the whole amount of taxes during construction on the reproduction of the plant.

Q. Of the new plant?

A. Yes.

Q. What was the amount of interest?

A. $196,529.

Q. Was that depreciated any?

A. No, that is on the reproduction. Taking engineering which amounts to $313,411. The tax during construction of $72,759.; and the lost interest dueing construction, of $196,529. and you have a total of $582,699. which is included in my total figures of the reproduction cost shown in the letter to Mr. Haines. Now then the amount covered in the allowance for present value, of course is less because overhead charged depreciate as the buildings and equipments depreciate; depreciating each in these amounts by the composite per cent condition instead of $582,699. or $507,144 which is the corresponding overhead charge included in my present value make a figure of $3,261,705.

Q. Now, while you are right there, will you give us the figures please, the full amount of the three items, first the amount that was added for paving?

A. $330,558.

Q. And your going value?

A. $583,000.

Q. Now, then what is the sum total of these so-called charges?

A. The overhead charges I have given you on the reproduction basis, $582,699. or $507,144. on the present value basis.

Q. On the reproduction basis it is $582,699.

A. Yes.

1190 Q. Organization and legal expenses was what?

A. The net construction cost $62,000.

Q. Even?

A. Yes. The corresponding amount for working capital is $142,000.

The MASTER: I don't think his calculations are correct. I wish you would go over them again. I think when you come to figure it down you will find they are not.

Q. Now, I have those items, paving $330,558.

A. That is the net construction cost.

Q. Going value $583,000.

A. That is the reproduction cost.

Q. Taxes, interest and overhead charges $582,699.

A. Yes.

The MASTER: Here is what I am interested in. To each of the items you add fifteen per cent?

A. To each of the items, buildings, machinery and distribution.

The MASTER: Now, then you calculate on that the present value?

A. The present condition and then the present value.

The MASTER: You can't get at how much that is or reduce it to an analysis unless you go to the items?

A. No; unless you go to the items to which it was applied.

Q. Now, I had $582,699 for taxes, interest and overhead charges.

A. That is the total of the allowance on reproduction cost basis for engineering, casualty liability, omissions, contingencies, taxes during construction and lost interest during construction.

Q. Then I have an item here of $62,000. That is for promotion and legal expenses, and so on?

A. That is parallel of what we call the net construction cost of the balance of the stuff. It is the cost of legal organization,

1191 expenses without any addition for engineering or taxes or lost interest.

Q. What is the sum total of these four items, leaving out the capital—the paving, the going value, overhead charges and the $62,000 organization and legal expenses?

A. The total net construction cost included for paving, plus the corresponding amount for organization and legal expenses, plus the corresponding amount for working capital, plus the total amounts allowed for engineering, casualty liability, omissions, contingencies, tax during construction and lost interest during construction is $1,117,257.

Q. Now give me those items, first the net construction cost of paving?

A. $330,558. Organization and legal expenses $62,000; work-

ing capital equipment $142,000; the balance of these items overhead charges $582,699. that makes a total of $1,117,257.

The MASTER: How do you make that $142,000 instead of $150,000?

A. If you refer to the second page B you will find I think $142,000 as the net construction, and the tax appears as overhead and the loss of interest appears as overhead.

Q. Now, the item of paving is $330,558.; the going value $583,000; the overhead $582,699.; organization and legal $62,000. What is the total of those items?

A. The total of the net construction cost for paving $330,558, plus going value $583,000. plus overhead as previously defined $582,699. plus organization and legal expenses $62,000, equals $1,558,257.

Q. Now, Mr. Lea, please state what that total represents as a total in the record?

1192 A. I don't know.

Q. If you take that total now and subtract that from your total reproduction cost, what have you then?

A. Substracting the sum of $1,558,257. from the sum of $3,641,714 will leave the sum of $2,083,457.

Q. Will you tell the Master what those figures represent?

A. I don't know what they represent.

Q. You don't know?

A. No, sir, I can't give that amount a name.

Q. How would it do to say that represented the net construction cost less these four items you just footed up?

A. That would be incorrect.

Q. In what respect?

A. Suppose you try it, and see if that is true. Subtract those four amounts from the net construction.

Q. The reproduction cost I mean?

A. Subtracting from the total reproduction cost the total of the four items leaves $2,083,457.

Q. Then that $2,083,457. represents your judgment and the valuations as made by you in your report of the reproduction cost of the property of this plant, outside from those four items?

A. That figure is not my figure and doesn't mean anything to me.

Q. Don't mean anything to you?

A. No.

Q. Is my statement correct?

A. It is not.

Q. What is the matter with it?

A. You are making me say something I am not saying.

Q. You are not willing to say what $2,083,457 represents worked out from the report that you furnished us?

1193 A. I am not willing to say what you mean by such a combination of figures that you make when I don't see that they mean anything.

Q. Is there anything wrong with the four items I gave you?

A. They are correct as items.

Q. What I want to arrive at is the amount or value or cost or

whatever you may term it that you arrived at for the physical property of this company, free from any of these four items?

A. I cannot arrive at the reproduction cost of the physical equipment in this property without considering those others.

Q. Well, give us the net construction cost then?

A. Net construction cost of what?

Q. Of the physical equipment of this property without any of these figures in them.

A. The total net construction cost of the physical equipment is shown in Exhibit E to be $2,272,015.

Q. Now then give me the reproduction cost as you worked it out, give it to the Master and state it in the record less these items.

A. The sum of the four items I gave you is $1,558,557. I can only speak of those amounts as figures; they represent nothing.

Question repeated.

A. You have no reproduction cost until you have allowed these other items.

Mr. BYERS: I do not like to appeal to the court with respect to a witness, especially not as intelligent a man as this is, but I think we have reached about the limit. I have tried to get along with this man for a day and a half. I don't want anything from him that he cannot figure out from his report. Here is a report that he has offered and he has a theory that he has worked out. It is
1194 entirely proper that we ought to fully understand it. It seems to me the witness is not trying to either assist the Master or counsel.

The MASTER: That is the only trouble with the witness; he is all the time trying to sustain his theory instead of answering the question. I say again, answer his question; if you can not answer the question, say so. Don't enter into any argument.

Q. Now, I will put that question again. I wish you would give to the Master the difference between the total, as you have used it in your letter to Mr. Haines, of the reproduction cost of this plant, and the sum total of the four items which you have figured up there to be $1,558,257?

A. The difference between the sum of $3,641,714, which I give as the total reproduction cost of this property, and the total of the amounts comprising the net construction cost of paving, plus going value, plus the amount corresponding of the net construction cost of organization and legal expenses, plus the amount called overhead, which covers engineering, casualty liability, omissions, contingencies, taxes during construction, loss of interest during construction, is $2,083,457.

Q. Now the amount of $3,641,714, is the amount that you give in your letter to Mr. Haines as the reproduction cost?

A. It is.

Q. You gave us the taxes Mr. Lea as $72,759. What would it be depreciated if you worked it out that way?

A. I can't tell you off-hand.

Q. Can you give us the lost interest depreciated off-hand?

A. Not off-hand.

Q. How long would it take you?

1195 A. I don't know.

Q. Can you do it in time for this afternoon?

A. I can't do it during lunch hour.

Q. How about those other figures I asked you for last night, on the prospective growth of business under the ninety cent rate?

A. I haven't them.

Q. When will you get them?

A. I can't say when they will be done.

Q. Have you worked at them?

A. I am not yet working on them.

Q. I wish you would remember these two items of taxes and the item of lost interest and work them out for us so that we can have them some time during the hearing?

A. You want to show the amounts included for taxes during construction and lost interest during construction, as they might be properly extracted from the present value shown in the letter to Mr. Haines.

Q. Yes, sir. Now, Mr. Lea, in attaching your values to the separate items in the invoice Exhibit 15, you, as I understood you yesterday, took the figures just as Mr. Broadnax and his men had made them, except in a very few instances where you either ignored them or found some little errors?

A. The figures in the inventory you are speaking of—perhaps I have made you misunderstand what I emeant when I said there were figures in that inventory which I have not accepted. There were figures as to the quantity of paving necessary to take up; I have my own ideas about that and took my figures.

Q. Was yours larger than theirs?

A. I did not make any comparison between the results. I noticed they had some amounts there, which didn't mean anything to me.

1196 Q. You didn't agree with whoever worked out the inventory?

A. I didn't see any reason for taking their practice, I had my own practice for that.

Q. I notice in your report for instance in some places where you are dealing with the laying of brick you credit $17 a thousand and in other places $16 a thousand and one or two places maybe as low as $15. Take your $17 item, what does that cover?

A. That covers the labor and material entering into the laying of brick.

Q. Anything else?

A. It covers the brick laid in the wall with all the charges incident thereto the same as you would pay the contractor.

Q. It would include the contractor's profit?

A. Oh, yes, the net construction cost throughout includes the contractor's profit.

Q. Where did you get your information about the costs of contractor's prices in laying brick in the city of Des Moines?

A. I got some information here, and I compared it with information I had from other parts of the country.

Q. Who gave you the information here?

A. I got some from the company in a statement made up by three *three* contractors.

Q. Do you know their names?

A. Yes, I think so. Mardis was one.

Q. J. C. Mardis?

A. Yes. I don't remember the other two.

Q. Did they give you $17 a thousand as the going price in Des Moines for laying brick?

A. I would have to look up that record.

1197 Q. Did it make any difference what kind of brick were used?

A. Oh, yes.

Q. You were dealing with the kind of brick in these buildings down here?

A. Exactly, except there might be some little odd size brick there; there is a slight variation in different yards in the same locality. I have not tried to distinguish between brick that were for instance 2¼ or 2½ inch by 4½ etc.

Q. I am talking about the expenses of the cost of brick?

A. I have used the prices that appeared to me fair for the kind of brick used, and the number of brick in the given building I have taken from the inventory.

Q. You paid no attention to the number of brick except as you found it in the inventory?

A. Yes.

Q. What is the price of brick in Des Moines?

A. The price varies with the kind of brick; I would have to look up my records.

Q. I mean the kind of brick used?

A. I would have to look up my records; I never carry those figures in my mind.

Q. You got prices in other places?

A. Yes, sir.

Q. Of the kind of brick used here?

A. Yes, sir; common brick, pressed brick and paving brick.

Q. In the matter of excavations I notice, without calling for particular items or pages, that your valuation on excavation runs from sixty cents to $1.30; I think you made some higher than that; where did you get your information about the cost of excavation in Des Moines?

A. I made some inquiries and used the information from

1198 other parts of the country.

Q. If it should turn out, Mr. Lea, that the usual price for excavation, say take the excavation where these two south tanks are or holders, whatever you call them, that the ordinary usual and and every day price of that kind of excavation was from fifteen to eighteen cents per cubic yard, would you still think the Master ought to take your prices from sixty cents to $1.30?

A. My prices from 60 to $-.30 is based upon the particular kind of work and the volume of work.

Q. You know where these two oil tanks are?

A. Yes.

Q. You saw the character of the excavation there?

A. Yes.

Q. If it should turn out that you could get all the men you wanted to make that kind of excavation here in Des Moines and could at the time that work was done, and could every day since, for from 15 to 18 cents, you would not still insist that your value from sixty cents to $1.30 should be taken?

A. Not on that particular item, if I have used that.

Q. You haven't anything under sixty?

A. I have in some places. I don't remember where they are. I do not suppose my detailed items will be found to agree throughout with what you can actually do here, and a variation like the one you speak of would not affect my judgment of the value of the properties, because I know there are other items, I must have been on the other side of it. The figures I used is what I knew to be fair for that kind of work throughout the country.

Q. So your idea is, in all cases where you have valuations too high, there must be corresponding cases where they are too low, so that what you furnish is an average and not a real value?

1199 A. I furnished you what in my opinion was a fair rate.

Q. You got at it by the process of averages?

A. Averaging results which I find around the country in corresponding work.

Q. I thought you added fifteen per cent to cover your mistakes?

A. That is a different item altogether.

Q. That hasn't anything to do with those valuations?

A. Not in that sense.

Q. That is supposed to cover things the Gas Company did not know they got, or the Gas Company hasen't furnished you the items?

A. Eight per cent is to cover just exactly what I intended to.

Q. That was omissions?

A. Omissions, for instance, ordering material by various parties for the duplicate plant the cause of delay and consequent expense together with all such contingencies as all big construction work is exposed to.

Q. I thought you told us yesterday you checked those things carefully and you gave your judgment on every item of property that was in here?

A. I didn't say that. I said I had checked the inventory sufficiently to satisfy myself as to the substantial accuracy of the items given.

Q. Do you think some are not in there?

A. I know there are.

Q. Of enough importance to be considered?

A. Yes, of enough importance to be considered. I suppose the

items omitted will amount to several thousand dollars; it is physically impossible to include everything.

Q. You think you have got that high enough?

A. That is one of the things I have to include in my omissions.

Q. Then there ought to be several thousand dollars more
1200 added to your inventory?

A. No, not in my judgment.

Q. In this report of yours I notice in figuring going value you get in advertising and soliciting?

A. As operating expenses, yes.

Q. You worked that in your going value proposition?

A. Yes, on both sides of it.

Q. You never did that before, work in advertising and soliciting in going value before?

A. Yes.

Q. You did not do it at Beatrice?

A. I did not know this method then.

Q. You advised the people out there it should not be used?

A. I did not.

Q. It would be wrong to use it?

A. I certainly did not.

Q. Isn't this what you advised the Beatrice people—I will read it to you: "There must also be added to the physical equipment certain amounts which make up the difference between the value of the physical equipment alone and the value of that same equipment when actually connected up with the consumers' appliances and in actual use as a going concern." Do you remember that statement?

A. I do not; I may have made it, I certainly don't remember.

Q. You go on: "This difference is known as going value and is made up as follows: 1907 meters, $22.; $24,134. Estimated losses for three years $9,000; total $33,134." Do you remember that?

A. I don't remember it.

Q. You say you did not advise that?

1201 A. I do not say I did advise it.

Q. Do you say what I have read is a part of your report?

A. I don't know that it is not; I don't say it is not; I know where to go to find the facts if I want them.

The MASTER: Now, I see here the purifying house A and B the total net construction $9,507.

A. Yes.

The MASTER: Now figure what you added to it?

A. Each of the buildings is shown in Exhibit G, with the details making up the total net construction cost for each of those buildings. Now I take all of this total net construction cost for buildings and add them together, and that gives a total $85,723.

The MASTER: I am asking about a particular one; how do you get this sum here for building A and B?

A. By adding to the net construction cost of the building fifteen per cent and then add to it its percentage of tax during construction and the percentage loss of interest; those percentages I have in my office.

The MASTER: That is just what I wanted to know. Then as I understand it you get $11,860 the total reproduction cost, you add fifteen per cent of the net construction cost which is $9,507. and then you add a percentage of taxes whatever that may be and that gives $11,860.

A. Yes, sir. I can go right through with the building if you wish.

Q. The MASTER: Well do that now.

A. I get $10,933. Now we take the total net construction cost of all the buildings to arrive at the percentage of the total construction cost, which is $85,723; that is the total net construction cost of all the buildings, and add fifteen per cent to that which
1202 gives $98,581. the total which I have included for taxes during construction cost of the building is $2,264. We will divide $2,264 by $98,581. to find the percentage of taxation to be added to the individual building.

The MASTER: What is your percentage?

A. It is 2.29 per cent; almost two and three-tenth per cent.

Q. Of what?

A. Percentage added to the net construction cost plus engineering, to arrive at the amount of taxes. I start out with the net construction cost for building one, A and B, $9,507, and add to that fifteen per cent covering casualty liability, omissions and contingencies you have $10,933. Your next step to determine the amount of tax during construction on that amount, which is determined from the chart and each of the steps shown, and the total amount of tax allowed because of building is $2,264. The total of the net construction cost plus fifteen per cent for engineering, etc., is $98,581; that is, for taxes during construction there has been added to the net construction, plus the fifteen per cent and another percentage of 2.296, which is the average percentage to be added to each of the building units because of tax during construction. Multiply the net construction cost, plus fifteen per cent by this percentage, 2.296 gives $251. which is the amount of tax to be paid during the period of construction upon this particular building one A and B. The tax that you pay during this period of construction, must be added to the other costs of the building and they represent an outlay of cash, consequently you are losing interest on that money. But it is assumed the money spent during the given year is spent at a uniform rate. Therefore the loss of interest on that amount is only one half as much as though the amount had been placed at
1203 the beginning of the year. Then you have to add the net construction cost plus fifteen per cent the amount of tax divided by two, because his interest in only paid on half of the property, and that means you are paying $251 taxes; add that to $10,933 gives you $11,059. Your loss of interest is based on the

latter figure, $11,059. The total amount allowed for loss of interest in my report on account of buildings is $6,089 or a percentage on the net total reproduction cost of $98,581. of 6.176 per cent. That percentage has to be added to the money you have accounted for up here. That percentage worked out gives you $683. In other words, you have your net construction $9,507. to which you have added fifteen per cent, giving $10,933. Then you have added your taxes, $251 and to that you add $683 for lost interest during construction; the total amount of taxes paid on this building is $251, that is the total amount of tax paid after you made this assumption that the money going into the building throughout the year is charged at the rate of a half a year. So $251 is the amount to add here on that account. Now, then, you go back to the net construction cost beginning with building 1-A and B net construction cost $9,507. add fifteen per cent for engineering, etc., which makes $10,933. add to that the tax $251 and the lost interest during construction, $691. and you have a total reproduction cost for that building $11,875.

The MASTER: Did you figure the distribution system the same way?

A. Exactly.

The MASTER: What is the total amount of taxes you figure?

A. $72,759 is the total.

Q. Right at that point, Mr. Lea, what is the final figure that that *that that* building goes into this valuation for?

1204 A. $9,106. present value.

Q. Now, what was its reproduction cost?

A. $11,860.

Q. I mean without overhead, tax and interest, net construction?

A. Its net construction was $9,507.

Q. The amount it finally went in at?

A. $9,106.

Q. It goes into the valuation after depreciation at nearly one hundred dollars more than the net reconstruction cost, is that it?

A. No.

Q. Oh, $9,100 it goes in at?

A. It goes in $9,106 present value, the net construction cost being $9,507. It goes in at less than the net construction cost before any of the overheads have been added.

Q. How old is that building?

A. Nineteen years.

At this time an adjournment was taken until 1:30 p. m.

1205 1:30 p. m., FRIDAY, *July* 28, 1911.

HENRY I. LEA being continued on cross examination by Hon. H. W. Byers, testified as follows:

Q. What the reporter now has marked defendant's Exhibit "A" is the computation that you worked out for the master just before dinner as it affects Building 1, A and B, is that right?

A. Yes, sir.

Q. Now this computation was worked out by you by using tables and figures that appear in your report that has been marked Exhibit 20, is that right?

A. The figures were all taken from Exhibit 20. I don't know just what you mean by tables unless you refer to the columns of figures as tables.

Q. Tables or figures?

A. Yes, sir.

Q. In other words the information necessary to make this computation in the first place and to clear them up if that seems to be necessary will be found in your Exhibit 20?

A. Yes, sir.

Q. On the same method of arriving at the different items that are finally included by you in the total with respect to buildings, all the other buildings can be ascertained the same way?

A. Yes, sir.

Q. And must be ascertained the same way from your exhibit 20?

A. Yes, sir.

Q. Now you say you figured six months as the time necessary to construct this building?

A. This particular building I estimate will have been com-
1206 pleted at the end of the year 1912?

Q. At the end of the year 1912?

A. Yes, sir.

Q. Then you gave to that building as the period for construction two years?

A. No, sir.

Q. When does your period begin?

A. The building is not started until the spring of 1912, but it is completed during that year.

Q. The erection of the building is not commenced until the spring of 1912?

A. No.

Q. But it is completed what time in 1912, about according to your figures?

A. Well before the end of the year. The dates I would have to get from my office I have not got detail here.

Q. Then there would be no way we could figure out that detail from your report?

A. Yes, sir.

Q. Then you must be able to get it without getting detail from your office?

A. You have it right here. If you will look at the end of that column under the year 1912 showing reproduction expenditures you will find that all of the buildings are completed during the year 1912.

Q. I know but that does not answer my question. You have already said it was completed during that year but what I want to know is just the number of months, weeks or days you have used in your computation and in your percentages for the construction of these siveral buildings.

1207 A. I don't recall the dates of the several buildings, all I have here is the fact they were begun after the first of January and completed before the first of the following year, all of the buildings.

Q. Then there is no way we can find from the report as it is made up just exactly the period that you have used in arriving at these percentages and these figures.

A. Yes, I show here that that construction is assumed to proceed at a practically uniform rate throughout the year, consequently the taxes on the construction of that series of buildings during that one year will be the equivalent of the ordinary rate on the total amount for one half a year.

Q. Well, in other words then, you have figured on a period of six months.

A. I have assumed that the rate of investment for the purposes of arriving at taxation would be most fairly taken as running uniformly throughout the year. As a matter of fact I believe you would have a little more than half the money invested before half of the year and that would bring taxes up some but it is safe to take a uniform rate of construction there that would be fair.

Q. Then you assume the process of building would continue through the year?

A. Through the building construction portion of the year.

Q. Well how much time would that be, that is what I am getting at.

A. That is as soon as frost is out of the ground in the spring here you begin and before the frost is in again you are through.

Q. That would be about the 1st of April, is that your idea?

A. I would have to get my notes to see what date I began on definitely.

1208 Q. Could not give that information without your notes?

A. Not all that is needed for this purpose right here.

Q. For this particular building you have added in $251 taxes?

A. Whatever I worked out there this morning, I don't remember the details.

Q. That is what seems to be here, $251. What rate did you figure the taxes here?

A. At 2 and one fourth per cent per year.

Q. And what valuation of the property?

A. Full valuation.

Q. Did you know that that was not the Iowa rule or Iowa method?

A. I was told it was, I considered there that was the rule here at the time.

Q. Isn't this what you were told the rule was, you took the full valuation, say a piece of property was worth $10,000 then for taxation purposes that is divided by four so that the value for taxation purposes would be just one fourth of that, didn't you understand that was so?

A. You have not made a complete statement. I understood that the basis of assessment was 25 per cent of the value of the property and that on that 25 per cent the tax rate was 90 mills which is the

equivalent of two and one fourth per cent on the full value. I used two and one fourth per cent on the full value which I was told by the assessor was the correct rate.

Q. That is the way you got at it, you figure on a basis of 25 per cent of the value of the property?

A. No, sir; I figured on a basis of two and one fourth per cent of the full value of the property.

Q. I know, but you figured that would be equal to taking the full value of the property and putting your tax rate upon one
1209 fourth of it.

A. At the rate of 90 mills certainly.

Q. You knew of course taxes were payable but once a year here?

A. I did understand so yes.

Q. And that there is no interest or penalty or charge upon the tax until they are due and delinquent, you knew that didn't you?

A. I made no allowance for any delinquency at all, nor excess charges of any kind.

Q. In getting at your interest what rate of interest did you allow?

A. Six per cent.

Q. Is that the rate you have charged all through your computations.

A. That is the rate I have used wherever loss of interest is considered.

Q. How about your sinking fund, what rate did you allow there?

A. On the depreciation annuity?

Q. Yes.

A. Oh various rates depending on the life of the -quipment.

Q. What was your sinking fund basis, you proceed to start and how did you work it out, what rate of interest is the sinking fund supposed to bear?

A. The sinking fund I have, the sinking method I used in arriving at the depreciation annuity and only that.

Q. Isn't that supposed to b-ar a certain rate of interest?

A. What?

Q. This sinking fund.

A. Supposed to bear a certain rate of interest for certain kinds of equipment.

Q. Give us one for an illustration.

A. If the equipment has a life of fifty years and you want to determine the annuity which will necessarily be laid aside
1210 each year annually compounded at a given rate of interest to give you at the end of the fifty period that amount which you are to recover, then you would have one rate of interest. For another period to which you are to compound annually will be another rate because the life of the equipment which you are providing for will determine the rate which you can net on this fund.

Q. In this rather extended explanation when you use the term given rate of interest what do you mean?

A. Specific rate of interest.

Q. What was it, how much?

A. For what life?

Q. The life you had in mind when you gave the illustration.

A. I said fifty years.

Q. Well fifty years.

A. You want the rate I have used on the fifty year life is that it?

Q. Yes.

A. Three per cent.

Q. Now taking your building there for instance, the first building and what is the sinking fund there, the amount you say should be set aside?

A. Building No. 1 "A" and "B" depreciation annuity on sinking fund basis is $105.

Q. Now then what rate of interest should that amount bear to work out your proposition.

A. Three per cent compounded annually.

Q. Now the next building there?

A. The next building is thirty years.

Q. What per cent would that sinking fund draw in order
1211 to work out your proposition?

A. Three and one fourth per cent.

Q. Didn't you understand that was what I was trying to get at in the first place?

A. I was trying to answer your question as yo- gave it.

Q. And in all other places where you have tried to account for the loss of interest in arriving at your reproduction value you used the rate of six per cent.

A. No, sir. I used 6 per cent where I arrive at the amount of loss of interest during construction, but that is a radically different character from this, from a depreciation annuity, cannot be treated the same way.

Q. (Question read.) I am not asking whether it would be the same thing or whether the same rate would be used?

A. You said all other places. There are no other places. This is not parallel to the six per cent case referred to, this is not another of the same kind.

Q. In what instances have you figured interest at six per cent in your report?

A. In this report you are speaking of?

Q. Yes.

A. Wherever there has been loss of interest during construction it has been figured at the rate of sic per cent per year on such amounts as have been invested for the full year. If an amount has been invested for less than a full year, it has been treated proportionately.

Q. What was the reconstruction cost of that second building.

A. The total reproduction cost of building No. 1 C is $155.

Q. What is its present value according to your report?

A. $127.

1212 Q. Take the buildings altogether to sho-ten this up, what was the reproduction cost of all the buildings?

A. The total reproduction cost of all buildings $106,934.

Q. And what have you made their present value according to your figures?

A. Present value of all buildings, $82,445.

Q. And some of these buildings were constructed as early as 1876 as I remember it?

A. The oldest building is thityy five years old.

Q. The large holder down there, when -as it put up do you know?

A. It was erected in 1903.

Q. That is the largest one?

A. That is the million foot holder.

Q. Do you know what it cost the company when it was put in?

A. No, sir.

Q. Did you make any effort to see?

A. No, sir.

Q. You didn't care anything about that in arriving at your valuation.

A. No.

Q. What is your reconstruction cost?

A. The tota- reproduction cost of storage holder No. 20 is $137,988.

Q. That is the total reproduction cost?

A. Total reproduction cost.

Q. In that is all these so-called overhead charges and the interest and taxes?

A. All of the items that I have indicated are included here.

Q. That includes taxes and interest?

A. That includes taxes during construction, loss of interest during construction and the 15 per cent for engineering, casualty liability omissions and contingencies.

1213 Q. If the company had purchased—and I ask this for the purpose of bringing your theory out clearly,—if the company had purchased that holder new for say $50,000 and you had had that information would that make any difference with your valuation.

A. It would not unless $50,000 happened to be the average price of holders of that kind which I know is not the case.

Q. You were not paying any attention to what was actually paid fo- property here upon any of these items were you?

A. No, sir.

Q. You didn't regard that as a necessary element at all in arriv- in- at the value?

A. No, sir; I never use it.

Q. That is the notion I got from your theory. That is to say now your valuation rests upon your judgment as to what it would cost now to reproduce all this property without reference to what it might sell or what the company bought it for or what they could buy it for?

A. I can't answer that without an explanation.

Q. Well I will take your explanation this time.

A. My estimate of the reproduction cost of the physical property of the company is not based upon the cost to the company as shown by the books. It refers to my own estimate of what it would cost

at this time to reproduce property of this kind and quantity as shown in my table of total reproduction costs.

Q. Is there a market value for that kind of a holder?

A. As it stands down here you mean?

Q. Yes.

A. There might possibly be someone else who would be willing to take it and handle it for you.

1214 Q. Is there a market value to that holder?

Mr. GUERNSEY: Probably he don't just understand what you mean by market value.

Q. Is there a market value for that kind of a holder?

A. Certainly.

Q. What is the market value of that kind of a holder?

A. Erected in Des Moines $137,988.

Q. I am not asking your reproduction cost, I want to know what the market value is.

A. Is what I base my cost on.

Q. Do you know of another one like it?

A. Perhaps not like it, I don't know *whether* another holder having 1,132,000 cubic feet capacity perhaps.

Q. Then it does not have a fixed market value?

A. It certainly does.

Q. Who fixes it?

A. I don't know who fixes it.

Q. You don't know of any market value put on that except the one you put on?

A. Not talking of this specific holder I understand.

Q. Or any holder like it?

A. Now what you mean to ask is was there a market value of holders?

Q. To establish the market value or how was it established on this holder?

A. The only way any market value is which I presume to be the operation of the laws of supply and demand.

Q. Was there any other market value other than what you gave?

A. What do you mean by the question, I don't get it.

Q. You don't understand the question?

A. No.

1215 Q. If you were to be asked tomorrow by some client what holders like that were seeling for on the market what would you say to him?

A. I would not say this amount of course. That is not the sale *pr* price, that is not the contractor's price.

Q. What would you say?

A. I would say if you want to know what that holder costs when erected——

Q. No if he asked you what the market price was?

A. Go figure up the construction cost and give it.

Q. Tell him it would be worth the construction cost?

A. No tell him if he wanted a holder like that under conditions similar to Des Moines that would be the net construction cost.

Q. Then it has to be worked out here in Des Moines and apply to conditions and prices here?

A. Obviously.

Q. And is that the way you work this out?

A. It is.

Q. Now then if this gas company purchased that holder here in Des Moines, been bought and set here for a fixed price wouldn't that have something to do with the market price of such a holder here in Des Moines?

A. Make that a little more clear.

Q. (Question read.)

A. Are you asking whether the price paid by the Des Moines Gas Co.——

COURT: Just answer the question.

A. I can't answer his question Judge.

Q. If it should appear that the Des Moines Gas Co. went into the open market, bought the material, whatever is necessary to
1216 go into that holder, paid for the labor that was necessary to construct it, and paid for every item that was necessary to make a complete holder and then the sum total of all these expenditures was 50 per cent less than you had in your figures and you had known that in advance of making up your statement here, would it have made any difference with the valuation?

A. No, sir.

Q. You would not have paid any attention to that?

A. I would not.

Q. That would not have affected the value as far as you are concerned?

A. That would have been an abnormal condition, I would not have considered it.

Q. I wish you would give us the tables you used in determining the average investment age?

A. You will find them in the report.

Q. Tell us where we can find them?

A. Immediately following the double sheets in Exhibit "D." The sheets labeled average of mains, average services, average age meters, the three sheets immediately preceding the blank sheet with the letter "E" fastened to it.

Q. Turning to your meter table, on page 12. You have figures out there the average age of meters to be 8.27. The figures from which you got finally that result appear in this table do they not? You take the life of each meter in years as you determine it or fraction of years as the case may be, and then you take the total number of meters in use each year from 1886 to 1910 and then you add the sum total of the figures in the last column and the sum total of the figures in the third column, and divided the larger num-
1217 ber by the smaller and got 8.27. That is the way you arrive at that?

A. That is the average of meters on the installation basis.

Q. Now then below that you say average of meters on investment basis, 7.7. Now how do you get that?

A. Same scheme.
Q. Well give us the figures. Where could you find the figures?
A. They are not here.
Q. I asked you for them yesterday or day before. Have you made any effort to get them for me?
A. No, sir.
Q. Where are they?
A. I don't know.
Q. Are they at Chicago?
A. I can tell you how I arrived at that result if that is what you want.
Q. Where are the figures?
A. I don't know.
Q. Do you have the memorandum in Chicago?
A. I believe I had it there once.
Q. Is it there now?
A. I don't know.
Q. Which of these average ages did you use in the final computation?
A. The only one you could consistently use which is the investment basis figure.
Q. The one we don't have the figures here for so that we can check.
A. That happens to be so but you can easily check it.
Q. Will you furnish us the figures from which you worked this item 7.7.
1218 A. I will if I can find them.
Q. You stated a moment ago we could easily check it?
A. Very readily.
Q. How do we do that without the figures?
A. By using your own unit numbers on meters if you know those units to be correct. Get the unit prices and they work out from that
Q. I want to get Mr. Lea, you furnished this table here and I would like to have you furnish the figures by which you worked out this 7.7, and you will be expected to furnish them before we are through with you as a witness. How did you get at the age of these meters?
A. From the records of the company.
Q. Who furnished you the memorandum?
A. I don't remember.
Q. Where is that memorandum?
A. I don't know.
Q. Do you have it in your office at Chicago?
A. I think so.
Q. You used the memorandum as the basis of these tables didn't you.
A. This total was made from these figures, I don't know whether in my office or not.
Q. If we wanted to determine the accuracy of your figures from the memorandum you used to make them we would have to have that memorandum wouldn't we?
A. No, indeed you would not. All you would have to have would be one of the books that was in court a few days ago.

Q. That would show the whole business?

A. That would show you all the material from which these tables are built.

Q. So you assume to state that the memorandum that was
1219 sent to you is exactly the same as the memorandum we would find with the book here in court?

A. I didn't say that.

Q. Did you ever examine the book, check it up with the memorandum you had?

A. No.

Q. So you don't know anything abo-t that you just assume the book will show exactly what the memorandum was?

A. I know exactly what I said, it was that in that book you will find all the material needed in building up this table as to the numbers of meters.

Q. Would we know how to figure it out?

A. I didn't say you would know how.

Q. The memorandum with respect to these meters was a part of the memorandum and data that was furnished by the gas company?

A. Yes, sir.

Q. For your purposes and from that memorandum and data as far as it was available, as far as you had it, you made up these tables of figures?

A. Which tables are you referring to now?

Q. All of them that appear in your Exhibit 20.

A. You will have to be more specific, I can't answer that broadcast.

Q. All of them on page 12?

A. That is the page age of meters?

Q. Yes.

A. The data on the sheet labeled average of meters showing years, total number of meters end of year, number of meters installed during year and years in service, all these figures were obtained from the records of the gas company.

1220 COURT: You didn't examine the records of that?

A. No, sir.

COURT: You don't know whether they have them or not?

A. No, I don't know whether they had 1970 meters but I took it for granted they did.

COURT: Just assumed that?

A. Yes, sir.

Q. There was a memorandum furnished you, I don't care whether it was the records of the company whether they got it from the books or where they got it, but the memorandum from which you worked out these tables especially the one on page one of Exhibit 20 and the one on page 11 of the same exhibit and the one on page *of* ten of the same exhibit were furnished you by the Des Moines Gas Co?

A. They were.

Q. Now turning to page 11, I notice there that you have used a little different method in arriving at the average age and the fourth column instead of being total service years as the other is total meter

years, you say total dollar years. Now just how did you — at this total dollar years?

A. Multiplying dollars shown in the second column by the years shown in the third.

Q. That is you took first the item there, 1910, that is in the first column, in the second column is the item 18,579. Now what does that represent?

A. That represents the estimate made by somebody of the cost of putting those services in the ground.

Q. And furnished to you in the form of a memorandum?

A. Just as you see it here.

Q. Somebody furnished it to you just as it is here?

1221 A. Yes, sir.

Q. Originally?

A. Yes, sir.

Q. They didn't furnish you this sheet?

A. Not that particular sheet.

Q. Nor these figures?

Q. Not this particular piece of paper no.

Q. But did furnish you another piece of paper upon which these figures appear?

A. Yes, sir. These are not my figures, I have not been governed by these figures in any extent.

Q. You understood the company was furnishing these figures to you as figures that could be found on their book records?

A. No, sir.

Q. What did you understand?

A. I understood these figures were not made from anything on the books but they were arrived at by using certain units which one of the engineers of the company had selected.

Q. What units do you mean?

A. Units as to price. I don't know what units we used nor anything about that and I didn't accept them. The calculation is correct for the purpose——

Q. Why did you offer them here if you didn't accept them?

A. Because this is not a table used for valuation, this is a table used in arriving at age of the services. It shows that even with any number of dollars in this column so long as the ratio between the units for different sizes be correct, that ratio may be made up with figures twice too high or fifty per cent of what it should be.

As long as the ratio is maintained you get correct figure in

1222 years.

Q. Then this table don't represent anything in the way of existing facts or figures as it appears here?

A. Not to my knowledge it don't represent anything concerning value as far as I know.

Q. They are of no importance?

A. I never so considered it. That table is but a method of arrivin- at the age.

Q. You didn't arrive at the age, investment age of the services on

page 11 in the same way you arrived at the investment age on page 12 did you?

A. The same way, yes.

Q. Exactly the same way?

A. Exactly the same way.

Q. You had figures furnished by somebody else?

A. I didn't use the figures. I used figures for the method of calculating the composite age all I wanted was the composite age.

Q. Page 12, these figures and that computation was made upon figures that were taken off here as I understand?

A. They have been here but they are not *n*ere now I believe. They may be in some of these records now, I am not sure.

Q. Turning to page 10 is another table somewhat similar to the tables we have just been using. In this table you proceed on the installation basis alone do you?

A. The conclusion shown here is on the installation basis but the investment basis calculation wa- made also.

Q. And that was worked out at the time this report was made was it?

A. I don't remember the time at which it was made.

Q. Well during the time this report was in preparation.

1223 A. It was before I came to work out the depreciation in my report I know.

Q. Now where are the figures and memorandum from which you made the table that appears here on page 10 with respect to the investment age.

A. I don't know.

Q. You filed them with your other memoranda and paper at Chicago?

A. I presume they are in my office.

Q. Anyway they are not here?

A. They are not here.

Mr. BYERS: We would like to have the witness directed to produce the memoranda and figures upon which the table as it appears here on page 10 or rather the average investment age was figured out and -rrived at as shown here on page 10 and also on page 12, so that we can have them before the witness is excused.

COURT: If you can produce them I wish you would do it. If the compilation made was incorrect, that of course would bring incorrect results.

Mr. GUERNSEY: I may say in this connection we expect to prove the correctness of it before we get through.

COURT: If you can do so I would like to have you produce them. I mean the memoranda that was furnished you.

A. This is a copy of the memoranda that was furnished me. The one I got is the original from which I copied this showing how the age was arrived at.

COURT: Well get it if possible because figures are like logic you know, if you start wrong you will be wrong yourself.

Q. You stated this morning or yesterday, at least some time during

several days that you have been with us that it would require a million dollars to cover new construction during the next
1224 seven years. I wish you would itemize that for us.

A. I arrived at that figure by using units, we consider large portions of the plant as a whole and I can't itemize that without a great deal of time. I will have to detail that if you want it itemized.

Q. What was your idea in stating it?

A. I know the figure carried as a full capacity unit.

Q. But how are we going to know?

A. I don't know how you are going to know.

Q. Not even the Master could know that?

A. Yes, we can provide him with all details.

Q. But you have not done that?

A. No.

Q. Well I wish you would — that too before you are excused. There is no way that can be done now is there?

A. No.

COURT: Where did you get this?

A. I have the lump sums which I used.

COURT: Have you got the details of this?

A. Oh no, I would have to work it out in detail, work up this machine and work up that, what the additional would be and sized building you would have to have. Aside from that we know from experience the grand total figure per thousand feet of gas made, what that would be. This is extensions necessary to take care of the business which this company will doubtless take in addition to what it now has within the next seven years. Seven years from now this plant will have to be bigger than now. Mr. Byers is asking now how much money will this company have to put into additions to the plant in the next seven years. I can give you lump sums on that which are based on unit cost per thousand feet *feet*
1225 of gas making capacity but can't give it to you in detail witho-t an awful lot of work.

Q. You worked that out to some extent in your mind?

A. Why yes.

Q. Give us as near as you can in a general way the principal items that have to be used.

A. I seem to have left that in my room. I thought I had it here, but it is not here. I did work it out some days ago and arrived at something over a million dollars. I can find it in my room.

Q. We will take it up at some other time. In reaching your average of meters on page 12, Exhibit "D" of Exhibit 20, you give 1261 meters as having seen 29.1 years of service. Is that the actual years of service of that many of the meters or is that simply an arbitrary number that was used to work out your age basis.

A. That is not the average number of years. That 29.1 you will notice gives 1261 meters which were in use at the end of the year 1886. Prior to the year 1886 the records do not show the number of meters used per year. Consequently from the records as they did exist back to 1886 a curve was plotted and then the curve was

extended back to 1864 as the most correct method of determining how many meters had been installed at the end of each of the several years covered and it was found of course that there were more meters added per year during the end of the period than at the beginning the result being that the composite age of the whole 1261 was as shown here but not one of these meters that had been in use 29 years.

Q. What I want to know is whether there figures are to be taken as representing 1261 meters that had been in service for 29.1 years?

A. Certainly not, and I just was explaining it to you.

1226 Q. What you do claim is that they had been in service an average of 29.1 years?

A. That is not what I claim.

Q. Neither of these things are true?

A. No, sir.

Q. What do you claim?

A. Just as I have expressed it. This is the composite average.

COURT: Composite is what you call true average?

A. That is the true average. Of course that don't mean 1261 meters have been in 29 years each. Meters don't last 29 years.

Q. That is what I was trying to get at.

A. A much simpler way of getting it.

Q. The same is true as to 1304 meters there that you use the term 23 years, is that right?

A. It is not.

Q. Well does it mean that they have been in service 23 years?

A. It does not. It does not mean 1304 individual meters have been in use 23 years.

Q. What does it mean?

A. Means at the end of 1887 there were in use 1304 meters. Of course these meters have been replaced from time to time as individual meters.

Q. Well then haven't you instead of getting the age of the meters there haven't you got the age of the service and connections?

A. No.

Q. Isn't that — you have done?

A. No, sir.

Q. How did you get the basis for these figures for this composite average you tell about?

A. I have explained as fully as I can.

1227 Q. Wasn't that done as you said here a few days ago by examining the record showing the meters that were in service?

A. It was obtained exactly as I said it was obtained and in no other way.

Q. And how was that?

A. The record will show, I have forgotten the wording.

Q. Who furnished the information to you?

A. The gas company.

Q. And in what form did they furnish it?

A. The form you have it there.

Q. What do you mean by the form I have it?

A. Just that.

Q. I haven't it in any form?

A. The report is in your hand isn't it?

Q. I will put that question in another way. Was this information furnished to you by the gas company in the form of a memorandum other than the memorandum you have set out here in your report.

A. It was furnished to me on a piece of paper which is not the pi-ce of paper in my report, but the form in which the information was arranged and the facts stated in the information given me are as shown in my report.

Q. Im other words this is what you claim to be a copy of what somebody else furnished you?

A. Copy of the record taken from the books of the company.

Q. Did you see it taken from the books of the company?

A. I did not.

Q. How do you know it was taken from the books of the company?

A. I believe the man that told me it was from the records.

Q. How do you know it was?

A. I don't know it.

1228 Q. All you know is it was furnished by some individual. Who furnished it?

A. I don't know what individual furnished it to me.

Q. Doesn't this table show the average age of the installation meters rather than the average age of the meters?

A. It does not.

Q. Turn to page 12 Mr. Witness of your exhibit 20 in the third column near the bottom under the heading No. of meters installed during the year, the figure 17 appears opposite the year 1889, and opposite the figure- No. 2338. Now were there 17 meters now in use, installed and in use that were installed and in use in 1889?

A. That sheet does not say they were.

Q. That is not the question I asked you?

A. I don't know.

Q. Did you assume that?

A. I assumed this table to be correct.

Q. Then you assume there were seventeen m-ters in use now that were in use in 1889?

A. I did not.

Q. Well what did you asume to be correct with respect to that?

A. That of the total number of meters now in use it is fair to say that a p-oportion represented by seventeen meters has been in use for a period of twenty one years and nothing else.

Q. You mean then seventeen of the present m-ters?

A. I didn't say that.

Q. Did you mean by that that any one of these meters have been in use for twenty one years?

A. It is possible some one of these meters has been in use
1229 for twenty one years.

Q. How many do you assume have been in use?

A. Of no interest to me how many had been in use. I want to know the composite age, not the individual age of each meter.

Q. You have to have something to start with?

A. I have it right here.

Q. You didn't start with this only, this is only a memorandum.

A. No, this table was made from the records, but this is all I need.

Q. Take the one above where it says number of meters installed, third column, 200 opposite the year 1890 and total number of meters, 1538. Does that represent or intend to represent that there were 200 of the meters that had been installed during that year and now in use, hadve been in use since 1890?

A. Certainly not.

Q. You have the same answer for that, as you had to the seventeen?

A. Exactly.

Q. And the same as to all of these?

A. To all the others.

Q. I wish you would explain just a little further for me—I don't seem to get that through my head very clearly,—just the ourpose of this table and what was accomplished by it, how it can be used to test and check up any part of your report?

A. The meters used by this company are of various sizes. Each year there is installation of a number of meters, but in that number there is a varying proportion of the different sizes of meters. A compilation and record showing the actual number of five light meters installed during the year 1886, together with the number of three light meters that same year and all the other sizes tahat may have been installed that year and maintain a record of each
1230 individual meter up to the present time showing how often it has been repaired or renewed or replaced entirely would involve an amount of work that is beyond all reason. The practical way of arriving at the composite life of the meters in any plant is to make a table like this having as a foundation the total number of meters in use. Now the number put in in a given year as I said before has always various sizes and the best you can do is to strike an average for all of these years as to the ratio of one size of meter to the other sizes installed in a given year. That is fair to all concerned and it is found to be correct in practice. Now then having determined the total number of meters gained during each of a given number of years and having assumed that you are taking an average size of meter which you have to do as I have explained then this table does show that with the number of meters installed in a given year may be found the percentage of the total number which the meters installed that year represent. That is all that table shows as far as that second column is concerned.

Q. I know, but now after you have done all that what have you accomplished?

A. When you get through with the rest of the calculations you have determined the composite age.

Q. To come back to the seventeen, you are trying to figure out the socalled installation age of the meters and you start in that column with the year 1889 and the number 1338 and then 17. Now that number 17 is the basic number for your computation as to the years to go into your year column isn't it?

A. Yes, sir.

Q. Now you get it into your year column by multiplying 17 which is in the meter column by 21?

1231 A. Yes, sir.

Q. Which is the years in service and you get a result of 357. In other words the years of the seventeen meters that have been in service as this service would indicate at least to a novice for twenty one years made the total of years to go into your years column of 357 and the same is true of your 200 just above seventeen; you take the year 1890 and take the number of meters 1538, the total number of meters and then you take 200 as designating the number to count in your years and multiply it by twenty do you not and you get four thousand?

A. Yes, sir.

Q. And then that column you continue that way until you get the total number of meter years and then divide it by the total number of meters installed, that is the way you get your installment age?

A. No, sir.

Q. I mean the average age?

A. No, sir. Divide it by the total number of meters installed.

Q. That is what I said isn't it?

A. Beg your pardon, I thought you said in stock.

Q. Supposing during these periods one third of these meters had gone into the scrap heap and other meters taken their places would that make any difference in your table?

A. This table is based on the record shown on the number of meters installed, this has nothing to do with the determination of the rate of depreciation to meters, I show the number of years as a composite age of the whole number of meters.

Q. It has little to do with any part of the real bases of your valuation here?

1232 A. It has a very important bearing — the number of years composite age of the meters is a very important item, but this table has nothing to do with the rate of depreciation to be allowed because of the scrappage of meters.

COURT: On page 9 you give the average age 7.7 of the meters?

A. Yes, sir.

COURT: Life twenty five years.

A. Yes, si-.

COURT: And per cent condition 80 per cent.

A. Per cent condition, that is the condition a meter of that average would be in.

COURT: You add the same taxes and per cent of interest to that

A. Not the same per cent of interest while constructing that part of the system.

COURT: You add the 15 per cent to that.

A. Yes, have to add 15 per cent.

Q. How much of a meter aside from the shell can be used without removing for more than ten years?

A. Very often all of it except the diaphragm.

Q. How much of it can be used for more than fifteen years?

A. Same answer.

Q. Nearly all of it except the diaphragm?

A. Very often that is the case I said.

Q. What would you say is the avarage age?

A. Can you make that more specific. The average time that elapses before the meter needs repairing of any kind?

Q. No, before any part of it cannot be used except the shell without renewal.

A. I would have to refer to detail records to give you the average life before each of the many kinds of repairs become necessary. The figure used here is only my indication as twenty five years'
1233 life for a meter as a whole?

Q. You can't answer the question as put to you?

A. Not without further details in my office.

Q. What is the value of the shell of a five light meter?

A. The shell alone?

Q. Put a value on it.

A. I don't know.

Q. What is the value of a ten lighter meter, the shell alone?

A. I don't try to keep those prices in my head.

Q. You don't know?

A. I have records, but I don't keep them in my mind.

Q. Have you got it here?

A. I am not sure that I have*m* I will see. I have not the detail here as to the cost of the shell alone.

Q. After the completion of your report as to the value of this property, the physical property, what per cent condition did you finally leave it in?

A. What portion of the property do you refer to?

Q. The physical property.

A. All of it except the real estate.

Q. Yes.

A. That is shown in Exhibit "D."

Q. 85.3?

A. 85.3 is the present per cent condition of the total physical equipment of the Des Moines Gas Company excepting its real estate.

Q. And *is* your computation and your reproduction on the theory and basis on which you figure it out would represent a condition of 85.3.

A. Figured on a basis that requires certain conditions as
1234 standard that is the per cent condition of this plant today.

Q. I wish you would answer that question as put?

A. 85.3 is the composite per cent condition of the total physical property except real estate of the Des Moines Gas Company.

(Question read.)

A. You haven't asked me a question if you want to take it technically.

Q. Give me yes or no.

A. I can't.

Q. We are dealing alone with your report, your figures and as you have valued this property and worked it out in this report, Exhibit 20 you live it in an 85.3 per cent condition?

A. Yes, sir.

Q. Working capital you cover in your report, is that for the purpose of construction or operation?

A. That is the amount you require when you get into operation on the present scale.

Q. Any part of it for construction?

A. A portion of it has been used—if you mean in the calculation for the hypothetical plant?

Q. Yes.

A. The report shows how fast I have assumed this money to be required.

Q. Part of it you use up in construction?

A. No, sir; I have not used it up, it has been used in connection with construction.

Q. Part of it used?

A. Part of it necessarily used in connection with construction. It was not as an investment.

1235 Q. And part of it in operation.

A. Part of it used until the plant was in operation.

Q. It was used in operation?

A. It became necessary when the plant got in operation to use additional working capital.

Q. If any part of it was used for operation how would that affect your taxes and interest proposition.

A. If it was used for operation it was not working capital.

Q. You have just said part of it would be used in operation?

A. No, sir; I said when you began to build this plant in addition to the costs shown by material and labor and the other items entering into construction costs you have got to have certain ready cash with which to work. I show in my reproduction chart how fast you would have to accumulate this working capital. When you have acquired a business equal in extent to tha- of the present Des Moines Gas Company it will amount to the figure I have shown here as a total.

Q. As you have figured it out have you provided the amount of working capital that is set forth here simply for construction?

A. Certainly not. It is not so shown.

Q. How much of it is for construction?

A. None of it permanently for construction.

Q. Turning to page 3 where you have your working capital you have an item down at the bottom there loss of interest during construction?

A. Yes, sir.

Q. That is loss of interest on this capital that is to be used in operation but is held during construction, is that the idea?

1236 A. No, sir. If you will look at my reproduction expenditure there you will see exactly what it covers. During the year 1911 the hypothetical plant would have to have in my opinion working capital of $22,000. During the following year $40,000 additional would have to be installed. The following year $80,000 additional would have to be provided and throughout that period you have been accumulating taxes during the construction period chargeable to the money which is going into this working capital fund and which appears at the end of -he construction as working capital for the operating plant. It is the amount of money that goes into construction or into part of it that constitutes liquid assets necessarily used in the conduct of the business consyruction and operation.

Q. Finally all go to be used in operation then?

A. Certainly not.

Q. What portion?

A. The money used in operation is spent in operation.

Q. What portion of this money is set asid- finally to be used in operation?

A. I suppose every particular dollar of this fund may go into operation, but if so it is replaced by another dollar. This fund as a fund is retained intact.

Q. All used in operation?

A. Certainly. In the conduct of the operation of manufacture and distribution.

Q. Turning to your working capital again I wish you would explain a little more fully the item $39,607.29, why that is included and what your notion about it is?

A. That is not included.

Q. It is not included?

A. Certainly not. That is an item which must necessarily be deducted from the gross working capital.

1237 Q. I don't care what you do with it, you take it off of this total $181,377.29. What I want to know is why you used that item in that statement at all?

A. Because I want to know what the net working capital is. I don't care about the gross.

Q. You get at that by deducting the accounts payable out of the gross working capital?

A. Get at the net working capital.

Q. Do these accounfts that you have used here include the average carried liabilities through the year on pay rolls and taxes and insurance water rent, and so on?

A. What item are you referring to?

Q. $39,607.

A. That covers all accounts payable of whatever nature so long as they relate directly to the business of manufacturing or distributing gas in the city of Des Moines.

Q. Does it include any thing that has not already appeared on the books accrued liabilities of any kind?

A. You will find in the standard classification of the American Gaslight Association what items it covers?

Q. That is not what I asked you.

A. I don't remember the items.

Q. This item $40,201.89 I wish you would explain that to the Master why it is, in what way found in Exhibit 20?

A. That is the total value at the time of taking this inventory of all working supplies in the store room.

Q. Was that just what was on hand at that time?

A. Yes, sir.

Q. You didn't then try to get the average stock that was carried through the year, you just took what was on hand the first

1238 day of January.

A. Well I had seen the stock and I drew the impression that was a reasonable amount of stock, presented a fairly average amount of stock.

Q. I didn't ask you that. I simply wanted to know if you took the amount that was on hand the 1st day of January 1911.

A. Yes, sir.

Q. Do you know the average monthly sales being made?

A. Of what?

Q. The stock?

A. Don't sell stock.

Q. Don't sell it at all?

A. All of it, a lot of that is pipe.

Q. What they do sell do you know what the average monthly sales are?

A. No, I don't. I have seen some figures on that, but I don't remember.

Q. Do you know what the average monthly consumption of this material stock and all is.

A. By the company you mean?

Q. By the company.

A. No.

Q. How much generator fuel stock is included in the item $10,449.98?

A. I have not the detail here.

Q. Have you it anywhere?

A. I had it I believe in my office.

Q. It is with this memorandum I have several times asked for.

A. I presume so.

Q. You will produce it?

A. If I can.

1239 Q. Do you know what the average consumption of generator fuel stock is?

A. Not off hand. I have memorandum whowing what it is.

Q. That is with this memorandum?

A. Yes, sir.

Q. How much oil is represented by the item $9,301.81?

A. I don't remember the number of gallons.
Q. You don't remember anything about details about that?
A. No, I do not.
Q. You have the figures with this memorandum?
A. I believe so.
Q. Do you know what the average monthly consumption of oil is?
A. No, I don't remember the amount.
Q. Does your memorandum show that?
A. I think so, I have a memorandum or have had one showing it.
Q. Did you make any comparison of the average used to determine whether or not the first day of January was typical of the year or not?
A. I made a calculation showing that it was a very reasonable amount of oil to carry in stock in a place located as this is.
Q. That is not quite an answer.
A. I made such an average, yes.
Q. Do you know what the average amount of all the material and supplies on hand wa- during the last four years, the average amount they have carried?
A. No, I do not.
Q. Did you have any figures showing that?
A. I don't believe I had any figures showing that item for the years back. That naturally varies with the growth of the plant.
Q. On the first day of January 1911 you estimate in your
1240 statement here cash items $49,434.15. Did you make any investigation or comparison with other years on that, the cash the first of the year?
A. I have seen statements for other years that make this look reasonable.
Q. Whose statement?
A. Statements of the Des Moines Gas Company.
Q. Furnished to you?
A. Yes, sir.
Q. Are they with these memoranda that you have in your office?
A. I don't remember.
Q. You filed it away didn't you?
A. I presume they are there, but I don't remember that. That is not the kind of information I would file very carefully.
Q. How much of this $49,434.15 was drawing interest or do you figure as having drawn any interest?
A. I don't know whether any part of it was. I believe it was all held for quick work and the interest on it would be a negligible amount.
Q. At any rate you have not given the other side of the account credit for interest on that?
A. For the reason they might very readily carry a larger sum of cash than that and still be within the reasonable practice.
Q. At any rate you have not taken into consideration the interest pn that.
A. No, I have not.
Q. If it should turn out to be a fact that your allo-ance for real

estate, $259,000 odd dollars aside from the improvements and the organization and legal expenses, $68,023 a total of $327,678 is $5000 in amount larger than the entire investment in the plant for all purposes up to June 30, 1888 after this property had been in operation 12 years, would that have anything to do with your figures?

1241

A. Of course not.

Q. What is the latest important piece of construction by the gas company?

A. I believe the 10 foot six water gas set, I believe was the latest important extension made at the plant.

Q. And when was that?

A. About 1909 or '10. It is two years old now.

COURT: That is the first they used water gas?

A. No, this is the biggest machine they have. They had four machines before that.

Q. When do you say they got that?

A. Within two years.

Q. Do you know what it cost the company?

A. No, sir.

Q. Did you make any inquiry to find out?

A. No, sir.

Q. Don't you think that would have helped you some?

A. Not the slightest.

Q. You would have had placed the same valuation on it if you had known that the company bought it for 25 per cent less, bought it in the open market for 25 per cent less than you have given credit for it in your computation?

A. I would.

Q. And knowing too that your proposed valuation was to be urged upon the Master in this case for rate making purposes.

A. Yes, sir.

Q. Now what other important piece of construction have they made within the last three years that you know of.

1242

A. Well they have been doing a great deal of street work, running mains and services and meters, setting meters.

Q. Give us some one important thing that amounts to enough to bother with it now?

A. Well take the oil tanks No. 24 and 25, the two large oil tanks over by themselves.

Q. When were they constructed?

A. Within the last two years.

Q. So undoubtedly every single item of expenditure on the part of this company in connection with these two tanks appears on the company's books does it not?

A. I don't know.

Q. Well you have not hesitated heretofore to say all these other things appeared on the company's books?

A. I have not said all these other things, I specified the things of which I have knowledge.

Q. Did you make any inquiry to find out?

A. No, sir.

Q. You didn't ask the gas company or any individual in connection with it what it costs the company to put in these tanks?

A. I should have been greatly surprised if I should have found it on the books.

Q. That is not an answer.

A. I didn't ask them.

Q. You didn't ask the company or anybody else how much it cost to make the excavation there?

A. No, sir; not as to that particular excavation.

Q. I mean as to that.

A. No.

1243 Q. You didn't make any inquiry of anybody to ascertain how much the contr-ctor received for the brick work?

A. No, I made general inquiries as to the cost of brick work in Des Moines.

Q. I am not asking about general inquiries, talking about this particular construction now of thes- two tanks?

A. No, sir.

Q. You didn't make any inquiry of anybody either contractors or the company to ascertain how much the company paid for the steel work that is there.

A. No, sir.

Q. Steel construction. Then for both of these tanks as I understand your answers they were put in there within the last two years?

A. They were within the last two years according to the record.

Q. Now what do you credit for these two tanks on your computation?

A. The reproduction cost total $20,500.

Q. That is for both of them?

A. Yes, sir.

Q. Now if it should turn out that the gas company or to put it in another way the total expenditure of the Des Moines Gas Co., upon these two tanks covering every item of labor and material and construction on both of them was say, $12,500 would that make any difference with your estimate of the reproduction cost or value of them?

A. Not the slightest.

Q. Then why did you ask anybody in Des Moines brick men or carpenters or excavation men or anybody else about prices of work in Des Moines?

A. Because I have to arrive at units.

1244 Q. I know, but why didn't you try to arrive at some of your units by ascertaining with respect to some definite piece of work like the Des Moines Gas Company work.

A. Because I have made estimates, I have considered so many pieces of work of so many kinds and so many places when I determine in my own mind the reasonable units I am willing to stand on my own prices.

Q. There is a lot of brick work in those two tanks.

A. Quite a bit.

Q. You took Mr. Mardis' work and went to two other contractors?

A. I didn't say I did.

Q. You said something about Mr. Mardis?

A. Yes, I said he was one of the contractors who provided lists of unit prices to the gas company and which list I have seen.

Q. When you got Mr. Mardis' statement of figures whatever they were as to brick work in Des Moines, if you had gone to the Des Moines Gas Company after you got Mr. Mardis' statement as to the brick work and the Des Moines Gas Company had told you that they went into the open market and had the brick work done down there in these two tank erections there for $12.50 a thousand, which figure would you have taken in trying to work out a fair value of this property, what the gas company told you they -ctually paid for the work or what somebody had told you was the usual price in the city of Des Moines?

A. I didn't ask the gas company what they paid. What the gas company would say it had paid would not have effected my valuation in the slightest.

Q. You would rather have somebody state as to his opinion what the general prices or ordinary prices had been in Des Moines for brick work, that would weigh more with you would it than
1245 the actual expense of putting up brick work itself, that is your idea?

A. That is not my statement nor my idea. When I am to make a valuation of a plant I do not want to——

COURT: Just answer the question and stop.

A. I can't answer without explaining.

Q. The Des Moines Gas Company built a building down there just a short time ago didn't they?

A. Yes, building No. 7 is comparatively new.

Q. When was it built?

A. Within the past two years.

Q. In that building what did you allow for brick work?

A. Well I can give you the net construction cost on brick work. I have got it all, but you don't want the reproduction tota-.

Q. No, I want the net construction cost of the brick work.

A. I have the brick in the walls at $17.00.

Q. $17 a thousand?

A. Yes, sir.

Q. How many thousand were there?

A. 112,698.

Q. That building was erected within you say two years?

A. Yes, sir.

Q. I suppose soon after you came here you went down to the plant?

A. Yes, sir.

Q. And you began immediately to get your information with respect to local conditions and local prices?

A. Yes, sir.

Q. You observed when you were down there that this building was of very recent construction didn't you?

A. Yes, sir.

1246 Q. You knew or naturally must have known the gas company had had it erected within very recent years?

A. Yes, sir.

Q. Now did you make any inquiry of anybody in connection with the gas company to see what they paid the contractor that laid these brick?

A. No, sir.

Q. Did you make any effort to find the contractor who did the work?

A. No, sir.

Q. Now if you had made that inquiry and the gas company had inform- you that that work was done here by brick masons in Des Moines for $12.50 a thousand, would that have helped you any?

A. No. sir.

Q. Have you figured out the per cent that your overhead charges bear to the entire cost?

A. No, but I can give it to you very readily here. By overhead you mean total engineering, casualty liability, omissions and contingencies, loss of interest during construction.

Q. I mean all the items that you understand and engineers generally include in overhead charges.

A. You will have to be more specific if you want that in percentage. the figure which I am speaking of is $582,699, which I showed you this morning. That is the one you want the percentage of?

Q. Is that what you call overhead charges?

A. No, that is what you call overhead charges.

Q. It is properly called overhead charges. I am trying to get what you have added to the value of this property that is not covered by the physical end itself in the way of overhead charges if that is a right term to use.

A. Well you can't use that in the way you now asked for it
1247 because the going value is an attribute of the physical equipment I can give it to you exactly as I have it here. I think that is what you want.

Q. How do you mean?

A. Total engineering casualty liability, omissions and contingencies plus total taxes during construction plus loss of interest during construction.

Q. All right give me the per cent that bears to the total co-t.

A. It is a trifle over 16 per cent.

Q. What was the sum of these amounts you used for the devisor?

A. The sum of $582,699 which is the total covering the money reported for engineering, casualty liability, omissions and contingencies, taxes during construction and loss of interest during construction represents a trifle over 16 per cent of the total present reproduction cost of the property.

Q. That does not include legal expenses and organization.

A. That per cent is based on the total reproduction cost?

Q. You don't include organization and legal expenses in your divisor?

A. No.

Q. Did you make any effort to ascertain how that per cent appears with what the company had actually paid for these things?

A. No, sir.

Q. You don't know they had to pay any of it?

A. No, I do not.

Q. You made no effort to ascertain that?

A. No, sir.

Q. I wish you would do just one little further job of figuring for me and then I believe I will drop figures, if you will tell me taking all of your overhead charges with your organization and legal expenses and going value and paving and tell me what per cent that is of the total cost as you have it in your re-

1248 port?

A. Based on reproduction?

Q. Yes.

A. Put in real estate?

Q. Real estate as overhead?

A. I have simply taxes during construction.

Q. That is all right, I want that in.

A. You want to include the go-ng value too with this?

Q. Yes, the total making allowance for going value.

A. Making allowance for going value $583,000 plus the total shown in my report for engineering casualty liability, omissions and contingencies, taxes during construction, loss of interest during construction amount to $582,699, the figure corresponding to net construction cost for working capital $142,000 the figure sorresponding to net construction cost of organization and legal expenses $62,000 added together make $1,369,699.

Q. Did you add working capital there?

A. I added working capital exclusive of taxes during construction and interest during construction.

Q. I want you to leave that out and I want to put in the paving.

A. The total of the equivalent of net construction cost for organization and legal expenses which is $62,000 added to the total included in engineering, casualty liability, omissions and contingencies, taxes during construction and loss of interest during construction, which is $582,699 added to the going value allowance of $583,000 added to the total net construction cost of paving specified amount of $330,558 gives a total of $1,558,257 which latter amount represents a little bit over 42.7 per cent of the total reproduction cost of the property.

Q. Wouldn't that be 43 and a fraction rather than 42?

1249 A. Not unless I am wrong here and I don't believe I am.

Q. I guess you have it right. Now you knew did you not that the contract that the gas company had or rather the arrangement that it had here with the city in the way of a charge or rate for gas expired on the first of last January did you?

A. I no doubt had that information, I have forgotten the date.

Q. You had known anyhow whether just then or when you got

it? Now have you made any allowance of any kind anywhere for any deduction from your values in this property because of the fact that the arrangement with the city expired on the first of the year and the gas company now was operating without any arrangement or agreement or franchise.

A. No, sir.

Q. You have made no deduction on that account? Would that make any difference with the value of the property?

A. If the company had to pay for its franchise then of course the franchise payment would be included as part of the capital account of the company. But I made no allowance for franchise value one way or the other.

Q. What I am getting at is this, would it be worth anything in your judgment and would it have any valuation in your theory of arriving at values, if this gas company, this complainant company in addition to having a property that has been enumerated and furnished to you for the basis of your valuation, if it had had a twenty year franchise to carry on its business?

A. No, sir.

Q. That would not add anything in your judgment to the value of this property?

A. It would not add to this particular property anything in my judgment.

1250 Q. Would the fact that there is no other gas company operating here in this town, does that cut any figure in your theory or in your valuation either way?

A. No, sir.

Q. So that the fact, if I understand you, the fact now that the city of Des Moines could grant if it wished tomorrow, a franchise to some other company to come in here and put in a gas plant would not effect in any way the value of this Des Moines Gas Company's property?

A. No, sir. Not so far as this calculation is concerned.

Q. Neither its tangible or intangible property?

A. No, sir.

Q. You have in your list relief holder No. 18 and holder No. 19, the relief holder No. 18 appears on page 84 of your report and storage holder No. 19 on page 85. Now what have you estimated to be the present value of tho-e two holders?

A. No. 18 and 19?

Q. Yes.

A. Total reproduction cost holder No. 18 $36,248. Holder No. 19, total reproduction cost $55,454.

Q. $91,682 that makes is that right?

A. $91,702.

Q. Now Mr. Lea, if it should turn out that these holders only cost this company new, $73,414, would that make any difference in your computation?

A. No, sir.

Q. These particular two holders as they stand down here have no fixed market value in the country anywhere?

A. They are not readily saleable, but they could probably be sold.

Q. That is not quite an answer to my question.

1251 A. Holders of that type certainly are in the market, regularly.

Q. And they have a fixed market value do they?

A. No.

Q. I mean as they stand down here?

A. No. None of these things have fixed values, they fluctuate.

Q. If it should turn out that this company themselves some ten or twelve years ago, longer ago than that, put a value upon these two holders of $73,000, would that fact make any difference?

A. Not the slightest.

Q. You really didn't need any help to get at these values except just to have the list of the property?

A. Practically all except local prices as to labor and material, building construction.

Q. Local prices didn't seem to cut any figure with you?

A. It did.

Q. Prices this company paid didn't?

A. I didn't take the company's word on things like that.

Q. You didn't even ask them?

A. No.

Q. You didn't think they would give it to you correctly.

Q. I thought they would try to, but I didn't suppose the records were in such shape they could give it correct.

Q. For expenditures made within two years?

A. Covering all of the items, it is not customary to keep books that way.

Q. Let me ask you another question, along that line. If you had known or upon inquiry from the company had ascertained that in 1895 Mr. Edward G. Cowdrey, Harry D. Walbridge, Charles R. Fabin, George Irwin Butterworth, Loren E. Chollen, George H. Harper, William Henry White, W. A. Steadman, Waton Clarke, and E. G. Pratt had all under oath valued this gas property at

1252 that time from $440,000 to $483,756.06 would that have made any difference to you?

A. No, sir.

Q. Would not have cut any figure at all?

A. Not at all.

Q. Would not have even given you the slightest basis for arriving at values under your method and theory.

A. Not any basis as valuable as I consider I have in my own records.

Q. You know most of these men I have named?

A. Know every one of them except Mr. Steadman.

Q. Mr. E. G. Pratt was at that time the manager of the company?

A. I believe so.

Q. Mr. Wilton Clarke is now some office- in the company isn't he?

A. He is an officer in the United Gas Improvement Company, I am not sure whether he is in the Des Moines Gas Company or not.

Q. Any way he is an officer in the United Gas Improvement Company.

A. Yes, sir.

Q. Is all the piping that is down here in the yards used in the manufacture of water gas?

A. The pipe itself is not technically used in the manufacture of gas used in the distribution of it or carrying of it around the plant.

Q. Is all that is down there used for that purpose?

A. Maybe some dead pipe down there somewhere, but I understand all pipe in the inventory is live pipe in use.

Q. Do you know that?

A. I have reason to believe it is used.

Q. Are you stating what somebody told you?

1253 Q. I didn't dig up the whole connections to see if they were all under pressure at this time, but did go into the figures to see if the total amount of works piped was a reasonable amount of pipe for a plant of that size.

Q. Did you see any evidence or indications of an old coal gas apparatus down there?

A. Yes, sir.

Q. Is any of this pipe connected up with that?

A. I don't believe there is any connection at all between the old coal gas benches and the present equipment. There is a hydraulic main on top of the benches and I think I can say very clearly that the iron work stops before the end of the brick work is reached and no pipe going through that I can remember.

Q. Did you go about the plant to make an examination of the connections yourself?

A. I didn't try to follow through each of the connections shown in the plans, except on the plans there I did.

Q. Did you of the pipes that are shown on the inventory?

A. The total amount of pipes shown on the inventory appears to me a reasonable amount of pipe?

Q. That is not what I asked you?

A. I have not dug up the pipe and measured.

Q. Would you have to dig up the pipe to find the connection?

A. You would have to dig up mo-e or less of it. It might leave a building in one place and you might think it entered in another but you would have to dig it up to make sure.

Q. All I want is to make sure whether you found any part of the pipe connected up with the old coal gas apparatus? You would not have to dig the pipe up to see if it was connected with

1254 the hydraulic main?

A. You could see it from the hydraulic main down to the ground, a matter of about fifteen feet. I presume that would be maybe ten inch pipe.

Q. You examined that far so you are able to say no part of this pipe is included in the inventory?

A. I don't believe there is pipe there, I may be mistaken about that I don't believe there is a pipe up there, but if there is it is about fifteen feet.

Q. What you want to say by that is there would not be to exceed fifteen feet of pipe.

A. Of pipe. I don't mean by pipe, the hydraulic main.

Q. You mean by that to say there is not to exceed fifteen feet of pipe attached to this old coal gas apparatus?

A. I mean to say I don't believe there is any dead pipe included in the inventory figures.

Q. I suppose you don't know definitely about that?

A. I do not.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

1255 Saturday Forenoon Session.

JULY 29, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

HENRY I. LEA, re-called for further cross examination, examined by Mr. Byers, testified as follows:

The MASTER: Will you give me the total reproduction cost of works equipment?

A. $510,179.

The MASTER: Now will you give me the net reconstruction cost?

A. It is in Exhibit E, $420,428.

The MASTER: Now add fifteen per cent to it?

A. To the $420,428?

The MASTER: Yes.

A. $483,492.

The MASTER: Now then what did you add to that for taxes?

Mr. BYERS: In per cent do you mean, Mr. Master?

The MASTER: Yes.

A. 1.496 per cent I add to that is taxes; the total $7,234 works equipment.

The MASTER: Whereabouts will I find the total?

A. The total of taxes?

The MASTER: Yes.

A. Works equipment begins on page 105 on the following page. There is the total net construction, plus engineering added for that year. Here is the corresponding figure for the next year. $2,229 added for the tax of 1912; $4,305 added for 1913; making
1256 a total of $7,234 added for taxes during construction for the works equipment.

The MASTER: What do you make it?

A. $7,234.

The MASTER: Now, then add it together.

A. $7,234 to the net construction plus engineering—that makes $490,726.

The MASTER: Now, then, what do you add to that for interest?

A. Add to that the sum of $19,445.

The MASTER: Now, then, what do you get?

A. You get $510,179. There is a difference of $86 which is accounted for by the decimal point carried out. In my book I show $510,179.

The MASTER: Give me the total tax.

A. Total tax works equipment $7,234; total loss of interest $19,445.

The MASTER: I want you to do the same thing with the distribution system. I understood you yesterday—the reason I ask the question—that 2¼ per cent you add for taxes.

A. It is added but not added throughout the entire period. you want everything in the distribution system complete?

The MASTER: Yes, sir.

A. Turning to Exhibit E—total net construction cost, distribution cost $1,549,871. I have got added fifteen per cent to that first, $232,481. The total for taxes during construction is $48,950 and the total for loss of interest during construction is $131,725.

The MASTER: Can you give me the taxes?

A. Yes, do you want the percentage based on the net construction cost?

The MASTER: No, just as you made it, on the net construction cost with the fifteen per cent added.

1257 A. I will give you the percentage on that total. To the total net construction cost of distribution system complete, plus fifteen per cent, engineering, etc., I have added for taxes during construction 2.757 per cent. or a total of $48,950; a trifle over ¾ per cent.

The MASTER: How much did you add for interest in per cent.

A. To the net construction cost of the distribution system, plus fifteen per cent for engineering, plus tax of $48,950, I have added for loss of interest during construction 7.192 per cent or a total of $131,725.

The MASTER: Now if you multiply that by the average, what you call the composite average, what will it be?

A. If you multiply the total net construction cost of the distribution system, plus $232,481 engineering, etc., that is fifteen per cent, plus $48,950 for taxes during construction, plus $131,725 for loss of interest during construction, you will have that amount multiplied by the per cent condition shown in *in* the table, 88.23 for the distribution as a whole, which will give you the present value—that wouldn't work out in exact dollars.

The MASTER: What is that?

A. To make this work out in even dollars you would have each of the subdivisions, taking it the way it is indocated, taking the reproduction cost by the composite per cent shown gives for the present value $1,731,976.

The MASTER: Just about a thousand dollars difference?

A. Yes, that is due to the discrepancy I have referred to.

The MASTER: The same is true also of the works equipment?
A. Yes, sir.
The MASTER: And also of the buildings?
1258 A. Yes, sir.
The MASTER: I verified the buildings—I think you figured interest at 6.1 instead of 6.179?
A. I used the figure six per cent; I may have made an error that I don't know about.
Mr. BYERS: Mr. Lea, have you any of the data now, the figures I have asked you about in the last day or two and asked you to furnish?
A. No more than I have already furnished.
Q. Nothing except what you had here yesterday?
A. No.
Q. How soon can you get those figures for us and furnish the memoranda we have asked for?
A. I can't make any promise as to time; I don't know just how much time it will require.
Q. Some time next week?
A. Possibly.
Q. I wish, Mr. Lea, you would furnish them to *us* as early as you can. If you do not get it all at once, furnish what you do have as you make it up. Do you have a copy of your Taylorville report in your office?
A. Yes, sir.
Q. I wish you would let us have that too?
A. I cannot do that.
Q. Have you sent for a copy of your report made to Beatrice?
A. For you?
Q. Yes.
A. No.
Q. Will you get a copy of it?
1259 A. I will get it for myself and will produce it if the Master says so.

Mr. BYERS: We would like to have that for the purpose of further testing Mr. Lea's theory that he advances here in this court on values. It is important that we should have either his copy or use the one we have.
The MASTER: If you can, produce it; they want to see whether you proceed on the same theory.
Mr. BYERS: And then we want to compare his values generally along the line here.
The WITNESS: The only objection I have, I have no authority to produce these reports without the consent of the owner. I should be advised by the city of Beatrice if I am authorized to produce that report.
Mr. BYERS: I have here a letter from the Solicitor of Beatrice Nebraska, furnishing a copy of Mr. Lea's report with his statement of the manner in which it was made and Mr. Lea's employment.
The WITNESS: That does not satisfy me.
The WITNESS: I guess Beatrice won't object to furnishing it.

The WITNESS: I don't suppose they will.

The MASTER: Of course, if that is produced it is only fair if there is any difference that the witness have an opportunity to explain it.

Mr. GUERNSEY: I wish now, if your honor please, to suggest that the experts for the city send for all the reports, copies of the reports which they have made, so that when we come to their cross examination won't be delayed.

Mr. BYERS: We will promise you anything you want will be immediately forthcoming, if we have it; and there will be no objections either.

1260 Mr. GUERNSEY: I simply want to save time.

Q. Mr. Lea, I have on my notes here at the very beginning of your examination you stated that you proceeded to put a valuation upon this property, on the theory, or with the thought in your mind of fixing the value at which the property would be purchased by a contemplating buyer; that is right, isn't it?

A. That is right.

Q. And your whole theory and your entire report proceeds upon the theory you are working out the selling price or value of the property?

A. It does not. My report is based on the understanding that I am to determine as nearly as I can the fair present value of the property.

Q. As it could be sold or bought in Des Moines?

A. A value which would be considered fair by the buyer and seller.

Q. Now, Mr. Lea, if you proceed on that theory, what are the important elements—without going into details—what are the important elements of value attached to this property and which you considered in arriving at what would be a fair price for it to a purchaser in a general way?

A. The location, general characteristics of the city, prospective growth of the city, the present magnitude of the physical equipment, its present condition, present value of the business, the possibility of increase.

Q. Anything else?

A. There were a great number of other things.

Q. The more prominent ones are what?

A. Those are the more prominent ones.

Q. Did you take into consideration the original cost of construction?

A. No, sir.

1261 Q. Did you find out what that was?

A. No, sir.

Q. Did you take into consideration the amount expended in permanent improvements?

A. No, sir.

Q. Did you find out what that amount was?

A. I did not.

Q. Did you take into account the market value of the stock of of the Company?

A. No, sir.
Q. Did you try to ascertain that?
A. I know in a general way about what it was; it didn't interest me, I didn't use it.
Q. Did you consider the probability of the earning capacity of the property under the present ordinance?
A. No, I didn't consider the earning capacity in arriving at the value under the ordinance.
Q. Did you consider the amount of the operating expenses?
A. I did later on but not to arrive at a valuation.
Q. I mean leaving out valuations?
A. No, sir.
Q. The cost of the plant of the present company?
A. No, sir.
Q. You made no inquiry about it?
A. No, sir.
Q. And it is not involved in any way in your valuation?
A. It has nothing to do with the reproduction value of the property.
Q. The dividend earned in the past and paid to the stockholders, did you consider that?
A. No, sir.
Q. Did you make an effort to find out what amount had
1262 been earned and paid in the way of dividends to stockholders?
A. No, sir.
Q. Did you consider any surplus earnings of the company, if there were any that had been carried into the capital account?
A. No, sir.
Q. Did you make any inquiry to find out what they were?
A. No, sir.
Q. Now, in this going value would that be worth anything to a purchaser of this plant if he was not permitted to operate it in Des Moines?
A. You are asking whether the going value of a Gas Company in the City of Des Moines would be of value to a man and he couldn't operate it or get into touch with it in any way; I didn't consider that in any way.
Q. Will you answer it?
A. How can I answer a question like that?
Q. Would the Gas Company's present plant be worth any considerable sum to a contemplating purchaser if he were not permitted to operate it in the city?
A. The value would be there whether the particular individual could get to that value or not; the value is there.
Q. The plant would be worth just as much on your theory and in your judgment to a man who would not be permitted to operate it as it would be to a man who was allowed to operate it?
A. That is not what I said.
Q. Is that what you mean?
A. Certainly not.
Q. What would be the difference in the value?

A. I might want to own and operate this plant myself.
Q. Just answer the question.
A. That sort of a question you cant answer yes or no.
1263 Q. You understand, don't you, that before a gas company can use the streets and alleys of cities in Iowa and operate a gas plant they must have a franchise from the city, you understand that?
A. I understand they must have in order to begin operations.
Q. Don't you understand they must have in order to operate at all?
A. No, sir.
Q. That doesn't make any difference?
A. No, sir.
Q. You don't consider in this case here where the complainant owns a plant but without a franchise to operate it makes any difference with the value?
A. Not the slightest.
Q. Suppose you were making out a report, you are an engineer with a reputation and a member of an honorable profession, suppose you were making out a report to a bond company or a company that was about to invest its money in the securities of the Des Moines Gas Company, would you pay any attention to the fact that its franchise to operate in the city of Des Moines had expired?
A. That would depend altogether on the conditions I stated in connection with the property; I am valuing it as it is.
Q. Please answer the question. I want you to assume just what is in that question for the purpose of answering it. If you knew that the franchise under which the Des Moines Gas Company had been operating its business had expired and you were called upon by a company that was about to invest its money in the securities of the company, would the fact now that you knew that the franchise had expired be considered by you and reported to the bond company as affecting the value of eithe- plant or its securities?
A. I can repeat that last answer; that is all I can do.
1264 Mr. Byers: I submit I am entitled to an answer.
The Master: If you can make a better answer do so.
A. I have answered it absolutely—that would depend on the conditions surrounding the plant.
The Master: Would you give it any consideration?
A. Certainly if the franchise had expired at this time it does not in my opinion affect the value of the Des Moines Gas Company in the slightest degree.
Q. Take the Des Moines Gas plant just as it is, with the conditions with respect to the plant here just as it is and assume that on the first of January its franchise for operating in the city of Des Moines had expired, now in your judgment would a purchaser consider the want of a franchise and consider the value of the property less without a franchise?
A. Are you assuming the other conditions to be as they were in the city at that time?

Q. All other conditions that affect the plant?

A. Then the failure of the company to produce a franchise which at that time was alive would not have the slightest value.

Q. It wouldn't cut any figure?

A. No, sir; not in this case.

Q. And you have not given it any consideration in your report?

A. I certainly have.

Q. As affecting the value.

A. I have made the necessary inquiries to determine what effect it might have.

Q. Have you made any reduction because of the want of a franchise?

A. There is no occasion for it in this case.

Q. I say have you made any?

A. I have not

1265 Q. Now, just another question along that line. If the cost of reproducing the company's plant because of extreme depreciation of labor and material was not more than fifty to seventy-five per cent of its original cost to the company, would you still have adopted the reproduction theory in arriving at the value?

A. I would never assume a price peculiar to an abnormal period at any time in the placing of the value on a property out of fairness to all concerned. You have got to arrive as nearly as you can at a fair average figures, not abnormally high nor abnormally low.

Q. Then, as I understand you, if the cost of labor and material here in Des Moines, the kind of labor used by the Gas Company, had been fifty percent under what you found it, you would not have adopted it in the reproduction theory?

A. I wouldn't if this price were an abnormal price.

Q. Then what theory would you adopt?

A. Exactly what I did. I adopted the reproduction theory basis on what I considered fair, average prices over a period of years, neither abnormally high nor abnormally low.

Q. Then the prices of material and labor you have adopted are not present prices of material and labor in Des Moines?

A. They are what I considered the fair average prices that would be met in the period of construction considered here.

Q. So that then your report does not proceed on the theory and is not based upon the actual cost on the first day of January, 1911,

A. The labor and material such as makes up this gas plant in Des Moines, the actual cost of labor on the first of January 1911 is one of the items entering into my judgment as to what would be a fair average rate for labor of a given kind throughout the period of construction.

Q. Of how many years?

1266 A. As indicated by the chart.

Q. How many years do you say?

A. I think about four.

Q. Then in all that figuring you considered a four year period?

A. Whatever is shown by the chart.

Q. Will you call it four years for the purpose of illustration.

After you consider a period of three or four years whatever your report shows, to get at what would be, as you say, a reasonable and fair cost of labor and material, did you find that to be higher or lower than it was on the first day of January, 1910?

A. I don't remember.

Q. Is there any way anobody can tell from your report?

A. Not from my report.

Q. Did you try to ascertain the value of this property by capitalizing its earnings?

A. No, sir.

Q. Now, I haven't put that question before, have I.

A. No, it has not been asked before.

Q. Do you know and can you tell the Master now upon what amount the net earnings of the Des Moines Gas Company plant would pay six per cent?

A. No, sir.

Q. Why can't you?

A. Because I don't know the amount.

Q. Don't you know the amount of their earnings for the last year, net earnings?

A. No, sir.

Q. Don't you know the amount of their net earnings for 1909?

A. I don't carry any such figures in my mind.

Q. Do you have them anywhere?

A. I presume I have some of them.

1267 Q. You have the net earnings here with you for 1910?

A. No.

Q. Can they be found by an examination of your report?

A. No.

Q. No way that they can be figured out from your report?

A. Not from my report.

Q. Is there any way the gross earnings can be figured out from your report of the Company's business for 1910?

A. No, sir.

Q. For 1909?

A. No, sir.

Q. For 1908?

A. No year.

Q. What does this diagram with respect to gross revenues, operating expenses, what did you figure out from that; did you figure out the gross revenue of the company?

A. You can approximate it from the curves but you can't get the exact amounts because accurate readings is impossible on so small a scale.

Q. The scale is so small that it is impossible to get to a cent or dollar

A. You may look at it and see.

Q. You just give it to us approximately?

A. I can't tell approximately.

Q. You can't tell approximately, not from your sheet?

A. I wouldn't give you figures of that kind without giving them to you exactly.

Q. How many persons, Mr. Lea, had a part in the making up of this report Exhibit 20?

A. Well, I don't know how many men the Gas Company
1268 had to prepare the material they gave to me.

Q. Give me the number of people you know about?

A. There were four in my office; that is all I am positive about.

Q. How many of them were engineers?

A. Two besides myself.

Q. How many persons outside of your own office do you know had a hand in it?

A. I know a group of men were all more or less connected with it; I don't know what part each one did.

Q. I am asking for the number of persons?

A. I don't know how many.

Q. Well, how many do you now have in mind, of course there were more than you can remember.

A. There were eighteen on the inventory I have learned of; some of them I know; there were about I think seven or eight more I knew of directly connected with the preparation of the inventory.

Q. The eighteen persons you speak of had a hand in making the inventory but didn't do any work that appears in Exhibit 20?

A. They made the inventory from which my figures are taken.

Q. I am talking now of who actually had something to do with the making of this Exhibit 20 as it appears.

Q. Specify what you mean by something to do.

Q. Well, prepared any part of it or page in it?

A. Be more particular; what do you mean—who did the typewriting, who bound the book?

Q. Who did the actual work of making up that sheet?

A. The photographer in Chicago.

Q. Who did the actual work of making the original of which that is a copy?

1269 A. The draftsman in my office.

Q. Who furnished him the material?

A. I did.

Q. Anybody else?

A. Some of the material was furnished to me and the balance I worked out myself.

Q. Who furnished the other material to you?

A. The Gas Company furnished material showing abstracts from the records of the Company up to the end of the year 1910; the balance I worked out.

Q. Now limit the question to the persons who actually did some of the work in here—I don't mean just the typewriting—I mean the persons who either furnished the memoranda for the typewriter, or dictated it to the typewriter, limit it to the number of persons who exactly did some work of preparation—not the preliminary work of Exhibit 20.

A. There were four most of the time and five part of the time in my office.

Q. This work was all finally completed there at the office in Chicago?

A. Certainly.

Q. Did any of the engineers of the Des Moines Gas Company or any other gas company perform any part of the work?

A. No, sir not beyond the preliminary work. Every item I received from the Gas Company was in the nature of preliminary information necessary in arriving at the facts on which I based the valuation, and none of the valuation figures in any sense have been provided by anybody to me.

Q. I am not asking that at all; that is not what I am trying to find out. I am trying to find out from you, Mr. Lea, whether
1270 you yourself worked out all these details and furnished the material to your typewriters, or whether some of those other gentlemen furnished a part?

A. I personally furnished everything except the preparation or quantities of the material.

Q. Nobody had any hand in that?

A. Not in the making of the valuations and figures, no sir.

Q. Now can you give us from your curve sheet—I think you said you couldn't—you can approximate the gross revenue for any year?

A. I could approximate it in the sense you use it. I don't want to give you any figures representing results on so small a scale because you will hold me to it later.

Q. I won't hold you to it. Just take page 96 here and confine your answer now to the curved sheet itself without regard to whether it shows exactly; I want to know if you can tell me, for instance, what your curved sheet shows the gross revenue for 1909 to be, worked out on this sheet?

A. You will find the gross revenue line crossing the 1909 line between $475,000; and $500, that is as close as I can give it.

Q. Between $400,000 and what?

A. Between $475,000 and $500,000.

Q. Now give it for 1910?

A. That is between $500,000 and $550,000.

The MASTER: About $530,000?

A. That is as close as you can read it.

Q. And the operating expenses for the same year are worked out on the sheet?

A. The operating expenses are shown up to 1910 and don't include depreciation; that is something over $350,000.

Q. What is it for 1909?

1271 A. Somewhere between $300,000 and $350,000.

Q. Now, that under this sheet includes taxes but not depreciation?

A. Yes, it includes taxes but not depreciation up to the year 1910.

Q. Now, with the depreciation taken out as you are working it out on this sheet, the difference between the amounts you gibe me there as to the revenues and operating expenses would be the profits of the business?

A. Certainly not.

Q. Well, plus depreciation?

A. Certainly not.

Q. Well, what else would there be in there?

A. I understand there are some bonds outstanding; I don't know what amount; bond interest is obviously net profit.

Q. There may be something else involved here; there is nothing here to show anything about bonds that are out?

A. No.

Q. Then let us put it in another way; that is, the difference then, would show the profits the bonded interest plus depreciation?

A. You have got to put it different.

Q. You put it in your own way.

The MASTER: The depreciation is what he wants to know about.

Q. What I want to get at Mr. Witness, is what the difference between those two lines would represent in your judgment?

A. The differences between the gross revenue and operating expenses, you mean?

Q. As you have it worked out here up to 1910.

A. Why the difference between the gross revenue and operating expenses as shown here would indicate only that an incomplete statement has been made.

1272 Q. All right, we will let it stand at that. The gross revenue in your scheme on record here was a fundamental factor in your calculation of the going value?

A. It was one of the factors, no more fundamental than a great many others.

Q. It was a factor?

A. It was a factor.

Q. Now if the difference between these two lines had been much less than appears there would that have any effect on your going value?

A. Certainly.

Q. In what way?

A. Other things being as they are a narrowing of the difference between the gross revenue and the total operating expense would tend to reduce the amount of going value.

Q. So that the difference worked out on your curved sheet here, say the difference between your curved sheet and the actual situation of the gas plant would be $50,000. How much less would that make your going value?

A. Make your question explicit; I can't answer it the way you asked it.

Q. Well you show a margin on this curved sheet you just worked out between two lines, one marked gross revenue and the other marked operating expenses, including taxes, but not depreciation?

A. Yes, sir.

Q. You worked out an amount there in figures, haven't you, for me of about $175,000 difference in the figures, as you stated?

A. I didn't state $175,000.

Q. But the difference was about that between the figures you did give me?

1273 A. I don't know what the difference is.

Mr. GUERNSEY: For which year?

Mr. BYERS: Take 1910, Mr. Lea, and tell the Master what the difference would be worked out on this curved sheet between the gross revenue actual, and the operating expenses actual, including taxes, but not depreciation.

A. As near as I can read the chart the difference between the gross revenue for 1910 and the operating expenses including taxes but not depreciation is $175,000.

Q. Now, then, suppose instead of showing that amount the curved sheet had shown $50,000 less, now what per cent of reduction would that have made on your so-called going value?

A. It would have made a small reduction in the percentage; I can't say how much.

Q. About approximately, how much?

A. I can't say.

Q. Give us your best judgment?

A. I haven't any judgment.

Q. No judgment about it—all right, we will let it stand at that. Now, to give you an opportunity to express a judgment, if you have any, suppose it was a hundred thousand dollars less, what per cent of reduction would that work out on your so-called going value scheme that you worked out?

A. I can't say without calculating.

Q. Can't you approximately?

A. No, sir.

Q. Can't you give us some idea?

A. No, sir.

Q. Would it be large or small?

A. I can't say whether it would without figuring.

1274 Q. Would it be half?

A. I can't say without figuring.

Q. Would it reduce it seventy-five per cent?

A. I can't say without figuring it.

Q. All right. If the assumed gross revenue for the next seven years were ten per cent or ten cents per thousand feet less than you assume, how would that affect your going value?

A. I can't say without figuring that either because there are a lot of other things involved.

Q. Would it affect it at all?

A. It might affect it either way; it might run it up or down.

Q. Will you figure that up for us in connection with showing the prospective growth from 1910 to 1918?

A. I will if I have time.

Q. We will ask you to do that before we close the cross examination. Well, isn't it true that the higher the price charged for gas the more the going value of your plant?

A. As a general proposition it is not so.

Q. Is it so here?

A. It is not.

Q. What would be approximately the effect on your going value

if the prices were raised to $1.10—I mean now worked out here on your Exhibit 20?

A. It might increase the going value and it might decrease it.

Q. You don't know?

A. No, sir; and nobody else does.

Q. There is no way you could figure it out from your report?

A. No, not from this report. It can't be figured.

Q. But there is no way you can figure it out from your report?

A. No.

1275 Q. Is the same thing true as to ninety cents?

A. Certainly.

Q. If the plant owned by the Gas Company including all of its services and meters could be instantly duplicated on January 1, 1911, and if everything then owned by the gas consumers in the way of gas appliances in Des Moines remained in place as they were at that time, on the first of January, in the present city, and its existing practical acquaintance, that is, the city's acquaintance and people's acquaintance with the use of gas in the city, there would be no going value, would there?

A. As compared with what?

Q. If the Des Moines Gas plant could be duplicated instantly on the first day of January, 1911, and all other conditions with respect to gas consumers was just the same on the first day of January, 1911, as it was when you looked over the field, the connections and appliances and education, all that was just the same, there wouldn't be any going value, would there?

A. Are you asserting that you are going to put in a second plant complete in all particulars, an exact duplicate of the existing plant in the existing town, put it into service immediately, and the existing plant dissolves or disappears?

Q. (Last question repeated.)

A. You are assuming this business is not connected up?

A. No, I am assuming just what I say there, the whole thing is just as it was when we found it on the first day of January, 1911, connected up and the plant could be reproduced instantly, would there be any going value?

A. You are in a realm of speculation. I am not prepared and I won't say. I am only considering those things which are humanely possible.

1276 Q. Is your hypothetical town humanly possible as you worked it out?

A. I am not reproducing a hypothetical town. The thing I am reproducing in my hypothetical calculation here is certainly humanly possible.

Q. Do you want further time to figure this out?

A. I don't want to figure it at all. I can't figure on anything not humanly possible.

Q. That is all the answer you want to make?

A. Yes, sir.

Q. Is it humanly possible, Mr. Witness, for every house, take twenty thousand houses of a town, to be all piped for gas and no connections?

A. Certainly.
Q. And no fixtures?
A. Certainly.
Q. That is the theory you figured on, it is humanly possible?
A. Of course.
Q. When you were making your valuation for the Peoples Gas Light Company in Chicago for hostile interests that you referred to, did you have full access to the manufacturing plants of the company?
A. Yes, sir.
Q. What work of valuation did you have or do at Buffalo?
A. None on valuation.
Q. What did you do?
A. I made a lot of calculations in connection with their engineer to determine economies that could be effected in the cost of *of* manufacturing and distributing gas in the city of Buffalo and the work was done by the city of Buffalo.
1277 Q. Not any valuation at all?
A. No, except as the equiment would be effected by the changes that would be involved.
Q. Who paid you for your work?
A. The city of Buffalo.
Q. Do you remember the amount?
A. No, and if I did, I wouldn't tell you.
Q. Did you estimate the going value at all?
A. Why, no; I didn't appraise the property of the company.
Q. You didn't furnish any report at all that in any manner worked out values there, going value or any other kind?
A. No, sir; I had nothing whatever to do with the valuation of the property as a whole.
Q. At Taylorville, did you value the property as a whole?
A. Yes.
Q. I have forgotten when you told me you did that.
A. I have forgotten too.
Q. About when was it?
A. I don't know, sometime this year.
Q. Was it since February?
A. I don't know.
Q. Since March?
A. I don't know.
Q. Was it before February?
A. I don't know.
Q. When did you furnish the Des Moines Gas Company with Exhibit 20 or a copy of it?
A. I don't know the date.
Q. About when?
A. It was, I should judge, about two months ago.
1278 Q. That would be some time in May or June?
A. Some time in June probably.
Q. Early in June?
A. I think so.

Q. Did you furnish your report at Taylorville before that?
A. I don't remember.
Q. Was it before the first of January last?
A. I don't remember.
Q. You told us yesterday, Mr. Lea, that you used a three per cent sinking fund for a part of the plant in all cases of fifty years life; did you use that per cent?
A. I did.
Q. That is true all the way through wherever the life is fifty years, you use three per cent?
A. If that is the figure I gave you yesterday.
Q. For a part of the plant having, as I remember it, twenty years life, you used three and one-fourth per cent?
A. Whatever I gave you yesterday was correct.
Q. Did you usethat per cent for all parts of the plant of that age?
A. Yes.
Q. Now, what other percentages were used, if any, other than the three per cent?
A. There were several others; there are different percentages for each different length of life.
Q. Well, give us the other if you can without too much trouble.
A. What year do you want?
Q. You have already given fifty and twenty—where is your table?
A. You can't find my table; it is my personal property.
Q. Use your personal property for a few minutes, if you will, and give us the figures.
1279 A. What length of life?
Q. The years that you have used.
A. I have used a good many.
Q. Well, give us all of them.
A. The first life I have is fifty years and that is three per cent; the next is thirty years, three and one-fourth per cent; the next is forty years, and that is three per cent; the next is twenty years and that is three and one-half per cent; the next is sixteen years and that is between three and one-fourth and three and one-half—I would have to look up my records; the next is twenty-five years at three and one-half per cent; the next is fifteen years at three and three-fourth- per cent; the next is ten years at four per cent; next is forty years at three per cent; the next is thirty-five years at three and one-fourth per cent; next is seventy-five years at two and three-fourth- per cent; the next is sixty years at two and three-fourth- per cent. That is all, I think.
Q. Now, Mr. Lea, to ascertain those percentages you had to get some private record you have of your own?
A. Yes.
Q. Why did you use those different percentages, just explain that, please?
A. Because I believe as you increase the life you will decrease the net interest which you will find it possible to realize.
Q. And that is the reason you have made the difference in the rates as to life?

A. Exactly.

Q. Now, this sinking fund as you worked it out here is based on a fair rate of interest upon a safe security, is that the thought?

1280 A. It is based on a fair rate of interest and on creditable security.

Q. Now, if that were true, why did you use as low a rate as three per cent?

A. Because men who know about those things tell me that is the right figure to use.

Q. They told you that was about the right figure?

A. Yes, they explained why.

Q. That is the reason you used it?

A. Certainly no other reason. I haven't any judgment of my own as to financial matters of that kind.

Q. Now I wish you would take any case out of your report there, take any typical case and illustrate for us just how you got at your investment age.

A. You mean the composite age of the investment interest?

Q. You understand it, that could be worked out from your report?

A. I said from some method as shown in my report.

Q. We have had difficulty in trying to get head or tail to it, and I wish you would take any one case that would be an illustration for the Master, or the rest of us, and figure it out for us on an investment basis?

A. Any one case of what?

Q. You don't know what I am trying to get at?

A. No.

Q. For instance, in your report you have meters and you have set out—you give some of it on page 12—average age meters 7.70 years. Just tell us how you figured that out?

A. That is figured by compiling first a record—as I explained yesterday—of the total number of meters in use at the end of a given year and the total number of meters installed during each year back as far as the record will go and multiplying the meters

1281 installed in a given year by the number of years in service, you will find for each of the years the total meter years; add the total of meter years, or rather by adding the meter years for each year you arrive at a total number of meter years, which divided by the total number of meters installed at the time of the making of the calculation will give you the composite age or installation basis.

Q. Just notice the question?

A. I am answering it. To arrive at this same figure on the investment basis instead of using only the number of meters installed during the year you split it up into the meters of each size or use instead the average size of meters and multiply by the unit for that type of meter installed, and you will have instead of the total meter year total meter dollars.

Q. How does that give you total meter dollars?

A. The same as this gives total meter years.

Q. Where do you get your dollars to support that?

A. You get your dollars, knowing what it would cost to install

the meter at a given time which would be the total dollar year I should say.

Q. To get that, to figure out this 7.70 down here, we would have to have some other figures and information than what appears here?

A. You would have to have enough knowledge of the business to apply the correct units.

Q. We would have to know the cost of the units.

A. If you have a knowledge of the business you have those units.

Q. You would have to have that before these figures can be arrived at.

A. These figures are not arrived at by men not familiar with the business.

Q. It is your business now, as I understand it, to help us.

1282 Do you have anywhere these dollar meters years or dollar years as you worked it out to make this 7.70?

A. I may have it.

Q. You did have it at one time?

A. I believe I did; I think I have it now.

Q. Who worked out those figures here?

A. Which figures?

Q. The last line on page 5.

A. That is a copy from the summary of these details coming from the company.

Q. Who made the detauls?

A. Some one in the employ of the gas company.

Q. Was this 7.70 furnished to you as a part of the details?

A. Yes, after I had verified the calculation——

Q. That is the answer now—we are satisfied with it. Suppose now, Mr. Lea, you had only the following facts, taken merely as an illustration of your method; how would you proceed to get an investment age, say five thousand meters on connections which first had meters thirty years ago——

A. How many meters thirty years ago?

Q. Five thousand. Listen to the question. Five thousand meters on connection- which first had meters thirty years ago——

A. I don't get the drift of that.

Q. Five thousand meters which first had meters twenty years ago——

A. I don't know of any meters having meters.

Q. Five thousand meters on connection- which first had meters five years ago?

A. You will have to ask it again; I can't understand that at all.

Q. Is there too many meters or too much time?

A. There is too much ambiguity.

1283 Q. Well, let us reduce it a little—suppose you only had the following facts, taken merely as an illustration now of your method; how would you proceed to get the investment age of five thousand meters on connections which first had meters thirty years ago—five thousand meters on connections which first had meters twenty years ago?

A. I understand that.

Q. Is that the only answer you want to give?
A. That is all.
Q. Take page 12 of your report and take everything opposite the year- 1890 and 1887 and assume now those are the only lines on that page and work out the average age on an investment basis for us?
A. It is a very simple thing to do; it takes a lot of time.
Q. Well, do it—if it takes too long do it some other time and hand it in to us later.

Mr. BYERS: That is as far as I can proceed with this witness until these other matters are figured out and the memorandas and papers asked for are produced. There is another question or two I want to ask.

Q. In making up your report, did you work out specials on the percentage basis?
A. By the percentage basis.
Q. Not by actual count?
A. No, not by actual count.
Q. What per cent did you use to arrive at it?
A. Four and one-half per cent for the pipe.
Q. Four and one-half per cent of what?
A. Of the net cost of the iron pipe itself.
Q. That includes all these so-called seal pots that have been referred to?
1284 A. All crosses, T's, Y's, L's and drip pots. I think there were some few valves that were listed separately. It certainly does not cover valves. It only covers cast iron connection other than iron valves, including drip pots; no, unless the drip pot is on the side line, the line drip itself is not included as a special; all drips are treated separately as drips and not specials.
Q. You exclude from your specials what make up the four and one-half per cent of line drips and pipes leading to it?
A. Wrought iron pipes, yes.
A. And all valves are excluded?
Q. Yes, that is because the number of valves required vary at a wide range in different cities and you can't use any definite figure. You couldn't take any corresponding percentage for drips or valves.
Mr. GUERNSEY: You were asked if you were excluding line drips.
A. I have not included them at four and one-half per cent.
Mr. GUERNSEY: What pipes lead to line drips?
A. No pipes lead to the line drips; we have a wrought iron line running over to the side drips.
Mr. BYERS: Now, Mr. Lea, you said something about wrought iron pipe in your report and your report refers to wrought iron pipe in many places; do you just assume that was wrought iron pipe or is it in fact wrought iron pipe?
A. As a matter of fact we do not buy wrought iron pipe, we buy wrought pipe. We all understand we are not buying real wrought iron; everybody understands that, unless we specify particularly wrought iron; wrought pipe is the trade name for that style of pipe.

Q. Wherever that item appears in your report, does it
1285 mean wrought iron?

A. It means what I said, W. I. is the symbol used and that means wrought pipe. It used to be all wrought iron years ago and finally the dealers found they could make a steel pipe and slip it in on the gas companies, until now, we all understand it is not a wrought iron pipe.

Q. Then, as a matter of fact, wherever that term appears it does not mean wrought iron, but just steel?

A. It means wrought steel.

Q. It is cheaper than wrought iron?

A. Per foot.

Q. And don't last so long?

A. In some places it does; as a rule it does not last as long as wrought iron pipe.

Redirect examination by Mr. GUERNSEY:

Q. You just referred to a per cent of specials; what is your basis for that four and one-half per cent that you took.

—. I have made a number of calculations in different towns where I have done work, laying street mains, and I have seen corresponding figures from other men who have done work of that character, which all go to show that a fair allowance for the extra cost of specials would be four and one-half per cent of the cost of the pipe itself. That does not cover any additional charge on the pipe.

Q. That is what you call net construction?

A. It is often less than that. If the cost of the pipe per foot is thirty cents, I will add four and one-half per cent for specials.

1286 Q. That is the figure that has been developed by practice in your profession?

A. It does not mean four and one-half per cent of the total cost of pipe laying by any means.

Q. Is that pipe with the freight added?

A. That is just the net cost per foot of pipe. If pipe costs you thirty dollars a ton, four and one-half cents a pound, your cost per special would be four and one-half per cent of that.

The MASTER: In Des Moines?

A. If the prices were not different.

The MASTER: Do you include freight?

A. No, just the cost of the pipe without the freight or labor or paving, and work required in paying pipe.

Mr. GUERNSEY: One other thing, before I forget it, you were asked some questions based upon the assumption that the company here has no franchise—which is an assumption which arises in the imagination of counsel,—but I suppose we might as well go into it. Now, just assume, if you will, that the company on the first day of January, 1911, had absolutely no franchise whatever. It had this plant here which it had been operating up to that time, and that it was negotiating with the city for a new franchise and in that connection the question of rates arose and you were asked as an expert

to determine the value of that property in view of those negotiations, would that have any effect on your valuation in the slightest degree?

A. Not in the slightest.

Q. You testified, I believe, a little while ago that all the information contained on page 12 of your report Exhibit 20, which is the page headed average meters, installation basis, was furnished to you by some one connected with the complainant?

1287 A. Yes, sir.

Q. And that includes the computation at the bottom of the page?

A. Yes, sir.

Q. You mean this is practically a copy of what is given to you?

A. Yes, sir.

Q. I wish you would tell the Master what steps you took to verify it before making use of it?

A. I saw some of the detail records from which the basic material was taken and checked over enough of it to satisfy myself and to know it was honestly and accurately made. I did not check every figure. I satisfied myself it was correct, it was made on a correct basis and by men who had the data with which to make it and they were making it honestly.

Q. Another thing: you were asked if while you were making the examination of the property of the Gas Company in Chicago for what you designated as a hostile interest you were allowed access to the plant or plants of that company, and you said yes. Now I wish you would tell the Master whether before you requested that access you disclosed the fact that you were representing hostile interests to that gas company?

A. I certainly did.

Q. Now, with reference to these line drips and apparatus, is that under your distribution system in your inventory?

A. Yes, sir, in Exhibit I.

Q. That is on page 92. Turning to that page, tell us whether the drip pots as well as the valves were inventoried separately and not included in the estimate of percentage on specials.

A. All the drip pots and valves in the distribution system were separately itemized and were not included in any sense in the four and one-half per cent I have added to the weight of cast iron

1288 pipe in arriving at the allowance for specials.

Q. Now, you were asked if from your report the going value on the basis of a ninety cent rate for gas could be ascertained, and whether it could be ascertained on the basis of $1.10 rate, and you said it could not.

A. I said it could not be determined from my report but it could be determined on exactly the same method.

Q. What was the rate of the going plant at?

A. One dollar.

Q. If you had calculated the going value in your report on a ninety cent basis, would it have been accurate?

A. Certainly not.

Q. Or on a $1.10 basis?
A. Not.
Q. You were assumed to make an estimate of the going value in the city of Des Moines?
A. Yes, sir.
Q. Your report did not show what the distribution system of the Kalamazoo plant would cost?
A. No.
Q. It don't show anything except what you attempted to get at as the present value of this plant at that time under the actual conditions?
A. That is all it shows.

Mr. BYERS: Mr. reporter, will you please mark this exhibit of tabulated figures.
(Paper marked Defendants' Exhibit No. 7.)
By agreement of parties the witness is to make a correct duplicate of the same in typewriting.

At this time an adjournment was taken until July 31, 1911, at 9:30 a. m.

1289 Monday Forenoon Session.

JULY 31, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of Complainant resumed as follows:

HENRY I. LEA, re-called for further direct examination, examined by Mr. Guernsey, testified as follows:

Q. Mr. Lea, what are some of the things incuded in this percentage, on account of engineering, for instance?
A. The study of available sites for a gas plant within the city of Des Moines; the making of accurate maps of such real estate as is finally selected, of determining elevations of the various portions of such real estate; the making of the detailed plans and specifications covering all of the equipment at the works and in the distribution system; the comparing of the bids and specifications submitted by various contractors; the recommendation to the company as to which bid to accept, or the actual placing of contracts by the engineers; the supervision of the various stages of construction up to the final completion and the approval of the final payment on each of the individual contracts.
The MASTER: It is the ordinary work of engineering and the architect?
A. Yes, sir.
The MASTER: Including the supervision and superintendence of the construction?
A. Yes, sir.
Q. You were asked on your cross examination something about

contractor's profit. On what parts of the plant did you figure
1290 contractor's profit?

A. On only such portions as the company would ordinarily do by the contractor method, and that would be restricted to the plant and works equipment, the machinery and buildings in the plant itself; the street work being in nearly every case performed by the company itself.

Q. By the plant you mean manufacturing plant?

A. Yes, sir. Now there might in a case like this, there might be river crossings let to a contractor in occasional instances, but ordinarily that would also be done by the company; but the building of gas holders, putting up buildings for gas making and purifying machinery, meters, etc., of the plant would be done under the contract system by concerns specially adapted to that kind of work.

Q. Do these contractors expect a profit?

A. Their profit is in the price I call net construction cost.

Q. They anticipate and insist at least a prospective profit?

A. Yes, they do.

Q. On your cross examination you were asked several questions questions in connection with the matter of going value as to how your ultimate result would be affected say by a reduction of fifty thousand dollars in the gross revenue, or things like that. I wish you would state to the Master whether you could ascertain what effect that would have without making a computation through all these details?

A. No, sir; you can't.

Q. Two or three or several questions were asked you based upon the hypothesis that the present plant might be instantly duplicated; is this physically possible?

A. It is not.

1291 *Q.* The MASTER: What is the use asking that question.

Mr. GUERNSEY: I don't think there is any more use in it than there was in asking a question on that hypothesis.

The MASTER: That does not differ the question altogether in my judgment; of course, I am not expressing an opinion.

Q. Now, then, you were also asked a number of questions based upon the possibility of relaying the mains when streets happen to be unpaved; are these two hypotheses consistent?

Objected to on part of defendants as being incompetent.

A. No, they are not consistent. While it would be possible to relay some mains at the proper time coincident with the opening of the existing paving for replacing, it would just as naturally follow that a large part of the mains now without paving would at that time be covered with comparatively new paving and that a large part of the paving now existing would have been replaced and would be in such condition that it would not warrant the city in tearing it up for this purpose.

Q. If the plant were instantly replaced, would it be possible to wait for the streets to be torn up for repaving?

A. No, certainly it is safe to say if you were to wait until the city opened streets for repaving that cost would be very much in excess of what I have allowed in my estimate.

Q. On your cross examination you referred to a year's gross income as having been taken as a sort of an arbitrary measure of going value in the gas business?

A. Yes.

Q. Now what is the fact about that—this is, has that been accepted as a sort of an arbitrary test?

A. It has been accepted by a number of experienced men as an approximation of the going value.

1292 Q. And what about the thirty dollars per meter?

A. That is another method which has been used frequently.

Q. In the same way?

A. In the same way and for the same purpose.

Q. I think that referring to the third plat or chart which is in your report, Exhibit 20, you tell us that the gross revenue as shown there on page 96 was something over $525,000 for the year 1910?

A. Yes.

Q. So that would have run something under your computation of going value in your report if that rule had been adopted?

A. If I had adopted one year going value, I would have a value lower than shown.

Q. Now, suppose you had adopted thirty dollars per meter?

A. I would have a going value somewhat higher than I have shown.

Q. During a part of your cross examination General Byers used the expression gas appliances, referring to piping, and you used it in another sense; in what sense did you use it?

A. I used the term gas appliance to cover only such devices as actually consume gas, like lighting fixtures, mantels and lamps on the fixtures, water heaters, gas ranges, flat iron heaters or flat irons containing gas burners fed by a rubber tube leading to them, appliances actually consuming gas, not piping leading to them.

Q. You said several times on your cross examination that your method of computing going value would not work unless certain factors were ascertained; what do you mean by work?

A. Wouldn't show correct results.

The MASTER: In other words, you have got to have a correct basis?

1293 A. Yes, sir; you have got to assume conditions humanly possible and in proper sequence; such sequences as you actually find in practice in order to arrive at an accurate and dependable result.

Q. In this same connection I think in answer to some question on cross examination you assented to the use of the word speculative as describing the projections upon these charts as to conditions after the end of 1910. In what sense do you use this word speculative or assent *of* its use?

A. As applying to figures made or estimates made which are projected into the future, something which you can say is in the future because it has not yet come into being; you assume such and such results will be reached, and to my mind that is speculative.

Q. Something that is a matter of judgment as distinguished from something that has happened?

A. Yes, sir; something that applies to the future.

Q. Why is it that the gas appliances to which you refer are sold by the companies and are not sold generally like other merchandise?

A. Because the purpose of the company is primarily to increase its sales, and to that end it must get as many appliances in use as possible, from which it follows that they must be sold as low as possible. The gas company therefore has no motive except to sell at cost, and the selling of such appliances at cost is the uniform practice throughout the entire country.

Q. You referred to the 6 foot 6 sets as something you would not put into a new plant if you were building one. What is the fact as to whether the condition that exists here, taking this as an illustration of it is the condition found in every gas plant that has
1294 been developed in a growing city.

Objected to on part of defendants as being immaterial.

A. I believe my statement was that I would not if I were today building the plant of the present total capacity of the Des Moines Gas plant install 6 foot 6 units; but it certainly is a fact that this plant has gone through the period when this was the proper size to install. It was more economical in the conduct of the business to install the 6 foot 6 units, later the 8 foot 6 units and then still later install the 10 foot 6 units as the plant grew in capacity——

Q. That is not just the question I am asking. I asked you whether this is a condition that you find in the gas plants that have developed in a growing community.

A. It certainly is.

Q. Now, then, when the 8 foot 6 sets were put in, of course additional 8 foot 6 sets could have been installed for the reserve capacity instead of 6 foot 6; and when the 10 foot 6 sets were put in of course additional 10 foot 6 sets could have been put in instead of using the 6 foot 6 and the 8 foot 6 sets that the company had?

A. Yes, sir.

Q. If that had been done, how would it have effected the situation from the standpoint of economy?

A. There would have been unnecessary investments with a corresponding unnecessary interest charge.

Q. How about the depreciation?

A. The maintenance charges and depreciation charges would have been unnecessarily increased.

Q. So that *what* is the reason that has induced not only this plant but gas plants generally to adopt the course that has been followed here.

1295 A. The reason is that each company is planning on making its gas at the lowest cost per thousand feet.

Q. It is a question of economy?

A. Yes.

Q. You said in your cross examination that so far as the matter had come under your observation the books of the companies did not show correctly the cost of construction—I do not refer to this company but I refer to gas companies in general—and I think you gave that as one reason why you did not go to the books of this company for these costs. I wish you would explain that statement, state why that is true in your judgment.

A. Well, the company ordinarily keeps its accounts in such a way that they show the total amount of money expended for construction throughout the year and they can in most cases show from that total amount the proportion that has been charged to a given piece of construction, but they do not keep those accounts so that all the elements entering into a specific piece of equipment show that piece of equipment throughout the books; you would have to go through the books and segregate a lot of items. We know from experience about what proportion that will work out and these are the proportions I have used rather than dig them out of the company's books.

Redirect examination closed.

Mr. BYERS: We will not take up further cross examination until the information the witness is to produce is at hand.

Excused.

1296 WILLIAM A. BAEHR, being first duly sworn, on part of complainant, examined in chief by N. T. Guernsey, Esq., testified as follows:

Q. Please give the reporter your name, age, place of residence and occupation?

A. My name is William A. Baehr; age, thirty-seven; residence is Chicago; my occupation *os* consulting engineer.

Q. You say you are a consulting engineer. Have you specialized as to any particular matter in your consulting engineering, and if so, what?

A. My principal work is in gas engineering.

Q. Now, I wish you would state what experience you have had, stating it in detail, in connection with the construction, manufacture and operation of gas plants, and what special technical study you have taken for the purpose of preparing yourself for this professional work?

A. If there are no objections I might read what I have formulated on paper here regarding my experience; if there are no objections——

Mr. BYERS: That will be all right; we have no objection to that at all.

A. Witness reads memoranda as follows: In 1894 I graduated from the civil Engineering course at the University of Wisconsin at Madison, Wisconsin. During my college course, I did some work surveying for the City Engineer of Oshkosh, Wisconsin, during one

summer vacation. After graduation I was employed in the Bridge and Building Department of the Wisconsin Central Railway, now the Soo Line, doing office work. Subsequently, I did some real estate surveying in the suburbs of Chicago in charge of the
1297 field work. In the spring of 1895 I became a draftsman at the Edgemoor Bridge Works near Wilmington, Delaware. In the fall of 1895 I went to the Wisconsin Bridge and Iron Company at Milwaukee, Wisconsin, where I was employed as a draftsman on structural work, remaining there until the early part of 1897. In March 1897, I became Superintendent of Distribution for the Milwaukee Gas Light Company, which position I held for about one and one half years. During this time I had charge of main and service work for this Company. Subsequently, I was employed in general engineering at the Gas Works of the Milwaukee Gas Light Company doing general designing, and also designed and superintended the construction of the foundation for a three million cubic feet gas holder at the new plant of this Company in Milwaukee. This new holder was located on marshy ground, necessitating a study of the soil, the making of borings and piling work. In June 1899, I went to Denver, Colorado, as Superintendent of the Gas Department of the Denver Gas and Electric Company. While in this position I had charge of the operation and extension of the Gas Plant in Denver, including charge of coal, water gas and Pintsch Gas plants, and the distribution systems. During the time I was at Denver I made an examination and engineering report for prospective purchasers of the Gas Plants at Leadville, Boulder and Greeley, Colorado. During this time also, and during the year 1902, I made the drawings and specifications for remodeling the Gas Plant at Pueblo, Colorado, including the construction of the new water gas plant. During 1902, also, I was employed on engineering work in connection with the proposed improvements of the gas works at St. Paul, Minnesota. In March, 1903, I went to St. Louis, Missouri, as engineer of the Laclede Gas Light Company,
1298 which supplies all the gas for that city. In this capacity I had charge of the coal, water and Pintsch Gas plants and gas distribution systems, together with the electric plant and distribution systems of The Laclede Gas Light Company. I was in St. Louis for about six years and during this time was in charge of the designing and constructing the improvements to the plants and distribution systems of that Company, aggregating an expenditure of about seven million dollars. Among the work thus designed and carried out was the construction of a four million cubic foot gas holder; additions to the water gas plant of an approximate capacity of ten million cubic feet per day, together with the necessary apparatus and machinery; the designing and construction of a high and low pressure gas distribution system, including the designing and construction of about five hundred miles of gas mains and approximately sixty thousand new service and meter installations. During this time I designed and also had charge of the construction of a large Pintsch Gas Plant at St. Louis, capable of supplying gas, and actually doing so during the World's Fair in 1904, to more

than one thousand railroad passenger cars per day, together with a new distribution system for the same; also the improvements of the electric plant and distribution system were in my charge during this period. During the time I was engineer of The Laclede Gas Light Company, one hundred eighty acres of ground were purchased and I designed the general plans for a combined coke oven, coal gas and water gas plant to a total capacity of about one hundred million cubic feet per day. During the time I was in St. Louis
I made reports as Consulting Engineer for prospective pur-
1299 chasers of various gas and electric properties. Among the
gas properties were the following: Ardmore, I. T. 1905; East St. Louis, Illinois, 1905; St. Charles, Missouri, 1906; Little Rock, Arkansas, 1906; Collinsville, Illinois, 1907; Gas Plant Improvements, Toledo, Ohio, 1907; Hamilton, Ohio, 1907—employed by City—Hannibal, Missouri, 1908; Granite City, Illinois, 1907-1910.

Among the combined gas and electric properties were the following: Belleville, Illinois, 1905; Western United Gas & Electric Company Properties, namely, Elgin, La Grange, Aurora, Joliet, and twenty or more smaller places. La Crosse, Wisconsin, 1906, Street Railway also; Louisiana, Missouri, 1906; Nevada, Missouri, 1907—Water and Street Railway also; Cape Girardeau, Missouri, 1908,—Water also; In addition to these I made complete investigations and reports on the problem of supplying natural gas to St. Louis from the Kansas and Oklahoma gas fields, which involved a considerable amount of investigation and research work. I also designed and made complete specifications for a new coal and water gas plant at Beloit, Wisconsin, and a new electric plant at the same place. I also designed and furnished plans and specifications of the new electric plant and distribution system of the Merchants Power Company of Memphis, Tennessee. I also designed and partially built a complete gas plant, electric plant and distribution system at Davenport, Iowa. In April 1909, I left St. Louis and opened an office as consulting engineer in Chicago. Since then I have been employed as the regular Consulting Engineer of the Oshkosh Gas Light Company, embracing the designing and construction of all improvements of the gas and electric supply at Oshkosh, Wisconsin, as well as being in general charge of the operation of their
plants. I have been employed in the same capacity by the
1300 Beloit Water, Gas & Electric Company of Beloit, Wisconsin,
and also by the Greeley Gas & Fuel Company of Greeley, Colorado. Since entering into the consulting field I have made reports on various gas and electric properties, among others as follows: Anderson, Indiana, 1909, designing new plant and purchasing holders; Atlantic City, New Jersey, 1909; Lansing, Michigan, 1909; Litchfield, Illinois, 1909; Wilmington, Delaware, 1909; Amarillo, Texas, 1909-1910, water also; Galena, Illinois, 1910; Helena, Arkansas, 1910; Poplar Bluffs, Missouri, 1910; Waterloo, Iowa, 1910; Dayton, Ohio, 1910, natural gas also. I have also been employed as expert engineer by the Minneapolis Gas Light Company in the matter of service regulation. In the spring of 1910, I

was employed by the Southern California Edison Company (electric) to design and report on all improvements required for the coming five years in the plants and distributing systems of the eight gas companies owned and operated by that Company in Southern California at that time. I am making a detailed appraisal of the property of the Peoples Gas Light & Coke Company of Chicago, being employed on this work, the total value of their property aggregating many millions of dollars. I was also employed by the city of Wheeling, West Virginia, to investigate the conditions and design improvements for the gas plant and distribution system which is owned by the Municipality of Wheeling. At the present time I am employed by the Public Service Commission for the First District of New York City to investigate and report on the gas pressure conditions in New York City and to make recommendations required to give New York City first class pressure service. Recently, 1911, I have been further employed by the City of
1301 Wheeling, West Virginia, to build their new gas plant and rehabilitate their distribution system, as per my report made to them in 1910. Also very recently, 1911, I have been employed by the City of Buffalo, New York, to investigate and report upon the operating conditions and expenses of the Buffalo Gas Company, supplying the artificial gas to that city, with a view towards determining what economics, if any, could be effected by the installation of labor saving machinery. I have just finished an employment by the Kings County Lighting Company of Brooklyn, New York, on a rate regulation case before the Public Service Commission for the First District of New York. I am at present engaged in making a complete valuation and determination of both gas and electric light and power rates in Oshkosh, Wisconsin, being retained for that purpose by the Oshkosh Gas Light Company.

Q. Up to 1909, when you opened your office in Chicago, you had what to do in connection with the operation of these plants you have spoken of?

A. I was in actual charge of the operation as well as construction and designing.

Q. What do you mean by saying actual charge, were you manager of the plants?

Mr. Byers: It seems that paper fully qualifies the witness.

Q. What I want to get at in a general way is the nature of the duties which you performed in operating these plants, so as to indicate what knowledge you have as to the actual operating.

A. I think I can probably answer that question best by stating that at Denver I was superintendent of the gas department, and I went to the gas plant and the other places where it was my duty to visit each day, and at the gas plant I investigated each opera-
1302 tion each day, looked over the results for the preceding day and directed such changes as were necessary to make in my judgment, to improve results, if that could be done. When I went to St. Louis, that being a considerably larger city, it was impossible for me to visit each gas plant each day, but I made it a point to

visit all the plants of the Company several times a month, and each day I conferred with all the superintendents of the different plants as to the operation, and went over the results of the preceding day and determined personally the changes that were requisite in the future operations to secure further economy, of that were possible.

Q. Now, have you made a valuation of the property of the Des Moines Gas Company, the complainant, in the city of Des Moines, consisting of its manufacturing and distributing plants in the city used for the purpose of furnishing gas?

A. I have.

Q. When did you first come to Des Moines?

A. I came to Des Moines first about the first of January 1911.

Q. Was that the first time that you had received any information, or at least any observation as to this plant?

A. It was.

Q. Now, then, tell us what you have done, how much time you spent in Des Moines, and what you did in the way of examining this particular plant?

A. My first visit to Des Moines, was about January 1st, and at that time I was here two days only, being very busy and being required to leave on other work on the evening of the second day. During these two days I made an inspection of the gas plant by going through each building and noting all the apparatus, and subsequently made a tour of the city, driving to the outskirts in
1303 several directions and being advised generally of the extent of the distribution system. At that time I made an approximate determination of the valuation of this property. Subsequently I came to Des Moines, I think some time during February—I prefer to refresh my memory on that particular point because I have a note as to when I came—I find I was here three days in the early part of February, from the 6th to the 8th inclusive, and again in Des Moines on February 26th to March 9th inclusive. At these subsequent visits I went into the question of the inspection of the plants more thoroughly and made determinations of the cost of doing the work and the cost of materials in Des Moines, and made a very careful check of a copy of an inventory of the property of this company, which was handed to me by the company.

Q. Now, let me interrupt you a moment—this copy of the inventory is a copy of Exhibits 15 and 16?

A. I believe it is a copy of those exhibits.

Q. Except as to inaccuracies Mr. Lea called attention to amounting to about fourteen dollars?

A. Yes, sir.

Q. Now, then, go on and state what you did in the way of checking the accuracy of this inventory yourself?

A. With one of my assistants I went into each building and measured each building and measured the thickness of the walls and the *the* sizes of windows and door openings; measured the height of the walls of some of the buildings only, but I took enough measurement to satisfy myself of the substantial accuracy of the inventory in regard to the buildings. In regard to the apparatus I went over

the list of the apparatus as noted in the inventory and checked
1304 each piece of important apparatus personally and noted that the size and description of the same corresponded with that furnished in the inventory. That is about all the checking I did.

Q. Did you do anything in the way of checking up the distribution system, if so, what?

A. I did nothing in the way of checking up the distribution system accepting the inventory of the company as correct in that particular.

Q. What was the result of this checking of the buildings and apparatus?

A. I found that the measurements were correct as set forth in the inventory, and that the apparatus as listed therein was actually at the Gas plant of the Des Moines Gas Company, and that the description, size, name, manufacturer etc., corresponded to the description, etc., in the inventory.

Q. Please state whether or not you proceeded to make a valuation of the property of this complainant company in the city of Des Moines, used and useful in its business of manufacturing and distribuiting gas there?

A. I did.

Q. Have you copies of your report?

A. Yes, sir. (Witness produces copies.)

Q. I wish you would state whether the report marked complainant's Exhibit 21, is your estimate of the cost of reproducing this plant?

A. It is.

Q. Now turning to page one, which immediately follows the index, you have first here some explanatory matter, part of it you have already covered; what do you mean by the statement unit costs were fixed to each item covering cost of material and wages?

1305 A. By unit cost I mean the cost of a unit quantity of material usually in place. For instance, concrete is usually estimated at so much per cubic yard, and I determine what would be a fair price per cubic yard of concrete, in place, in Des Moines.

Q. As of the date of this appraisement?

A. As of the date of this appraisement.

Q. Was that followed out, for instance, with reference to brick and lumber and various other things involved of that character?

A. Yes, that same system was carried throughout the brick work, excavation, roofing, hauling, all of the usual features that are incident and a part of the construction work of this kind.

Q. Now, stopping here for a moment, Mr. Baehr, I wish you would tell the Master whether this method of obtaining unit prices figured at, what you call a basic cost, and then add those various other items, is the method usually adopted both by engineers and contractors in estimating costs of work?

A. It is.

Q. What did you do with reference to laying out the work and determining what part of it would be done in each year and why did you do this.

A. The date of this valuation was assumed as of January 1st, 1911. I estimated that on this date some mind would conceive the idea of supplying Des Moines with a gas plant; I did this in order to logically reproduce this property. The necessary steps to go through to reproduce a property and business of this kind from its inception to a completed state, were assumed about as follows: To start with, during the first six months of the history of this construction, it is assumed that a preliminary investigation would be made, to look over the city of Des Moines as a field for gas for a gas
1306 company, which would be followed by an engineering investigation to determine the advisability of constructing a gas plant in this place and developing the gas business here. The first six months would be consumed by work of securing the franchise, the necessary time and effort consumed in arranging and financing of an enterprise of this kind, the determination of a proper site and optioning of real estate, naturally the service of an attorney at law would have to be arranged for, and the spirit or mind conducting this enterprise would lay out an organization to handle it, not only the construction work but to carry on the office end of the business. Now I estimated that it would fairly require six months to carry out that portion of the work. I further estimated, thereupon that about the first of July 1911, in other words, six months after the date of valuation that the real estate would be purchased, that the business and engineering departments would be organized as rapidly as possible; that an office would be rented and the various heads of departments would begin to arrive and that the organization would begin to assume form. Also that the general legal and financial organization would be completed during the last six months. Now as soon as the engineering department is organized, it would proceed to undertake the usual and customary work of an engineering department of that kind, would undertake, such as an investigation of the real estate, the laying out of the plant, making detailed plans, securing prices of purchase, etc. This work of engineering is figured and estimated not to be completed in the six months, but to continue throughout the construction period to a more or less extent, as required to carry on that work. Then I estimated that actual work would begin about the first of January, 1912;
1307 in other words, about one year after the inception of the enterprise. I figure this is a fair period to allow for the necessary work to be undertaken preliminary to actual construction. Thereupon the rate of construction is estimated to be carried on with a view toward the utmost economy. If you would consider a man investing his money in an enterprise of that kind, he would naturally be desirous of completing his construction and getting into operation and securing a return at as early a date as possible and keeping in mind the reasonable amount of work that can be done economically and fairly, I have estimated the rate of work as contained in this report.

Q. Now, on page one, I think you referred to this rate of work under a division; how you got at it by dividing the work into districts?

A. Yes; the distribution system is a very expensive feature of

work of this kind and it requires careful study to lay out the amount of work that should be done in a given length of time in order that that work may be economically and reasonably possible. I assumed and estimated that it would be reasonable and fair to carry out the amount of the distribution work in Des Moines in three years, and there being about 180 miles of main, all told, I estimated that it would be reasonable to figure to lay approximately one-third of that amount of mains each year. For that reason I divided the city into three districts, and these districts are so divided that the amount of work in each is approximately the same—the mains in each district and services in each district and the rate of installation of meters are given in this report; but approximately one district is completed per year, with the exception of the meters, which
1308 are not fully installed in each district in the year mentioned, but the rate of installation of meters is shown in the table in this report. These districts correspond with the districts shown on the map in one of the earlier exhibits submitted by you—I have forgotten the exhibit number.

Q. That is in Exhibit 16, plate #33. Are these districts indicated on the plate which has been referred to in Exhibit 16 as plate #33?

A. Yes, sir.

Q. How are the first, second and third indicated?

A. The first district is marked one, the second is marked two, and the third district is marked three.

Q. You refer to beginning work in 1912; there is a reference here on page four to river crossings?

A. The river pipes would have to be laid—I understand during the winter months the water is low and I understand that you can estimate that during the winter months you always find the water low to do this character of work to the best advantage—for that reason I estimate that the river piping work would be begun in the winter of 1911 and 1912.

Q. And what have you estimated the rate of expenditure each year, whether it is uniform or not?

A. During each year, I estimated the rate of expenditure would follow a straight line, from the beginning to the end of each year, and that is practically true.

Q. What do you mean by following a straight line; we don't know, we don't think by lines?

A. I mean that the expenditure in the last half of the year would be practically the same as the expenditure the first half of
1309 the year and for that matter that the rate of expenditure each month would practically follow the same kind of a curve if plotted on a sheet of paper; by curve in this instance I mean a straight line.

Q. When did you estimate the plant would be completed?

A. I estimated that the entire physical equipment, that is the plant and the distribution system would be completed and in operation on and after January 1, 1915.

Q. And when would you first begin to supply gas?

A. I estimated we would first begin to supply gas on January 1, 1913.

Q. Now, Mr. Baehr, what do they call this method of valuing a plant?

A. It is called the reproduction method.

Q. Why have you adopted it?

A. I have adopted this method because in my opinion it affords the best test upon which I can base my judgment of the value of this property.

Q. And what is the fact as to whether it is a standard method and used by engineers generally?

Objected to on part of defendants as being incompetent and not a matter of expert testimony.

A. It is a method which is in general use.

Q. On what basis have you figured the taxes?

A. I ascertained that the tax rate in 1910 was ninety mills on one dollar on twenty-five per cent of a full valuation. I changed that rate, or reduced it rather to the rate on a full valuation, which is equivalent to a rate which is two and one-fourth per cent per year on a full valuation, and that is the figure I used.

Q. Now, turning to page 5 of your report, we will take up
1310 these overhead matters first in the order you have them; what do you mean by items of additional cost?

A. By items of additional cost I mean those portions of the cost of carrying on an enterprise of this kind over and above the cost of material and wages entering into the actual construction.

Q. Then the material and wages are not the only items of cost that enter into the actual construction?

A. They are not.

Q. You take up the first here, what?

A. I first take up what I call item #1, contingencies.

Q. You have the words on base only; who do they mean?

A. The cost of material and wages I call in this report a base figure. Now, contingencies I apply to the base figures only, contingencies being estimated as a percentage.

Q. By saying you apply to the base figure only, you mean you apply them before you add taxes and things of that kind?

A. Yes.

Q. What per cent do you add on account of these contingencies?

A. I apply contingencies only to certain portions of the property; that is, the construction work; there is no contingency on real estate; meaning by that the gas works, on mains and services and on meters in use I apply contingencies at ten per cent on the base figure for those parts only; on meters not in stock, no contingencies.

Q. The plant as you used the word in this Exhibit 21 means the manufacturing plant then?

A. Yes.

Q. Not the entire property of the company?

A. No, not the entire property.

1311 Q. Now, please state whether or not on page 7, you explain in detail some of the items that are included in this matter of contingencies?

A. I do.
Q. And it is under that head?
A. Yes.
Q. Now what have you allowed on account of contingencies?
A. In dollars?
Q. No, per cent.
A. Ten per cent on the plant, meaning gas works, mains and services and meters in use, using the base figure.
Q. Why do you adopt ten per cent?
A. Because ten per cent is the result of my experience in doing construction work of this kind. I have found in the number of years I have handled construction work and been in charge of construction work of this kind, that there were always items of cost entering into the final cost which were not foreseen at the time the work was originally planned and estimated. These contingencies as I call them, varied in amount, in some cases running as low as ten per cent, in other- they run very high; but from the experience I have had and being in actual charge of this construction, I estimate that ten per cent is a conservative and fair figure to use in this case.
The MASTER: Is this per cent estimated upon the entire cost of the meter or on the laying of it?
A. That per cent is estimated on the cost of the meter in place; that is, base figures only.
The MASTER: I mean the cost of the meter and the cost of placing?
1312 A. Yes, sir.
The MASTER: And in the same way with the mains?
A. The same way with the mains.
The MASTER: And the same way with the plant?
A. Yes, sir.
The MASTER: That ten per cent goes under cost of construction and the cost of material both?
A. It goes upon the cost of material and wages entering into the cost of any portion of the plant, or the whole of it, and the mains, services and meters in use.
Q. Now, turn to page 7. What are some of the things you take into account here that are covered by this ten per cent?
A. In the first place, that ten per cent covers among other things, omissions. In a case like the one under consideration omissions are not as serious as in cases where the inventory would be made with less care and less completeness. In this instance the inventory has been made with great care and with great completeness and the omissions are not as serious here as might be the case elsewhere. But there are bound to be omissions and I have covered omissions, whatever they are, under this item of contingencies. I might instance that by stating that in Chicago, where a very careful inventory of the property of the Peoples Gas Light & Coke Company was made, I subsequently checked the inventory and personally found some omissions, even with the great care they had used, and for that reason and because of my experience in this matter I feel

that a certain allowance for omissions must be made and is fair to make. Now, under contingencies I also cover the item of temporary work. In building a plant of the size of the one in Des
1313 Moines, or even plants that are much smaller, there is always a certain amount of temporary work which disappears after the completion of the plant, and that work therefore is not found in an inventory which is made subsequently to the completion of a plant. Yet that work has cost money, and it is only fair that an allowance for it be made. I might instance that by giving one experience we had in building a four million cubic foot holder at St. Louis. After the work was practically completed and the holder was ready to test, it was necessary to erect a temporary building and put in an electric moter and blower, run in wires and run a pipe and pump air into that holder for the purpose of testing it. When the holder was completed that was taken out and disappeared, and if an inventory of that property were made today, no trace of that work would be found. For that reason it is proper to allow something for temporary work. Now, the next item that I have included in contingencies is the item of piece-meal construction. Piece-meal construction is very high for certain portions of the work, and again in other portions of the work it is not so high. When you consider a plant like the gas plant of the Des Moines Gas Company, you will realize at once that this plant has been built up a portion at a time, and it always costs more money to build a plant a portion at a time than it would cost to rebuild that plant in its entirety at one time as one large construction undertaking. Now, if you consider the subject of mains in a gas plant—mains in a gas plant are extended to some extent by piece-meal construction. You may have a house which is only fifty or seventy-five feet beyond the end of the mains and you come and apply for gas and the company is obliged to undertake the construction of a main extension of
1314 only fifty or seventy-five feet in length, has to go to some extra expense over and above what it would be obliged to go to if it laid the entire main system in one large construction undertaking. From my experience and in my judgment it is fair to allow something in plants of this kind for piece-meal construction. Now the other features that enter into contingencies are such features as are enumerated on page 7 there, which I may state are changes in construction made necessary by encountering unfor-seen obstacles during the progress of the work—rise in prices of labor or materials above normal, financial panics; financial panics may result in extreme difficulty in getting money to carry on the work; the work might even be stopped; this would result in an increased construction cost. Inclement weather is a source of considerable contingency; then there are other causes, such as floods causing both delays and actual property loss; failure of contractors, special unfor-seen difficulties, deep excavations, strikes, and as I have stated here in general, all those costs, experience has shown, must be provided for by prudent men engaging in large construction enterprises, over and above those which can be specifically enumerated.

Q. Now, your next item, additional cost on page 5 is what?

A. That is item #2, called engineering and superintendence, and

that is figured on base plus number one, which means it is figured on the base figure, namely, cost of material and wages, plus contingencies.

Q. What does this include? Is that detailed, commencing near the bottom of page 7?

A. Yes, at the bottom of the page there.

Q. State generally what you cover by that?

1315 A. Generally, salaries, wages of engineers, superintendents employed on the work, the preparation of detailed plans and specifications, receiving bids, preparation for letting contracts, purchase of material, supervision of work, the adjustment of contracts, final tests of machinery to see that it fulfills the specifications and requirements of the contract, investigation of real estate, determination of proper location of plant, etc.

Q. How much have you allowed on account of this item?

A. On real estate I have allowed 1.5 per cent; on plant, meaning gas works, mains and services and meters in use, I have allowed five per cent.

Q. What on meters in stock?

A. On meters in stock nothing.

Q. Now I wish you would state whether this is a fair and reasonable allowance on this account of this item of cost?

A. In my judgment this amount is a very fair amount to allow, and there are many instances where engineering work goes at a higher percentage then I have taken. I think this is fair in this instance.

Q. Now your next item is what?

A. Number three, legal organization, liability for casualty and fire insurance. I have lumped those items under one head of number three. They are figured on base only.

Q. Have you stated in a general way the latter half of page eight, what is included here?

A. I have, beginning with the words investigation expenses.

Q. Now on page 9, what do you do?

A. In order to determine a fair and reasonable percentage for this item #3, I made an estimate as shown on page 9 of the

1316 items that would enter into this item of legal expense and organization, and that is found detailed on page 9. The percentage which I finally adopted is considerably less than the detail shown on page 9, because I wanted to be conservative and fair in this item.

Q. Now, your estimate of what this item would actually amount to went to what?

A. The item #3 I estimated would run $116,776.

Q. What did you actually allow in making your estimate of the reconstruction cost on account of this item?

A. I actually took a percentage which amounted to $90,444.

Q. About $26,500 less than the actual cost as you figured it?

A. Yes, sir.

Q. Now, what is the fourth item of additional cost?

A. The fourth item of additional cost is taxes during construction, which is figured on the base, plus items numbers 1, 2 and 3.

Q. Why do you figure it on the base plus items number 1, 2 and 3?

A. That is plus contingencies, engineering, organization and legal expenses, because those items number 1, 2 and 3 are a portion of the work of construction just as much as the physical material entering into the same; and the taxes I figured on the full valuation.

Q. Now, on page 6, is there some detailed statement of what you have given us about the computation of taxes?

A. Yes.

Q. And this is also explained on the first half of page 10?

A. That is also explained on the upper part of page 10.

Q. Now, what is your next of these items of additional cost?

A. Number 5, which I have called interest during construction. This interest added to the capital account is figured on base
1317 also number 1, 2, 3 and 4, meaning by this the items of the table shown on page 5.

Q. That is figured on the actual expenditures?

A. Yes.

The MASTER: Taxes on prior year, however, is so included; what do you mean by that?

A. I figure that the taxes are levied one year and paid the next. I have included the tax levied each year in the same year as accruing on that same year; but in the particular year under consideration I have not figured taxes.

The MASTER: Don't you mean following there instead of prior?

A. No, I mean prior, because if you assume, for instance, the tax of 1912 in the interest calculation for the year 1912, I have not figured interest on the taxes accruing in that year, but I have figured interest on the taxes for the year prior, 1911.

Q. Turn to page 10—is this explained in the latter half of that page?

A. Yes, beginning with interest during construction.

Q. What is your next of those additional items?

A. The next item is #6, working capital.

Q. Where do we find that, explain it?

A. It begins on the bottom of page 10.

Q. In a general way what does it include?

A. In a general way that includes material, supplies in stock, and a fair amount of cash to carry on the operation of the business.

Q. You stated at the bottom of page 10 how you arrived at that?

A. Yes, sir.

Q. Now what is the next of your additional items?

1318 A. The next item #7 is going value.

Q. Have you stated in a general way on pages 12, 13, 14, 15, and part of 16 how you compute that?

A. These pages simply comprise some general consideration leading up to going value. They do not explain in detail the method I finally based my judgment of going value upon.

Q. We pass that, at least for the present, until we get to that subject. Now what have you set out on page 17 of Exhibit 21?

A. Page 17 shows a summary of the reproduction new and present or depreciated values of the property of the Des Moines Gas Company, together with an estimate of the average condition per cent of the physical property.

Q. Now, turning to pages 18, 19 and 20, there is a single page so marked?

A. Yes.

Q. What have you set out on that page?

A. On the page marked 18, 19 and 20, I have set out the reproduction new value of the physical property and business, giving the reproduction new value of the base figures with items of additional cost and the total.

Q. And these items of additional cost here are lumped in the aggregate?

A. They are in this table.

Q. In the succeeding page, 21, please state whether this base cost is given and the amount of the items of additional cost separated into taxes, interest and items 1, 2 and 3, which cover I believe as shown on page 5, your contingencies, engineering, superintendence, legal organization, liability for casualty etc.

A. They do, on the basis of reproduction new.

1319 The MASTER: That omits the going value.

A. Yes, sir; that is just an analysis of the items of additional cost which are not applicable nor applied to working capital and going value.

Q. This page 20, as I understand you, is simply giving in more detail the totals of those items of additional cost which appear on pages marked 18, 19 and 20?

A. Yes, sir.

Q. Now, passing to page 22, that is what?

A. On page 22 is shown a schedule which I estimated to determine the amount of the investment going into operation each year. To explain that a little further, you will note there is no portion of the investment charged into operation during the years 1911 and 1912, for the reason that gas is not turned on until January 1, 1913. The construction work is not entirely finished on the date the gas is turned on, but certain portions of it are constantly being finished and as fast as they are finished it is fair that tax and interest chargeable to the capital account should cease. For that reason I have made a careful estimate of a portion of the investment going into operation each year.

The MASTER: On the first of January each year?

A. That is at the end of each year.

The MASTER: For the prior year?

A. Yes.

Q. For instance, you have 1913, that column would indicate the portion of the investment used in operation at the end of 1913?

A. No, during the year 1913.

Q. At the end of 1912?

A. Yes.

1320 Q. And 1914 in the next column is used in the same way?

A. Same way, yes sir.

Q. Now, what does the next page show, page 23?

A. Page 23 gives the portion of the investment in operation during each year in dollars on the basis of reproduction new, not including taxes and interest.

Q. Turning to page 27, what is that?

A. Page 27 gives the detail of the method of figuring taxes and interest which are chargeable to operating expenses only on the basis of reproduction new. That particular table refers to the expenditure of a portion of the table shown on page 24. In other words, the table on page 24 shows the computation of taxes and interest chargeable to the capital account, but that particular page, 24, does not show the portion of taxes and interest which go to operation. Page 27 explains one portion of these figures going to operating expenses.

Q. And stopping a minute at page 24, that gives what?

A. Page 24 is a summary showing the estimated expenditures by years on the basis of reproduction new. This table is made largely for the purpose of showing the amount of taxes and interest chargeable to the capital account. I have not taken the taxes and interest chargeable to the capital account item by item, but have based it on the summation of items as shown in this table.

Q. And do pages 25 and 26 as well as page 27 show the details with reference to computations which are contained in the summary on page 24?

A. They show the detail of the computation as relating to taxes and interest; show how each figure is derived.

1321 Q. I think we will turn, Mr. Baehr, to your cost of reproducing this property as you have it in detail; that is your base figures.

A. Page 72 is the summary.

Q. Now the first item you have there is your real estate?

A. Yes, sir.

Q. Now what did you take as your base value of real estate; what does that mean and where did you get your information?

A. The base figure on real estate which I took is $200,000. I made no investigation of the value of the real estate owned by the Des Moines Gas Company, but the Company informed me that some real estate experts in Des Moines had given them valuations of this real estate and that those valuations were somewhat in excess of $200,000. I took for my base figure as a result of that information the amount of $200,000 and at the time I investigated the number of square feet of real estate as shown in the inventory to be 196,358 and I find that at $200,000 base figure value of real estate this amount equals $1.02 per square foot; that value appeared to me to be reasonable and I have used it in my calculations.

Q. Turning now to page 72 again we have real estate base two hundred thousand dollars.

The MASTER: You don't consider this man an expert on real estate.

Mr. GUERNSEY: I was going on to have him explain the basis on which he had taken his figures.

The MASTER: The fact of the matter is I wouldn't consider the testimony of either one of them on the value at all.

Mr. GUERNSEY: That item goes into his total valuation and I wanted him to explain how it goes in.

1322 Q. Mr. Baehr, referring to this table on page 72, you have first base $200,000, then you have under the next column 1, 2 and 3, what does that mean?

A. The 1, 2 and 3 refers to item numbers detailed on page 5, one being contingencies, two being engineering and superintendence, and three being legal organization, etc. Now this amount of eleven thousand dollars is the one and one-half per cent for engineering and superintendence and the four per cent for legal organization, liability for casualty and fire insurance, but not any allowance for contingencies.

Q. That gives you the aggregate on account of real estate contained in your valuation as what?

A. $229,229.

Q. That is carried into a summary on page 126, is it?

A. That is shown on the top line of page 126.

Q. Now, then, going back to page 72, you have your next item there, plant, as what?

A. The base figure of plant $469,517. on the basis of reproduction new.

Q. The additions bring it up to what amount?

A. The additions on the same basis bring it up to $603,675.

Q. Now that plant includes the buildings, contents, outside apparatus, holders, tanks and sundry equipment?

A. Yes, sir.

Q. And the aggregate there of $469,517. which with the additions comes up to $603,675. on page 72 is distributed into these items I just mentioned on page 73?

A. It is.

Q. Now on page 74 and page 75 we have a large number of items which make up under the head, base $469,517. and under the total $603,675. I wish you would state whether these are *are* more in detail the items which go to make up the amounts sum-

1323 marized on page 73.

A. They do.

Q. Now, then, turning to page 74 you have first buildings?

A. Yes, sir.

Q. And they are all included together; I wish you would turn to page 76 and state whether there you give the base and the additions and total of the reproduction new value of each one of the buildings?

A. I do.

Q. For instance, I wish you would state what your estimate is of the base amount of the building known as #1-A and B purifying house.

A. The base figure on the basis of reproduction new is $9,501.

Q. What are the additional items to be added on account of items 1, 2 and 3?

A. Items number 1, 2 and 3 cover contingencies, engineering and superintendence, legal expense and organization, and amount to $1,853.

Q. The taxes?

A. The taxes are the proportion of taxes chargeable to the capital account; as proportioned to this building, amounting to $235.

Q. So that the total reproduction cost of this building is what?

A. $12,217.

The MASTER: Why can't we shorten this some way.

Mr. BYERS: I have no objection.

Mr. GUERNSEY: I was going to ask a general question now.

Q. I wish you would state whether on this page, 76, you have listed each one of those buildings and have shown your estimate of the base and the additions on account of these various items you have referred to, and the total reconstruction cost of that building, whether in your judgment those estimates are reasonable, fair and correct?

1324

A. The buildings shown on pages 76 and 77 and these figures in my judgment represent fair values of the buildings and in my judgment are correct.

Q. Taking these totals on page 77, I wish you would state whether they are carried into the summary on page 74?

A. The total buildings shown on page 77, rather the totals are shown as the top line of the table on page 74.

Q. And opposite the word what?

A. Opposite the word buildings.

The MASTER: They are not included on 72?

A. They are shown separately as the top line on page 73, but the table on page 72, the buildings are included under the heading plant.

The MASTER: As $603,675.

A. Yes, sir.

Q. Now, then, your next item here on page 74 is contents, building one, A. and B?

A. Yes, sir.

Q. Now turn to page 78, and I wish you would state whether that page shows the various items there referred to, the base cost and the additional items, and the total reproduction cost new in your judgment, shows it fairly and accurately.

A. It does and in my judgment is a fair figure and accurate.

Q. And then the figures shown on page 8 appear on page 74 opposite the classification contents of building 1-A and B.

1325

A. They do.

Q. They go into that summary there?

A. Yes, sir.

Q. Now the next is building 3; on page 74; I wish you would turn to page 78½ and state what that is?

A. Page 78½ and 79 together give the detail of the contents of building #3 on the basis of reproduction new, and the sum-

mation of those figures appears on page 74 opposite contents building #3.

The MASTER: That is the new plant?

A. That is on the basis of reproduction new, yes sir.

Q. Now take the next item on page 74, contents building #4, and state whether or not the details as to that item are set out on page 80?

A. Those are shown on page 80.

Q. And the totals as they appear on page 80 as to those items constituted those items on page 74?

A. Yes, sir.

Q. Now what is the fact as to page 81 showing in like manner your estimate of the value of contents of the building #5?

A. It does.

Q. And these totals are carried to page 74?

A. They are.

Q. Now turning to the next item, page 74, contents building 6-A and B please state whether or not page 82 shows details as to those items?

A. It does.

Q. And the totals as they appear on page 74 are taken from page 82?

A. They are.

Q. Now, the next item, page 74, is contents building 6-C.

1326 I wish you would state whether page 83 shows the details of your estimate as to the value of this item?

A. It does.

Q. And the sums of those details are carried to this item on page 74?

A. They are.

Q. Now the next item, page 74, is contents of building # 7?

A. Yes, sir.

Q. Please state whether page 84 shows the detail of this base $45,651 and also shows the details which make up the balance of these items, contents of building #7, page 84?

A. It does.

Q. Now referring to the remaining items which are shown on page- 74 and 75, making up the aggregate total of $603,675 with the items that have been referred to, I wish you would state whether the details of these items are shown on pages 85 to 112 inclusive of your report Exhibit 21?

A. Yes, sir.

Q. And this item $603,675 then goes from page 74 to page 73 and from there into your summary on page 72?

A. Yes, sir.

The MASTER: Mr. Byers, you have no objection to this general question?

Mr. BYERS: Absolutely none.

Q. Now referring to all of these pages, Mr. Baehr, will you please state whether each item as you have given it there, in your judg-

mnt is a fair and reasonable item based upon a fair and reasonable cost of reproducing the specific piece of property which it refers to?

A. It is.

1327 Q. Now, then, turning back again to page 72 your next item after real estate and plant is distribution?

A. Yes, sir.

Q. That shows base 1,551,202 and a total of 1,993,243?

A. Yes, sir.

Q. Now, I wish you would state whether there is a summary of the items making up these totals on page 113 of your report?

A. There is.

Q. And does this summary show as to the items classified generally there, as to each class, the base and additions on account of items which you have indicated, items 1, 2 and 3, and on account of taxes and interest and the total?

A. Yes, sir.

Q. Now, your first subhead here is street mains?

A. Yes, sir.

Q. Taking these various items and not stopping for that one, street mains, river pipe, paving over mains, street mains, valves and drips, steam and street railroad crossings, house services, lamp services, paving over services, meters in use, meters in stock and distribution, tools, I wish you would state whether pages 114 to 123 inclusive of your report show as to these items the details, showing the base and the additional items which you have mentioned, and the total.

A. They do.

Q. So that the totals contained upon page 113 are made up from the items which appear on the subsequent pages up to 123 inclusive?

A. That is right.

Q. And these together make up the total show- as distribution system on page 72?

A. Yes, sir.

Q. I wish you would state generally as to the items going into the distribution system, whether they show in your judgment the

1328 fair cost of reproduction new of this system and show fairly the actual value of the separate items going into it?

A. They do as of the date of this valuation.

Q. Now, the next item you have on page 72 is what?

A. The next item is marked general office and stable equipment.

Q. Will you turn now to page 124 and state to what extent you have itemized this item?

A. I have divided that among furniture and fixtures, book records, and stable equipment.

The MASTER: Is the outside apparatus included in the total?

A. That is included under the heading of plant.

Q. How do you place your valuation on these items and how do you get at it?

A. The item of furniture and fixtures is the equipment of furniture and fixtures at the general office of the company, and that base

figured $14,015, was arrived — by me as a fair figure to represent the value of that particular equipment on the basis of reproduction new from an inspection of an inventory of said furniture and fixtures furnished to me by the company together with a statement, meaning verbal statement, of the value of one or two of the principal items.

Q. How old were these furniture and fixtures?

A. They were very recent.

Q. Now how did you get at the next item?

A. The book records I have taken base figure on the basis of reproduction new, of ten thousand dollars which in my judgment is a fair and conservative estimate of the value on the basis of reproduction new on the date of this valuation of the book records owned by the Des Moines Gas Company. I did not include under
that heading drawings or portions of the works or maps of the
1329 distribution system, the value of which I included under
the heading of engineering and superintendence, but this particular item of ten thousand dollars base figure covers the other records of the company, such as for instance history cards and the general business records. I think the figure is conservative and fair.

Q. What is the final item on this page?

A. The final item is stable equipment.

Q. How did you get at that estimate, the value of that?

A. The base figure $11,359, is my estimate of a fair figure of the stable equipment derived from an inspection of the inventory of stable equipment made by the company and handed to me. I have based my value on the information concerning the principal items contained in the said equipment. It is not the result of a detailed estimate on each item.

Q. What do you say as to whether it is reasonable or accurate or not in excess of the total reproduction new value of this item?

Objected to on part of defendants as incompetent and immaterial.

A. In my judgment this amount is conservative and fair.

The MASTER: What are the book records?

A. We will take the one thing, history cards——

The MASTER: They are the books of account?

A. Yes, sir; the books of account and the records relating to the business of the company.

Q. Why would they be of any value to a new plant if this plant was reproduced?

A. They would be of the greatest value; they contain the records
of the transactions of the company, the names of consumers,
1330 the locations and what has happened at those consumers'
places, the various transactions in a business way. I consider them of great value. I think that figure is if anything low.

Q. And these items shown on this page, 124, are carried into the summary on page 72 under general office and stable equipment?

A. Yes, sir.

Q. Now, Mr. Baehr, this summary of the plant and summary of

the distribution system, which take up pages 74 to 124 inclusive, say nothing about depreciation?

A. No, sir.

Q. What method did you take to ascertain the per cent condition at present of this plant, do you refer to this on page 125 of Exhibit 21?

A. Yes, sir. The condition per cent or the present value of buildings and apparatus or physical property of any kind were determined by a personal inspection which I made, a very careful inspection of each item. In a general way the per cent condition of those portions of the equipment which are under ground, like mains and services and that portion of the equipment called meters, I did not see and I computed their per cent condition on the basis of the composite life and age of these items.

Q. Now, turning to page 126 and the following pages, over to page 137 which is included, will you please state whether or not these pages state the cost of reproduction new of these various items as we have already found them, and show in addition to that the condition per cent and the present or depreciated value of each one of those items?

A. They do; they refer to the visible property.

Q. It is the items we have not been referring to heretofore?

A. Yes, sir.

1331 Q. Will you turn to page 17 and state whether or not under the headings real estate, plant, buildings, contents of buildings, outside apparatus, holders, tanks and sundry equipment, general office and stable equipment and distribution system you have summarized these items which are found in pages 126 to 137 inclusive?

A. Omitting the distribution system which you mention, they do.

Q. Before I get to the distribution system—now the plant and buildings includes quite a number of items and they have various conditions per cent as shown in detail?

A. Yes, sir.

Q. How did you obtain 84.8 condition per cent which you apply on this item on page 17?

A. The cost of the reproduction of the plant and building is shown as $86,924. The present or depreciated value $73,741 is taken from page 127. The condition per cent on page 17 of the plant and buildings was obtained by dividing $73,741 by $86,924. I wish to explain right here that the condition per cent as shown on page 17 is only to the nearest decimal. As a matter of fact if the condition per cent is wanted accurately it would have to be carried on to a number of decimals. To illustrate that difference, 84.8 carried out is 84.834.

Q. That is, carrying out individual instances would have increased the condition per cent somewhat and would have increased the depreciated value?

A. No, $73,741, is derived from page 127; that is not changed at all and the condition per cent is only taken on one decimal.

Q. Now, this distribution system that appears here on page 17 is taken from page 113?

A. That is shown on page 113.

At this time an adjournment was taken until 1:30 P. M.

1332 1:30 P. M. MONDAY, *July* 31, 1911.

WILLIAM A. BAEHR continued on direct examination by N. T. Guernsey, Esq.

Q. I think Mr. Baehr that just before luncheon you had stated that the tables of the distribution system appearing on page 17 you took from pages 113 and the following pages showing details as to that matter?

A. Yes, sir.

Q. And what is the fact as to whether as to each item of detail these things shown with reference to the distribution system commence at page 113 and continuing to and including page 123 are correct and accurate in your judgment?

A. They are.

Q. I think I have asked you that once before but if I did it won't do any harm. Now then turning to page 63 taking that and the following pages down to and including page 71 I wish you would state whether they show what in your judgment is the condition per cent of the items making up the distribution system and also show your method of arriving at this conclusion.

A. They do.

Q. Now taking page 63 for a moment there is a formula at the bottom of that page. From what did you derive that formula?

A. That is the regular formula used in compound interest calculations.

Q. In getting your present values what rate of interest did you take?

A. In this case I took four per cent.

1333 Q. Now turning to page 64 you have there in the first line street mains 930,746, then times renewed in 58.1 years' life. Why did you take 58.1 years, explain that, the basis for that column?

A. 58.1 years is the composite life of the street mains and that figure 58.1 is derived as shown on page 66. You will notice on page 66 that the estimated life of the mains two and one half inches and under is taken at 20 years and that the estimated life of three inch mains is taken at 30 years and four inch mains at 50 years and the 6 inch mains and the larger mains than six inch at 75 years. Referring to the table on page 66 you will find that I have a column, times renewed in 75 years. That is the way to determine the true composite life of the mains. It is estimated that the larger mains are renewed only once in 75 years, but the four inch mains are estimated to be renewed every 50 years. That means that the 4 inch mains are renewed one and one half times as often as 6 inch and larger mains. Therefore in order to determine the true composite life it is necessary to multiply the first column which on page 66

is reproduction new value, by the times renewed in the longest life main shown in that table, namely 75, divided by the life assumed for each item and that gives the column headed total expenditures in 75 years. Then to determine the dollar years you multiply the next to the last column by the life and the sum total of the dollar years divided by the reproduction new value, by the total of the reproduction new value column—no, divided by the total expenditures in 75 years. Then to determine the dollar years you multiply the nex- to the last column by the life and the sum total of the dollar years divided by the reproduction new value, by the total of the reproduction new value column—no, divided by the total expenditures in seventy five years gives the true composite life of 58.1 years. Now referring back to the table on page 64, the same method of calculation is used and the reason that I am taking the times renewed in 58.1 years is because that happens to be
1334 the figure of the longest lived apparatus contemplated in this table.

Q. How did you treat paving over mains as compared with the paving itself in this?

A. I estimated the life of the paving over mains the same as the mains themselves.

Q. And why?

A. For the reason that when the mains finally had to be replaced the paving has to be replaced at the same time and the cost of that work comes at the same time that the cost of the pipe itself takes place.

Q. Getting down to where there is a substantial difference, say at house services, is there anything there to show the way in which you have computed your figures as to this item?

A. I have assumed house services to have the same age as meters. The determination of the composite age of meters is shown in the table on page 71. That table gives the calculation by which the composite age of meters is derived at reproduction new value. The only difference between meters and services being in the life. I have assumed the composite age of the services as the same as the composite age of the meter, but the life of the services I have assumed at twenty years whereas I have assumed the life of meters at twenty five years.

Q. Before I forget it, where did you obtain the data set out on page 71?

A. I was furnished with a list of the number of meters installed during each year beginning with 1887 and was also given a memorandum of the number of meters which were in use at that time. By means of this column which I have in ink notation in my book, but did not copy into the other reports, because I did not think it was necessary, I obtained the first column in that table called
1335 investments. The total of that column you will notice meaning now the column headed investment is $255,885. If you will not refer for a moment to page 121 you will find at the bottom of page 121 the last column gives the total cost of meters in use on the basis of reproduction now with a detai- of the additional

cost items and that total figure, $255,885 is the same total figure as shown *b*at the bottom of column headed investment on page 71. Now taking number of meters installed each year and using the average price per meter as derived from the total figure of $255,885 I compute that column headed investment. Now the second column, years in service I believe is self explanatory, it is just the number of years these meters have been in service and the third column is the product of column one and column two, calling column one the Investment column. Then the total of the investment years divided over the total $255,885 equals 8.23 which is my estimate of the average of the meters. I have also shown on the page the estimate of the average of the meters installed before 1886 and the ratio shown, 23 is to 6.8 as 22 is to X, that gives the figure of 6.5 years. In other words my estimate of the average of meters installed before 1886 in 1886 is 6.5 years and that continued to 1911 January 1, is 29.5 years as shown.

Q. You have a computation on page 67 which is headed determination of the average age of mains on the investment basis.

A. Yes, sir.

Q. Did you use that or if not for what purpose is it inserted.

A. That table is inserted to show my method of calculating the average of mains, and that was done using basis figures only. The investment in each year is detailed on page 68. The 1336 column on page 67 headed investment is derived from the last column on page 68 headed total. That total on page 68 shows the dollar value of mains laid each year. The dollar value of mains laid each year in turn is derived from the table on page 69 which shows feet of each size of main laid each year. Now go back to the table on page 67, the multiplication by the investment of the years in service *ives* the investment years as shown in the last column and the sum total of the investment years divided by the sum of the investment, in other words by $930,746, gives the average age of mains at 8.9 years.

Q. Turning to page 68 does this page show the amount of mains in the ground each year commencing with age 1864 to 1888 and then running down to and including 1910, all the mains laid each year?

A. The table on page 68 is the dollar value. The table on page 69 gives the number of feet.

Q. I will take the 69 table first. Does the table on page 69 show in feet the amount of mains of each size laid from 1864 to 1888 and then in 1888 and each year thereafter down to and including 1910?

A. It does.

Q. Where did you get that information?

A. That information was given to me on a memorandum handed to me by the company.

Q. So that you relied on the company for this information?

A. I did.

Q. And then page 68 is this reduced to dollars?

—. Yes, sir.

1337 Q. Now on page 70 you have what?

A. On page 70 I have a table showing a determination of the average age of river pipes on the investment basis using *preproduction* new value. This is computed in a similar manner.

Q. Page 65 shows the results of those computations as to each of the various parts of the distribution system.

A. Yes, sir.

Q. And your age dollars, that means the dollars multiplied by the age?

A. Yes, sir.

Q. You take that for what purpose?

A. I use that computation for the purpose of determining the composite age of the entire distribution system.

Q. Which you find to be what?

A. Which I find to be 8.6 years.

Q. What application do you make of that?

A. I used that figure to determine the present value of the distribution system.

COURT: 58.1 is 58.1 per cent of the cost of the mains, the value.

A. Page 66 that figure*d* 58.1 is the composite life or as you might call it the true average life of the street mains, or all of the street mains. And I determined that on the investment basis as we call it.

Q. What use did you make of this in obtaining the present value?

A. The figure of the composite age?

Q. Yes, 8.6 years.

A. If you will refer to page 63 you will find the top item is called street mains and the reproduction new value of this
1338 item is $930,746. Now down on the lower portion of the page you will find the formula that I used to determine the condition per cent and in that formula, or rather before you can apply that formula it is necessary to know the age in years, the life in years and the rate of interest assumed in this compound interest calculation. In that case the street mains the age is the composite age as determined on page 66 viz.: 58.1 years, I should say the composite life and the composite age of the street mains is 8.9 years. Now applying these two figures in that formula together with the rate of interest 4 per cent gives the condition per cent of street mains namely, 95.2 per cent. Now multiply the reproduction new value by the condition per cent gives the present or depreciated value of street mains at $886,017, as shown on the top line of page 63.

Q. In the same way, using the same theory you worked this out for meters house services and the other items going to make up distribution system?

A. I did yes.

Q. What is your estimate of the present or depreciated value of the distribution system and is this estimate in your judgment fair and correct?

A. The present or depreciated value of the distribution system in my judgment is $1,746,924, as shown on page 63 and in my judgment this is a fair and correct value.

Q. That is the condition per cent as carried over to page 17 is it not in your summary there?

A. Yes, that is shown on the summary and in the table on page 17.

Q. Now I want to as briefly as I can explain some matters in your report here. Commencing at page 28 what do you give?

1339 A. On page 28 is given the estimated expenditures in building up this property during the year 1911 not including taxes and interest.

Q. That includes also page 29?

A. Yes, sir.

Q. Now beginning at page 30, at 30 and 31, what do they show?

A. The tables on pages 30 and 31 show the estimated expenditures on the basis of reproduction new at the gas plant during the years 1912 and '13, using base figures only. It is estimated there is no work done at the gas plant during the year 1911.

Q. Now taking this generally from page 25 on to page 42 do these pages contain the details which are set out in the summary on page 24?

A. Yes, sir; they do.

Q. Or putting this in another way the pages following 24, up to and including 42 are all summarized on page 24?

A. Yes, sir.

Q. Now Mr. Baehr referring to page 43, I see there you have the number of feet of each size of street mains by districts, and pages 44, 45, 46, 47, 48, 49 and 50 all relate to paving or matters pertaining to paving?

A. Also to the distribution system.

Q. I mean the mains or matters pertaining to mains?

A. They also include, also on page 50 is shown the details of services and the preceding tables you mention refer to mains.

Q. Then referring to page 51 there is some details as to meters?

A. Yes, sir.

Q. Now state whether or not this is the same data which you used in the preparation of the report?

A. This is the data upon which the report is based with

1340 reference to the expenditures by districts.

Q. Now what is page 52?

A. Page 52 is a general summary showing a determination of the composite life of the entire equipment on a reproduction new basis.

Q. You said the entire equipment. In what sense do you use the word equipment?

A. In that instance in the sense of including the entire physical property except real estate.

Q. And what is page 53?

A. Page 53 is a summary of the same items as shown on page 52 only page 53 results in a determination of the composite age.

Q. The following pages 54 to 62 inclusive cover what?

A. They cover the determination of composite life and age of buildings, apparatus and physical equipment except the distribution system.

Q. And what method, or have you used the same method here you have already described in dererming this composite age?

A. I have.

Q. Now Mr. Baehr did you compute the going value of this plant?

A. Yes, sir.

Q. Turning back now to page 12, How do you define going value?

A. I define the going value as the enchancement in value of the physical property of any concern due to the business that concern has and is doing. This going value has sometimes been called the value of the created income.

Q. You refer here to certain items which have been included in going value by engineers. Please explain what they are, and why in a general way?

1341 A. I have enumerated a certain number of items on page 12, such as advertising, solicitation of business, gratuitous work, demonstrating old and new devices for utilizing gas, educating the public to the advantage of gas and gas plant products, experimental work, trying installations of gas consuming devices, money and efforts spent on prospective business that does not develop, loss of interest because of extensions into what is at first unprofitable territory, but where such extensions are made perhaps on account of the paving and perhaps for their advertising value, cost of the development of the organization in the effective handling of business development. Excess of operating expenses above income during a portion of the development period. Deficit in fair return on the investment during the development period. Now these items which I have just enumerated and which are shown on page 1*w* are stated to be various items which have been held as being included in going value by different engineers at different times. Again other engineers include other items as shown at the top of page 13. Such as management which is explained on that page and which may be stated briefly, that it is imperative that high managerial ability and efficiency should be recognized and allowance for same made for the reason that such a policy would eventually result to the interest of the consumer. Other engineers have also held that *g*he possession of real estate of sufficient area and so located as to be readily available for extensions is an asset of value. Other engineers have held that another feature or item of going value is based on the fact that where connections are made to the consumers' hou-es and business relations established it requires some special incentive to in-

1342 duce such consumer to change to the competing company.

Q. You refer here to several method- of figuring going value. Will you state — your views in the gas industry are?

A. In arriving at my judgment of what the going value of this property is speaking as of January 1, 1911, I have considered several methods. In the first place some enginee-s have held that the annual revenue derived from the sale of gas is a fair measure for going value. The idea that such engineers probably had in their ming*s* was that the least possible development, — period to reproduce the business of any company referring now to any gas company is two years. Such engineer apparently assumed that a

straight line development of the business would take place during such two years and they probably reasoned that the purchaser would assume that he would lose one half of two years' revenue. In other words one year's annual income from the sale of gas. Applying this method to the case of the Des Moines Gas Company as of the date of this valuation would result in a figure of about $540,000. Still other engineers have estimated going value on another basis, namely on the basis of $30.00 per consumer. There idea of estimating $30 per consumer is that it is the average cost per consumer to equip him with gas consuming appliances and secure his business and this has reference to developing business in a reasonable length of time. In a way this fifure results almost the same as the figure based on annual revenue and in the case of the Des Moines Company as of the date of this valuation the figure of $30 per consumer results in an estimate of going value of $597,090.

Q. What method of figuring going value commends itself to your judgment as the most accurate?

1343 A. In my judgment the method which lends itself to the most accurate computation and upon which I prefer to base my judgment of the going value of this company is to measure the going value by the loss incurred during the period of development. In the instance of the Des Moines Company I am measuring this loss by the loss incurred by the Des Moines Company in developing its business to its stage and to the revenue as of January 1, 1911. T-is method of estimating going value is based on the idea of reproducing the entire physical equipment and the business of the Des Moines Company in a given lengt- of time. In order for the method to be such that I would p-ace reliance on it it is necessary that each step of the calculation be such that an experienced gas engineer would see that each step and the amount of time consumed by each protion of the construction and development would be reasonable and wou-d be such that would be readily possible to carry out. The method appeals to me for the reason that I can exe-cise my judgment on each step of the process of reproducing this company, on each step of the process of reproducing its physical equipment, and can also reproduce its business logically and in the period of time which appeals to me as being reasonable.

Q. Now turn to page 138 of your report, does that page and the remaining pages of your report there contain information which you have used in reaching your conclusions as to going value or computations growing out of this information.

A. These pages you have stated namely from page 138 through the balance of the report with the exception of pages 148, and 149, contain computations upon which I base my judgment as to the going value of the Des Moines company, meaning the Des

1344 Moines Gas Company as of the date of this valuation. Pages 148 and 149 you will notice refer to future depreciation.

Q. Do you use this future depreciation in your going value computations?

A. I do not use the future depreciation as figures on pages 148 and 149 because those two pages are merely studies or calculations

of future depreciation and the amount of future depreciation which in my judgment is fair and reasonable is not shown there on pages 148 and 149 but is indicated in the following calculations.

Q. Before we leave these pages, so that -e may leave them, let us take page 148 for a moment. You have there compiled or produced the operation and distribution system, its reproduction value, composite life and then a column headed straight line basis. What does that mean?

A. The straight line basis column represents an amount of money which in my judgment is necessary to set aside each year for depreciation, is estimated on a straight line basis.

Q. What do you mean by straight line basis?

A. That simply means the total reproduction value divided by the composite life of any piece of property or equipment that you are attempting to determine the d-preciation of.

Q. If I had a single piece of equi*o*ment with a life of 50 years and cost $100 that would be one fiftieth each year.

A. That *o*wou*n*d be one fiftieth each year on a straight line basis.

Q. The next column is headed 4 per cent sinking fund basis. That is what?

A. That c-lumn repre-ents the amount of money which would be necessar*t* — aside each year to take care of the total depreciation of any item provided that amount of money so -et aside is in-
1345 vested at four per cent interest and compounded.

Q. What do you mean by the column va*i*red rate of interest?

A. That is a study of the amount of money which would be necessary to set aside each year on a compound interest theory and using different rates of interest as shown on page 149. These different rates of interest are proportioned or assumed according to the life of the item under consideration, a longer lived item acquiring a smaller rate of compound interest than a shorter lived item.

Q. And as the resul*f* of this study what did you adopt as the basis for your fu*r*ture depreciation?

A. If you will refer to page 148 the total amount of money to set aside every year on a straight line basis you will notice is estimated at $76,352. This am*i*unt is tax 2.88 per cent of the total reproduction value. The next column the 4 per cent sinking fund basis totals $33,359 which is the amount of money I have estimated necessary to set aside annually to take care of depreciation if invested at four per cent and this is 1.26 per cent of the total reproduction value. The final column estimated with varied rates of interest totals $38,-733 and this amount again is 1.46 per cent of the reproduction value. Now informing my judgment of the proper amount of money to set aside each year to take care of depreciation, I could not conceive of any company setting aside any amount of money each year without investing it som- way. Some companies invest such mon*e*is in extensions in their own plant. Other companies that I have known have invested such moneys in their own bonds which in a measure is in their own extensions. But, as a matter of fact, it

appears fair to me to consider that no company would set
1346 aside any considerable amount of money without investing it some way or other. On this basis it does not appear fair to me to consider depreciation on a straight line basis. Now on the other hand I cannot conceive of the compound sinking fund basis being entirely safe to adopt without taking into consideration some other things. For instance the lives of these various items entering into the property of the Des Moines Gas Company from my best estimates based on my experience of the probable life of that kind of property. On the other hand I am not able and I do not think it is humanly possible to foresee changes that may take place in the art of gas manufacture or distribution. Neither can I foresee and estimate the fact that more efficient apparatus might be invented which would make it advisable to take out the present apparatus rendered so *absolute* and substitute the more efficient modern apparatus.

COURT: Would it pay to do that?

A. It would not pay to do that unless *it* resulted in a saving of money.

COURT: You would consider the co-t of the old apparatus.

A. Consi-er the cost of the old apparatus, yes. Now there is another feature in relation to properties of this kind which is very important and on which subject our knowledge is altogether insufficient. We are perhaps on the threshold of a great destruction of mains by electrolysis that may have great consideration in reference to approximate cost. From present knowledge we make this estimate and I make the best estimate I am able to from proper consideration of the probable life of these mains, but I am not able to say what might happen to them from that standpoint. Considering
the subject of meters the tendency of the gas business has
1347 been in recent years towards the use of a higher pressure. Gas very recently is beginning to be consumed right up to the burner at greater pressure than we formerly considered at all. For instance gas is used — distributed at pressures which I think I can best bring to your mind by stating that the pressure is somewhere in the neighborhood of one or two ounces per square inch. Now there are lights, gas lights, gas lamps on the market which are using gas up to three pounds pressure per square inch at the burner. That is something like tw-nty four or five times as much pressure as was formerly used. Now I am not *sending* that this is universal but I am saying that this type of burners are being invented and it is found that as the pressure increases at the burner, especially with the type of burner known as a Bunson burner using a Welsbach mantle that the light efficiency per cubic feet of gas used is much greater than under low pressure. It seems when this subject was first developed that the pressure was gradually raised step by step and as this pressure was raised it was found that there was constant increase in the light efficiency. Now as far as we know today we have not reached the limit of this light efficiency and we have not reached the limit of efficiency of gas consuming appliances for that purpose. Now in the same way gas consuming appliances using gas

for fuel purposes it is found that as the pressure under which this gas is burned is increased there is an increase in efficiency. That simply means as applied to the subject I have in mind now, the question of tin meters that there may come a time when the tin meter as now used will no longer be safe because they do not stand very high pressure. It may be that some day that it will be found necessary and reasonable to discard tin meters entirely. That is
1348 another of the considerations which governs the mind in placing an estimate on furture depreciation. Now there may be other features which govern the furture depreciation and which have an influence on my judgment. There may be at some time in the near future or within the life as I have figured it extraordinary demands on street work due to the growth of the city and the increase in civic pride we might say. For instance you take in New York or Brooklyn or Chicago, particularly in New York and Brooklyn at present subways are being built and going to be built and there are going to be more subways than there have been before apparently. Whenever these things take place it requires changes in distribution and in mains and we cannot foresee exactly what depreciation may be caused by these reasons. In considering this subject therefore my best judgment is that it is not safe to base depreciation on the straight line basis, neither is it entirely safe to base it on the ordinary compound sinking fund calculation. But my best judgment is that the depreciation of the Des Moines company and that a fair figure to use for that would be two per cent of the reproduction new value of the property which as indicated on -he table on page 148 totals $2,642,467. Two per cent gives a sum somewhat in excess of $52,000 Now in order to reduce this depreciation allowance rather the sum of money which it is necessary to set aside each year for depreciation to a figure which is convenient to handl*y* a figure which will grow as the investment in the business grows, my judgment is to use instead of the two per cent a figure of ten cents per thousand feet of gas sold. Using for the year 1910 ten cents per thousand feet of gas sold results in a figure of $52,510 which is 1.99 of one per cent of the reproduction
1349 value or corresponds very closely to my original judgment of two per cent and is a trifle less. Therefore my judgment is that a fair amount of money to set aside for depreciation of this company will be obtained by using the figure or ten cents per thousand for the gas sold per year.

COURT: Would not that vary?

A. That would vary yes. As the amount of gas sold increased it would increase. The basis of that assumption is that the amount of money invested in this property will increase from year to year and the amount of actual property therefore will increase from year to year and for that reason I deem it advisable to use the figure which is used and it corresponds in my judgment to the true percentage of the reproduction value which should be used.

Q. I think Mr. Baehr you called my attention to something in this Kings County case which confirms this estimate you have made or -tended to. Will you tell the Master what it was?

A. I was recently employed by the Kings County Light Company of Brooklyn, New York, in a rate case which was presented before the public Service Commission for the first district of New York, and I found that the figures which I worked out in that case, that is in the case of the Kings County Lighting Company was practically the same figure which the engineers of the Public Service Commission in the first district had worked out. In fact our figures differed by something less than $1,000, there estimates as I recall it being about $64,000 and my estimate as I recall it being about $63,000 and I arrived at that on the same basis of figuring and reasoning that I use in this instance.

Q. Who are the engineers for the commission, do you know?

1350 Mr. Byers: If that is extending very far I want an objection to it as entirely incompetent and immaterial what somebody else did or how it compared with his work.

A. I don't know them by name sir.

Q. I mean what relation do they sustain to the commission, what do they do for them?

A. As I understand it they are the engineers employed by the Public Service Commission of the First district in New York for the purpose of carrying on this kind of work for the commission.

Defendant moves to strike this evidence not because it is so very important in this case, but because it is irrelevant and we do not care to go into that field from our side of the case to either dispute it or support it.

Q. Turning to page 138 which is the beginning of this data which you used in figuring your going value, that shows what?

A. That table on page 138 gives the past gas sales of the Des Moines Gas Company in cubic feet, rather in thousands of cubic feet beginning with the year 1900 up to and including the year 1910. And thereafter gives my estimate of the future gas sales of the Des Moines Gas Company for the years 1911 to 1917 inclusive. That table also shows in the last column the estimate reduced to a percentage increase in total over the previous year.

Q. Why did you run this estimate up to and including 1917?

A. Because in making the figures for the going value calculation I estimate that the comparative plant will catch up to the going plant at the close of the year 1917.

Court: What you term the hypothetical plant?

A. Yes, sir.

Q. These figures down to and including the figures for the
1351 year 1910 were obtained by you in what manner?

A. These figures were given to me in a memorandum by the company and I assumed those figures to be correct.

Q. How did you get the figures after 1910?

A. The figures from 1911 to 1917 inclusive, are my estimate of the future gas sales of the Des Moines Gas Co.

Q. You know that Mr. Lea has testified in this matter. Do you know whether these estimates agree with his or not?

A. I don't know whether they agree with Mr. Lea's figures or not. These are my own figures and I paid no attention to anybody's else.

Q. You don't know then whether they agree or do not agree?

A. I do not.

Q. The word parallel is down here, what does that mean?

A. That means beginning January 1, 1918, the going plant and the comparative plant run parallel. That simply means I felt it was not necessary to carry the estimate beyond January 1, or rather beyond December 31, 1917.

Q. On the next page you have something headed method of calculation of gas consumed by districts of the comparative plant. What occasion was there for making any computations of this kind?

A. You will have noticed in some earlier tables in this report that a careful estimate was made of the reasonable rate at which the physical property could be duplicated or reproduced and in the distribution system in order to get at that reasonable rate and as before explained we divided the city into three districts, having determined the rate at which we could reproduce the mains and services and meters in these districts, it next became necessary to determine the rate at which the comparative plant would secure business.

1352 In order to determine this we secured data—I say we now, meaning myself—I secured data on the consumption of meters in the third district in 1910 said data being furnished to me by the gas company. Now the result of the gas company's determination as to the consumption per meter in the three districts and also dividing this consumption between that of the regular meters and that of the prepayment meters is shown in that table. In the lower half of the page 139 I have calculated a percentage which is used throughout the development period applying that consumption per meter as determined in the tables furnished to me by the gas company. For instance in District No. 1 as shown in the lower table there were in use at the time of this valuation 4,986 regular meters and 4,515 prepayment meters. Multiplying the number of regular meters in District No. 1 by the consumption per meter in District No. 1 as indicated above on the same page results in an estimated sale in District No. 1 in 1910 of 194,878,000 cubic feet for regular meters.

Q. That is where?

A. That is just below the middle of the page under the heading of District No. 1.

Q. What is there is 194,878?

A. Well that table is expressed in thousands of cubic feet. And the same figure for the prepayment meters in District No. 1 is 87,473 which amount means thousands of cubic feet. Making a total in District No. 1 of 282,351.

Q. To be sure we have got that straight that is 282,351 thousands?

A. That really means 282,351 thousand cubic feet.

Q. You have expressed it here in thousands?

A. I have expressed it there in thousands of cubic feet

1353 omitting the last three ciphers in each instance. In the same way I have calculated the consumption of District No. 2 and

found that a total of 145,227 and in the same way District No. 3 and found that a total of 88,846. The total of the three districts calculated in this way is 516,424. This figure differs from the actual sales of the Des Moines Gas Company in the year 1910 somewhat, therefore in order to get the percentage of consumption of each district to the total I have divided the estimated consumption for instance in District No. 1 by the total estimated consumption and the same in District No. — and the same in District No. 3 and that results in the following percentages. District No. 1 sells or uses 54.8 per cent of the entire gas sold in Des Moines, District No. — 28.1 per cent and District No. 3, 17.1 per cent and in determining the sales of gas in each district in the comparative plant I use these percentages as applied to the sales of the going plant for the same year.

Q. Now turn to page 140. In computing your estimate of the operating expenses and the income of the hypothetical plant or comparative plant, was it necessary for you to have the amount of gas which it would manufacture and sell?

A. It was.

Q. What was the purpose of this computation that is set out on page 140?

A. The computation on page 140 gives the estimated sales both of the going plant and of the comparative plant by districts for each year during the development period, that is from the time gas was first turned on or would be first turned on January 1, 1913 up to and including the year 1917.

Q. And that is shown by districts and also by aggregates
1354 for each year?

A. Yes, sir.

Q. The per cent consumption comparative plant is per cent of what?

A. That percentage is derived from the following two pages, pages 141 and 142. These pages——

Q. You didn't catch my question. That is the per cent of what?

A. That per cent applied to the consumption of the going plant gives the consumption of the comparative plant.

Q. Now then turn to these succeeding pages, 141 and 142 and state how you reached that conclusion which you show on page 140 as to this percentage?

A. The table on page 141 is my estimate of the physical rate of installing meters of the comparative plant. I can illustrate this best by taking as an example District No. 1. It is estimated that all mains and services in District No. 1 would be laid in the year 1912. Now the question that next arises is the question of the rate of installation of meters. My judgment is that there would be no meters installed on January 1 which naturally follows the assumption that the mains and services would be laid in that district in that year. My judgment is that business would be acquired at the rate of 60 per cent of the number of meters actually in use in District No. 1 of the going plant would be in use by the comparative plant at the end of the year 1912 and that the average number of meters in use in this particular district in 1912 would be 15 per cent of the meters

in use in that dis*yti* of the going plant. In the year 1913 therefore we would start with 60 per cent of the meters in use and I have estimated that business can be acquired in this district at such a rate that at the end of the year 1913 100 per cent of the meters
1355 would be in use and the average for that use would be 80 per cent. The same method holds through the other districts.

Q. Now turn to the next page?

A. Page 142 gives the estimated rate of the actual acquiring of business as expressed in consumption of gas of the hypothetical plant at the different periods of each year in which this is compared to that of the going plant. I can illustrate this by taking Di-trict No. 1. It was estimated that gas is turned on January 1st, 1913. From the preceding table on page 141 you will notice that the estimated number of meters in use on January 1, 1913 is 60 per cent of the total. My judgment, however is that you could not immediately acquire the full consumption of gas in that district. That is you could no*g* immediately acquire the full consumption of gas for each meter installed. My judgment is that there would be enough business or gas consumed so that 25 per cent of the consumption of the meters installed on January 1, 1913 would be consumed at once. By the end of the year 1913 that 75 per cent of the consumption of the meters installed would be secured. Now it is well to bear in mind that both these tables are expressed in per cent gas and not in actual cubic feet so that when these tables are used it is necessary to multiply these percentages together. Now my estimate of the average consumption of gas for the year 1913 of the meters installed during that year or rather of the average actual number of meters installed that year is 45 per cent and as you follow down through that table you will notice that the business acquired gradually increases until the consumption of gas reaches 100 per
1356 cent. For District No. 1 it is estimated that the business in this district is secured to equal that of the going plant by the end of the year 1916, although all the meters are installed at the end of the year 1913. In the same way for District No. 2 it is estimated that here the business would be secured by the end of the year 1916 to equal 100 per cent, but all the meters would be installed by the end of the year 1914. And the other district is shown in the table.

Q. Turning to page 143 you take up what there?

A. That is merely data giving the record of send out in cubic feet of the maximum day, the maximum week and the send out for the year of the Des Moines Gas Co. for the years 1904 to 1910 inclusive.

Q. You obtained this information where?

A. This information was given to me by the gas company.

Q. Turning to page 144 what appears there and where did you get this information?

A. This information was given to me by the gas company and is a statement of the unaccounted for gas of the Des Moines Gas Co., expressed both in cubic feet and in per cent of gas sent out for each of the years 1904 to 1910 inclusive.

Q. That includes the gas sent out that is not registered by consumers' meters and accounted for that way.

A. The unaccounted for gas is the difference between the gas as sent out from the station and the gas as registered by the consumers' meters or otherwise actually accounted for.

Q. Now then digressing for a moment these percentages the last three years are four, four and a fraction and five and a fraction. Now are these high or low?

A. That per centage of unaccounted for gas is very low and shows that the condition is good in -hat respect. For instance I
1357 made some computations of the unaccounted for gas in various places and have also made some computations of the unaccounted for gas in Des Moines reduced to per mile of main on a 3 inch basis. That is reduced all mains to i-s equivalent number of feet of three inch main. In Des Moines the unaccounted for gas per mile of actual main last year was 129,000 cubic feet and reduced to the equivalent three inch basis it was 71,600 cubic feet. Now comparing with some other cities I have got for instance Brockton, Massachusetts, 177,650, Cambridge, Mass., 96,067, Fall River*m* 168,-085, Lawrence 124,354, Lynn, 153,327, Worcester, 185,532, Newton, 42,661, Springfield, 47,326. These statistics from Massachusetts cities were derived from the rep-rt of the Massachusetts commission, that is the last report issued for 1910, and in this case I believe gives data up to July 1, 1910. You will notice that in most instances the unaccounted for gas of these cities per mile of equivalent three inch main is considerably over 100,000 feet per year and only three of them are below 100,000, one of these being Cambridge with 96,000, Newton 42,000, and Springfield 47,000, in round numbers, whereas Des Moines last year was 71,600 feet. This method gives a very accurate way of comparing the accounted for gas of various cities and shows that the unaccounted for gas in Des Moines is very low. I have also reduced the unaccounted for gas in these Massachusetts cities to per cent of gas sent out as follows: For the year 1910, except the Massachusetts which I believe end July 1, 1910. Des Moines in percentage showed 4.31; Brockton, 10.97; Cambridge, 4.15; Fall River, 6.91; Lawrence, 7.03; Lynn, 6.35; Newton, 3.54; Springfield, 2.66; Worcester, 7.32. These compari-
sons lead me to say that the unaccounted for gas in Des
1358 Moines is low, is very low.

Q. Now the next page here in Exhibit 21 is revenue per thousand in Des Moines only which I think explains itself except the note there. What does that mean?

A. In looking over the operating income and expenses of the Des Moines Company for the year 1910 and one or two years previous I find that the company has a small income from Miscellaneous sales.

Q. Of what?

A. Which are sales of other things besides gas and in order to reproduce the condition as nearly as possible I have taken account of that.

Q. That you have reduced to the amount per thousand feet?

A. I say as to the estimate of income of both the going and the comparative plant during the business development period.

Q. That amount is .0005 per thousand feet?

A. That should be $1.0058.

Q. What should be 1.0058?

A. The figure you have just read. The figure I have read includes miscellaneous sales of .0005 dollars per thousand feet.

Q. So in order to get the revenue per thousand feet of gas sold should this be added or subtracted from the revenue $1.0058 on the same page?

A. It is included in that revenue as shown because it is included in the total revenue.

Q. Now what are these figures that are contained on pages 146, 146½ and 147? What do they relate to?

A. These figures are to show the calculations I have made to obtain the estimated future taxes of both the going plant and the comparative plant.

1359 Q. I see that the table on page 147 is headed estimate of future taxes for going value calculation?

A. The particular table on page- 146 and 146½ represents the calculation of the taxes for the going plant and the table on page 147 represents the calculation of the taxes for the comparative plant.

Q. With these figures as a basis what attention if any did you give to estimating the operating expenses of the going plant?

A. I made a very careful study of the probable operating expenses of the going plant for the years 1911 to 1917 inclusive as shown in the first large table following page 149. This study was based upon the actual operating results of the Des Moines Gas Co. for the year 1910 to which I made certain adjustments for instance deducting estimated cost of supplying gas to Valley Junction, and I also adjusted certain other items so that the cost as I estimated it would represent in my judgment a fair average cost of operation for the years under consideration.

Q. You have another large sheet following this headed estimated operating expenses of the comparative plant during period including details and results of going plant 1910, with estimated Valley Junction cost deducted. What is this table?

A. This table is my estimate based on a study of the operating expenses of the company of what the comparative plant would require for operating expenses beginning with the year 1911 up to and including the year 1917. I might say that the column shown under going plant 1910 adjusting certain items and deducting cost of supplying Valley Junction is the same as the corresponding column on sheet headed operating expenses of going plant.

1360 Q. Take the year 1913 under operating expenditures opposite the word manufacturing, you have 3600 before your column showing cost per thousand. What does that mean?

A. That means that my estimate of the number of dollars required for that particular item manufacturing in the year 1913 of the comparative plant is $3,600. Comparing that to the going plant you will find that in the going plant my estimate of the amount of that particular item for that year 1913 is $4,400. Now I do not say that the comparative plant will require that *must* expenditure in

that item. My estimate is $3,600 for the comparative plant and the net returns——

M. BYERS: What are you referring to?

A. The comparative plant estimated operating expenses the year 1913 as itemized the amount under per M made. Now this $3,600 I reduced to per M made. In order to get this reduced to the cost per thousand feet made it was necessary for me to estimate not only the sales of the comparative plant for that year but also the unaccounted for gas. Now the unaccounted for gas of the Des Moines company is very low and in my estimate of the operating expenses of the going plant I have assumed that the company would be unable to maintain the unaccounted for gas as low as it had in the year 1910 and that the unaccounted for would increase in 1911 to 4.5 per cent, in 1912 to 4.6 per cent until it reached five per cent in the years 1916 and '17. Now in the comparative plant the tendency of the unaccounted for gas would be the other way. It would start higher and would become less as the amounted business increased and I have shown my estimate of the unaccounted for gas of the comparative plant on the sheet for the comparative plant.

1361 Q. In each instance then where you have figures preceding an item in the column per M made, these figures represent the expense in dollars for that year for that particular item as you estimate it, is that right?

A. They do not. The figure 3600 represents dollars, but——

Q. I guess I did not make myself clear. Where you have figures as I refer to them as 3600, 2500, 3000 without any per cent or anything else accompanying them, do they represent the expense in dollars for that particular item.

A. They do.

Q. The next class is illustrated by the second item boiler fuel opposite which you have under column per M made, as 43 and to the left of that 10 pound X. Wha- does that mean?

A. The boiler fuel of the Des Moines company for 1910 ran a certain number of pounds of coal used per thousand feet of gas made. Now I have estimated when the comparative plant starts up that the boilers would have to be run and that the amount of coal while in total not as great as that of the going plant, yet owing to the much smaller amount of gas made would be greater per thousand feet of gas made and have made my figures and my judgment is based on my experience in other plants that it will require for the amount of gas made there in this kind of a plant 10 pounds of extra boiler fuel per thousand feet of gas made in the year 1913.

Q. So that 10 pounds X is in effect an expenditure in the fuel figured there upon .0413?

A. Yes, sir; from that the figure per thousand of .0413 can be deduced.

Q. I notice in the next year this same item you have five pound X?

1362 A. Yes, sir.

Q. That means as the consumption or product is increased that excess is decreased?

A. That means that owing to the much greater amount of gas

made the quantity, the extra quantity of coal per thousand feet decreases very materially and subsequently disappears.

Q. In the succeeding three years there is no excess shown there?

A. There is not.

Q. Your next item here is under generator fuel I think 8.5 pounds excess what does that mean?

A. That means that my judgment of the amount of generator fuel per thousand feet of gas made in 1913 of the comparative plant will be 8.5 pounds more than the actual going Des Moines Co. used in 1910 per thousand.

Q. What is the difference between boiler fuel and generator fuel?

A. The difference is that the fuel that is used in steam boilers is called boiler fuel and that is used for making steam. The fuel called generator fuel is the coke which is used in the water gas generator for making water gas.

COURT: That is what is used for making gas?

A. Yes, sir.

COURT: Is that used altogether here?

A. Yes, sir.

Q. What, don't they use local coal here for generator fuel?

Objected to as incompetent, immaterial and the witness is incompetent.

A. Local coal cannot be used in water gas generators, it will not serve the purpose of generator fuel which has to be a hard carbonaceous fuel.

Q. Opposite manufacturing labor you have 20 per cent X.
1363 That is explained the same way as these other items?

A. Yes.

Q. Under oil you have .5 gallons X?

A. Yes, sir.

Q. That is explained the same way?

A. This means my estimate of the consumption of oil per thousand feet of gas made of the comparative plant in 1913 will be .5 gallons more for each thousand feet of gas made than the going plant used last year.

Q. I notice there is an item here at the end of your manufacturing just before your net manufacturing expense, less residuals that is in red. Why is that put in that way?

A. That is deducted from the manufacturing expense because it represents the amount of money estimated to be realized from the residuals in this case tar.

Q. That is the process of manufacture produces some tar.

A. Yes, sir.

Q. And you deduct what is realized from that from the cost of manufacture?

A. Yes, sir.

Q. Now then I have just referred to this deduction on account of the amount realized from the sale of the residual here, tar. Is this a customary way of figuring these expenses making that deduction and in that way?

A. It is. In this kind of a plant they have a bi-product which

has value. I take cognizance of that in the estimated cost of manufacture.

Q. Turning to the next large sheet will you please explain now just how you have attempted to compute the cost of reproducing this business by the use of the factors we have been consider-
1364 ing?

A. In general I base my judgment of the going value on the difference in net earnings reduced to their present worth of the going plant and the comparative plant during the period of development of the business. In the first place the first calculation shown in the upper right hand corner of this sheet is the investment reduced to its present value and reduced to the expenditures in each year, omitting now the first column in reference to working capital or going value. The second colum- shows my estimate of the amount of working capital to allow during each year totaling $150,000. The third column is blank. The fourth column gives the total of the investments. The reason that the third column is blank is that this is the first trial calculation in which no allowance whatever is made for the amount of going value in the investment calculation. Now the second calculation following at the upper right hand of the page under construction gives the calculation of the interest which enters as a revenue of the comparative plant. This is deduced in the manner shown, namely, column No. 1 of the interest calculation shows the total investment to date in the comparative plant. That amount which I have deducted—take for instance the first year the investment is estimated to be $270,758.

Q. May I interrupt you a minute. I want to tie some of these things together. We have already referred to some parts of your report which show the investment in detail each year. Without finding it now do you remember the parts of the report referred to?

A. Yes, sir.

Q. Now how do the amounts shown there check with these
1365 amounts given *given* here?

A. They will not because these amounts are amounts reduced to present value. The amounts shown in the report are amounts on the basis of the reproduction new.

Q. But they are based on these figures that are goven here?

A. They are, yes.

Q. Now will you proceed please?

A. Going back to the interest calculation the amount $2,440,613 at the top of column No. 2, is the difference between the total estimated investment as shown under the investment calculation less the amount invested for that year as shown in column No. 1. Now column No. 5 shows the amount invested for construction during the year or the amount used for construction during the year and is the same as the last column of the investment calculation. To determine the amount of interest that this money would accrue it is estimated that the amount of money which is used for construction during the year is invested at 2 per cent on daily balances and the interest on it is therefore figured at one half of two per cent on the assumption that the construction proceeds on a straight line during

the year. The amount of money which is left from the total and which is estimated as not being used during the year is figured to be invested at the net income rate of two per cent for the entire year and the calculation of that is shown in column No. 4. The sum of the interest in column No. 4 and No. 5 gives the total interest estimated to be earned by this money during each year and this total interest is carried down into the comparative plant under the column interest on unemployee capital.

Q. That would appear opposite 1911?

1366 A. The amount as calculated in 1911 under first preliminary calculation is $51,520, that is the amount that appears opposite 1911 in the comparative plant under the heading interest on unemployed capital.

Q. Has interest been computed in the same way for each of the succeeding years?

A. It has.

Q. Now coming dow- to your comparison take 1911 with the going plant and tell us what you show there?

A. Referring to the calculation going plant in 1911 the second column which is headed M cubic feet of gas sold is my estimate of the amount of gas that will be sold in Des Moines during the year 1911. The next column shows the increase over the previous year in per cent and these figures correspond to the figures in the previous pages that we have referred to. Now the revenue from the sales of gas is estimated at $1.0068 per M, and multiplying the M cubic feet sold in 1911 by this rate gives the revenue from sales of gas of the going plant for 1911 of $562,469. In addition to the revenue from the sale of gas the company as I have explained before has a small revenue from miscellaneous sales of .0005 per M which in the going plant in the year 1911 amounts to $279. The going plant does not receive interest on unemployed capital therefore the gross revenue is the sum of the two preceding revenues or $562,748. It is next necessary to estimate the operating expenses of the going plant and this I have taken at $.5833 per thousand feet sold which is the figure shown at the bottom of the table total estimated operating expenses of the going plant for the year 1911. That reduced to dollars amounts to $325,782. That amount is the operating expenses

1367 less taxes and depreciation of the going plant for the year 1911. The taxes of the going plant which I have estimated in the year 1911 at $42,431 are estimated in detail on page 146 of my report. The amount of money to set aside for depreciation I have taken at 10 cents per thousand feet sold and this amount in dollars estimated for the going plant for 1911 is $55,867. The total operating expenses therefore of the going plant for the year 1911 is estimated at $424,170 which is the sum of the operating expenses less taxes and depreciation, plus taxes, plus depreciation. Deducting total operating expenses estimated to be $424,170 from the gross revenue $562,748 leaves an estimated net earning of the going plant for the year 1911 of $138,578. Now in order to compare the earnings of the going plant to the comparative plant to be subsequently worked out I reduced the net earnings to their present worth using an interest

rate of six per cent. This results in a factor for one year of .9434 and applying this factor to the net earnings for 1911 of the going plant results in the present worth of the net future returns of this plant for the year 1911 of $139,774.

Q. Have you gone through each year in the same way for the going plant?

A. Yes, sir.

Q. Following that is the comparative plant? What difference is there between the two computations.

A. There is this difference that the comparative plant is not in operation during the years 1911 and 1912 but during 1911 — 1912 the comparative plant enjoys a revenue from the interest on unemployed capital as before explained. After 1912 that is beginning with the year 1913 the comparative plant begins to sell
1368 gas and therefore enjoys a revenue not only from interest from unemployed capital but also from the sale of gas. During the years 1911 and '12 inasmuch as the plant is not operative—I am speaking now of the comparative plant there would be no operating expenses and no taxes chargeable to operation. However, depreciation begins immediately and I have made a calculation of the amount to set aside for depreciation. Otherwise the calculation follows the same general lines as that of the going plant.

Q. .Now with reference to the matter of depreciation under the per M column where you have ten cents on the going plant I see for 1911 you have 3.04 per cent?

A. Yes, sor.

Q. Running down to 1914, 89.2 per cent. After that it is at ten cents per thousand again? What do these verious per cent- mean in there?

A. During the years 1911 to 1914 inclusive, or rather during the years 1911 and '12. there is no gas sold by the comparative plant at all. Therefore, the depreciation for these two years could not be based upon the amount of gas sold and it is necessary in those years to base the depreciation upon the amount of property or amount of the investment. The figure 3.04 per cent used in 1911 results from estimating the percentage of investment compared to the total in that year omitting the real estate and that percentage in that year is 3.04. In the same way the percentage for the year 1912, results in a percentage of 23.7. Now in the years 1913 and '14, especially during 1913 the amount of gas sold is so light that if depreciation were set aside at the rate of ten cents per thousand feet sold it would result in a figure much below two per cent of the prop-
1369 erty. I therefore continued the percentage calculation up to and including the year 1914 after which sales of gas are at a point where in my judgment it is fair to apply the full rate of ten cents per thousand depreciation.

Q. One word more about that. In 1914 we have 89.2 per cent and the amount $58,550. That amount is 89.2 per cent of what?

A. That is 89.2 per cent of the physical equipment or rather the investment in 1914 as related to the final total investment leaving out of consideration real estate.

Q. You don't mean $58,550 is 89 per cent or 90 per cent of the total investment up to that time?

A. Not at all. Depreciation is based on that 89 per cent.

COURT: 89 per cent of the reproduction?

A. Yes based on the reproduction new value?

Q. You don't mean to say 89 per cent depreciation.

A. I do not. The depreciation is based on 89.2 per cent of the —I have got the exact figure here, in this case of $2,671,696 or $2,379,896 which at 2 per cent equals for the year $58,550.

Q. Then this 89 per cent represents the amount of the investment therefore the basis of the depreciation calculation up to that time.

A. I am mistaken on that Mr. Guernsey. The 89 per cent represents that in 1914 89.2 per cent of the total physical property is in operation and that amounts to $2,379,896. Now that is 89.2 per cent of the total reproduction new value less real estate. Now then the amount of depreciation $58,550 is derived from multiplying the depreciation as calculated in the going plant for the year 1914 by that 89.2 per cent. I was mistaken before in my assumption, I had that wrong at first.

1370 Q. Now this first calculation or tabulation here of net going value gives you the final column here as comparative plant which represents the difference in favor of the going plant in each year?

A. Yes, sir.

Q. That is its present worth of course I mean?

A. Yes, sir.

Q. What is the aggregate which you get there?

A. The aggregate of the differences of the present worth of net future returns if $532,659.

Q. Now having obtained this result from this first trial what do you do with this $532,659?

A. I use that to make a second trial calculation which is shown on the page following the first trial calculation. You will notice that on the second trial calculation in the upper left corner there is a column headed "Justifiable expenditure in developing business" and in this column you will find totaled the $532,659 derived from the first trial calculation.

Q. And distributed over the various years?

A. And distributed over the variou- years just as it is in the first trial calculation.

Q. This is not in the first trial calculation?

A. Well it is derived in the first trial calculation at the end of it.

Q. Now then how does that affect these interest calculations?

A. The addition of the amounts for justifiable expenditure for developing business increasing the total amount of the investment, therefore increases the amount of interest earned by unemployed capital as shown in the calculation at the upper right hand corner of the second calculation.

Q. Your going plant in this second calculation is it

1371 changed or not?

A. The going plant is exactly the same as in the first trial calculation. That remains the same throughout.

Q. And what if any changes are there in the calculation as to the comparative plant except these which arise our of the allowance to the comparative plant of this matter of interest?

A. That is the only change in the comparative plant with the exception that that produces changes in the earnings.

Q. These changes in interest followed out of course change the other items right straight through. What d-es this second trial give you as your difference between the two plants, the measure of this going value?

A. The second trial calculation naturally results in a lower figure and amounts to $509,146.

Q. Now what is your next step in your final calculation?

A. The next step if a complete calculation was made would be to use the figure obtained in the second trial calculation, namely $509,146 but in figuring this out I have made the necessary adjustments at once in the final calculation to make the result agree.

Q. What do you mean by making adjustments to make the result agree, you mean forcing a balance or things like that?

A. No, sir. If I had made a third trial calculation, if I had used the figure obtained on the second trial calculation of $509,146 I would have obtained a figure somewhat in excess of $509,146. Then I might have made a fourth, a fifth, a sixth and so on *moc* calculations narrowing down the difference each time between the figure derived by the calculation of assumed amount for going value until that would finally result in a figure when the estimate*d* of going value finally agrees with the amount shown by the
1372 calculation. By taking interest and making small adjustments in the estimated increments for each year it is not necessary to expend all this work and go through all these calculations and I have just simply shown the final calculations where I assumed the going value is $509,795 and where the result of the calculations shows the same figure.

Q. That is it proves to the dollar?

A. In this case it proves to the dollar.

Q. That is with reference to the aggregates. Now your column headed justifiable expenditure for developing business in the computation in the left hand upper corner of this last sheet is the column making *yp* the items of going value?

A. Yes, sir.

Q. Now what is the fact as to whether the aggregate not only checks but also the amount for each year?

A. The amount for each year's checks and the aggregate also checks. After making a number of these calculations the interest adjustments become simple.

Q. Turning back to page 17 is the amount $509,795 shown in your summary there as going value the amount ascertained by you in the manner just stated?

A. That is the amount and in my judgment represents a fair allowance for going value.

Q. Now Mr. Baehr have you reached a conclusion as to what would be the fair actual cost of reproducing the property of the Des Moines Gas Company used *used* and useful in its business of manufacturing and distributing gas in the said city as of January 1, 1911?

A. I have.

Q. And what in your judgment is that amount?

1373 Objected to as incompetent, immaterial and object to the witness as not competent.

A. The cost of reproduction new my judgment of the amount is $3,531,491.

Q. Now have you reached a conclusion as to the present value of the property referred to, that is the property of the Des Moines Gas Co. used and useful in its business of manufacturing and distributing gas in the city of Des Moines?

A. I have.

Q. What in your judgment was the actual reasonable value of that property on the 1st day of January, 1911?

Mr. BYERS: The question in that form is objected to as incompetent and immaterial.

Mr. GUERNSEY: What formal objection is made to the question?

Mr. BYERS: We stand on the record.

A. My judgment of the fair present, or depreciative value is $3,221,166.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

1373½ Tuesday Forenoon Session.

AUGUST 1, 1911—at 9:30 a. m.

All counsel for the respective parties present.

Testimony on part of complainant resumed as follows:

WILLIAM A. BAEHR, re-called for further direct examination, examined by Mr. Guernsey, testified as follows:

Q. Mr. Baehr, the last thing I asked you last evening was your estimate as to the value of this property of the Des Moines Gas Company used and useful in its business of manufacturing and distributing gas in the city of Des Moines on January 1, 1911. I wish you would state whether you have formed a conclusion as to the present value of this property, and if so, what such value in your judgment is.

Objected to on part of defendants as being incompetent and immaterial.

A. In my opinion the present value of this property is enhanced over the value of January 1, 1911, by the additional construction which has been carried on since that time and to some extent the alue is decreased by the extra amount of depreciation which has

taken place since that time; but as a whole my judgment is that the property is enhanced somewhat in value.

Moved on part of defendants to strike the answer as not responsive and incompetent.

Q. Now, referring to your report marked Exhibit 21, there are some general questions I wish to ask because I did not go through it item by item. In the first place, is the property which you refer to in this report and valued in this report the property which is described in the inventories Exhibits 15 and 16?

1374 A. It is.

Q. Now you have referred to buildings here, building 1-A and B; is the designation of the buildings the same as the designation applied to the same buildings in this inventory?

A. It is.

Q. And as to contents of the buildings, you have followed the inventory also?

A. I have.

The MASTER: You have compared them, have you?

A. Yes, sir.

Q. Now, I want also to ask you, Mr. Baehr, whether—ask you generally—whether the statements and estimates made by you and contained in this Exhibit 21 are each of them in your judgment true and correct.

Objected to on part of defendants as being incompetent and immaterial.

A. They are.

Q. And what is the fact as to whether the prices and costs taken by you in making up Exhibit 21, Mr. Baehr, were in your judgment in each instance reasonable, fair prices for the things to which they were applied at the time as of which the valuation was made?

Objected to on part of defendants as being incompetent and immaterial; the witness is not shown to be competent.

A. They were.

The MASTER: I notice in your itemized account of each building you have what is termed interest and taxes; that is added to the net construction cost of the material.

A. Yes, sir; I call the net construction cost the base figure.

1375 The MASTER: Now where is the summary on buildings?

A. It is on page 77, your honor; that is the final figure there at the top of the page.

Mr. GUERNSEY: You mean page 76, don't you?

A. Yes, 76 and 77.

The MASTER: That gives the total as of now, present value of net construction cost?

A. That gives the total construction cost on a basis of reproduction new.

The MASTER: Now where is the real estate given on the basis of the present value?

A. You will find that on page 17.

Q. May I make a suggesion there. Page 17, Mr. Baehr, gives this in the aggregate; now if you will turn to page 126, do we not find there the total reproduction cost or value of each building, its condition per cent, and its present value given in detail?

A. That is right.

Q. And then that total from page 127 is carried to page 17?

A. It is.

The MASTER: That is the buildings alone?

Mr. GUERNSEY: Yes, that is the buildings alone. We will make a memorandum showing these pages where they are classified, if that will be more convenient to you.

The MASTER: That would be very convenient to have.

Q. Now, Mr. Baehr, let us take the next one, contents of buildings, that follows the buildings, doesn't it, in each instance?

A The contents begin on page 126.

Q. And follow the same arrangement we followed before?

A. Yes, sir.

1376 Q. The contents begin at page 78 for the base and the additional items showing the total reproduction cost?

A. Yes, sir.

The MASTER: I think I understand that now.

Q. Now, are you familiar in connection with your business with the reasonable prices of the apparatus and machinery and things of that kind that are contained in this inventory and contained in your Exhibit 21, Mr. Baehr?

A. I am.

Q. And are the prices taken by you in each instance including your unit prices for labor and material as well as the prices for machinery, apparatus and other things in your judgment reasonable and fair?

Objected to on part of defendants as being incompetent and immaterial; the witness is not shown to be competent.

A. They are.

Mr. GUERNSEY: We now offer in evidence Exhibit 21.

Objected to on part of defendants as being incompetent and immaterial, being a mere memorandum made by the witness. We object to all that part of it that refers to the so-called items of additional cost as incompetent, immaterial and irrelevant and not an issue in this case. We object to that part of Exhibit 21 that refers to the so-called going value because it is incompetent, irrelevant and not an issue in this case. We object to all of the tables and computations and figures set out in Exhibit 21 for the reason that they are incompetent and immaterial, the competency of the witness as to those computations has not been shown; and for the further reason that it already appears that a large part of the computations and tables and figures are based upon memoranda and infor-

1377 mation furnished by other persons and it is mere hearsay and not the best evidence.

The MASTER: If I understand you, you don't make any objection because the witness' attention has not been called to each and every item?

Mr. BYERS: Not at all.

Defendants also make the same objection, incompetent and irrelevant, to all that part of Exhibit 21 that deals with mains under pavement, services under pavement and estimated cost of reproducing, tearing up and replacing the paving, and to all that part of Exhibit 21 that deals with crossings under railroads, street railways as to both mains and services, if there are any such, for the reasons heretofore stated; and we object to all that part of Exhibit 21 that deals with items 1, 2, 3, 4 and 5 as the witness has stated them here, being, 1 contingencies, 2 is engineering and superintendence. 3 legal organization, liability for casualty and fire insurance, 4 is taxes, and 5 is interest, for the reason that all of these items and proof with respect to these items is entirely immaterial and irrelevant to the question involved in this controversy.

In making this objections as heretofore stated, we waive the minute and detailed identification of the Exhibit of the figures of the several items contained in it.

The MASTER: As I understand that objection it applies to each and every item contained in it, waiving, however, the fact that the witness' attention has not been called particularly to the items?

Mr. BYERS: We are waiving the identification of this book but object to its fontents.

1378 Q. Mr. Baehr, I wish you would in a general way state whether this plant is adapted to the purposes to which it is put, that is, manufacturing and distributing gas to consumers in the city of Des Moines?

A. In my judgment the plant of the Des Moines Gas Company is well adapted to serve the city of Des Moines with gas, and the people of Des Moines. The plant is of sufficient capacity and still it is not overbuilt. The quality of the service is good for the reason that the average candle power, as shown by the Company's records for the year 1910, was 22.78 and the average British thermal units, or heat units, per cubic foot for the year 1910 was 600. These qualities constitute a good gas. The apparatus for making gas is good; it is modern apparatus. The mains are of fair size, so that the people even in the outlying districts receive sufficient gas pressure. I based my judgment in this respect on the inspection of the pressure tests last winter where I found that most of the city was receiving during the time of the *peal* load, that is, at the time of maximum consumption, a pressure of three inches water column or above that, with a few isolated instances of pressure down to possibly 2.5 inches. That constitutes first class gas pressure service. The management, the engineering and the supervision of the company appeared to me to be very good, and I think the plant in general is well adapted to Des Moines.

Moved on part of defendants to strike out the answer of the wit-

ness, all of it, for the reason that it is made up of conclusions based upon hearsay and upon records that are not before the Master. The answer is for that reason incompetent as a part is based upon hearsay, part is a conclusion and part is original testimony, and it so intermingled that it is impossible to separate it; therefore I move to strike the whole answer.

1379 Q. Mr. Baehr, will you please explain the necessity for surplus capacity in the plant of the Company?

A. In the first place, reserve capacity is necessary to good service. It is essential in supplying gas that the supply of gas be continuous and that it be not interrupted even for an instant. The reason of this is that in a city using gas there are always some gas burners open, that is, the gas is burning, and if the supply of gas were discontinued for one reason or another from the works these various burners which are open would remain open and subsequently when the supply of gas is again turned on a number of these burners would undoubtedly continue open and gas would stream into the rooms or buildings in which these burners are located. The result of this is great danger due either to asphyxiation or from explosions. Furthermore, there is necessity for reserve capacity on account of supplement breakage or accidents in portions of the generating apparatus. In addition to this it should be understood that a water gas generator, or rather a water gas set, meaning by that the generator, carbureter and the super-heater must be shut down in periods of from 40 to 100 days—depending on the amount of work that set does, or rather the amount of gas it makes—for the purpose of relining or recheckering the sets. During the time that the relining or recheckering takes place the water gas set is out of commission for several days and is not capable of making gas, and for that reason it is necessary to have other sets. The recheckering takes place more frequently than relining. Recheckering takes place at regular intervals because the brick becomes saturated with
1380 carbon and loses its efficiency. This shutting down of the water gas sets for recheckering or relining must not be confused with the daily shut down due to cleaning fires, the clinkering, which occupies an hour or an hour and a half each time and takes place once or twice a day, in some cases three times, according to the way the set is operated.

Q. Now, which is more economical, to have the surplus generator capacity or reserve generator capacity, or to have reserve holder capacity to take care in that way of the interruption of the work of the generators?

A. In general it is more economical to install additional generating capacity than it is to install additional holder capacity. By the installation of additional generator capacity the erection and construction of additional holder capacity may many times be put off a number of years. On the other hand, the erection and construction of additional holder capacity will not allow the putting off of additional generating capacity for possibly more than one or two years. In reducing this to a financial proposition, ordinarily

it is more economical, from a financial standpoint, to put in the additional generator capacity. In the case of the Des Moines plant, in my judgment it would be considerably more economical to put in additional generating capacity, although the necessity for additional holder capacity will not be obviated, as in the course of a very few years, in my judgment, an additional holder will be necessary. Roughly, it would cost about fifty per cent per million feet of capacity, in my judgment, in Des Moines to install additional holder capacity over and above additional generator capacity. I
1381 might add to that, that in my judgment it will be necessary to purchase additional real estate on which to erect the additional holder.

Q. Now, I wish you would state what expenditures, in your judgment, Mr. Beahr, could reasonably be expected as necessary in the near future in order to maintain the property of the complainant up to its present state of efficiency?

Objected to on part of defendants as being immaterial incompetent and irrelevant.

A. In the going value calculation I made an estimate of the future gas sales of the Des Moines Gas Company up to and including 1917, and from those figures I have estimated that the maximum day's send-out in 1917 will be, roughly, three and a quarter million cubic feet per day. The maximum send-out last year was 2,228,000 cubic feet, I believe; but in compiling my estimate of future sales upon which to base my judgment of going value, I kept the estimate of sales conservative so as not to exaggerate the going value. In my judgment, for construction purposes these figures would not be sufficiently safe. I made a rough calculation in a general way of the construction requirements for the next seven years, and in my judgment it will be necessary to purchase additional real estate upon which to erect a new holder. The largest present holder of the company is 1,100,000 cubic feet capacity, approximately, and in my judgment the next holder to be erected should not be less than two million cubic feet capacity. In attempting to place this holder upon the present real estate of the company I found there was no room upon which to erect it, and for that reason, in my judgment, it will be necessary to purchase real estate upon which to erect such a holder. In my further judgment the purchase of additional real estate will be such that if the two million holder were
1382 erected thereon it would practically use up the best part of the available space as the holder is round, and real estate is usually square or rectangular in shape, and for that reason it might become advisable to make the holder a three million cubic feet capacity in place of a two million. I have estimated the real estate which would be required at approximately $92,000. Now, in my judgment, it will be necessary to install additional manufacturing capacity at approximately two million cubic feet capacity, which is one 10 foot 6 generator set, plus certain additional apparatus through the plant, which I estimate to cost $164,000. The three million holder I estimate will cost $250,000, complete. In

my judgment in the next seven years the main mileage will be increased from 50 to 60 miles, or approximately thirty per cent increase over the present mileage. This I estimate will cost approximately $400,000. I have estimated that the approximate increase in population in the next seven years will be 20,000, an increase of about 23 per cent from the present population. On this basis I have estimated that the increased investment in meters and services will be about $150,000, making a total of $1,056,000. Now if it is decided to build a two million holder in place of a three million cubic feet holder, I would deduct from that holder the sum of $75,000, leaving a total of $1,981,000.

Q. Mr. Baehr, will you tell us what reasons there are, if any, in your judgment, why this real estate which is occupied by the manufacturing plant is especially adapted to the uses of this Company?

A. There are various reasons why the real estate is desirable and especially adapted to the use to which it is put. In the first place the plant and ground is above flood line and on that account there is no danger of interruption of the service. In the second
1383 place the track facilities are excellent. The loading and unloading, receiving and shipping material are facilitated very much for this reason. The plant is so located on the Des Moines river that they are able to pump a water supply for general work service by pumping the water from the river and in that way saving money in the purchase of water. The central location of the plant enables the men who are working there to reach it readily, and furthermore, the engineer and superintendent can reach the plant rapidly in case of accident. The location of the plant is very near the center of distribution. This is a highly desirable feature, because it not only shortens the feeder mains required, but also decreases their size and in that way tends towards economy. The area of the plant is well drained, and this is a desirable feature. The plant is so located that men and wagons starting from the feeding shop start practically from the distribution center and that effects a large saving not only in time, but in the cartage of all kinds of supplies, pipes, stoves, fittings, etc. The present real estate has another feature of value, which is that it is large enough for extension of the manufacturing capacity, with the exception that additional ground is needed for the erection of a holder. The general condition of the soil of the real estate is favorable; it is good ground for foundations, not marshy, and does not require tiling. There is one additional feature that I consider is a desirable feature, and that is that the elevation of the plant with reference to the general elevation of the city is such that the plant is below that general city elevation. In a low pressure gas distribution system this is a desirable feature because air being lighter than gas tends to rise and this in a measure overcomes a portion of the friction in
1384 the feeder mains and tends to economy and to good service.

The MASTER: Is that true in the territory south of the Coon?

A. I can't say specifically in that respect. I have in mind the higher portions of the city I have seen.

Q. Now another thing about your Exhibit 21, that is in making your valuations, did you take the widths of the trenches as given in the inventory, or did you rely upon your own judgment and experience as to that?

A. I paid no attention whatever to the inventory in that respect, but used my figures as to the width of trenches.

Q. I think the inventory also estimates the amount of trenching and paving and laying of services, state whether your estimate is based upon that or upon factors determined from your own experience?

A. My estimate is based entirely upon my own experience in that respect.

Mr. GUERNSEY: There is one question suggested with reference to the objection made to Exhibit 21, we might as well clear up before finishing the direct examination of this witness. Among other things, it is objected to as a mere memorandum; if that is to be construed as an objection, we will have to show that. Will you tell us, General Byers?

Mr. BYERS: I have already stated that we do not object to the manner or rather to the form in which the exhibit is gotten up, or that the witness has not dealt with each detail in the exhibit; we waived the requirements, but insist even if that all had been done, still the exhibit would be incompetent for any purpose in this case.

Mr. GUERNSEY: On what is the objection that it is a mere
1385 memoranda predicated?

Mr. BYERS: It is this: you cannot substitute this witness for proof that exists in an original form.

Mr. GUERNSEY: So far as that goes we expect to supplement the testimony of this witness as to the matters which are furnished him by the testimony of people who furnished it.

Mr. BYERS: Of course, that is all a matter for the record and for the court.

Mr. GUERNSEY: As I understand your objection, you make no objection that would not be equally available if the witness had gone through this exhibit item by item and had testified to the reasonableness of each item.

Mr. BYERS: No, I have already stated that; it is in the record.

Judge CARR: As we understand it, there is no objection to Exhibit 21 because of the fact that the witness' testimony or a part of it appears in that form.

Mr. BYERS: That is correct.

Judge CARR: Except as to the substance, you do not object to the form?

Mr. BYERS: That book is not testimony at all; that is my notion.

The MASTER: Of course if the witness' attention had been called to each and every item there would be no question about it; and we have considered it that way; that is the way I understand it.

Mr. BYERS: The only exception I take to that is, still it would not be evidence, but a mere memorandum to aid the court, if it wants to use it.

1386 Cross examination by Mr. BYERS:

Q. Where is your office?

A. My office is in the Peoples Gas Building, corner Michigan Avenue and Adams Streets in Chicago.

Q. On the same floor with Mr. Lea?

A. No, sir; my office is on the twentieth floor and I believe Mr. Lea's office is on the fifteenth floor.

Q. You are in the same building?

A. Yes, sir.

Q. What time in 1910, if at all, did your employment begin for the present company?

A. I spent January 1st and January 2nd of 1911 in Des Moines; prior to that I had never been in the city.

Q. January 1st and 2nd, did you say?

A. Yes, sir of 1911.

Q. Now, on these two days, who of the other engineers did you meet here?

A. I do not recall meeting any other engineer here, Mr. Byers, if you mean somebody outside of the city.

Q. Yes, I mean any of those gentlemen that are now interested in this controversy as witnesses or in any other way?

A. I didn't meet anyone at that time, except Judge Carr and Mr. Read, but no outside engineers.

Q. Now, then, did your employment begin at that time?

A. It began January first, 1911.

Q. And what in a brief way led up to the employment, who did you have negotiations with?

A. On the day prior to January first, 1911, I had a long distance telephone call requesting me to come to Des Moines at once and I left Chicago that evening, arriving here on the morning
1387 of January 1st.

Q. And the long distance call was from the Des Moines Gas Company?

A. It was, yes sir.

Q. And it was in response to that call you came on the 1st of January?

A. Yes.

Q. Now, do you have any employment for the United Gas Improvement Company now?

A. I am not doing any work for the United Gas Improvement Company.

Q. Have you, in the recent past?

A. I do not recall that I have been employed by the United Gas Improvement Company.

Q. You do not remember of such employment?

A. I do not at the moment.

Q. Have you been doing any work for the Companies that are controlled by the United Gas Improvement Company so far as you know?

A. I have done work for the Des Moines Company, and as stated

in my—I don't know what the legal term is—my affidavit, perhaps opening statement, I did some work for the Minneapolis Gas Light Company.

Q. That concern is owned by the United Gas Improvement Company?

A. I am not sure that that company is owned by the United Gas Improvement Company, but I understand they have an interest in that company.

Q. Is that the only one you remember now that you did work for in which they were interested?

A. I might look through that list I had to see whether I did any work in which the United Gas Improvement Company is interested.

Q. Did you work for any of these companies: Allentown
1388 Gas Co.?

A. I have not.

Q. The Burlington Gas Light Company, Burlington, Iowa?

A. No.

Q. Chester County Gas Company, Westchester, Pa.?

A. No.

Q. Concord Light & Power Company, N. H.?

A. I have not.

Q. Connecticut Railway & Lighting Co., New Haven?

A. No.

Q. Consumers Gas Co. Reading, Pa.?

A. No.

Q. Dauphin County Gas Co. Steelton, Pa.?

A. No.

Q. Des Moines Gas Co. Des Moines, Iowa?

A. Yes.

Q. Prior to this present employment?

A. No, sir.

Q. Equitable Illuminating Gas Light Co., Philadelphia, Pa.?

A. No.

Q. Essix & Hudson Gas Co., Newark, N. J.?

A. No.

Q. Fulton County Gas & Electric Co. Gloversville, N. Y.?

A. No.

Q. Georgia Railway & Electric Co. Atlanta?

A. No.

Q. Harrisburg Gas Co., Harrisburg, Pa.?

A. No.

Q. Hudson County Gas Co. Jersey City, N. J.?

A. No.

Q. Kansas City Gas Co., Kansas City, Mo.?

1389 A. No.

Q. Merion & Radnor Gas & Electric Co., Ardmore, Pa.?

A. No.

Q. Minneapolis Gas Light Co., Minneapolis, Minn.?

A. Yes.

Q. New Gas Light Co., Janesville, Wis.?

A. No.
Q. Northern Liberties Gas Co., Philadelphia, Pa.?
A. No.
Q. Omaha Gas Co., Omaha, Nebr.?
A. No.
Q. Paterson & Passaic Gas & Electric Co., Paterson, N. J.
A. No.
Q. Haven't you been retained by the Omaha Company?
A. No.
Q. Pensacola Gas Co., Florida?
A. No.
Q. Peoples Gas Light Co., Manchester, N. H.
A. No.
Q. Philadelphia Gas Works?
A. No.
Q. Public Service Corporation, Newark, N. J.
A. No.
Q. St. Augustine Gas & Electric Light Co.
A. No.
Q. Sioux Falls Gas Co.?
A. No.
Q. Savannah, Gas Co., Savannah, Ga.?
A. No.
Q. Sioux City Gas & Electric Co., Sioux City, Iowa?
1390 A. No.
Q. South Bend & Mishawaka Gas Co., South Bend, Ind.?
A. No.
Q. Syracuse Light & Power Co., Syracuse, N. Y.
A. No.
Q. Vicksburg Gas Co., Vicksburg, Miss.?
A. No.
Q. Waterbury Gas Light Co., Waterbury, Conn.?
A. No.
Q. Wyandotte County Gas Co., Kansas City, Kans.?
A. No.
Q. And the Minneapolis and Des Moines Companies are the only two of that list that you remember?
A. Yes, sir.
Q. You have been in St. Louis several years in connection with the Gas Company's works there?
A. Yes, sir.
Q. And are thoroughly familiar with the gas situation of St. Louis?
A. I am familiar with it up to the time I left there.
Q. I understand you left there about two years and a half ago?
A. I left St. Louis at the end of March 1909.
Q. Now up to that time your employment or rather your engagements had been largely in the operation of gas plants?
A. They have been largely in the operation, and construction also.
Q. Up to the time you left St. Louis and went to Chicago?

A. Yes, sir.

Q. And had you ever had any employment prior to your going to Chicago from any cities or municipalities anywhere with respect to fixing valuations on gas properties?

A. I was not employed by any city or municipality prior
1391 to leaving the employment of the La Clede Gas Light Co., in St. Louis, on rate cases or valuations for rate purposes.

The MASTER: Prior to April 1, 1909?

A. Yes.

Q. In that connection had you been employed prior to that date by gas companies or any other interests for that matter, in the invoicing and placing of value upon gas properties prior to April 1909?

A. Yes, sir; a great many of them.

Q. And about how frequently, in a general way, say over a period of six or seven years just prior to April 1909?

A. I stated——

Q. If you will notice I have in my question, fixing values; I know you stated in your examination in chief you had done a great deal of work, but I do not remember that you stated you had valued gas properties prior to that time?

A. I valued a number of gas properties prior to April 1st, 1909, but off-hand it would be difficult for me to say how many a year.

Q. I have no notion of going into the details or places, but just in a general way I thought I would like to have you give us an estimate of the number?

A. I can do that in the following way: During the time I was employed by the Denver Gas & Electric Company of Denver, Colorado, I made three valuation reports.

Q. On their plant?

A. No, sir, on the plants at Leadville, Colorado, Boulder, Colorado, and Greeley, Colorado.

Q. Those valuations were made for owners of the gas plant or contemplated purchasers?

A. Yes, sir; during the time I was at St. Louis I made valuations on about twelve properties and in addition to that all the gas
1392 plants operated by the Western United Gas & Electric Company. This latter company owns or controls the property at Elgin, La Grange, Aurora, and Joliet, Illinois, and I think about smaller villages in that neighborhood.

Q. And that work was all for gas companies, anyway not for municipalities or cities.

A. Yes, sir.

Q. When you were answering Mr. Guernsey's general questions this morning about this plant, were you using a memoranda?

A. I have some memoranda here, yes sir.

Q. From which you refreshed your recollection as you were making the answers?

A. Yes, sir.

Q. Now, about April, 1909, you went to Chicago and opened up

your office and started in to work as consulting engineer, if I remember correctly?

A. Yes, sir.

Q. Are you a graduate of any technical school of engineering?

A. Yes, sir; I am a graduate of the University of Wisconsin, Madison, Wisconsin.

Q. Was your training there along technical lines in gas engineering or general engineering?

A. The course I took was a civil engineering course; that is the one I graduated from.

Q. Immediately, as I remember, after your graduation you became interested in work about gas plants?

A. It was some three years or two and a half years after graduation before I got into the gas business. That period of two and a half years being occupied to a certain extent by surveying
1393 work, but mostly by drafting and designing work in bridge works.

Q. What year did you graduate up there?

A. In 1894.

Q. So that it would be somewhere between 1896 and 1897, safe to say in 1897, you began your work with the gas companies?

A. The date I believe I stated before is March 1897 when I first went into the gas business.

Q. Up until April, 1909, you had devoted your entire time and energy to either the operation or construction of gas properties for the owners?

A. In the employ of the owners, yes sir.

Q. So that when you went to Chicago to open up your office your intention was, I suppose, to specialize along gas lines, gas engineering lines?

A. Yes, that was my intention although I am doing work in connection with electric light plants.

Q. Now, I wish you would tell us in a general way just about what the employment or work of a consulting gas engineer as the profession is carried on in Chicago, what it is?

A. Well, in a general way, my work covers the reports on gas properties and electric properties for bond houses or purchasers of such properties; the valuation of properties in cases like this one in Des Moines. I am operating two gas plants and one electric plant as consulting engineer; one gas plant at Oshkosh, Wis., a town of about 33,000 people.

Q. Now, just there, who owns that plant?

A. Mr. Edgar P. Sawyer and family of Oshkosh; and also am operating a gas plant at Greeley, Colorado.

Q. Who owns that plant?

A. That is owned largely by Mr. Clarence Darrow, of
1394 Chicago. In addition to that I have done such work—for instance, I am just completing an exhaustive study and survey of gas pressure conditions on Manhattan Island for the Public Service Commission for the First District of New York. I am also building a gas plant for the city of Wheeling at the present time.

Q. Now, these two plants that you say you are operating, do you mean you are superintending the operation of the plants, or what do you mean by saying that you are operating them?

A. Well, the gas plant at Greeley, I am virtually directing the policy of the company, mostly by correspondence because it is a long ways from Chicago; and I am also laying out the improvements as required and if questions of price or anything of that sort comes up they come to my office, and the local managers refer all questions of improvements to me.

Q. And your client in that case is the owner of the plant, Mr. Darrow?

A. Yes, sir.

Q. And what you are doing with respect to additions and improvements and operation and with respect to prices is in his interest or for him?

A. Yes, sir.

Q. Now, at Oshkosh, what do you mean by operating that plant?

A. The Oshkosh Gas Light Company owns and operates the gas plant and electric light and power service of Oshkosh, Wisconsin, and my duties there are to lay out and plan all improvements and in that connection I secure the prices of all the important apparatus and submit them with recommendations to Mr. Sawyer, requesting his approval before finally closing contracts. I also go to Oshkosh frequently, usually once a month and spend one or two or
1395 three days, as may be necessary, during which time I visit the plants and confer with the superintendents and direct them what they shall do; all important extensions are referred to me for advice and approval to see whether they are right or not, and such things as wages of men, even such things as vacations of employés come to my office.

Q. I take it from that employment, the fact that your employment is so general, that you also determnie the price in a way?

A. Of gas you mean and electric light?

Q. Yes.

A. I am just now making a valuation of both gas and electric light properties in Oshkosh for the purpose of determining the rates.

Q. How large is the city of Oshkosh?

A. My recollection is the last census gave it approximately a population of 33,000.

Q. More than one gas company there?

A. No.

Q. This Sawyers company has a monopoly on the gas business?

A. In that city, yes sir.

Q. I mean in that city. What rate are you getting there now?

A. The rate for gas at present is—they use two meters system there; that is, there is one rate for illuminating gas and one rate for fuel gas. It is exactly the same gas but used through different meters for different purposes. The net illuminating rate is $1.25 per thousand cubic feet; and the fuel rate is *is* one dollar net per thousand cubic feet on a sliding arrangement, so that when used in large quantities, the consumer of fuel gas using a sufficient quantity gets

a rate of ninety cents over and above the first twenty thousand feet any one month; I may be mistaken as to the twenty thousand feet; that may be fifty thousand.

1396 Q. What do you mean by net rate, $1.25?

A. If gas bills are paid within a certain time after they are rendered in Oshkosh, the rate for gas in the case of fuel for instance, is one dollar and for illuminating is $1.25, which we call the net rate. If the party does not pay the bill by a certain date the gross rate applies which is a greater rate.

Q. What is it?

A. The illuminating gross rate $1.75; I am not sure of the gross rate for fuel, but I believe it is either $1.15 or $1.25 per thousand.

Q. Can you give us in a general way, without taking time to figure it out, about what average rate the company actually gets in Oshkosh?

A. My impression is that the average rate is something like, well, say somewhere around $1.10 per thousand; that is just my judgment.

Q. Is there a controversy on there now for a reduction in rates?

A. No, sir.

Q. Now the Greeley, Clorado, plant, how big a town is that?

A. That is a town of about 8,500 or 9,000 people.

Q. A small place?

A. A small place.

Q. The gas company there has a monopoly on the gas business?

A. Yes, sir.

Q. What is the rate there?

A. The net rate is $1.50 per thousand through one meter.

Q. Now, is there any other gas properties in which you have an interest either as an operator or a financial interest?

A. I have a small interest in the gas plant at Beloit, Wisconsin.

Q. You mean financial interest?

1397 A. Yes, sir.

Q. Any other?

A. No, sir.

Q. Do you own any stock in any other gas or light company of any kind?

A. No, sir.

Q. This one at Beloit, Wisconsin, is that the only gas company there?

A. That is the only gas company there.

Q. That is a town of about 15,000?

A. I think it is from 15,000 to 17,000.

Q. And the gas company has a monopoly on the gas?

A. Yes.

Q. What is the present rate there?

A. Well, I don't know; I think it is $1.25 but I don't know.

Q. Did you have anything to do with the management of it?

A. No, sir.

Q. Your interest is not large enough?

A. It is very small.

Q. Is that a corporation?

A. Yes, sir; the name is Beloit Water Gas and Electric Company.
Q. So you are interested in it as a stockholder?
A. Yes, sir.
Q. Now, since April 1st, 1909, what has been your employment in a general way without going into the details?
A. Generally, as consulting engineer of gas and electric properties, making valuations and gas pressure reports and building and operating gas plants and one electric plant.
Q. The gas pressure proposition is really your specialty?
A. Why, not necessarily; I think I feel equally competent in gas works as in gas distribution.
1398 Q. How much of your time since April 1909, has been devoted to valuing gas plants?
A. I should say that the majority of my time was devoted to that work.
Q. In fact that was really the first work you did after you opened your office?
A. Yes, sir.
Q. And with whom was your engagement at that time?
A. About the first valuation work that I did was at Atlantic City, New Jersey, Lansing, Michigan, Litchfield, Illinois, Wilmington, Delaware, and Amarilo, Texas.
Q. And that employment was all for gas companies?
A. That was all for the owners or the company.
Q. Now, Mr. Baehr, who is the principal owner of the Belot Company?
A. I believe that company is controlled by a trust company in Cincinnati.
Q. Who besides yourself in Chicago is interested in it, has some considerable interest in it?
A. I don't know.
Q. Has Mr. Cowdery any interest in it?
A. I believe he has, but that is not based on absolute knowledge.
Q. Mr. Cowdery is at the head of the Chicago Gas Company?
A. Mr. Cowdery is the vice president of the Peoples Gas Light & Coke Company.
Q. Now, since April, 1909, have you been employed by any municipality or city for the purpose of making up a valuation of gas properties for rate making purposes—leave out of that now your pressure and all that sort of thing—just rate making purposes?
A. I do not believe I have been employed for such purposes.
1399 Q. Have you since April 1st, 1909, been employed by any municipality or city for any purpose in connection with gas properties?
A. Yes, sir; in the city of Wheeling and the city of Buffalo.
Q. Now, take the city of Wheeling first. If I understand your answer in chief that is a municipally owned plant, that is, the municipality owns the plant?
A. Yes, sir.
Q. And what was that particular service there, that is, what part of the business of the gas plant did you have to do with, what was the nature of your work?

A. At first when I went to Wheeling it was for the purpose of investigating the operating conditions of the gas plant and distribution system and I made a report on that which also embraced the improvements required to put the gas plant and distribution system in good shape.

Q. When you went the next time, what was the purpose then?

A. There was quite an interval of time between the time my report was turned in and the time action was taken by the city of Wheeling, but action was taken this last spring and I am now in charge of building a new gas plant there, overhauling the mains and relaying the services and getting the meters into condition.

Q. Does that general statement cover the only employment you had at Wheeling, or rather the character of your work?

A. Yes.

Q. It was not then in the nature of making up a complete inventory and fixing the value of each particular item and valuing these so-called overhead charges?

A. Not in Wheeling.

Q. Now, Buffalo is the other city?

1400 A. Yes, sir.

Q. When was it you were employed in Buffalo?

A. That is very recently, within two or three months.

Q. That report has not been made yet?

A. That was a report concerning improvements at the gas plant at Buffalo.

Q. I don't want it unless it was valuation?

A. It was not valuation.

Q. In the Wheeling matter I take it from what you say your report covered improvements that would be necessary for some few years in advance of the time you made your report?

A. It covered improvements that I recommended to the city of Wheeling that they make at once.

Q. And did you put the cost of the improvement in your report?

A. Yes, sir.

Q. What items of overhead charges did you include?

A. I included in that engineering and superintendance. I did not set those items aside specifically; I included those in the amount in totals, but contingencies, engineering and superintendence were the items I considered at that place.

Q. No tax and interest or going value or anything of that kind is covered by that report?

A. No, sir.

Q. And no organization or legal expense?

A. None.

Q. Now, those two are the only cities for which you have rendered services with respect to gas properties since April 1909?

A. I rendered services to the city of New York in connection with the Brooklyn Union Gas Company.

Q. I mean in valuation?

1401 A. Yes, there was a valuation of the property in Brooklyn.

Q. When was that work done?
A. That was started last winter and is not finished.
Q. And your report is unfinished?
A. It is unfinished, yes sir.
Q. Now, Mr. Baehr, you first came to Des Moines on the first day of January?
A. Yes.
Q. Had you ever been here before?
A. I had never been in Des Moines before then.
Q. And you were here two days at that time?
A. Yes.
Q. You never bought or sold any real estate in Des Moines?
A. I did not.
Q. You never either was interested as a contractor or bidder or owner in the construction of buildings or anything of that kind in Des Moines?
A. No.
Q. Now, after the second day of January, when did you next come to Des Moines?
A. I next came to Des Moines on February 6th.
Q. That is 1911?
A. That is 1811.
Q. Whom did you meet at that time?
A. I met the officials of the company, Mr. Haines and Mr. Vincent.
Q. Were there any other engineers there, Mr. Lea—I have forgotten the other gentleman's name—Mr. Randolph?
A. I don't remember their being here at that time.
Q. When did you first meet with them, if you did at all,
1402 after your employment, where was the meeting?
A. I believe in Chicago; the exact time I cannot give you, but it was early in the year.
Q. Who was present?
A. There were present various gentlemen from the United Gas & Improvement Company, Mr. Lea and I believe Mr. Randolph.
Q. Any other engineers besides Mr. Lea and Mr. Randolph that you now remember?
A. None outside of the men from the United Gas Improvement Company.
Q. The men I mean from there, if you can give me their names?
A. Mr. Klump and Mr. Heminger were the engineers from the United Gas Improvement Company.
Q. Was counsel for the company present?
A. Yes, sir.
Q. Can you give me some idea of the date, how soon it was after the first of the year?
A. I am sorry I cannot give you that, but it was early in the year.
Q. Was it in the month of January?
A. I believe it was in the month of February; I am not sure of that.
Q. At any rate, it was early in the work?
A. Yes, sir.

Q. Now, at that conference or meeting of counsel and engineers were you advised as to the character of the controversy that was on here and the purpose of this gathering of engineers and their employment, and so on, in a general way?

A. I had been advised in a general way of the nature of the controversy prior to that.

Q. That is, by some person connected with the Des Moines Gas Company that informed you?

A. When I was here on the first and second of January I
1403 understood the matter involved was a rate regulation case.

Q. Were you informed in a general way as to what the range of contention was?

A. My understanding at that time was that the city had passed an ordinance fixing the price of gas at ninety cents.

Q. And you understood that the rate in force at the time of the passage of the ordinance was a flat rate of one dollar?

A. I understood the rate was one dollar net.

Q. With the usual penalty for failure to pay on or before the 15th of the month?

A. Yes, sir.

Q. Were you also advised by somebody in connection with the Gas Company that the controversy had reached the courts and that the valuation and estimates were for the purpose of using them in a law suit and as evidence?

A. I understood that in a general way, yes sir.

Q. Now at this conference of counsel and engineers did you take up the question of these so-called intangible values, like going value and taxes and interest and pavements and so on?

Objected to on part of the complainant as not competent because it is a conference with the witnesses and their counsel and their clients and no matter that was gone into on the direct examination at all and not a proper subject of cross examination. I may say, if your honor, please, Mr. Read and Judge Carr and myself were all present at this conference. It is rather a remarkable cross examination.

The MASTER: I think it is competent to show the fact.

Mr. GUERNSEY: The record may show that we have not put any witness on the stand without conferring with him about
1404 the subject matter of the testimony.

Mr BYERS: It is proper and competent in this way, and has been so held. It is entirely proper for us without and reflection upon counsel or the witness, and I do not want anybody to get the notion that the question is for the purpose of in any way reflecting upon anybody, but it is perfectly competent and proper in view of the fact that here is an element that the men of this profession say has been of uncertain proof and standing and it is an element of value that has only recently been worked out; now it is entirely proper for us as bearing upon the weight of the evidence of this witness to show that the result of that conference was a sort of general understanding to proceed along certain lines in fixing these valuations; that goes

to the weight of the testimony of this witness and don't affect their probity.

The MASTER: So far as this question is concerned, I haven't any question about it.

Last above question repeated.

A. There were a great many things discussed and I believe, among others, that there was some discussion on the features you mention.

Q. Now, you understood at the time too, Mr. Baehr, I assume, that Mr. Lea had employment in this same matter that you had been employed in?

A. Yes.

Q. And for the same purpose and that his work was to cover the same field?

A. I presumed it was at that time.

Q. And Mr. Klump, you knew that he was probably employed for the same thing?

1405 A. Mr. Klump is with the United Gas Improvement Company. I don't understand that he was employed in the same way that Mr. Lea or myself were.

Q. You understood, however, that he was interested in the same matter in the same work that you were to cover whatever his employment might be?

A. I presume so, yes.

Q. And he has been here right along and checked up this work?

A. I don't know what checking he has done, but he has been here.

Q. Now, in that conference at Chicago, was Mr. Alvord present?

A. In the conference I had in mind, the first one, held early in the year, Mr. Alvord was not present.

Q. Was he during the winter some time?

A. There was a conference at which Mr. Alvord was present.

Q. When was that held?

A. I can't tell you exactly, but it was subsequent to the first one.

Q. Can you give us some idea how long it was afterwards?

A. I think it was subsequent to the first of March.

Q. Was it as late as April?

A. I would be unable to say. I think I can say definitely since the first of March; that is as far as my recollection carried me.

Q. Was it after the reports had been worked out and about ready to be put in form?

A. It was during the time my report was being worked upon.

Q. At this second conference, were these other engineers present besides Mr. Alvord?

A. I believe there was another conference at which Mr. Randolph, Mr. Alvord, Mr. Lea and myself were present.

1406 Q. Was Mr. Benezt Williams there?

A. No, sir.

Q. Was Mr. Haganagh present at either conference?

A. Mr. Haganagh I believe was for a short time at one of the conferences, but a very short time.

Q. First or second one?

A. I don't know about that; I am not sure on that.

Q. Where were these conferences held in Chicago?
A. At the hotel.
Q. Was Mr. Douthirt present?
A. Yes, Mr. Douthert I think he was at one of the conferences I am sure of; I am not sure that he was at both of them or all of them?
Q. At the hotel?
A. At the hotel.
Q. At the La Salle Hotel?
A. No, sir; the Blackstone.
Q. Now at this first conference Mr. Baehr, had any part of the engineers' reports, that is covering valuation, been made up?
A. Are you referring to my report, Mr. Byers?
Q. Any, yours or any others.
A. No, there was an inventory ready.
Q. That is the inventory of the items without any valuation you mean, something like is contained in Exhibit 15?
A. Yes.
Q. That had been made up so that you had it there at this conference?
A. Yes.

Q. Now at that time, do you remember whether any of the
1407 engineers had their figures so that they were presented at that conference?
A. I think there were some figures discussed.
Q. Didn't one of the engineers at that meeting state figures and valuations he had worked out on this plant?

Objected to on part of the complainant for the reasons last above urged and as immaterial and not cross examination; he is asking for what took place at this conference.

The MASTER: I think that is competent and proper cross examination, both.

Last question repeated.
A. There were some figures discussed and I believe, of course, in order to discuss them they were stated.
Q. Can you tell us what the figures that were stated and discussed referred to particularly?

Complainant interposes the same objection as last above.

A. They referred, as I recall it, to such matters as cost of brick work, cost of concrete, cost of lumber and carpenter work roofing and such matters.
Q. Now, were those figures stated by a consulting engineer as you remember it, I am not caring about the name of the person?
A. No, sir.
Q. You say it was not a consulting engineer?
A. No.
Q. Was Mr. Haines present?
A. I believe Mr. Haines was there, but I am not sure of that.

Q. Was it anybody that was entirely outside of this controversy and who is not here either as a witness or advisor?

A. No, it was not anybody outside.

Q. It was somebody interested in the controversy?

1408 A. Yes, sir.

Q. During that conference—we are dealing with the first one—was the question of the price of gas discussed in a general way I mean now by the engineers and by the other gentlemen present?

Complainant interposes the same objection last above made.

A. I do not believe there was any discussion about the price of gas, except there must have been some remarks that the city wanted to reduce the rate to ninety cents; but I don't remember any discussion about that.

Q. I suppose there was something said about the importance of the valuation as it related to prices.

Complainant interposes same objection last above made.

A. I do not believe there were any statements of that kind made.

Q. I don't mean now that anybody said you will have to fix a particular valuation in order to support our contention; I am trying to get a picture now from the beginning to the end of your mind and the things that may have influenced you when you come finally to fix a judgment and determine the fact; that is all I am trying to do, to get that before the Master's mind and my own, simply to weigh the testimony.

Complainant interposes the same objection last made.

A. The only statement I recall at any time concerning that, it was told me what the Company desired in this matter was to *to* know the fair value of the property; they wanted to know what the fair thing was, what was right and fair; that is all I recall.

Q. When that was stated did those several engineers that have taken part in making up the valuations and invoice discuss valuations along those lines at that conference?

Complainant interposes the same objection last made.

1409 A. At that time the things that were discussed were the prices of these particular classes of work, construction work. I have enumerated.

Q. Now, Mr. Baehr, you understand very readily this, I think that if several engineers were to deal with this property for the purpose of arriving at a valuation, the valuation later to be used in the trial of a case as evidence, that you would not proceed along entirely different lines, at least you would want to know before you started where you were all going to end?

A. I would think so.

Q. That is what I am trying to get at, not what was said and done, but was that line of discussion carried on in that conference in a general way?

A. I should think in a general way the discussion would trend along fair values, etc.

Q. Was there anybody present at that conference, any engineers aside from Mr. Alvord who made up a report of valuation that is not here present and has not been here during this session?

Complainant interposes same objection last made.

A. I never saw a complete valuation of this property outside of the valuation that there has been offered here by Mr. Lea and my own.

Question repeated.

Complainant interposes same objection last made.

Q. Let me put the question in a different way: How many engineers do you know that have made up a report fixing a valuation upon the property of the Des Moines Gas Company for the purpose of this controversy?

A. I know of three engineers, Mr. Randolph, Mr. Lea and myself.

Q. Were there any made by any other engineers?

1410 A. There were some figures made; whether they were completed or not, I don't know, by two other engineers.

Q. Who were they?

A. Mr. Klump and Mr. Heminger.

Q. Is Mr. Heminger connected with the United Gas Improvement Company.

A. Yes, sir.

Q. He is from that establishment?

A. Yes.

Q. Were there any others?

A. No, other engineers that I know of.

Q. The real question I am trying to get at, did an engineer, no other person, at the first or second conference make up a report of the valuation of this plant that is not here among these men you mentioned?

A. I don't think so. If there was, it is a failure of my recollection.

Q. Passing that conference for a few minutes, when after the second day of January did you come to Des Moines again?

A. On my next visit I arrived here Februart 6, 1911.

Q. And how long did you stay?

A. I stayed till February 8th inclusive, a total of three days.

Q. Was that visit the one that began on the 6th of February for the purpose of checking up the invoice to satisfy yourself as to what was there?

A. I started to do that work at that time.

Q. On the 6th of February?

A. Yes, sir.

Q. You were here until what date?

A. To the 8th inclusive.

Q. Did you come here on the morning of the 6th?

1411 A. Yes, sir.

Q. You left Chicago the night before?

A. Yes, sir.

Q. So you were here then three days at that time?

A. Yes, sir.

Q. Were there any other persons working at the same kind of work you did during these two or three days here? I don't mean repairers or day laborers, I mean engineers?

A. I don't think there was anybody here but my own man and myself at that time.

Q. Then you returned to Chicago?

A. Yes, sir.

Q. When did you come back again?

A. I arrived here on the morning of February 22.

Q. You are speaking now of the same year all the time?

A. Yes, sir; the year 1911.

Q. How long were you here that time?

A. I was here until March 9th inclusive.

Q. Did you get here just as you did before, in the morning?

A. Yes, sir.

Q. So that you put in eleven days?

A. No, sir; I put in at that time sixteen days in Des Moines.

Q. Counting Sundays and all?

A. Yes, sir; I worked Sundays.

Q. During those sixteen days you were checking up, measuring and proving the measurements and so on?

A. Yes, and was also working on the figuring.

Q. You did part of your work of making up your final report here in Des Moines during those sixteen days?

A. Yes, sir.

1412 Q. Did you have your office force or some of your office force here with you at that time?

A. I had one man here at that time.

Q. I mean not in your engineering department?

A. This was a young engineer, done engineering work.

Q. Now during those sixteen days were there of the other engineers who had placed valuations on this property present at any of this time doing the same class of work?

A. Yes, sir.

Q. Who was here?

A. I recall Mr. Lea was here.

Q. Anybody else?

A. I believe Mr. Randolph was here, but my recollection is not clear on that point.

Q. Did you use the Company's office or hotel for work, all of you?

A. I did most of my work at my room in the hotel.

Q. And the others some at the hotel and some at the office?

A. I don't know where they did their work, but they were at the hotel, Mr. Lea was.

Q. You all stayed at the same place while here?

A. Yes.

Q. Mr. Lea was working on his report during those sixteen days?

A. I believe so, yes, sir.

Q. When did you come back again?

A. On the morning of July 8th, 1911.
Q. For what purpose did you come at that time?
A. I have been here continuously since then.
Q. You came here to attend this trial?
A. Yes, sir.
Q. Then prior to July 8th you made three separate trips
1413 to Des Moines?
A. Yes, sir.
Q. The first one lasted two days, the second one three days and the third one sixteen days?
A. Yes, sir.
Q. Twenty-one days altogether?
A. Yes, sir.
Q. That covers your time in Des Moines from the time of your employment up to the first of July?
A. Yes, sir; up to the first of July.
Q. Now, when you came here the first of January, I suppose you met Mr. Haines first?
A. I did.
Q. I wish you would give to the reporter in as brief a way as you can and yet give us the facts, just what information, I don't mean about the law suit, but just what information he gave you the first day you was here with respect to the property?
A. The first day I was here Mr. Haines and myself visited the gas plant and made an inspection of the gas plant, and we also drove around the city to the outskirts in two or three directions. During this day we discussed the apparatus at the plant and the sizes——
Q. Now, Mr. Baehr, if you will accommodate me by confining as far as you can your answer to Mr. Haines' statement about the property—when you say we discussed, we can't tell who suggested the matter.
A. He told me the capacities of the holders and the number of miles of main pipe, the number of services and the number of meters and also a very brief description of the real estate owned by the company.
1414 Q. That was the first day?
A. Yes, sir.
Q. Was that information given to you in writing, did Mr. Haines reduce it to writing so that you had a memoranda to take away with you?
A. I think I made my own memorandum from his statements.
Q. But there was a memoranda taken, either he furnished it to you or you jotted down what he told you?
A. I believe I took a memoranda down myself.
Q. And that covered the capacity of the plant and miles of main and number of services and the real estate and the number of meters, can you think of anything else any other information furnished you by the company at that time?
A. Mr. Haines gave me, as I recall it, what in his judgment was an approximate value of the real estate.
Q. I think the testimony shows that the real estate had been

appraised before the first of January; wasn't what he told you the value the appraisers had fixed on it; that they had appraised it at so much?

A. Not at that time as I recall it; I don't think so.

Q. Then what other items of information, if any, was furnished to you either by Mr. Haines or any other person for the Gas Company?

A. I believe it was Mr. Haines who gave me what he considered an approximate valuation of the office furniture and fixtures and stable equipment.

Q. Anything else?

A. Yes, I believe I was furnished with a statement of the rate of taxation for 1910 in Des Moines.

Q. Well, was that furnished by somebody for the Gas Company?

A. Yes.

1415 Q. Now any other item you can think of?

A. That is all I recall at the moment.

Q. Now, then, when you came back on the 6th of February, what information or statement of any kind was furnished to you by the Gas Company, by Mr. Haines, or anyone else for the Company?

A. I believe it was at that time I was given a copy of the inventory of the property of the Gas Company.

Q. Is that the book that has been marked Exhibit 15?

A. Yes, sir.

Q. And anything else besides that Exhibit 15, at that time now, between the 6th and the 8th?

A. It is hard for me to recall just when I got some things that were given to me, but I believe I was furnished and I know I requested to have some statements prepared for me of the various purchases of material of certain kinds that the Company had made in recent years, and the cost of laying the services and that sort of thing, and I believe some of those things were furnished to me in the days that you mention.

Q. If they were furnished to you they were furnished in writing?

A. Yes, sir.

Q. And you took them away with you to your Chicago office?

A. Yes, sir.

Q. To be used in formulating your final report?

A. I used them for the purpose of forming a judgment on portions of the report.

Q. Now, in this last answer, as I have it, you were furnished a statement showing the purchases of material?

A. Certain kinds of material.

Q. What kinds, can you name the kinds?

A. I requested that a careful statement be prepared for me

1416 showing the purchases of cast iron pipe for the past five years; also a statement showing the purchases of screw pipe; that is, either steel or wrought pipe.

Q. Where the ends are put together with threads?

A. By screw threads. Also a statement of the cast iron specials purchased.

Q. What do you include in cast iron specials?

A. By cast iron specials I mean such cast iron pipe, fittings, T's crosses elbows, plugs drips and things of that kind.

Q. Drips line and side pots?

A. Yes, sir. I also requested a statement of the prices paid for small fittings, that is, fittings which we use on screw pipe. I also requested a statement of the cost of laying services for the past five years.

Q. Do you mean the labor cost?

A. The thing I requested there was a statement showing for services the cost of material and the cost of labor. I also requested a statement of the amount of the store room expense this Company incurred; in other words, what it cost them to operate their store room as expressed in the percentage of the cost of the material handled. I also requested information as to construction carried on at the plant at various times.

Q. For a period of five years?

A. That information extended back further than five years. I also requested a statement of the operating expenses of the Company.

Q. For how many years?

A. For about five years. I also asked for a statement of the amount of gas made each year for a number of years back; the amount of gas sold each year; the unaccounted for gas and a statement of gross income.

1417 Q. For how many years?

A. I requested that for five years or more and got it that way. And the operating expenses for the same period and taxes paid.

Q. Actually paid?

A. Yes, sir. I believe that covers the requests I made.

Q. Were all of these requests complied with by the Company and the information furnished to you in memoranda form that you asked for?

A. I believe I have all the information in memoranda form.

Q. That you took with you to your Chicago office and used it in making up your Exhibit 21?

A. Yes, sir.

Q. Now, when you returned for your last trip prior to the commencement of this proceeding, what information, if any, further than what you already related did you get from Mr. Haines or anyone else for the Gas Company?

A. I think some of the information I have just enumerated was given to me at that time.

Q. Without respect to the time when the information was furnished you will you please state in the record what other information at any time of any kind, if any, with respect to the character of the Company's property, the quantity of the property, the cost of it, the gross revenue, the net revenue, or any other fact in con-

nection with the property, was given to you by Mr. Haines or some person for the Company?

A. I have a map showing the extent of the distribution system, also a map of the city of Des Moines on which I indicated the three districts into which I divided the city for the purpose of computation in my report, and I believe I have two blue prints giv-
1418 ing data in the form of curves as to the past history of the Company.

Q. How was this all furnished, what you stated in this last answer, to you by the company?

A. Yes, sir.

Q. And were those two blue prints the blue prints that correspond and represent the same things as the curved sheets in Mr. Lea's report?

A. Those blue prints I have, give the facts only up to December 31, 1910.

Q. Up to that time they correspond and represent the same information or facts as are represented by Mr. Lea's two curve sheets in his report?

A. I believe they do.

Q. Now, is there anything else, any other information of any kind or any fact that you remember that was furnished to you by the Gas Company or any one for them?

A. I don't recall anything at the moment; there may be.

At this time an adjournment was taken until 1:30 p. m.

1419 1:30 p. m., TUESDAY, *August* 1, 1911.

WILLIAM BAEHR continued on cross examination by Hon. H. W. Byers, testified as follows:

Q. During the noon hour, Mr. Baehr did you think of anything else in the way—you remember what the last question was?

A. You asked me whether there were any other things I could think of which the company had given me. I have found some more Mr. Byers. There is a third blue print of development cur-es. I was under the impression there was only two, but there are three. Then I have a statement showing the average candle power, average heat value and dew point during the year 1910. Then I have some sets of prices, that is they are typewritten lists or unit costs of day work in Des Moines furnished by contractors, one by the name of Mardis and one by the name of Weitz. Then there is a detailed statement of gas sold from 1904 to 1910 inclusive by years. Then there is a statement of the history of the price of gas. There was also furnished a statement of holder cost for the past three years. Also a statement of gross revenue, operating expense, taxes and net earnings for the years 1887 to 1910 inclusive. A statement of gas sold from 1888 to 1910 inclusive by years. A statement of the population of Des Moines in 1880, 1890, 1900 and 1910. A small schedule of quantity and cost of coke and oil used in manufacturing gas. A statement of profit and loss for the years 1907, 1908, 1909 and 1910. A statement giving the record of mains laid by sizes

and for each of the years from 1888 to 1910 inclusive. A statement of the number of governors.

1420 COURT: What is that?

A. They are a small device for regulating pressures ahead of the meters. They are employed on services connected to the high pressure line. A statement of the working capital as of December 31, 1910. A statement giving consumption of meters by districts, meaning the districts used in my report. A statement giving the cost of laying mains and services divided into details for labor and material for some years past. A copy of a letter from a local contractor as to the cost of resporing pavements. A study of various methods of figuring life and age and depreciation. A statement of the cost of meters. A statement of the number of feet in size and mains in each of the districts. Those are the things.

Q. May I have that list just a moment?

A. Yes, sir.

Q. Now Mr. Baehr were all of the items covered by your last answer furnished to you by the company or some person for the company?

A. Yes, sir.

Q. And how many, if any, of the items covered by your answer did you request?

A. I believe I requested all of them.

Q. And your purpose in doing that was to get such information as you could to aid you in fixing the value of the property?

A. Yes, sir.

Q. Now this third blue print showing development by surves was that a blue print that corresponded and represented the same thing as is shown by the curve sheet No. 3 in Mr. Lea's report?

A. I can't say whether it corresponded to curve sheet No. 3, but I have three blue prints.

1421 Q. There are three curve sheets in his report are they not?

A. Yes, sir.

Q. And the last curve sheet that you refer to here the third one, did that extend beyond the year 1910?

A. It did not.

Q. Well would it be correct for me to say that then up to the year 1910 the blue print that was furnished to you does correspond with and represents much the same thing that is shown by Mr. Lea's curve sheet the third one in his report?

A. I believe so including the year 1910.

Q. I suppose to the 31st of December, 1910.

A. Yes, sir.

Q. Now the price list or price memorandum that you say was made by Mr. Mardis or by Mardis and one by Weitz, that was furnished you by the company.

A. Yes, sir.

Q. And not by these gentlemen that you named?

A. No, sir; these partisular lists were furnished to me by the company.

Q. And the history of the price of gas was furnished to you by the company?

A. Yes, sir.

Q. How early in your employment?

A. Well I didn't keep the dates on which I received them but I got some on my second visit and some on my third visit.

Q. Well I suppose this history of the price of gas, I suppose you mean by that the history of the local plant?

A. Yes, sir.

Q. Not the general history of the price of gas generally, but confined to this city.

1422 A. Yes, sir.

Q. And this plant?

A. Just simply a statement of the different prices at different times in Des Moines for gas.

Q. Do you remember the earliest period stated in the history?

A. I do not but I can find that out.

Q. You don't remember it now?

A. I don't remember it no sir.

Q. And the history was carried down I suppose to the dollar rate?

A. Yes, sir.

Q. You have stated in response to a question, and I hardly think the question was entirely fair, the things that might be involved in it. I suppose you did not request this blue print did you?

A. No, I did not request these blue prints, they were made up and given to me.

Q. Some of the other engineers made these and the company handed them to you or had them sent to you?

A. Yes, sir.

Q. The detailed statement of the gas sold from 1904 to 1910, you did request that did you?

A. Yes, sir.

Q. And the reason you did was because it was very important to have it in order to make up an intelligent estimate of the value of the property in this city?

A. Yes, sir.

Q. You regarded it as one of the important facts necessary to be known in advance?

A. I did, yes.

1423 Q. And the history of the price of gas you regardee that as important too?

A. I did.

Q. Now the holder cost past three years, I take it you mean by that the cost of gas in the holder and not the cost of the holder itself?

A. I mean the manufactured cost of gas in the holder.

Q. You requested that information from the company?

A. Yes, sir.

Q. Because you regarded that as information that was necessary to form an intelligent estimate of the value of the plant.

A. Yes, sir.

Q. Now the gross revenue and operating expenses—I will start with gross revenue. You asked for that information?

A. Yes, sir.

Q. And did you indicate in your request the period over which you wanted the information to go?

A. I believe my request was verbal and was to the effect that I would like to get a statement of the gross income for the past five years and as many years prior as I could get it.

Q. You don't distinguish at all or don't mean the gross income as distinguished in revenue in any way do you?

A. No, sir.

Q. They mean the same thing as you used them, you used gross revenue here that is the reason I did.

A. Yes, sir.

Q. You requested that information because that was not only important but a necessary thing to know in order to arrive at an intelligent and correct judgment of the value of the property of the company?

1424 A. Yes, sir.

Q. Now do you remember without going to your memorandum the period covered by the statement that the company did furnish you?

A. My impression is it was from 1887 or 1888 up to and including the year 1910.

Q. Was that in the form of a sheet made up showing the gross revenue for each year?

A. Yes, sir.

Q. Giving the years you mention. Now operating expenses, did you request information as to that item?

A. Yes, sir.

Q. And over what period of years?

A. For the past five years and as many years prior as they could give me.

Q. When the company furnished it, what period did it cover?

A. My recollection is that that particular statement under consideration covered from about 1887 or 1888 up to and including the year 1910.

Q. And was the information written upon a sheet showing annual operating expenses?

A. It was typewritten on a sheet.

Q. For each year?

A. Yes, for each year.

Q. You requested that item because you regarded it as not only important, but necessary in order to make up an intelligent judgment of the value of the property?

A. Yes, sir.

Q. Now taxes, what period did the information given you cover as to taxes, how many years?

1425 A. I believe the same period, that is from about 1887 or '8 up to the year 1910 inclusive.

Q. And was that information furnished to you in writing by the company?
A. Yes, sir.
Q. And why did you want that information?
A. For the same reason, that I wanted it in compiling portions of my report.
Q. In other words to make up an intelligent and safe estimate of the value of the property of the Des Moines Gas Co., you deemed it necessary to know what they had been paying in taxes in Des Moines?
A. Yes, sir.
Q. Covering a considerable period of the life of their plant?
A. I don't know, for at least five years.
Q. And that information was made up in typewritte- form the same as the other?
A. Yes, sir.
Q. I find here another item, net earnings 1887 to 1910. Did you request that information?
A. Yes, sir.
Q. Was it necessary for you to have that information from the company?
A. Yes, sir.
Q. After you had been furnished with the gross revenue and operating expenses and taxes?
A. Well I could have made the deductions of course myself, but while they were making up the statement I asked them to——
Q. Just as w-ll carry it to the limint and make it complete, that was your notion?
1426 A. Yes, sir.
Q. And I take it you regarded the item of net earnings as important and necessary to a proper valuation of the property?
A. Yes, sir.
Q. Now that item was furnished in the same way the others were furnished?
A. Yes, sir.
Q. And covering the period you state from 1887 to 1910?
A. Yes, sir.
Q. The last day of 1910?
A. Up to and including the year 1910?
Q. The next item you have here is gas sold from 1888 to 1910 Did you request that information from the company?
A. Yes, sir.
Q. And for the same reason as stated as to the other items?
A. Yes, sir.
Q. That item is necessary as to the amount of gas sold over a given period of years, is a necessary item in arriving at a valuation of the property.
A. Yes, sir.
Q. Now population of Des Moines for the years 1880, 1890, 1900 and 1910, was that information furnished by the company?
A. It was.
Q. To you?
A. To me, yes.

Q. In memorandum form?
A. Yes, sir.
Q. Did you request it?
A. I did.
1427 Q. And why?
A. For use in connection with my report.
Q. Did you regard that information as important and necessary in fixing a value upon the property of the Des Moines Gas Company plant?
A. I did.
Q. Schedule of manufacturing cost. Just what do you mean by that Mr. Baehr?
A. By that is meant the cost of coke and oil used in the manufacture of gas.
Q. I didn't give you all of the item, I guess it is schedule of manufacturing cost, quantities used and cost of same? That is all limited to the items of coal and oil is it?
A. It may include the coal used under boilers, but it does include coke used in the water gas generators and the oil used for making gas.
Q. What period of time did that schedule cover?
A. Some three or four years from 1910 backwards.
Q. There was set out in that schedule was there in the form of memorandum the quantity of coke and oil used by the Des Moines Gas Co., and the original cost of it.
A. Yes, sir.
Q. Did you ask for that information?
A. I did.
Q. And did you state the period for which you desired the information?
A. I believe I requested that the price of materials for the past three or four years would suffice for my purpose?
Q. Did you regard it as important and necessary to?
A. Yes, sir.
1428 Q. And it was furnished you as these other items have been by the Des Moines Gas Co.?
A. It was.
Q. Now the next thing you have here is statement of profits and loss for the years 1907, 1908, 1909 and 1910. Did you ask for that statement?
A. I don't recall whether I asked for that particular statement or not.
Q. Was it furnished to you by the company?
A. Yes, it was.
Q. Did you regard it as important in making up your valuations?
A. I am not so sure whether I requested that from the standpoint of regarding it as important or not.
Q. But you have it among your files?
A. Yes, sir.
Q. Just as it was furnished to you by the company?
A. Yes, sir.

Q. Now the next item is record of mains laid by sizes and years 1886 to 1910. Was that information furnished to you?

A. It was.

Q. Did you ask for it?

A. Yes, sir.

Q. To whom did you direct your request?

A. To Mr. Haines.

Q. On one of your early trips to Des Moines?

A. I think I must have asked for that very early in the proceeding.

Q. Why did you ask for that?

A. For the reason I needed the information in compiling portions of my report.

Q. Wouldn't it have served the same purpose if you had
1429 been simply furnished with the number of feet or miles of main in use by the Des Moines Gas Co.?

A. No, sir.

Q. It was absolutely necessary that that information be in detail as to the number of miles or feet of main laid each year, the size of the different pipes and the character of the pipe itself, is that right?

A. The character of the pipe itself I determined from conversation, but the other features you mention were necessary.

Q. However you determined it it was necessary that you know whether it was cast iron or steel or sheet iron or what ever might be used?

A. Yes, sir.

Q. Would you have been satisfied as an engineer to have made up and furnished an estimate of the value of this plant without this information from the company?

A. No, sir.

Q. And when did you first get it?

A. I began to get information on January 1st.

Q. Do you remember when you got this first as to mains?

A. No, sir; but I think that was probably along in February or March.

Q. About the time that you got the maps and distribution statement.

A. Yes, sir.

Q. Do you still have that memorandum?

A. Yes, sir.

Q. Did you get this information Mr. Baehr prior or subsequent to meeting at the Blackstone in Chicago?

A. I believe most of the information was secured subsequent to the first meeting at the Blackstone Hotel.

1430 Q. I suppose I am safe in saying that the same information with respect to mains was furnished the other engineers at the same time?

A. I can't say as to that.

Q. You don't know about the fact?

A. I don't know.

Q. You haven't talked that over with them to know whether they did in fact have that information or not which was furnished to you?

A. I did not.

Q. Now that memorandum will show first the number of miles or feet of mains laid by the Des Moines Gas Co.?

A. Yes, sir.

Q. Next it will show the size of each main?

A. Yes, sir.

Q. And the year in which that particular pipe was laid?

A. Yes, sir.

Q. Covering the period from 1888 to the 31st day of December 1910?

A. Yes, sir.

Q. Now in connection with that, did you have furnished to you or did you ask for the cost of the main?

A. I did.

Q. As you did the cost in other places here, and was that furnished?

A. There was a statement furnished to me of the cost of laying the mains, giving the details of labor and material for several years past.

Q. Was it a part of this same memorandum that had the number of miles of mains and sizes and so on?

1431. A. I believe not, I believe that was on a separate sheet.

Q. And that you have not in this list have you?

A. I believe I have. I believe I have included somewhere in that list the cost of mains and services.

Q. But anyway you don't think it was in this memorandum that we just now have under consideration?

A. No, sir; I believe it is on a separate sheet.

Q. You regarded this information I take it as highly important and necessary?

A. Yes, sir.

Q. And would not be satisfied to make up valuation upon any gas property or gas plant without that detailed information?

A. No, sir.

Q. Now number of governors, that I suppose was simply one of the details of the material or rather the apparatus or pipe used and that was furnished the same as all this other and at your request?

A. Yes, I asked for that information although I did not deem it as necessary perhaps as some other.

Q. Working capital December 31, 1910. Did you ask for that?

A. Yes, sir.

Q. And why?

A. In order to assist me in formulating my judgment for an allowance of working capital of the company.

Q. In using the term working capital, just what do you mean?

A. I mean the amount of money invested in stores and supplies and a certain amount of cash over and above that.

Q. In other words stock and material on ha-d not in use and whatever cash the company was carrying and using for discounting bills and that class of business.

1432 A. Together with a consj-eration of accounts payable and accounts receivable.

Q. That is to say if they had accounts payable on the 1st of January of $10,000 and accounts receivable of $30,000 both good you would call the difference part of the working capi-al?

A. Yes, sir.

Q. Which would be $20,000 in that item?

A. Yes, sir.

Q. You got that information for that one year, December 31, 1910?

A. Yes, sir.

Q. And when the information came to you it showed the material in stock *on* on hand, the stock as distinguished from material which would mean stoves and fixtures and that class of property and bills receivable and bills payable and cash in the drawer.

A. I think it showed accounts receivable and accounts payable in addition to the material and the cash.

Q. Instead of bills receivable and bills payable?

A. Yes, sir.

Q. Do you remember how much that was on December 31st?

A. Total of the working capital at that time?

Q. Yes. Total of these items you call working capital.

A. My impression is that statement shows statemen*d* in excess of $141,000.

Q. At any rate it was furnished to you by the company in a written memorandum of some kind and you used it in working out your report?

A. Yes, sir.

Q. The next item here is consumption of meters by dis-
1433 tricts. Do you remember just when the scheme of dividing the city into districts originated and who originated it?

A. According to the best of my recollection that was developed about the latter half of February.

Q. And was it your plan or somebody else's?

A. I believe that resulted as the result of a discussion concerning that exhibit.

Q. Among the engineers?

A. Among the engineers.

Q. It was finally determined that would be a good way to work out the proposition and you adopted it?

A. Yes, sir.

Q. Was that accomplished at this conference in Chicago, the second one at the Blackstone Hotel?

A. I believe we decided on a division of the city into districts while in Des Moines.

Q. Earlier than the meeting at the Blackstone?

A. My impression is that this was some time during the latter half of February.

Q. And after that had been worked out among the engineers and the other interested parties then the company furnished the information by districts?

A. Concerning meters yes.

Q. Yes, I mean concerning the consumption of meters, I suppose that means the gas measured by the consumers' meters?

A. Yes, sir.

Q. And nothing else?

A. That is it.

Q. Now in this item of consumption of meters by districts was that memorandum made up showing the number of meters
1434 and where *and where* they were in use or did it just give the number as *som* many and amount consumed as so much?

A. I believe that memorandum gives the number of meters in each district and there are some computations on it which result in final figures showing average consumption per meter in each district as distinguished between regular and prepayment meters.

Q. Do you know whether that includes the consumption of gas by the street lights?

A. No, sir; that refers entirely to the consumption of gas by consumers' meters as I understand it.

Q. In buildings and not by either street lights or any other outside illuminating scheme.

A. My recollection is that refers to meters only.

Q. Now that information you regarded as important and necessary.

A. I did.

Q. To an intelligent and safe valuation of the property did you?

A. Yes, sir.

Q. Now we have the item I guess that we were talking about a moment ag*i*, cost of laying mains and services. Did you request that information?

A. Yes, sir.

Q. Why?

A. I wanted to make a careful study of the cost of laying mains and services in Des Moines as the result of which study I could form my judgment upon which to base the reproduction value in my report.

Q. In other words, you deemed it as absolutely necessary to be informed as to the cost of all material and all labor about the gas plant in the city of Des Moines in order to determine what
1435 a gas plant in that city was worth?

A. Yes, sir.

Q. You would regard a valuation based upon information that left out the item of cost in Des Moines as of no value to any body?

A. Well I would not like to say that a valuation *l*ade without such consideration would be worthless.

Q. You would not recommend to one of your clients, if that is the right term to use, if you were going to advise for investment purposes you would not recommend action on a plant where no consideration had been given to the cost of the property in fixing value would you?

A. That might depend to some extent on *t*hat the information was to be used for.

Q. Well if it was information that was to be used for the pur-

pose of determining the value by people who knew nothing about the value of property at all, if they were trying to inform themselves?

A. There might be conceivable an approximate valuation which would serve some purpose.

Q. That is to say might guess at the value without having any definite information about it at all?

A. Some values need not be based on as detailed a study as I have made in this instance.

Q. But you regarded this item as one of the real important items upon which to base your judgment of valuation did you not?

A. Yes, sir.

Q. Now how many—I don't know whether you told in connection with the mains laid, but what period did the information
1436 showing the cost of laying mains and services cover?

A. I believe the past five years.

Q. And was that detailed information, that is did it show labor cost, the material cost and such overhead charges as might be necessary in the laying of mains and services?

A. As I recollect it the information was furnished in detail.

Q. And that was furnished by the Des Moines Gas Company in the form of written memoranda.

A. Yes, sir.

Q. Do you still have that.

A. Yes, sir.

Q. The next item here is cost of restoring paving and I believe that is one of the items of information that you did not accept just as it was furnished to you if I remember your statemen- *f*orrectly. Did you ask for the cost of restoring paving?

A. I asked for dat- on the cost of restoring various kind- of pavement in Des Moines.

Q. I suppose you did that because you recognized that the cost of that kind of work varied and was not the same in all localities?

A. I wanted to reinforce my judgment, to base my judgment upon a study of costs in Des Moines.

Q. It was in Des Moines of course, the property was in Des Moines you were fixing a value on?

A. Yes, sir.

Q. You wanted to know about the cost of that kind of work in Des Moines for the purpose of determining the value of taking up and repla*t*ing paving?

A. Yes, sir.

Q. You would not have thought it safe would you to have
1437 acted upon information about the cost of tearing up and replacing pavement in Wheeling for Des Moines would you?

A. I should have wanted detailed information of local conditions.

Q. Was this item furnished you by the gas company?

A. Yes, sir.

Q. In the form of memorandum?

A. The form of a copy of a letter.

Q. And that copy of a letter was a letter written to the gas company by somebody here in Des Moines?

A. Yes, sir.

Q. Do you remember who it was?

A. No, sir; I do not.

Q. Whose name was attached to it?

A. No, sir.

Q. Anyhow it was a letter purporting to detail the cost of tearing up and replacing a given amount of paving of the different kinds?

A. Yes, sir.

Q. That is to say on the memorandum was a statement as to what it would cost to tear up a piece of pavement so many feet wide and so many feet long where the paving was asphalt with concrete base and so much if it was brick pavement and so much if it was wood blocks and so much if it was this other kind of pavement, I have forgotten what they call it?

A. My impression is that the particular memorandum referred to or copy of the letter referred to indicated the cost per square yard, whether it gave dimensions of openings I don't recall.

Q. Well somewhere along *w*ither in your testimony or Mr. Lea's and I am not very sure which you indicate that you did not
1438 accept the company's statement as to the size of the openings?

A. I did not.

Q. That is you did not accept it?

A. No, sir.

Q. Now was it in this memorandum that they stated the size of the trench or opening that they furnished as a basis for the valuation on pavement?

A. No, this memorandum simply contained the cost of restoring paving. The sizes of the openings were determined from my own experience.

Q. They did however, furnish you some statement as to the size of the openings from their standpoint?

A. I don't -ecall that but I believe not.

Q. In this statement of the cost of repairing paving what other information if any was in it than just simply the statement of the cost given by somebody as to what it would cost to tear up and replace paving in Des Moines?

A. I believe there were some general statements as to the conditions under which the price named would hold.

Q. That is what I want if you can remember.

A. The only one which comes to my mind at the mo*n*ent is that—well I think more than one comes to my mind now. There was some specifications as to the material, the paving material which had been taken up, that it was not to be covered by dirt, excavated from the trench, and that in taking up brick pavement not more than a given percentage of the brick were to be destroyed or broken in taking out.

Q. Any other conditions?

A. That is all I recall at the mo*n*ent.

Q. Was there anything in the latter about the future care of the part of the paving that had been replaced?

1439 A. I don't believe there was.

Q. Or connecting it up with the balance of the paving?

A. My understanding of that information was that if a hole had been excavated through or cut through an existing paving and the paving was to be replaced that it was to be a good job and that the new paving was to connect on to the old and make a good piece of work or workmanlike job.

Q. Have you got the copy of the letter with you?

A. Yes, sir.

Q. If you will, just let me have that.

A. There is the letter.

Q. The letter you refer to uses some signs and marks I would like to ask about down in the specifications if that is a proper term, it begins with two course brick pitch filler width of trench 20 and what do the marks mean, does that mean 20 feet.

A. Twenty inches.

Q. And four with two points?

A. That means twenty inches.

Q. Width of trenches 20 inches, additional width of pavement 4 with two marks?

A. That is also inches.

Q. This letter you refer to is in the form of a proposal to the Des Moines Gas Co. on the part of the J. W. Turner Improvement Company to do certain work in tearing up and replacing pavements is that right?

A. Yes, sir.

Mr. BYERS: I will read it in the record so that we will have it.

1440 MAY 22, 1911.

Des Moines Gas Company, Des Moines, Iowa.

GENTLEMEN: We propose to furnish all tools, machinery, labor, and material necessary to relay pavement in a 20 inch trench, said trench to be excavated and backfilled by the Des Moines Gas Company to the sub grade of the pavement in place, for the following prices.

	Width of trench.	Additional width of pavement.	Per lineal foot.	Per square yard.
2 Course brick pitch filler.....	20″	4″	$.24	$1.05
Concrete base brick, cement filler.	20″	10″	.62	2.28
" " " Pitch " .	20″	4″	.36	1.75
" " " Sand " .	20″	4″	.28	1.37
" " " asphalt " .	20″	4″	.38	1.82
2 course " sand " .	20″	4″	.16	.72
Concrete base creosote block, pitch filler	20″	10″	.50	1.98

These prices are based on the condition that the men taking up the pavement will not cover concrete, brick, creosote blocks and

cushion sand which has been removed from the pavement with the excavated earth and will leave them convenient for replacing in the pavement. Also that in removing pavement with sand, pitch or asphalt filler, they will not destroy more than 10 per cent of the brick or creosote blocks.

Respectfully submitted,

J. W. TURNER IMPROVEMENT COMPANY,

By PAUL L. REILLY, *Secretary.*

1441 Q. Was that the information as to Des Moines upon which you at least partially based your judgment of the value of tearing up and replacing paving?

A. That was part of the information, yes. I used that for partially determining my judgment.

Q. Did you get any information from anybody else as to the cost of tearing up and replacing paving in Des Moines except that?

A. I discussed the question of paving costs with Mr. Vincent engineer of the Des Moines Gas Company and I am not sure from recollection whether the prices given by these contractors that I refer to Messrs. Mardis and Weitz have any data as to paving or not.

Q. They are not in the business of paving are they, either of them?

A. I don't recollect whether their lists furnished any paving items or not.

Q. At any rate this is the written information that was furnished to you by the Des Moines Gas Company upon the paving question?

A. It is.

Q. Now in this connection what you asked the company for was some information as to what the cost to the company had been for that kind of work wasn't it?

A. I didn't ask specifically for what you state.

Q. Did they ever furnish you information of that kind?

A. I had several talks with Mr. Vincent the engineer of the gas company and such information may have been included in these discussions I don't remember that.

Q. Now the next item here, an interesting one to me at least, a study of life and age and method of figuring, who furnished

1442 that?

A. Mr. Klumpp of the United Gas Improvement Co.

Q. Was it his work?

A. I am not sure of that.

Q. Do you have that paper with you?

A. Yes, sir.

Q. Did you request that?

A. I don't remember whether I requested that or not.

Q. Why was Mr. Klumpp furnishing it to you, what had he to do with it?

A. We had various discussions of the methods of de-ermining age, depreciation, etc., and Mr. Klumpp had made some studies of various methods of figuring these things and he gave me one of the copies or a copy of the work that he had done in that respect.

Q. Now right in that connection let me ask you if it is not the fact that in this conference the ones you had when counsel were present and some of these engineers we- present in February or whenev- the time was at Chicago and the one at the hotel there, Blackstone Hotel wasn't one of the questions that you were all discussing at these times was the true method that ought to be adopted in arriving at the value of property, wasn't that one of the things you were all discussing at the inception of this work?

A. We discussed a number of subjects and I am trying to refresh my memory just now as to whether we discussed the method of arriving at the value of the property or not. My impression is that we did not devote any discussion to the method of arriving at the value but we discussed features of the method.

1443 Q. Am I not safe in saying this that at these conferences when counsel and the engineers who were expected to fix a value and appear here in the trial of this case to support their reports, wasn't it a part of that discussion and wasn't that one of the things that you were trying to work out a concert of action on and that is the question just what items of value should be considered in arriving at a final estimate of the value of the whole property.

A. I believe there was a discussion of the varius items that entered into the value of the property.

Q. And I suppose it is true too that one of the things about which there was some difference of opinion among you at the beginning was as to whether or not all of the items that were finally included in the valuation or only a part of them were proper to be considered in a rate case.

—. I presume there was some discussion along these lines, yes.

Q. Would you as an engineer with the experience you have had in the business and with your knowledge of the gas business and its relation to the public and especially its relation to the public in Iowa would you make exactly the same valuation or rather would you adopt the same methods of arriving at the valuation and include the same items in the valuation in a case where the value was being fixed for the purpose of rate making that you would in a case where the value was being determined for bargain and sale?

A. I believe that I would make no difference in the value of the items that are contained for instance in my report in the Des Moines case, but there might be other considerations entering into the question of buying and selling which I might discuss.

1444 Q. In that connection isn't that exactly what you were doing in this conference, were discussing these propositions and trying to arrive at a concert of action on this question of valuation?

A. I believe we were duscussing all these featyres.

Q. Now when you said a study of life and age—first let me ask you what connection did you understand Mr. Klumpp had with this controversy?

A. I understand that Mr. Klumpp is an engineer in the employment of the United Gas Improvement Company of Philadelphia and I presume he is assigned to assist in this case on the part of the company.

Q. In other words you knew he was not an outside and disinterested party with respect to the valuation of this plant.

A. Yes, sir.

Q. You knew that his employment was with the owners of this plant?

A. Yes, sir.

Q. And how was it with respect to Mr. Heminger? Was that the same situation in his case?

A. Yes, the same situation is true in his case.

Q. Any of the other engineers occupy the same situation?

A. I believe Mr. Brodnax was in the employ if the United Gas Improvement Company early this year and prior thereto.

Q. Mr. Randolph, did he have any employment, that you know of?

A. Not that I know of.

Q. Was it determined there at the conference finally that Mr. Klumpp was to work out this study and furnish it to you gentlemen?

A. I don't believe that was determined at the conference because my first recollection of that study, I can't tell just when it
1445 was but I happened to see it one day and asked Mr. Klimpp what it was and he told me. I glanced through it and subsequently was given a copy of it.

Q. I suppose Mr. Lea and the rest of the engineers were given a copy too?

A. I am not sure of that. I don't know.

Q. The study of life and age, that meant life and age of the plant or the separate items of the property?

A. I believe that the studies contained in that statement of Mr. Klumpp's related to life and age of mains and meters and perhaps also the plant and plant apparatus.

Q. Did it purpose to be a study of the actual life or rather the life and age of property that was actually in existence or was it made up of estimates, etc.?

A. I believe it related to the Des Moines property in a general way, but I have not studied the same in detail so that I cannot say for sure on that point.

Q. Have you got it handy?

A. Yes, sir.

Q. I wish you would let me have it. The study you have handed me is a bound volume and on the inside front page the words Des Moines Valuation notes on depreciation with p. 31 no meters per year and the name W. A. Baehr on that page and the following pages from 1 to 56 inclusive.

Mr. GUERNSEY: It is hardly correct to call that a bound volume is it?

Mr. BYERS: Well perhaps not.

A. Yes, sir.

Q. And it has been marked by the reporter defendant's Exhibit 8?

A. Yes, sir.

1446 Q. The next item here Mr. Baehr is cost of meters. Was that information requested by you from the gas company?

A. It was.

Q. And was it furnished to you in the form of memorandum?

A. It was.

Q. And what was included in the memorandum as you remember it?

A. I don't remember what was included in that memorandum I would look at it to see.

Q. Do you have it handy?

A. It may be among these papers.

Q. If you will just take a second and see. Do you find it?

A. Yes, sir. It is the top statement on that sheet of paper.

Q. Mr. Baehr I wish you would read into the record or state into the record using the memorandum that was furnished you to refresh your recollection just what was furnished to you by the Des Moines Gas Company with respect to the cost of meters giving the information just as it was given to you?

A. The data is headed cost of new meters. Then there is a subhead period. Then March 1, 1906 to February 28, 1907 $25,746.76. March 1, 1907, to February 29, 1908, $12,137.37 March 1, 1908 to February 28, 1909, $5,798.54. March 1, 1909 to December 31, 1909, $12,263.41. January 1, 1910 to December 31, 1910, $13,089.36. Total meter account $69,028.44. Total meters purchased in above periods 7,034. Effective cost per meter $9.813.

Q. Do you know what was meant by the term effective cost?

A. I do not.

Q. Have you had that explained to you since you received that information?

A. I have not.

1447 Q. So you don't just know at this time even what they meant by that?

A. No, sir.

Q. What you got from it was that that was the actual expenditures for meters for tho-e years was it not?

A. The only thing that I got from that memorandum was that a certain meter account *shod* that many dollars per year. I discussed that with the engineer of the gas company and I subsequently secured other information verbally which I used in making my own costs.

Q. That information when it first came to you was in the form you have just read it?

A. Yes, sir.

Q. Indicating to your mind and that is the information that you got from it was that for the years stated there there had been expended actually for meters between March 1, 1906 and December 31, 1910, $69,028.44, the amount stated there?

A. The only information I got was that a certain meter account showed these figures and that is as far as my information went. I didn't ascertain——

Q. I know but you didn't suspect that didn't show the actual expenditure for meters did you?

A. All I know about — is what I said that it represents the expenditure of the meter account. That is as far as I went with it.

Q. What you asked for was the amount of money that was expended, paid out by the gas company for meters during these year-wasn't it

A. No I tried to secure a detailed statement of the cost of meters f. o. b. cars plus the cost of testing and handling, plus cost of connection and I didn't get that sort of a detailed statement.

1448 I got this statement. Then I subsequently had discussions about the meter proposition and finally formulated my own estimate.

Q. That don't quite clear up that situation for us. What did you understand when you got that that the item there from March 1, 1906, to the date the next year there, what that represented?

A. I presume it represents the cost of new meters in that period but I don't know that.

Q. That is what you took it to represent when you got it?

A. Yes, sir.

Q. Of course you don't know as to any of these things that appear in their records except as they state them to you?

A. That is it.

Q. Now you did request of the company did you not a statement of the amount paid out, may not have put it in just that form but you did request information as to the amount expended for meters covering a period of years?

A. My request was the cost of each size of meters f. o. b. Des Moines and not the total.

Q. They sent you what you have there?

A. Yes, sir.

Q. In requesting the cost f. o. b. of meters in Des Moines and I take that to mean delivered in Des Moines on cars you assumed it not only important but necessary to have that information in o-der to make up your general report here as to valuations of the light plant?

A. Yes, sir.

Q. And your whole scheme does depend upon the accuracy of the information that was furnished you all along the line as

1449 to the cost of the several articles does it not?

A. The information furnished me assisted me in forming my judgment of the cost of the property in Des Moines. Of course you understand that I have an idea of what the various kinds of things cost used in gas plant construction.

Q. But in this case you did not act on any idea about cost of other properties only as that might have aided when you had none locally?

A. I got all the information I could locally.

Q. The last item here is mains by districts number of feet and size. You had that in a separate memoranda did you from this?

A. Yes, sir.

Q. Did you request that?

A. Yes, sir.

Q. And just what is covered by the memoranda that was furnished you on that proposition?

A. Was that by districts?

Q. It says mains by districts number of feet and size.

A. That information comprised the number of feet of each kind of main in each district and the number of feet of each kind of main under each kind of pavement in each district.

Q. In other words it was a very complete statement covering all items that you have just mentioned.

A. It was.

COURT: Was that used otherwise than in the going value?

A. That was the principal purpose of it.

Q. In this last statement mains by district and number of feet and size it was necessary for you to have that in order to work out the plan or the method that you have adopted in arriving
1450 at valuation was it not?

A. Yes, sir.

Q. And that was the reason you asked it?

A. Yes, sir.

Q. Now I have noticed, at least I think I have, I don't know that I have been through your report carefully enough to be sure about it, but I see no place in the report where you have taken up the physical property by separate items and given the value by items. Your valuations are nearly altogether in totals are they not?

A. Yes, sir.

Q. In that respect you did not pursue the same method Mr. Lea did?

A. I am not at all familiar with Mr. Lea's report.

Q. You were here several days while he was explaining it you remember?

A. That is the only time I paid any attention to it. My method of figuring and my report is entirely different from Mr. Lea's.

Q. He took up, for instance, take the buildings, he started with clearing site and he allowed a certain amount for clearing site, then the next item was excavation and he allowed a certain amount for excavation and then the next item was probably foundation, if it was brick the number of brick and the cost of the brick in the wall which was carried out in his total of brick and then the frame work if there was any frame work, the number of feet of lumber and the price of that lumber I suppose as I remember it in the building and that was carried into his total. Now it is not possible for us to go through your report and ascertain just what you have used for your unit values is it?

1451 A. No, sir; those figures are not in the report.

Q. You I suppose, however, did work the valuation out from units.

A. Yes, sir.

Q. Then in that connection you get your information as to measurements, as to quantity, age of properties, perhaps better to say history from Mr. Brodnax' inventory?

A. Yes, I derived that information from the inventory of which a copy was furnished to me.

Q. In that inventory the separate items are carried through so that you had the items not only of apparatus, but of the material used in the building as to brick and all the quantities.

A. Yes, sir.

Q. So you have undertaken to value the mason work, cost of brick cost of excavations the cost of lumber in the wall or in the building and the cost of labor and all that sort of thing in Des Moines?

A. I have.

Q. Who did you consult if anybody with respect to what the cost of labor was in Des Moines?

A. I consulted the Des Moines Gas Company officials in Des Moines and I believe two contractors in Des Moines.

Q. The two you have already named?

A. Yes, sir.

Q. Did the Des Moines Gas Company furnish you any written memprandum showing the cost of labor in Des Moines?

A. I believe they did.

Q. What period of time was that memorandum confined to.

A. I understood that data to refer to conditions as of the time of this inventory or thereabouts.

1452 Q. It would be some time between the 1st day of January 1911, and the 1st day of July say, of the same year?

A. I would take the labor condition, the labor prices to refer to a building season.

Q. Well is that a building season I have just mentioned?

A. I would consider a building season from the opening of building work in the spring until towards the winter.

Q. Well of course then it must have covered a period sometime in the past?

A. That was my impression, yes.

Q. Probably what they paid for labor last year?

A. That was my impression.

Q. In other words, you didn't take a period of years and get the average cost of labor, that is not the way you proceeded?

A. Not on the labor, no I didn't.

Q. You undertook to fix the cost of labor for the building season of 1910?

A. Well I would extend that a little further and say it was the approximate price—that it was the price of labor for the entire year 1910 and p-esumably extending into the year 1911?

Q. How did you get at the cost of excavating?

A. Excavation?

Q. Yes?

A. The cost of excavation was stated by contractors to be so and so much for different kinds of excavation.

Q. So all your valuation then and estimates as to the co-t of excavation in Des Moines rests upon statements of these two contractors made to you through the gas company?

A. No. After having obtained these statements I studied them

very carefully and derived figures which in my experience
1453 would be satisfactory for that kind of work. I didn't accept the cost of work as given to me by these contractors without studying them and without using my experience on which to base a unit cost.

Q. You would not want to add anything to the value of this plant by refusing to take what it costs in Des Moines to do work would you?

A. I would certainly not want to do anything that was not fair and right.

Q. That is not just an answer. Isn't it true Mr. Baehr that if upon investigation you found that the cost of excavation in Des Moines was less than it was at these other places where you had experience in fixing value upon property in Des Moines wouldn't you accept that rather than the higher figures that your experience had convinced was in vogue in other places?

A. I would certainly pay attention to is and would certainly not figure the excavation as high as in other places where the costs were a great deal higher.

Q. Well wouldn't you take it exactly at the price it could be done for here, wouldn't that be the value of it?

A. Take practically that but I have included in my excavation the cost of hauling.

Q. Take the excavation right south of Elm street, you know where Elm street is, that cuts through the Gas company's property and divide it and leaves two storage tanks of some kind, I don't know just what they are.

A. Yes, sir.

Q. South of Elm street. There was quite a large job of excavation for these two tanks the dirt just simply hauled up in a
1454 big pile. What do you allow for that kind of excavation do you remember?

A. I can't tell you without looking up the exact figure, but I took my excavation and determined what in my mind would be the method of excavating, I had from these contractors the cost of doing excavating by various methods and I based my judgment of the cost of doing excavation by each kind of method on these figures.

Q. But there is no way is there we can take your report and ascertain just what you allowed upon certain parts of this work for excavating?

A. The report does not show that in detail.

Q. Let me put this question to you, if it should turn out that a dozen reliable persons would appear here and testify in this case that that kind of excavation the usual and ordinary charge for it was from 15 to 18 cents would you then think that the allowance in here of from 60 cents to $1.30 would be fair?

A. If the contractors had included in it in their estimates just exactly what I have included in mine and if my figure should be obviously wrong that way, I would admit it is wrong.

Q. You have used a sort of comparative method of getting at *at*

value you don't want the Master to understand that you pay no attention to actual conditions here do you?

A. No, sir.

Q. That is to say while you have treated and worked out what you regard as a fair valuation now of the plant buildings, as you call them, and in that valuation of course is included a large amount of excavations and common every day labor. You don't mean do you that your valuation was made without regard to the
1455 conditions down there and this kind of excavation that was actually done do you?

A. No, sir, I take into cognizance the conditions as they are in Des Moines and of the cost.

Q. Take that place I told you about where all in the world they had to do to make the excavation was to hitch a team of horses to a scraper and go into that soft dirt and scrape it up into piles, is it — your judgment and is that the figure you have used from 60 cents to $1.30 a yard for that work would be reasonable?

A. I don't remember what figure I used, but whatever figure for excavation I did use was my judgment of the reasonable price of that kind of work.

Q. Have you a memorandum handy so you can just at one glance see excavations?

A. Yes, sir.

Q. I would like to know the range of your allowance for excavation?

A. Well referring to the principal excavation for building No. 1 A and B, including hauling, I have figured $1.00 per cubic yard.

Q. You arrived at that valuation on the theory I suppose that it would be necessary to pay for not only taking dirt out but hauling it away?

A. Yes, sir.

Q. Off the premises?

A. Yes, sir.

Q. But how about when you don't take it off the premises at all but left it there to fill up sink holes around in the lot, used
1456 it for filling?

A. The figure for excavation which I have used in this instance is based on excavation and hauling and is my judgment of the reasonable price for that kind of work in excavations not exceeding 8 feet in depth. Now to answer your question specifically if excavated earth could simply be taken out by a scraper the cost would be less.

Q. Is a dollar the lowest figure you have allowed?

A. I don't remember, I would have to go through my detailed statements all the way through. But in my notes I find that I have the cost of excavation as ordinary cellars by barrow that is wheelbarrow, $1.00 per cubic yard. Ordinary cellars by scraper 35 cents a cubic yard, then the cost of a quarter mile haul on excavation of ordinary cellars at a total of 55 cents per cubic yard. This is all ordinary cellars.

Q. Now that is a sort of arbitrary valuation or cost fixed by you without any reference to the use of the dirt or value of it after it is taken out. That is to say these figures are what the work of taking out of the cellar or the place where the excavation is being made and hauling it away without reference to its use.

A. I have included in that a fair contractor's profit and take the figure as the reasonable average price for doing that kind of work per cubic yard.

Q. Does it make any difference what kind of soil you have to work in?

A. Oh yes if there were rock it would cost a great deal more. I assume no rock excavation at the plant.

Q. You assume the ordinary clay or sand sub soil?

1457 A. I have assumed the average soil or clay.

Q. No rock, no blasting, nothing of that kind.

A. No, sir.

Q. Did you make any inquiry here of men that were in that business to find out what they were charging for doing work every day right along?

A. I determined from local contractors what they considered a fair price for doing that kind of work.

Q. I know, but those contractors were getting that kind of work done. Did you inquire of anybody that was actually doing work themselves?

A. I don't know as I can answer whether these men were actually doing that kind of work themselves or not. I don't know them well enough for that.

Q. As I understand it, you didn't talk with them at all, but the company furnished you their statement.

A. I don't think I made my point quite clear. I was here a considerable length of time and I also had one of my assistant engineers here for a period of time which was as long or longer than the total time I spent here. He also made considerable inquiries as to the cost and reported to me and in connection with the memorandum of the cost of doing work copies of which were handed to me by the gas company, I determined what in my judgment was the fair cost for doing that class of work.

Q. Aside from those two contractors did any other disinterested party here in Des Moines give you any information about the actual cost of excavations such as the gas company were compelled to make when they built their plant?

A. No.

Q. Now take the question of brick, laying brick, do you

1458 know how you got at the value of the brick in the wall?

A. Yes, sir. We made inquiries, that is I am referring now to my assistant engineer and myself, of the cost of brick delivered in Des Moines and we found for instance that after discussing this with brick contractors, one was the Flint Brick Co., and also the Capital City Brick Co., that common brick that they would deliver common brick and considered a fair price for same delivered to be $9.00 per thousand. From that I made an analysis of the cost

of laying the actual thousand feet of brick in walls and foundations with using different kinds of mortar and in order to determine the cost of mortar I made a careful inquiry of the cost of cement delivered in Des Moines and the cost of sand delivered in Des Moines and I also ascertained the cost of labor in Des Moines.

Q. That is you mean you inquired about it and got information about it?

A. Yes, I got information as to the cost of labor in Des Moines. Then I added to the cost of the thousand brick and the cost of mortar sufficient for one thousand brick and the cost of labor for one thousand brick and added thereto fifteen per cent contractor's profit which gave me the cost per thousand brick laid and then I worked out the same sort of a tabulation for the different kinds of mortar, for instance I worked out one tabulation using cement mortar and followed the same lines and got an estimate of the cost of laying brick using lime and cement mortar and also an estimate of the cost of laying a thousand brick in lime mortar. That is the way I arrived for instance at the cost of brick.

Q. What did you finally figure in your estimate as the cost of a thousand brick in the walls?

1459 A. That depended on the kind of mortar used. If laid in cement mortar I figured $18.22 per actual thousand of brick.

Q. Did you make any investigation to see what kind of mortar had been used down there?

A. Yes, sir. That is covered in the inventory.

Q. That was lime wasn't it?

A. There was some lime and later there was some lime and cement and some cement mortar but in order to be sure in each instance I would have to look at each building.

Q. If there was any cement at all it was in the newest building or very late one?

A. I would have to look that up to get at the fact.

Q. Give us the value you finally arrived at?

A. This particular price I am giving you now is the cost of laying one thousand brick in foundations and bulk work with 15 per cent contractor's profit. If in cement mortar under these conditions I estimate $18.22 per thousand of actual brick.

Q. You inquired of the Flint Brick Co., and Capital City Brick & Tile Co.

A. I just have it the Capital City Brick Co.

Q. All right the Capital City Brick Co. Now you take brick being made by the Capital City Brick Co., and the other company that you say you inquired of and lay a thousand of them in a wall, is there any wall down there in any of the buildings of the Des Moines Gas Company's plant that would be like that thousand brick wall?

A. I don't believe I understand that question.

Q. The question is this, the buildings that the Des Moines Gas plant is occupying were built out of certain kinds of brick.

A. Yes, sir.

1460 Q. And laid in lime mortar or cement. Now did you ascertain or try to find out whether that brick that these people would furnish at $9.00 a thousand was the kind of brick that was in these walls?

A. That is what I understood from inquiry.

Q. Who told you it was?

A. I went down and inspected the brick, also discussed that with the gas company, also discussed with the brick people and they stated to me that the usual brick used in walls was worth $9.00 per thousand.

Q. That is the usual brick used in walls nowadays?

A. Yes.

Q. Was $9.00 a thousand but the brick in these walls are not the usual brick that are being used these days are they?

A. There are some brick that are much better than common brick.

Q. Yes, some brick are better that is true, but most of them are poorer and most of them differ from any brick made in this market now, are they not?

A. I think that is not quite true Mr. Byers. I think that the brick in the generator house and the brick in the building occupied by the blowers and the two 8 foot 6 condensers, and the boilers is a very good grade of brick and better than the common brick.

Q. These buildings are of recent construction?

A. The generator house or extension at least of the generator house of comparatively recent construction.

Q. What is the size of the brick in the old building, building built thirty five years ago?

A. I can't tell you what the dimensions of the brick are.

Q. And the one that was built 19 years ago, did you pay any attention to the size of the brick.

1461 A. No, sir; because the brick made by different people varies somewhat in size.

Q. All of that old brick down there are practically every brick that was used in these buildings prior to 1900 are common soft brick ain't they, that is except the trimming?

A. There are some buildings there made out of common brick.

Q. And all of them built prior to 1900 built out of common soft brick aren't they?

A. I would not *to* commit myself as to the date.

Q. All of the old ones anyway?

A. I presume the old ones are built out of common brick.

Q. The figures you have there are $18 for lime?

A. For lime mortar and common brick laid in foundation and bulk work including 15 per cent contractor's profit $16.95.

Q. How much laid in c-ment?

A. Laid in cement in foundations and bulk work, $18.22.

Q. In these other items of excavation did you allow contractor's profit too?

A. I allowed a contractor's profit in excavation, that is excavation at the plant, not excavation in the distribution system.

Q. Is that about fifteen per cent?

A. In that estimate a contractor's profit is used at fifteen per cent.

Q. That is to say if there was 10,000 cubic yards of excavation you would ascertain by your method the value of the digging hauling away of the dirt and then to that give a contractor's profit of 15 per cent?

A. In the excavation as nearly as I could get it I estimate that the contractor's profit is about 15 per cent. It is very diffi-
1462 cult to tell just exactly what it is, might be 12 per cent, might be 15 or 16 per cent.

Q. That would be a matter of estimate unless you had the contract at so much and knew just what the profit was?

A. Yes, sir.

COURT: You did not give the cost of lime and cement mortar?

A. If in lime and cement mortar common brick in coundation and bulk work $18.28 per actual thousand of brick.

Q. Do you mean in actual brick in the walls or do you mean in actual brick furnished for the walls?

A. My estimate is based on actual brick in the walls.

Q. And what consideration if any do you give for bats and broken brick, anything?

A. If there were any great amount of those that would go in as a portion of the profit which I have shown here in contractor's profit.

Q. That is the way you would cover it would be the contractor's profit?

A. Yes, sir.

Q. You have already told us all of your information about brick and cost of labor and all that sore of thing as far as Des Moines is concerned was by information from the company or from these two contractors and your own helper whatever he found about it?

A. Also our inquiries directly from the manufacturers.

Q. Now how about lumber, how did you get at your valuation of lumber?

A. In order to find out what fair prices for lumber were in Des Moines, we consulted Reese Gabriel & Co., and we obtained from fair prices delivered on various kinds of lumber. When I have
1463 figured a carpenter's job I have taken consideration of the amount of lumber that it was necessary to use to take care of overlapping and to take care of the fact that lumber comes in even lengths. For the carpenter labor and nails I based that at a certain number of dollars per thousand depending on the kind of work and in lumber work I have estimated a 15 per cent profit.

Q. The same as you did in the brick work?

A. Yes, sir.

Q. In other words where the invoice as made by Mr. Brodnax would show 10,00- feet of common lumber in some bulidings you dertermined what you thought would be the reasonable value of 10,000 feet of common lumber in the building with a 15 per cent contractor's profit added.

A. Yes, sir.

Q. And you got your information largely from Reese Gabriel about lumber?

A. About the co-t of lumber itself and also added to my information by the figures given by the contractors which we have named.

Q. The two men you have named?

A. Yes, sir.

Q. So that all of your figures with respect to lumber and brick and excavation is based so far as Des Moines is concerned anyway on what somebody else told you is it?

A. Well I was obliged to accept the statement of manufacturers as to what they would sell lumber for and with that statement I believe I would answer yes.

Q. Now I suppose you had nothing to do with the invoice itself so as to be able to say anything about its accuracy as to either number or quantity or quality or anything of that kind?

1464 A. I made a very careful check of the dimensions, but I did not calculate the quantities of brick but accepted the inventory in that respect.

Q. As being accurate?

A. Yes, sir.

Q. Did you measure the thickness of the walls in the building?

A. I did.

Q. You checked to that extent?

A. We checked one building through entirely, that is calculated everything that was shown in the inventory, possibly in two buildings but one I know of at the moment and we found that the quantities in that case were substantially correct.

Q. You had several men at work here did you not, Mr. Baehr?

A. I had only one assistant with me in Des Moines, but several men of mine subsequently helped me in the figuring of this work in Chicago, although I determined all the unit prices.

Q. You checked up all apparatus down there?

A. Yes, sir.

Q. So you are pretty well satisfied that we have not left out any holders or generators or anything of that kind?

A. I don't think there has been anything of that sort omitted.

Q. In a general way you checked up this invoice so as to satisfy your own conscience anyway if I may use that term that you were putting a value on the plant about as it really existed didn't you?

A. I believe I have a fair value on the plant.

Q. As it really exists? Now just a minute about the pipes and what you call the specials. How did you get at your values of these articles?

A. Take in the first place main pipe. I obtained from the

1465 Des Moines Gas Co., a statement which has been mentioned before this afternoon of all the purchase of cast iron pipe by the Des Moines company since 1906 and from that statement I determined a weighted average price paid for cast iron pipe by the Des Moines Company since that time and made up two tabulations giveng that information and after having determined the weighted

average I determined from that what would be a fair price to use for main pipe in Des Moines and that price that I took was somewhat less than the actual weighted average of the purchases of the company since 1906. The cast iron pipe market has been low recently, rather low.

Q. It is very low now isn't it?

A. It is very low just at the time being, but I took a price that I thought would be fair under the circumstances based partly on—well I might say largely on the weighted average of the actual price paid by this company in these years.

Q. Right there Mr. Maehr you took a period over which you say you traversed in arriving at your weighted average. Two or three years of that time this pipe was exceedingly high wasn't it?

A. The price per ton varied considerably. The statement that the Des Moines Company gave me contains the dates on which they purchased the pipe and now for instance the cost of pipe in my first tabulation f. o. b. cars per ton run from $26.15 up to as high as $36.00 per ton.

Q. Is that the highest point that was reacher in 1908 was it?

A. I can't tell without referring to the memorandum that the company furnished me. I have not the dates in my notes.

Q. You still have the memorandum that was furnished?

A. Yes, sir.

1466 Q. All right.

A. Now the weighted average price per ton of all cast iron pipe bought f. o. b. cars Des Moines, including the four inch pipe was $31.22, excluding 4 inch pipe $30.55 per ton. That is considering only the six inch pipe, the corresponding price was $30.55. In considering the price I take into consideration also of the state of the pipe market and try to arrive at what in my judgment is a fair price to use to apply to the enti-e main pipe owned by the company and in use. The prices I took were for four inch $29.50 per ton, f. o. b. cars and for six inch $28.50 f. o. b. cars. To this there was added the cost of carrying pipe to where it was used.

Q. How much was that a ton, the cartage?

A. $2.00. And the store room expense which in the case of this company and from the memorandum submitted to me by the company was 5.96 per cent.

Q. The sto-age charges?

A. Yes, sir.

Q. That was what per cent?

A. 5.96.

Q. Figured on what?

A. On cost of the material.

Q. Including cartage?

A. Not including cartage in main pipe. In the cost of cast iron pipe I have added store room expense to the co-t of pipe f. o. b. cars per ton and then added the cartage.

Q. This $2.00 cartage, what was that for, just what cartage from the train to storage?

A. Some cast iron pipe are delivered directly from the cars to the

job, that is it is hauled directly from the cars to the street
1467 where it is laid.

Q. That is true of all large pipe?

A. That is usually true of large pipe. Smaller pipe may be put in the yard for a long time and then hauled out or for a short time so that there may be at times the cost of two hauls in some of the pipe.

Q. You allowed $2.00 for the cartage whether it is two hauls or one?

A. Yes, as an average price.

Q. And this five and a fraction per centage for storage where did you get that?

A. All the material passing through the store account of the gas company last year received a store room expense addition of 5.96 per cent which is the cost or the amount of money necessary to cover sto-e room expense or cost of car-ing and records of stock.

COURT: Is that including freight?

A. I have based my prices on f. o. b. Des Moines.

Q. You have allo-ed and added into the value of all of the pipe that storage charge of five and a fraction per cent?

A. Yes, sir.

Q. Whether it ever passed through the storage place or not.

A. I considered that was a fair reasonable charge to add to the pipe.

Q. This gas company, do you mean that they charge up as part of the cost of all their pipe that storage of 5.96 per cent and you adopted their charge?

A. I adopt their charge just how they treat that on their books I don't know.

Q. But anyhow whatever they told you, they did tell you
1468 that was a charge of 5 and a fraction and you have just adopted that and charged to the cost of the pipe?

A. Yes, sir.

Q. Wasn't that rather a new and novel thing to you?

A. No, sir. That is a usual thing in gas plants. In fact that is the practice in all gas companies with which I have been connected. They all keep a store room and the cost of running the store room was distributed over the cost of the material that passed through the store room.

Q. Then it is not storage at all, the item is as you figured out there is the cost of operating the headquarters or office a portion of it that should properly be charged to pipe, that is what you mean is it?

A. It is the cost of taking care of material and keeping track of it and is part of the cost of the material.

Q. Do you mean that there is some separate service performed by somebody in connection with the gas company for that item other tha- the general service around the office?

A. Yes, sir.

Q. What is it?

A. I can explain that best perhaps by stating in the cases where -- have bee- connected the store room department was a very large department, for instance at St. Louis there was a store keeper and a

great many assistants and there was telephone and stationary and coal for heating, gas, used for lighting the building, a great many charges connected with that which had to be absorbed.

Q. I think I get a better understanding of the item than I had before. I got the impression in the beginning it was for storage as distinguished from store expenses.

1469 A. It might be my wording is unfortunate.

Q. No it was not your fault, it was my own. Now as I understand that it is the proportion of the expense of operating the business at headquarters to handle this material and store it if it has to be sto-ed that is charged up to pipe and that amounts to five and a fraction per cent?

A. That is what it amounts to in a case of this kind.

Q. And that you have added to the cost of the pipe?

A. Yes, sir.

Q. Now I suppose of course that is one of the items that is charged into operating expenses too?

A. Well if the material which comes o-t of the store room is used in operation it would go to operation. That is that part of it and if other material went to construction account that proportion of the sto-e room expenses would go to construction account.

Q. The larger pipe, sixteen, 20 and 24 inch pipe, invariably goes right to the field doesn't it?

A. It would usually go that way, that would be the most economic way to handle it. It might be necessary to store it for special work.

Q. And that would also be true of the 12 inch pipe wouldn't it?

A. Not necessarily although in laying pipe people naturally buy requesting deliveries when they are ready to lay it or just prior thereto and they avoid if possible a second haul.

Q. What were your unit values or prices of the larger mains above the 6 and 4 inch?

A. I used for six inch and larger, $28.50 per ton f. o. b. cars Des Moines. For the 6 inch cast iron pipe and larger sizes up to

1470 and including the largest, a price of $28.50 a ton f. o. b. cars, Des Moines.

Q. Right at that point, do you know what the price of that pipe is toda- delivered in Des Moines?

A. I don't know what the price is in Des Moines, but I have kept track in a general way of the price in Chicago.

Q. Well there would be but little difference between the price in Chicago and price in Des Moines?

A. There ought to be, the price ought to be more here and is more here.

Q. What was the price in Chicago say on the 1st of January this year 1911?

A. For gas pipe the price in Chicago ran from $23 to $24.50 per ton.

Q. January 1, 1911?

A. January 1, 1911.

Q. And it is considerably less now isn't it?

A. I think prices now, I have not seen quotations for some four or

five weeks, I think at the time I last saw them the prices were from $22 or $22.50 a ton to about $24 per ton.

Q. Now if you will, go on with the other units there.

COURT: January 1, 1911, you say $23 and $24 for the large ones?

A. That is the price in Chicago.

Q. What would be the difference or what was the difference at any time you have knowledge of the quotations of that kind of pipe in Chicago and in Des Moines?

A. I have not that knowledge because I obtained my knowledge of local prices from the records of prices paid by the gas company.

Q. Well how did that compare with Chicago prices.

1471 A. I should jugde there would be a difference of about a $1.50 or $2. per ton perhaps.

Q. Now to close up the day I want to go to another question if you will take youe Exhibit 21 I wish you would give me the total amount and it will help me if you make a memorandum o- the items as we go along, the total amount of item No. 1 as you have consid-red it and estimated as an item of ccost?

A. The tota- amount of item No. 1 I would have to figure for you on the reproduction cost new because I have not got that separate in my report.

Q. It would be a little more wouldn't it, reproducyion cost new.

A. That would be more yes.

Q. Well give it to me the -ay you have it, the way you can get it the quickets. That is what you call legal and organization?

A. No, sir; No. 1 is contingency. I have got contingency figured out separately on present value or depreciative value and the total of that item is $180,887.

Q. What is item No. 2 the added cost?

A. Item No. 2 is engineer and superintendents.

Q. Now give me the amount of that?

A. The amount of that based on present value meaning by that as of January 1, 1911, is $102,484.

Q. Now if you will give me item No. 3, what is it?

A. Item No. 3 is legal and organization and the amount based on present value is $80,581.

Q. I have that $90,244. I wonder how I got that?

A. You must have got that on the basis of reproduction new.

Q. Now item No. 4.

A. Item No. 4 is taxes. Total amount of that added to the capital account pr-sent value $49,709.

1472 Q. Item No. 5?

A. Interest during construction present value total $133,191

Q. Item No. 6.

A. That is all.

Q. Well the amount of your going capital then we will call it item No. 6, I am getting at the added costs.

A. The going value is estimated at $509,795.

Q. Now working capital?

A. Working capital $150,000.

Q. Now the paving?

A. If it will be of any s-r-ice to you you may have this table itemising that.

Q. That will be of service to me but I will finish the examination as I started. The amount now of paving?

A. This is reduced to present value and the base figure using present value paving over mains $259,851, all present value.

Q. That is only paving over mains?

A. Yes, sir.

Q. I wanted the total of that, paving over mains and services both?

A. I have them separate. The additional item paving over services present value base figure $22,384.

Q. Is there anything else in the way of added costs there I mean over and above as counsel said the other day, the value of the bare bones?

A. I have got figures here real estate, buildings, contents of buildings, outside apparatus, general office and stable equipment, street mains, paving over mains, services, paving over services, meters in use, meters in stock, distribution tools.

Q. These figures will answer my purpose for the time being. Now your total as it appears there in your report total present value of the property $3,221,166. And what do these other items total you just gave me, the tota- engineering, legal and organization, taxes, interest, going value, capital and paving?

1473

A. You want working capital included?

Q. I do want it.

A. The total present value of the items No. 1, 2 and 3, taxes, interest during construction, working capital and going value is $1,488,872.

COURT: There is just one question I want to ask you, this $3,221,166 is construction cost?

A. No, sir; that is the present depreciative value.

Q. Did you leave out the paving?

A. That includes the paving, that $1,488,782 includes base figure present value paving over mains and paving over services. The present depreciative value of the tota- property I p-ace at $3,221,166, and the items Mr. Byers was asking me to total up are included in that figure I have just named.

Q. Then if I understand Mr. Baehr, and it is important for me to have these figures now because of the manner in which your report is made up, if I understand your testimony the present value that you find of the Des Moines Gas Co.'s property, aside from these nine items of contingency and engineering, legal and organization, taxes, interest, going value working capital and paving is $1,732,294?

A. I make it $1,732,294.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

1474 Wednesday Morning Session.

AUGUST 2, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

WILLIAM A. BAEHR, re-called for further cross examination, examined by Mr. Byers, testified as follows:

Q. Mr. Baehr, the last thing that went into the record last night was the figures that were made up from which a balance was found of $1,732,294 which represents your valuation of the property, less the nine items that were given to me. Now I desire to know whether in that $1,732,294 is included the fifteen per cent that was allowed as contractors' profit?

A. All the base figures of present value are calculated from the reproduction new value and where I have used the contractors' profit of fifteen per cent in the reproduction new value the same has been depreciated and is found in the base figures of the present value.

Q. The $1,732,294 is the present value of the property less the nine items that you gave me, which items were contingencies, engineering and superintendence, legal and organization, taxes, interest, going value, working capital and two items of paving, making nine altogether; that represents the present value less these items as I understand you?

A. I would not want to say just what it represents without going over each item. The figures which you have mentioned are all figures based on present value.

Q. Let me put it in another way, Mr. Baehr. There is no fifteen per cent allowance or addition to the first item, contingencies,
1475 $180,877?

A. There is not.

Q. There is no fifteen per cent allowance for additions in the item engineering and superintendence, $102,484?

A. No, sir.

Q. Nor in legal and organization?

A. No.

Q. Nor in taxes?

A. No.

Q. Nor in interest?

A. No.

Q. Nor in going value?

A. No.

Q. Nor in capital?

A. No.

Q. Nor in paving?

A. There is no fifteen percent in the figures on paving; what profit there is in the paving for the contractors, I don't know.

Q. I understand that, but what I am trying to get at, if you can give it to me without too much trouble, is the present value, the total present value of the property in which there is an allowance of this fifteen per cent; I want to get that item, if I can, in figures.

A. In order to do that I would be obliged to go through my entire detailed estimate and determine each of the items in which I have made an allowance of fifteen per cent. For instance, brick work is based on fifteen per cent contractors' profit; lumber work, there is a contractors' profit estimated and in steel work; but there is no contractors' profit estimated in the distribution system, that is, in the mains and services or the meters and not in portions
1476 of the plant, certain portions which I figured the Company would do itself, and that fifteen per cent profit where it has been allowed is used in the reproduction new figures and the present or depreciated value; in order to arrive at that the percentage condition is applied to the reproduction new value which contains fifteen per cent contractors' profit where I have used it.

The MASTER: It is included in works equipment or machinery?

A. In machinery which is estimated as being purchased and erected by contractors there is a contractors' profit and there are certain portions of the plant that I estimated the gas company would perform the work itself and in such cases I estimated no contractors' profit; that is all based on reproduction new.

Q. Will you tell me just where in Exhibit 21 I can find the details with respect to the numerous buildings?

A. On page 76.

Q. Now on page 76 you show the buildings to be of the total value—are they all on that page?

A. They are carried forward to page 77.

Q. I notice pages 76 and 77, your total value after adding the items 1, 2, and 3 and taxes and interest, you make buildings worth $86,924 and your base figures are $67,607. Now to which figure did you add the fifteen per cent, if to either?

A. The fifteen per cent contractors' profit, where I have used it, is included in the details of the buildings. For instance, the brick work and lumber work, that could not be deducted from this exhibit.

Q. Well, let me put the question this way: Every part of the building was figured by you on the basis of erection by con-
1477 tractors, was it not?

A. In order to know that I would have to look through each detail.

Q. That is your general recollection of it?

A. I figured that the buildings would be put up by contractors, but I wish to refresh my memory before——

Q. I wish you would do that.

A. I estimated fifteen per cent contractors' profit in brick work; no contractors' profit in clearing site and staking out; in cement work there is undoubtedly a profit, but I don't know whether it is fifteen per cent or not. The estimated prices that are used are the market prices and I can't tell you the percentage of profit in some of them.

Q. These statements that you are making now, are you getting them from your report?

A. I am getting it from some memoranda I have.

Q. We couldn't take the report and get these facts you are now stating?

A. No, sir.

Q. Well, let me put the question this way, Mr. Baehr: Whatever of contractors' profit you did allow will be found in what you term base figures; it is in there and makes up a part of the figures wherever it was allowed?

A. Yes, on the basis of reproduction new and does not apply to the whole of the base figures necessarily. In other words, there are certain portions of the work on which no contractors' profit was figured.

Q. Well what else is there in the base figures except the value of reproduction new—nothing else in there, is there?

A. I have got some figures, I have got base figures as of present or depreciated value.

1478 —. Yes, I know; but the base figures as they appear here in your report all represent reproduction new, do they not?

A. They represent just what I stated at the top of each page and I find that is reproduction new in each instance.

Q. Why do you think it is necessary to take that precaution.

A. I believe it is reproduction new.

Q. You made these figures yourself, didn't you?

A. Made most of them, yes, sir.

Q. And I suppose you supervised the preparation of this report?

A. I did.

Q. So that you are quite familiar with not only the completed report, but also the detailed information that was used and from which the report was made?

A. Yes.

Q. All I am trying to get at is to get for my own use and the use of the Master—as far as he may want to use it—information from you as to just where, in a general way now, that fifteen per cent is added.

A. The buildings contain fifteen per cent profit, except in certain parts, but inasmuch as the buildings are composed of brick mostly, all brick, concrete, lumber, roofing, the greatest part of the base figure of reproduction new building cost in my report will contain fifteen per cent profit.

Q. Well, now, if we should want to determine the accuracy of your figures and the propriety or necessity, in order to arrive at a fair valuation of including or adding this fifteen per cent to any particular part of this property, we couldn't do it, could we, from your report? There would be no way that we could check you up on that, would there?

A. I believe in order to be accurate it would be necessary

1479 to go through each item.

Q. And have your detailed memoranda?

A. I think I could tell you such portions of the work in which I did allow a fifteen per cent contractors' profit.

Q. But to do that you would have to refer to your memoranda that is not set out in this report?

A. Yes.

The MASTER: If you divided by 1.15 at these places you allowed it would give you the net result?

A. Yes, sir.

The MASTER: And that is the amount without the contractors' profit?

A. Yes.

Q. That is, if we knew just what figures you had included it in here we could arrive at it by dividing 1.15?

A. Yes, sir; but you must understand that certain apparatus like purifiers, water gas sets, the boilers, I don't know whether the percentage of profit on them is exactly fifteen per cent.

Q. You don't know whether that is exactly what you included in your figures or not?

A. The question under consideration is manufacturer's cost and that is a difficult thing to get at.

Q. Anyway, it wouldn't be proper for us to multiply by fifteen per cent, or rather take fifteen per cent of these total figures and call that what you allowed for contractor's profit?

A. It would not.

Q. Now, take your compararive plant, Mr. Baehr, and I wish you would state, if you can without too much trouble, the per cent growth of the plant covering the years that you have given in making you- comparison.

1480 A. In the year 1911, the comparative plant sells no gas. In the year 1912 it sells no gas. In the year 1913, as shown on page 140, the consumption of the comparative plant is estimated to be 135,111,000 cubic feet. That cannot be compared to the consumption of the preceding year by percentage because the preceding year was nothing. In the year 1914 the comparative plant consumption is estimated to be 417,399,000 cubic feet, which is an increase over the previous year of 282,286,000 cubic feet, which is approximately 208 per cent increase.

Q. Is that the year 1914?

A. Yes, I was discussing the increase of 1914 with those of 1913 in the comparative plant. Now in the year 1915 the estimated consumption of the comparative plant *os* 623,709,000 cubic feet, which is an increase over the preceding year of 206,312,000 cubic feet, which is equal to an increase of about 49.4 per cent over the estimated consumption of the year 1914. In the year 1916 the estimated consumption of the comparative plant is 692,549,000 cubic feet, which is an increase over the consumption of the yea · 1915 of 68,840 000 cubic feet and which is an increase of about 11 per cent. In the year 1917 the estimated consumption of the comparative plant is 743,010,000 cubic feet, which is an increase over the estimated consumption of the year 1916 of 50,461,000 cubic feet, or approximately 7.28 per cent.

Q. Now that comparative plant, or rather your figures on your comparative plant cover a period of seven years?

A. Yes, sir.

Q. Now, what is the average per cent growth for those seven years?

A. The seven years comprise the period from the inception of the enterprise until the comparative plant is estimated to have caught up with the going plant and two years of that time is taken for *for* construction without any gas being manufactured. I do not see just exactly how I can compare the average sales with the sales during the construction period when there were none.

1481

Q. I am not asking you to compare them at all. I am simply asking you to take the percentage you give me and give me the average per cent increase for the period you used in making your comparison of the plant.

A. I would like to have a little time to do that, because I believe that has to be figured on the basis of the weighted average.

Q. I will put it in another way. You started with 1914, 1915, 1916, and 1917, four years; now give me the average per cent increase during these four years?

A. If I understand you, you want the numerical average of the percentage I have stated?

Q. Yes, for those years.

A. The numerical average of 208 per cent, 49.4, 7.28 per cent and 11 per cent is 68.92 per cent.

Q. Now I wish you would take the Des Moines Gas plant for the years—well the last four years preceding the 31st day of December, 1910, and give me the per cent.

A. As shown on page 138 of my report, the per cent of increase of the Des Moines Gas Company for the years 1907, 1908, 1909 and 1910, inclusive, *are* 15.4.

Q. You are giving them by years?

A. Yes; the percentage increases for the years named are respectively 15.4, 7.3, 7.8, 7.0 and the numerical average of these four figures is 9.375.

1482

Q. Now these figures of increase as shown on your report on page 138 represent the correct figures as they appear in the books of the Des Moines Gas Company, do they—I mean those are the actual figures showing the actual sales?

A. They were given to me on memoranda from the Company in typewritten form and I believe they represent the actual figures as shown on their books.

Q. It was at least so represented to you and you understood it so?

A. Yes.

Q. In your examination in chief, Mr. Baehr, you referred to Massachusetts gas statistics. What is the rate for gas in Massachusetts—we don't care to have you go through the entire records of Massachusetts, but in a general way tell the low price and the high price.

A. It is not in my memory and I would have to look it up.

Q. You referred to it in your examination in chief and that is the only reason I inquire about it now.

A. I have no figures of rates in my mind; the figures that I referred to in my examination in chief were in reference to the average size of mains and the unaccounted for gas of certain Massachusetts companies, certain typical companies, as I took them from

the report of the Board of Gas and Electric Light Commissioners of the commonwealth of Massachusetts, marked the Twenty-sixth Annual Report.

Q. That is the book which you had in mind when you referred to Massachusetts statistics, the statistics appear in that publication?

A. Yes.

Q. In the memoranda that was furnished you showing the operating expenses for 1910, were the details set out, the items of
1483 operating expenses?

A. Yes.

Q. Do you have that memoranda with you now?

A. I have.

Q. I wish you would produce it.

A. (Witness produces memoranda) The only copy in detail which I have in my possession is a copy from some figures which I received, the original of which I have returned, and this copy was made in my office. I believe it is a correct copy of the figures that were furnished to me.

Q. The memoranda handed me, Mr. Baehr, covers three years, does it not?

A. I believe so.

Q. 1908, 1909, 1910?

A. I don't know whether that covers the calander years or not; I would have to look and see.

This memoranda covers the year ended September 30, 1908; the year ended September 30, 1909; the year ended September 30, 1910 and the year ended December 31, 1910.

The MASTER: That is the whole of that year, 1909?

A. Yes, that is covered separately and entirely.

Q. I wish you would turn to page 149, Mr. Witness, of Exhibit 21—no the page following 149, this sheet following page 149; now what do you have to say as to whether or not the information set out, the figures set out on that page were taken from these two sheets you have just handed me, that is so far as it refers to the going plant?

A. The figures for gas sold in Des Moines and in Valley Junction, the total unaccounted for gas, the total gas sent out from the gas plant and the operating results in detail of the entire
1484 plant for the year 1910.

Q. I should have limited the question to 1910.

A. They are taken and I believe are a correct guide of that paper that you have now.

Q. Now, all of the rest of the figures on this sheet following page 49, 1911, 1912, 1913, 1914, 1915, 1916 and 1917, are your estimates of the future condition of this property in its relation to the city of Des Moines and the manufacture and sale of gas?

A. All except the column which I call the adjusted column for 1910.

Q. Where is that column?

A. You will notice that the first two columns of figures in 1910 give the actual operating results.

Q. That is the first two columns?

A. Yes, and the next two columns give my adjusted operating details for the same years. The rest of the figures are my estimate of the future up to and including the year 1917.

Q. Do you mean by that your adjustment simply amounted to taking out Valley Junction?

A. My adjustment made a proper allowance as near as I could estimate it of the cost of supplying the gas to Valley Junction and I also adjusted certain other items.

Q. Just how did you mean?

A. I can illustrate that best by an instance. If you will refer to the general heading "distribution" you will find a left-hand item called repairs mains. This item you will find as stated in the actual operating results to have been for the year 1910, .0176 or 1.76c. per thousand feet of gas sold. Now, in my judgment an allowance of 1.25 per thousand feet gas sold if carried as a contingent
1485 account from year to year will be sufficient to cover main repairs, and I therefore reduced that figure. Then there were certain other figures that I treated similarly. For instance, repairs meters; that figure for the year 1910 was .0098, and in my judgment, derived from my experience, I figured that the proper allowance to cover this item should be .0150.

Q. In other words, you increase that materially?

A. I do, because from my experience I feel that the figure .0098 is not sufficient to properly maintain the meters.

Q. Then if we take the footings at the bottom of the sheet under your so-called adjustment column, is that carried into more than two columns?

A. No, sir.

Q. Well, now, when you get down to the bottom you increase rather than diminish the percentage, *did* you not, from .0594 to .0600?

A. No, I think you will find I decreased it.

Q. Where is it?

A. The total operating expenses, not including taxes a*b*d depreciation, giving now the actual results for the entire plant for the year 1910 were .5908. In my adjusted results the figure is for the same year .5867.

Q. Then you reduced it slightly?

A. I did.

Q. Now, then, aside from these changes or adjustments, as you call them, all of the figures and information set out on this sheet following page 149 of Exhibit 21, and under the years or figures 1911, 1912, 1913, 1914, 1915, 1916 and 1917 represent your estimates and your judgment of the future operations of the plant in Des Moines?

1486 A. During these years, yes.

Q. I mean during these years. Now how does that growth or increase compare to the percentage you gave me for the last four years—take the first four years of your estimated operations, how does it compare with the last four years of the plant, is that percentage increased or smaller, if you can tell off-hand?

A. I don't understand whether you are referring to the sales in cubic feet or increase in operating expenses.

Q. Well you have carried increase in all these items. Now take the increase in sales or the increase in gross revenue or net revenue; but since the other was sales, if you will take the gross sales for the first four years of your estimate and tell me how it compares with the last four years of the company's actual sales.

A. I have estimated that the percentage of increase each year over the preceding year of the Des Moines Gas Company for the next four years is less than the same percentage of increase each year over the preceding year of the Des Moines Gas Company for the past four years.

Q. Can you give me the per cent increase for the four years of your estimate you have given me for the last four years of the plant, I want to make a comparison if I can.

A. The average per cent increase of sales of the Des Moines Gas Company for the year- 1911, 1912, 1913 and 1914, that is, the numerical average of the percentages as enumerated on page 138 of my report is 5.745 per cent.

Q. And the other was—I don't remember the figures you gave me?

A. The other was 9.375 per cent.

The MASTER: When you say nine point, what do you mean?

A. I use the word point in place of the word decimal.

1487 Q. Now turn to the second sheet following page 149, and I wish you would state how much, if any part, of that sheet is a mere duplication of the preceding sheet?

A. The details shown in the column headed going plant 1910 together with the names of the detailed accounts is a copy of a column of those same names on the preceding sheet.

Q. Now, all the rest of this sheet then, if I understand it correctly, is your estimate of the growth or rather is your estimate of a comparative plant showing the growth of the comparative plant beginning with the organization in 1911, 1912, 1913, 1914, 1915, 1916 and 1917.

A. It is.

Q. Now, in arriving at these figures you have used almost altogether your own judgment and estimate as to the amount of business that would be done in the different years?

A. I have based that estimate on my judgment of the rate at which the business would be developed.

Q. In other words you have increase, as I remember it, between the year 1914, that is, the increase in the year 1915 over the business or sales of 1914, of 208 per cent; now you of course simply guessed at that, did you?

A. No, sir.

Q. How could you arrive at it in any other way?

A. That is the result of a careful estimate of the development of this business based on my experience of the rate at which construction work of this kind could be reasonably carried on.

Q. Why didn't you take the plant already here and start with

that as a basis of your calculation for growth and take the actual growth as it has been demonstrated here to base your figures on that?

A. The figures that I had were based partly on the growth
1488 of the city. The estimate of the growth of the going plant, that is, the estimate of the increase of sales of the actual or going Des Moines Gas Company in arriving at that I took into consideration the probable growth of the city.

Q. But how could you double, more than double the sales in the one years between 1914 and 1915; how did you figure that?

A. Well, that is estimated on the basis of the comparative plant, and you will remember that the first district of mains were laid, were estimated as laid and the services estimated as laid in the year 1912; and in the year 1913 the mains and services of *of* district number two were estimated as laid; therefore the rate of construction going on, new mains to cover new territory is as estimated and that in itself is estimated to cover gradually the ground each year.

Q. Yes, I know; that simply goes back to another guess or estimate. You worked that out in your own mind, the amount of mains that might be laid; you did not take the present plant and take any years of its existence to find out how it grew with respect to the laying of mains?

A. In my estimate of the going plant and in my determination of the average age of the mains you will find I have used a table showing the actual feet, each size of main laid each year of the actual Des Moines Gas Company from the year I believe 1887 up to and including the year 1910; I had those actual figures.

Q. Now, Mr. Baehr, if any of these columns of figures should turn out to be radically wrong, then your whole scheme of valuation falls?

A. No, sir; I do not see how much an assumption could make my whole scheme of valuation fall.

Q. Doesn't all of your valuation of this plant depend upon
1489 this so-called comparative plant; isn't that the way you worked out the valuation?

A. I used the method of the comparative plant for the purposes of basing my judgment of what the going value of this plant is. In the reproduction of such a thing as a building or water gas set I cannot see how the two tie together.

Q. But you tied the valuations all together. Isn't it true that your valuation, your final amount there that you fix as the value of this plant is worked out on this comparative plant system and depends upon the accuracy largely of your judgment as to those subsequent events, isn't that so?

A. I believe that the features or details of the operating costs of the comparative plant depend upon my judgment, but that judgment is based on the results accomplished here and on my general experience.

Q. But there is no way, of course, for us to separate what weight or how much your general experience figured in here; how much you based those figures on actual conditions in Des Moines. If, for instance, it should turn out that these estimated earnings were much

less than what you estimated them, that would disturb your whole scheme of your comparative plant and your going plant too, as far as that is concerned?

A. If the estimated development of the comparative plant, that is, if I have estimated that development has been too quick, it would tend to raise the going value, it would tend to exaggerate it; my estimate is based on my judgment as to what is a fair and reasonable amount of time to accomplish it.

Q. Yes, but all these figures must be here for some purpose; does your valuation rest largely upon these figures showing the comparative growth of your comparative plant, that is all I want to

1490 know.

A. My judgment of the going value is based to a large extent, to some extent at least upon the result of this calculation.

Q. That is true of going value and true of the taxes and interest?

A. I used my best judgment in arriving at these results, yes.

Q. The whole thing depends whether the scheme you worked out here works out finally, in the end?

A. If I understand you, the going value calculation, that is the result arrived at in the going value calculation depends on the length of time assumed for the business development.

Q. I was not quite ready to get into the going value question, but I want to ask you this question in that connection: now your final figure of the total valuation of this property of course would not be the same as it is if you had estimated the taxes one hundred thousand dollars less, would it, or one hundred thousand dollars more?

A. If the taxes had come at one hundred thousand dollars it would not accord with my judgment.

Q. And if they had come at one hundred thousand dollars more, it would not accord with your judgment and your figures would not have been the same if your judgment had been in favor of one hundred thousand dollars more taxes?

A. These figures are the result of my judgment.

Q. That is exactly what I am trying to get at, and the whole scheme depends on the accuracy of your judgment, that is true?

A. If I understand just what you mean by the term judgment in that respect, I think I could answer you.

The MASTER: Judgment is the conclusion reached; is it your judgment those things will happen, that is what he means by it.

A. Yes, it is.

1491 Q. What I mean of course in addition to the suggestion is, in every case now, of course, is there any single item in here in your report the value of which is fixed in any other way except upon just your estimate and judgment as to what it is worth?

A. In order to answer that I would have to go through all the figures again.

Q. Can you think of any one thing now, except the real estate?

A. Excepting the real estate, yes.

Q. So that there isn't any item in the whole list upon which you

fixed a value that you got from any actual existing figure showing the costs?

A. Well, I based my judgment, you understand, on a great many things.

Q. In the end it was altogether judgment?

A. I used my judgment on all figures.

Q. If they didn't suit you, you raised them or lowered them, whichever you thought was the thing to do?

A. I exercised my judgment and treated them accordingly.

Q. You referred to surplus capacity in this plant. I wish you would tell the Master how many miles of main the plant just as it stands today would carry?

A. Do I understand you to mean by that that the plant as it stands today, how many miles of main it would serve in Des Moines?

Q. I mean the first of January in all these questions.

A. The capacity of this plant, I am speaking now of what I call the net, safe manufacturing capacity, I figure the net manufacturing capacity at three million cubic feet per day, with the exception of the purifiers which have a lesser capacity.

Q. That is not exactly an answer, but I will put the ques-
1492 tion in another way——

A. I was coming to that. Now the number of miles of main a plant like this could serve depends on so many factors that I doubt if I could answer it.

Q. Don't you have a general knowledge about that, take a city the size of Des Moines with a plant such as this is and apparatus and so on, about the usual average number of miles can be served by that sort of a plant?

A. That varies a great deal Mr. Byers, and with different plants and depends——

Q. How many miles did you put in your new comparative plant?

A. Up to January 1, 1911, I estimated the miles of main of the comparative plant would be to reproduce those existing in the Des Moines Gas Company.

Q. Let me put it in another way: How many additional meters could be served on this line just as it stands by this plant in thousands?

A. I don't believe I can answer that question.

Q. Give us your best judgment.

A. The number of meters—I am reasoning out loud for a moment—the number of meters on January 1st was approximately 20,000. The maximum day's sent-out was some over 2,200,000. The plant with its present capacity could serve some additional meters, but I do not believe I can hazard a guess because I am afraid it would be only a guess.

Q. How many additional services—would you answer the same way as to services?

A. I think I would be obliged to.

Q. How much additional output of gas then could be made, put it that way?

1493 A. If you mean by that that the mains have capacity enough to take additional gas, I would say they could take some additional gas.

Q. Well, how much, give us your judgment?

A. That again, Mr. Byers, depends on so many factors, it makes a definite answer to that question almost impossible.

Q. You would have to have time to work it out as you worked out these other matters in your report?

A. I would be obliged to assume a great many conditions and would have to go through a great deal of work and then I would have to give you a dozen different kinds of answer on that.

Q. All right, we will let it go that way then. Now can you give us an estimate as to how much additional gas or extra gas over the present output could be taken from the works by the mains that are in and say carry it a half a mile or a mile?

A. I think that question ties right in with the previous one; I would have to make my answer in the same way, because in my previous answer I was talking about capacity of what is.

Q. Of course, if you were going to build a gas plant somewhere or recommend it, you would have to figure it all out?

A. Certainly.

Q. There isn't anything amusing or awkward about the suggestion?

A. Not at all; it simply involves a great deal of engineering work and computation.

Q. Now, in estimating the expense or rather the additions that must be made to this property in the next seven years, or the period you have used, as I remember the figures, they sum up to about $1,056,000.

A. That was on the assumption of a three million foot holder being constructed in that time rather than a two million
1494 foot holder; the holder figure was $250,000.

Q. And sixty miles of main—now you must have gone through that process of determining the amount of gas this plant would carry and the number of miles of mains that would be necessary in the future—I don't care to haggle about that at all, but you put the additional mains at $400,000 and the meter services at $150,000 and the increased population at 20,000. Now would it be a safe method if we want to check up on your judgment for us to take the same period in the life of the present gas company when there was an increase of 20,000 in the population, and ascertain what additions were made to the plant to take care of that as it actually existed here in Des Moines, would that be a safe thing for us to do?

A. Why, I based this entirely on percentages, and I think that takes experience, Mr. Byers, to do that.

Q. You could have told to a cent, couldn't you, just how much money the Des Moines Gas Company had expended in additions that were necessary to take care of an increase of 20,000 in the population of Des Moines, couldn't you?

A. Not to a cent, no, sir.

Q. Of course, I used that word cent like millionaires use it.

A. In making up my estimate of the future construction requirements I based that on a percentage method. There are so many things to take into consideration that a detailed estimate such as I think you have in mind would take a tremendous amount of computations and drawings and all that sort of thing.

Q. Now the very fact that you have to solve the problem in the way you say by taking into consideration so many things and then using your judgment upon many of them as to how they
1495 appeal to you and satisfy your judgment, wouldn't it be a good deal safer and a better way to determine what that expenditure would necessarily be by consulting the past and what actual years in Des Moines have shown was necessary, wouldn't that be better?

A. I think if I understood you, for the purpose of making an estimate of the construction requirements as it is wanted, this method I have used is sufficient.

Q. Well, sufficient for the Gas Company, but how about the public and other people interested in having the thing worked out so that it will be helpful to them?

A. Those figures are reasonably accurate.

The MASTER: Does net income have anything to do with the going value?

A. Yes, it is one of the factors of the going value calculation.

The MASTER: Suppose the physical valuation as you made it is $2,711,271.

A. That is without the going value.

The MASTER: Now what income would you expect on that in order to use the going value?

A. That amount is used in figuring interest on unemployed capital for the comparative plant.

The MASTER: What rate of income, suppose it was only one per cent on that amount, would the plant have any going value?

A. Yes.

The MASTER: If it was only one per cent on that amount?

A. If I understand you, you are referring to the going value calculation.

The MASTER: I am referring to the actual going value. If there was one per cent net income on the $2,711,271.

A. The income is one of the factors entering into the
1496 determination of going value, and if that varied it would produce some variation in the going value; I did not get your idea at first.

The MASTER: Did you figure six per cent on that amount?

A. I did not figure any rate of return on that; I took the present rate for gas, rather the rate of January 1st.

Q. Now, Mr. Baehr, let me test that proposition we were dealing with a minute: assume that during the last seven years the population of Des Moines had increased 30,000, and then if it should appear that the Des Moines Gas Company, which during that period was the only company furnishing gas in Des Moines, had only been

compelled to spend $500,000 to take care of that increase in population, in additions to its plant, which figure would you rather take, what it had actually cost this company to take care of an increase of 30,000, or take the estimate you make to be necessary to take care of an increase of 20,000.

Objected to on part of complainant as not a proper hypothetical question, and because the increase in population in the last seven years is nothing like 30,000, and because there is no evidence as to the actual amount expended. I think the court will take judicial notice of the census and will note that it is considerably less.

A. I would place reliance on my own estimate.
Q. Rather than the actual situation if you could ascertain it?
A. As you put it, yes.
Q. You looked these buildings all over down here?
A. Yes.
Q. You included in your report the valuation on real estate?
A. Yes.
1497 Q. And also on the buildings?
A. Yes, sir.
Q. Do these buildings add anything to the value of that real estate?
A. I considered the value of the buildings entirely separate from the real estate.
Q. I understand that; suppose that property was st-ipped now of the gas apparatus, take the naked property, the real estate with these buildings just as it stands, would the buildings add anything to the value of the real estate?

Objected to on part of complainant as irrelevant and immaterial and not based upon any hypothesis or fact.

A. I would estimate the ground would be worth without any buildings on it, at least as much as I have estimated it.
Q. That is not quite and answer. Strip the property, take the apparatus out of it, leave nothing there but the buildings and the land—you have explained that it is not accurate, and that you do not expect anybody to place any considerable reliance on your valuation of the real estate, because that is what somebody else furnished you—now I want to know your judgment as to whether the buildings add anything to the value of that property down there, the real estate?

Same objection as last above made, and it is not cross examination and the witness is not an expert on real estate.

A. I cannot understand what is meant by that, because I never considered it in that way.
Q. What I mean by it, the rule as I understand it with respect to this class of property and this class of cases, unless buildings add something to the real estate value they are not to be considered; so I want to ascertain whether you considered them because
1498 you thought they added value to that real estate.

Same objection as last above made.

A. I do not believe I can answer the question, Mr. Byers.

Q. Well, you have placed a value of $86,000 on these buildings down there—I am not pretending to be accurate—now then, would those buildings be worth that with the gas apparatus out, out of the building and off the property, leaving the buildings on the real estate, would they be worth any such sum of money?

Same objections as last above made.

A. I estimated those buildings as of themselves, just took into consideration the actual material and labor going into each building.

Q. You don't quite answer the question yet——

The MASTER: He wants to know what they would be worth for anything else?

A. My estimate of the buildings would be unchanged.

Q. They would be worth it just the same?

A. The buildings, yes.

Q. Why did you refer in your examination in chief in speaking about their valuation on your comparative plant to piecemeal construction?

A. Because in any gas plant there is piecemeal construction.

Q. There is no piecemeal construction in reconstructing a gas plant?

A. If the work is undertaken as a reconstruction proposition as a whole there would probably — very little piece meal construction, but the fact remains that piecemeal construction has taken place in that property and I feel it is fair that an allowance for that be made.

Q. Well, you didn't build your comparative plant by piecemeal construction, did you?

A. It is not estimated in the sense of a physical building in
1499 that way, but I do think it is fair to make some allowance.

Q. Did you see any indications of electroliers here?

A. I have not personally made an investigation.

Q. If there was such a condition existing, with respect to the mains, it would make a great difference in your valuation?

A. The present value of the mains service has been determined on the basis of composite age and composite life. If I knew the exact physical condition of the entire main system, I would exercise my judgment as to its value.

Q. Of course, if the electroliers existed to any considerable degree, then your whole computation as to the mains would be changed?

A. No, because I inquired to some extent about those.

Q. Anyway there is nothing of that kind here that you know about but you mentioned that inadvertantly not indicating there was any such condition here?

A. I do not believe I mentioned it inadvertantly.

Q. You didn't mention it on the theory that there was any such condition here now?

A. I believe I spoke of the electroliers as one of the unknown things we may have to face.

Q. You referred to a large number of gas properties you have been

connected with and many of them of which you had made valuations and referred in your experience generally with respect to the price of gas and the valuation of property and so on; have you in your comparative plant proceeded on the theory that the gas covering that period would be sold at a dollar per thousand?

A. The determination of those figures, rather that method
1500 of calculating the going value was as of January 1, 1911 and I took the price which was in existence at that time, which was one dollar per thousand cubic feet, a little over.

Q. It averaged something over a dollar because of this extra ten cents?

A. Yes.

Q. What effect do you think the reduction of ten cents per thousand would have upon the figures of your comparative plant, taking that as a basis?

A. That is a very difficult thing to answer. To use a figure of ten cents less would change the calculation to quite a considerable extent; I wouldn't want to say off-hand what the outcome would be.

Q. By what per cent would you say it would increase the sales as you have stated them in your comparative plant proposition?

A. I am not able to say that it would increase the sales at all, because my judgment in that respect is that there would be very little, at least not much difference between the sales at the dollar rate and the ninety cent rate.

Q. What was the result of the reduction of the rate of gas in St. Louis where you were so familiar with the situation?

A. This year?

Q. Yes and prior years.

A. In this year they made a reduction of the price of illuminating gas at St. Louis and I understand they are very much disappointed in the showing of increased business.

Q. When do you say they made the reduction?

A. On April 1st.

Q. Take the reduction just prior to the last one; how did the sales run?

1501 A. I was in St. Louis from 1903 up to the early part of 1909 and during that time there was no change in the price of gas.

Q Well, you understand, Mr. Baehr, I am asking you generally about St. Louis and the effect of the reduction of the price of gas in St. Louis on sales of gas; whether the sales increased or diminished, and I am speaking generally now referring to a period of say the last ten years?

A. I will try to answer that by stating that is one of the most difficult things that I know of, to state definitely, because in St. Louis during the time I was there there was a tremendous increase in the amount of mileage of mains and in the number of services and meters; not only in St. Louis but also in St. Louis County, the gas they had was supplied from the gas plants in the city of St. Louis. I do not believe I can give you any judgment as to the effect of prices on the sales of gas in St. Louis.

Q. How was it in Minneapolis?

A. I do not know.

Q. Isn't it true, Mr. Baehr, that while a low price of gas is a gain for the consumer, it is also a protection against competition either from new gas companies or electric light appliances?

Objected to on part of complainant as not being cross examination. There is no objection to counsel going into this if they want to make the witness their own witness.

A. I think that is a question involving so many considerations that I wouldn't want to undertake to answer that on so short thought.

Q. Well, in your experience in all these different matters you have spoken about the reduction in price resulted in stimulating
1502 the business of the gas company?

Same objection as last above made.

A. Generally speaking, which I understand, what you desire, the gas business has been increasing from year to year in the different plants with which I have been associated, and I cannot answer what percentage, if any of that growth was due to change in prices.

Q. You will say, however, I suppose, will you not, that there has been a gradual but constant increase in the sales of gas and quite a steady and quite a regular reduction in the prices?

Same objection as last above made.

A. Well, various companies from time to time have made reductions in the price of gas. Of course if you consider gas like natural gas which is sold at a very low price, the consumption of that gas per consumer is greater than the consumption of illuminating gas and that is sold at a very low price.

Q. Now, in a general way what is the difference or what has been the reduction in the general range of the price of gas throughout the country in which you have had your experience in the last ten years?

A. Well, during the time I was at Milwaukee there was no change in the price of gas.

Q. I am speaking now generally, in ten years, the difference between the price now and ten years ago generally?

A. I think the general tendency, considering it, I believe, as you are looking at it, has been to get to dollar gas.

Q. That don't quite answer the question.

A. I know it doesn't, but I am a little at sea, I don't quite understand what you want.

Q. You know about what the general range of prices of gas
1503 was ten years ago; what is it now compared to ten years ago, if you can tell me.

A. I do not believe I can tell you.

Q. Mr. Baehr, as I remember it, the difference between the gross revenue on one hand and operating expenses and taxes on the other for the year 1910, according to Mr. Lea's curved sheet, a blue print of which you have, was in round numbers about $175,000; now you in your computation here and in your exhibit 21 have figured

upon a depreciation fund of ten per cent as I understand you, on the gross revenue, which would be in round numbers $53,000; now that would leave for the year 1910 a net profit to the Des Moines Gas Company of $122,000; now with that figure in mind, a net profit of $122,000, you fixed the present value of the property of the Des Moines Gas Company, as I remember it, and have it on my notes here, on page 17 of your Exhibit 21, at $3,221,166. Are the figures right?

A. That last figure is.

Q. Now your computation and scheme of figuring it, or plan which ever is the better word, of figuring out going value resulted in the figure of $509,795.

A. Yes.

Q. Now subtracting the going value from the present value, as you give it on page 17, would leave, if I had made the correct substraction $2,711,371.

A. Yes.

Q. Now assuming those figures are correct, and the amount shown by Mr. Lea's curved sheet was the net profits, and that the ten per cent was taken out, $122,000 is the net profits, now the $122,000 would be a profit as I figure it of 4.5 per cent, do I have it
1504 right?

A. The percentage is correct.

Q. Now, then, how much would you have to raise the price of gas in order to get a fair return on that valuation?

Objected to on part of complainant as not cross examination.

A. I want first to correct a statement you made in reference to one of my figures. I have not used the depreciation as ten per cent; it is ten cents.

Q. Ten cents I should have said; and that would have amounted to $53,000?

A. For last year, yes.

Q. In round numbers it would be 53,000?

A. Yes.

Q. How much would you have to raise the price of gas in order to produce a fair return on the valuations that you figured out?

Complainant interposes the same objection last made.

A. I wish to state that I cannot answer your question, Mr. Byers, for the reason that I do not claim to be an expert on fair return.

Q. You are an expert in the gas business, and you have as I understood you in your examination in chief, made valuations for bond companies and for people who contemplated investing in gas plants and who contemplated the purchase of gas plants and you made numerous valuations for the owners of gas plants for the purpose of arriving at a valuation?

A. Yes, sir.

Q. I want to put this question to you and I think it is entirely a fair one: If instead of being called upon as you were here in this

particular case to furnish a valuation for this company or
1505 fix a valuation upon its property for the purpose of using in this trial as evidence, you had been called upon by some person who was about to invest his money in the gas plant in Des Moines, and he had employed you to come here to go over this property carefully, examine into every detail with respect to the character of it, quantity and quality and all that sort of thing and fix a value upon it on which you would be willing to advise him to make a purchase, and you had come here and gotten all the information that you did about the physical property and had worked out the valuation just as you have here until you found a total of $3,221,166 just as you have given it here, and then when you come to make up your report you checked over your figures and you found that the actual earnings of this company in this field, equipped as you found it on the first day of January 1911, the actual net earnings of the company was only returning one and one half per cent, or four and one-half per cent, either, on your valuation, would you advise your client to buy the plant?

Objected to on part of complainant as not cross examination, merely argumentative, irrelevant and immaterial.

A. If I had found that the return was only one and one half per cent I certainly would not advise him to purchase the plant.

Q. At the valuation you had found?

A. Yes.

Q. Well, how about the four and a half per cent?

Same objection last above made.

A. When you get into the question of what a man might be willing to take as a return on his money I must state that I am not an expert on a matter of fair return.

Q. You are an expert on values?

A. I think I am.

1506 Q. Let us put it in another way and see what your answer would be. As I remember it, in your explanation and in your definitions at the beginning of your report, among other things, you defined this so-called going value as a created income; now keeping that definition in mind, if after you had made up your figures just as you have, you had found by actual computation that the net earnings of the business of this company would not pay a return over say three per cent or four and a half per cent on your $2,711,371, where would your created income be for your going value?

A. In answer to that question I would say that my judgment of going value rests upon the facts of the net earnings, or rather my best estimate of the net earnings of the going and comparative plants, and in order to form a different judgment I would have to have a set of conditions entirely different than they are here, or were here on January 1st, 1911.

Q. I know, but testing your theory or proposition, what would your going value, your $509,795 be worth to anybody if it didn't

earn anything; what would it be worth to your contemplated purchaser or to a man who is going to invest his money, if it was not earning anything or could not earn anything.

A. The question of the amount of going value in case the property earned nothing and could earn nothing, that would of course affect the going value.

Q. It would wipe it out entirely, wouldn't it?

A. Well, if over a number of years into the future, I mean a considerable number of years, it was known definitely or as surely as anything can be estimated into the future, that a property would have no net earnings, as a practical proposition, the going value would be very small.

1507 Q. The property would simply be worth whatever it would sell for junk—now let me put it in another way and see if we can get any further light on this. If I understand your method now is a scheme that has been worked out here and you put in this going value just as you put in $509,000. worth of apparatus.

A. I added that $509,000 to the capital account as an asset of the company.

Q. You didn't add it to the capital account?

A. I consider it an element of value to the property.

Q. If you added that to the capital account you simply have $509,000 surplus capital; you wouldn't want to figure that into the value of the property for rate making purposes?

A. Perhaps I didn't make myself clear. In estimating the value of this property the amount of $509,795. I have added to the total of the real estate, buildings, mains, etc., and working capital, in order to arrive at my total present or depreciated value of the property.

Q. Well, now if in going through the company's business here you had found among other items of property a surplus of cash of $509,000 would you figure that in here in this valuation for the purpose of this law suit to make rates, if the company had $500,000 odd dollars in cash on hand?

A. That cash is always worth cash.

Q. Yes, but should it be figured in the gas property for manufacturing property?

A. I don't think that exists.

Q. If you had found it you would not have figured that in, would you?

A. Well, that depends on just what that cash was, what it represented.

1508 Q. Well, if it represented undivided profits laying there, simply undivided profits belonging to the stockholders of the company, you would not figure it in as a part of the valuation of the property, would you?

A. I would not considet rhat over and above a fair working capital in arriving at my value of the property, taking into consideration all the other items.

Q. Now, Mr. Baehr, since you put this value $509,795 just as Mr. Lea did, into the value of the property of the company, just as you would a holder down here at the plant, I want to ask you this question: If there was a golder down at the gas plant, no matter what

its size, that was not used in the making of gas at all and was not earning anything for the gas company, and not performing any part of the business of manufacturing gas, you would not put that in would you?

A. If I understand you, you mean that such a holder would not be used or useful in the business.

Q. Oh, it might be useful if somebody wanted to use it; but it is not earning anything; they aren't using it?

A. I don't say I would not consider it, because that holder might be going to be put into use.

Q. What I am trying to get at, Mr. Baehr, just how you get a going value into a property without in some way making it an earning factor in that property; that is, when you are dealing with a gas plant that is in the business of manufacturing gas—I will put another question to you in this way: Assume that six per cent is a fair return upon the property actually used in the business of manufacturing gas in Des Moines; now assume that the net earnings of the Gas Company in Des Moines would furnish a return, produce a
1509 return, of six per cent up in a valuation of $2,000,000 and no more, and the value of the actual physical property now of the company was $2,000,000 and no more, I mean when I say physical property the actual property itself without these additions, could you figure out any going value there?

A. I believe there would be a going value.

Q. What would it be?

A. I can't tell you in dollars.

Q. No, but how would it be valuable to anybody?

A. That affects the question of the rate of return.

Q. That is exactly what I told you. Assuming that the rate of return is a reasonable rate, six per cent on $2,000,000. that that is all this company is earning on that valuation, and that is the value of its physical property, there wouldn't be any going value there, would there?

A. The proposition as you have stated it resolves itself in my mind into the fact that the actual value of the property considered as a whole and considering every element was unchanged, but that the rate of return on the whole property is less than six per cent, as you stated.

Q. Then the value does not depend on the profits at all?

A. In making a valuation of this property the items up to and through the physical equipment and working capital are not based on any propositions of profits, but on what it would cost to reproduce that property.

Q. You can't have a going value without earnings?

A. That depends as I stated a moment ago, if the property according to your best estimate and judgment will not have net earnings over a number of years.

Q. It wouldn't be of any value then, would it?

1510 A. That would reduce the going value to practically nothing.

Q. The truth of the whole business is no one has ever been able

to work out any intelligent basis for fixing going value except upon the basis of early losses?

A. I am not willing to say that.

Q. Who ever had figured it out before this law suit?

A. I think this method of figuring going value is entirely logical and sound.

Q. Going back again, then, to the question that we have been having up for a few minutes, you would not contend to the Master or anybody else that any item ought to go into this total valuation that will not produce revenue, would you?

A. I consider this item of going value as a fair element of value of the property.

Q. You would not claim for a minute to the Master here as an experienced gas engineer and a man of affairs that a single item of property ought to go into this valuation that does not represent a part of the earning property, of the whole property, would you?

A. If I understand you rightly I might answer in this way by saying that this item of going value may be measured by the losses incurred in the development of the business and I will say further that I consider that a fair element of value.

Q. You haven't answered my question. Let us take it this way now and see if we cannot get together: Suppose at some early day in the operation of this present plant or at some time in the past they bought some apparatus, or machinery with a view now of using it in the gas business in Des Moines; they get it down here to the plant and set it up and they found it could not be used here at all,
1511 it is there as a part of the plant, a part of the property, but cannot be used for the purpose of producing gas, and by producing gas producing revenue for the company, you as an experienced gas engineer and witness in this kind of a case would not ask the Master to put that property in at any value?

A. If the management of the company purchasing that apparatus had exercised a reasonable degree of intelligence and knowledge of the business, if they had looked out as well as they could at the time for the interests of the company, I would say that company was entitled to earn on that property.

Q. But I say they cannot use it at all—suppose you get a contemplating purchaser and you are making up a valuation of the property for the purpose of advising the purchase, you would not want your client to pay anything for that apparatus; you wouldn't let him, would you?

A. To start with, I cannot conceive of such a condition existing.

Q. But I want to assume it existed, is not what you would do in that case and isn't that the only rule that has so far been adopted by any court or commission so far as you know in rate making cases, and not by any court as I remember it, even in a rate case, that if in the instance I have cited the company had lost because of this property, and as you say had exercised the best judgment they had, but notwithstanding their good judgment they had suffered some losses, you would measure that, cut by the value of this useless piece of property and you would measure it by the amount of that loss, the money they invested at that time?

A. I presume the amount of that loss would represent what
1512 that particular apparatus you have in mind would cost?

Q. That would be all that company would be entitled to, if anything at all, to have considered as a part of their property?

A. I would not want to answer that without giving it further consideration.

Q. Didn't you in answer here, you did say in one of your answers here, I have the note here, my method is based on early losses. The truth is you did not pursue that method at all, but you accepted the same method Mr. Lea has of taking the difference between the prospective earnings of a comparative plant and your estimate or figures of the earnings of a going plant, and in that way you found a sum here that did not represent anything except the difference between those two figures?

A. To start with, I do not recall using the words you have used; but I believe I said that the going value is sometimes measured by the losses incurred in the development of the business.

The MASTER: What do you mean by that, losses?

A. The losses incurred which may be represented by a deficit in return.

Q. If your going value is represented by early losses as distinguished from created income, then no more should be allowed, I suppose, than just enough to recoup those losses, that would be your idea?

A. I haven't made any investigation into the early losses. I do not believe I can answer that question at the moment.

Q. Let me put it this way, assume a situation like this: here is your gas company in controversy about rates—let me put it in another way; it is conceded by the company and by everybody else involved in the controversy that the gas company in establishing its business suffered a loss of say $100,000 up to the date that the
controversy is being had, and that those were due to the
1513 hazards of the business that they could not control, and had suffered that loss up to the time when the return on their investment was furnishing that fair and reasonable return they ought to have, now that $100,000 measured all that that company should have over and above the physical value in your judgment?

A. If that $100,000 represents the total deficit in net return, that would be a subject which I would give serious consideration in arriving at a judgment of going value.

Q. Assuming that represents exactly the amount of losses and that since the time that the company began to make a fair profit it had not yet got a fair return on its money, would you say it was fair, at least, to not go above the $100,000?

A. I would like a little time to consider that, Mr. Byers.

At this time an adjournment was taken until 1:30 p. m.

1514 1:30 P. M., WEDNESDAY, AUGUST 2, 1911.

WILLIAM BAEHR being continued on cross-examination by Hon. H. W. Byers, testified as follows:

Q. Have you any further suggestion or answer to make with respect to the last question that was put to you Mr. Baehr?

A. Was that the question in regard to the early losses.

Q. Yes.

A. Yes, sir; the method of calculation that I used is not based on the early losses but we reproduce these losses at the present time. That is the early losses were incurred years ago and this method of measuring going value is to take conditions as they are and reproduce the going value at the present time. That is different from the early losses in that respect.

Q. Well why do you speak about early losses at all?

A. You asked me the question.

Q. No, but in your examination in chief?

A. I have forgotten that I spoke about that Mr. Byers.

Q. That is not material now, but at any rate your idea and the idea generally of gas experts in working out this plan you have adopted here or theory is to in that way recoup whatever ea-ly losses the company may have suffered.

A. That is I approached the problem in that way as an engineer.

Q. Well now then suppose you were dealing with a company that had some early losses, that is did business during its existence for less than a fair return upon its money and the difference between a fair return and what it got representing its fair losses and during the later years of its existence it had more than recouped their
1515 losses by increased earnings *earnings* that were above and beyond what would be a reasonable return upon the value of the property, what effect would that have upon going value?

A. The calculation would be based entirely on conditions as they are at the time of the valuation.

Q. Well suppose that was the condition at the time of the valuation. Take the Des Moines Gas Company itself, suppose that an examination of its records from its organization down to the time you were called upon to put a value upon this property for rate making purposes ,ad more than made up all of its losses by its earnings under a rate for gas that wiped out all early losses and gave the company more than a fair return upon the value of the property, what effect would that have had upon your estimate of this so-called going value in this case?

A. I would make the estimate of the going value based on the conditions as I found them at the time of the examination. That is I would try to reproduce the property and the going value in the same way.

Q. That is to say you would work out this going value amount in the same way you did in this case even though the losses whatever they were had been wiped out and more?

A. I would make my calculations in the same way.

Q. Returning again to figures for a few minutes Mr. Baehr on present value as shown in your Exhibit 21, page 17, a six per cent

return upon the present valuation as you fix it $3,221,166 would produce $193,270 as I make it.

A. About that yes.

Q. And assume that the profits of the Des Moines Gas Co., as worked out by this curve sheet as shown in Exhibit 20, Mr.
1516 Lea's report less your depreciation ten cents on a thousand feet of gas 122,000 the increase or difference would be $71,270.00 and I figure that would amount to 13.4 cents a thousand that would have to be added to the dollar rate to furnish six per cent on your valuation. That is about right isn't it?

A. I think that figure is approximately correct.

Q. You set out certain figures on page 144 of your Exhibit 21, purporting to show amount of unaccounted for gas. Is any part of that represented in street lighting?

A. The street lighting as I understand it is taken care of in the sales, that is it is taken care of in the accounted for gas.

Q. You know about the company having a contract with the Welsbach people to furnish gas to them for street lighting purposes?

A. Yes, sir.

Q. What I was wondering was if you knew that in that item of unaccounted for gas any part of the gas that was used in these lights was represented, as I remember it you stated that the unaccounted for gas represented all of the gas sent out, metered out and not accounted for through the consumers' meters, the difference between the two?

A. Also in street lighting.

Q. Well you put that in now.

A. Yes, sir.

Q. That would make your answer more clearly correct than to say that——

A. Yes, I was speaking more generally at that time as to what constitutes unaccounted for gas so as to give a general definition.

Q. When you used the terms you did, the difference
1517 between what was metered out at the plant and what registered by the consumers' meter that would include what went to the Welsbach company wouldn't it?

A. Yes, sir. But this unaccounted for gas takes consideration of the gas used by the lamps.

Q. Now there is another point I don't think is entirely clear in your answer that I think ought to be cleared up to be fair to you. There is a large amount of gas consumption of the amount manufactured down here that goes to Valley Junction. Is that included in any way in your figures in unaccounted for gas.

A. It is in the figures on page 144, but in the going value calculation I have allowed for that portion going to Valley Junction.

Q. Do you have any figures handy there from which you could give us the average monthly or average annual feet that goes to the Welsbach people and the Valley Junction people?

A. I can tell you the sales to Valley Junction in 1910 and they amounted to 6,889,100 cubic feet. Now the amount of gas for street lamps I believe I can give you.

Q. I find here on this sheet you furnished street lighting 8,561,554. Tat I suppose appears in your report there somewhere?

A. I don't believe that shows in my report, but I have information as to that.

Q. Do you find the figures?

A. I have got a figure of sales to public lamps, public street lamps in 1910 of 8,546,498 cubic feet and to private lamps 15056 cubic feet making a total of 8,561,554.

1518 Q. Do you know what is included in these private lamps, what lamps they — and where they are used?

A. No sir; I do not.

COURT: I wish you would give those figures again.

A. Quantity of gas sold in 1910 to public street lamps I have as 8,546,498 and the amount sold to private lamps of 15,056 cubic feet making a total of 8,561,554 cubic feet.

Q. Do you know Mr. Bachr whether in this 8 million is included park lights?

A. I didn't go into the details, I can't tell you that.

Q. I noticed you called it street lights and I wondered if it covered park lights. On page 71 of your report you have meters costing $16,208 that you have given an average age of 29 and one half years. Do you mean by that that these meters of any of them are still in use?

A. There may be some of these meters in use today.

Q. Do you mean that all of them are in use or that there just may be now and then one?

A. I would be unable to say whether these meters were in use or not. There were installed at the end of 1886 all told 1261 meters and whether these particular meters are all in use now or not I am unable to say.

Q. How is it possible to get the average age of meters if you do not know, other than just a forced average which you make yourself?

A. I have made the best estimate of the average age that I could with the information at hand.

Q. So that average age as a matter of fact is based to some extent on your judgment independent of any existing facts in the

1519 as company's property?

A. This is based on the fact as I assume it to be a fact, that there were 1261 meters installed at that time.

Q. But not upon the fact that 1260 are still in use or any of them so far as you know?

A. I can't say that these 1261 meters are in use today.

Q. If the question was to get the accurate average age of 1260 meters installed in 1896, you would have to know wouldn't you just what years the meters were in use in order to get at the correct average age of them.

A. I think this average age I have assigned is perfectly accurate. The meters as you know are brought into the shop and repaired and used over again.

Q. Let me put it in another way. If there was not a single one

of them in use at the time you made your computation would it be accurate?

A. There were at that time the number of meters which I used and the record that I have gives the number of meters installed during each year since and the total is the amount of meters in use at the end of the year or rather on January 1, 1911. I assumed then that it is a fact as given to me by the company that there are 19,903 in use on January 1, 1911.

Q. That were in use for how long a time?

A. And I have gotten at the age in just the way I have shown and that is my best judgment of the method of getting at them.

Q. Were you informed that any of these meters or all of them had been in use that long?

A. I assumed that the meters would be treated as they are treated in any gas company, brought in repaired and sent out again.

1520 Q. Now I will put my former question to you because we don't seem to be getting anywhere on this proposition. If as a matter of fact there was not a single one of these meters still in use at the time these figures were given to you, your average age would not be very accurate would it?

A. In that case if these had been replaced by new meters the average age would not be as great as I have figured it and the present value would be higher.

Q. But that is not quite an answer. Of course to get the average age of a given number of meters by years, necessarily you must know must you not how many years each meter is in use and how many were still in use at the time you made your computation in order to get the average yearly life and existence accurately.

A. I think this method is perfectly accurate. I am afraid I have not made myself clear to you. When a meter is brought in you understand it is repaired and put in shape and sent out again. But if I understand you correctly you would assume that a meter that was bought we will say in 1864 has disappeared a long time ago.

Q. No, I have just a homely notion in my mind and that is the reason I am confused about this proposition, that where you have found the average age of a given number of articles, some one of them at least and a considerable number of them must at least be older than the average age.

A. That is undoubtedly true.

Q. Now if that is undoubtedly true, then it follows that you must have the time that each meter was in use and you must know in making up a computation of this kind how many are still in use in order to get anything like an accurate average age, else I

1521 don't know what you are trying to show by that item at all.

A. Well in my judgment this method is accurate in regard to gas meters.

Q. Does it mean then that some of these meters were in use 29 and one half years, is that what it means, I mean all of them?

A. It may be that there are some meters in Des Moines that are 29 and one half years old.

Q. This computation, by this you are referring to most all of them, if you are simply giving the average some of them were in a long time longer?

A. I will try to make that a little clearer. If some of these meters have disappeared there are new ones have taken their place.

Q. I know, but the other new ones are not in as long as the old ones?

A. That would decrease the average age and make the present value higher than I have assumed it in my report.

Q. I am not worrying about value now, it is this base figure here I am worrying about how that 29 and one half years, why we accept that as the average of the meters represented by that item?

A. I think that is as accurate as I can determine it and I think it is safe.

Q. When it is necessary to relay or repair mains or services un-*under* paving do you know how the cost of tearing up and relaying paving is taken care of,

A. I can speak from knowledge of what has been the custom, I cannot speak of what is the book record of the Des Moines Gas Co. in that respect.

1522 Q. Well generally if you can't as to this particular company?

A. Generally when a main which is under pavement is relaid or repaired, naturally there has to be cuts made through the pavement and that would be a repair account and the cost of that paving would go to repairs. If a service is repaired and a hole cut for that purpose through the pavement that would go into repair account.

Q. And finally get into operating expenses?

A. Yes, sir.

Q. In making up your figures of your comparative plant, do you assume that fixtures and other gas appliances are in the houses at the beginning of the making up of your comparative plant?

A. Yes, I assume the conditions here on January 1st, 1911, are just as they were on tha- date.

Q. Including house piping?

A. Yes, sir.

Q. And you assu*j*ed too at that time that the gas users in Des Moines had arrived at the same state of education on the 1st of January?

A. Yes, sir.

Q. Then if that be true just why did you take seven years to make your comparative plant cross or intersect the dividing line of the going plant?

A. Because I estimate based on my experience and judgment that that is the length of time it would take to reproduce this property and business where a man who is putting up the money to do this work would naturally desire to have it accomplished so as to get a return as soon as he could.

1523 Q. That is all in the field of speculation, judgment and opinion is it not? That is to say you might take a seven year period and thing that was the necessary period in which to

build up this business and another engineer might take a ten year period and still another one take a 26 year period?

A. No, I do not consider that that is in the realm of speculation. It is in the realm of judgment and estimate and if two experienced gas engineers were discussing this problem they would not be very far apart on the amount of work that could be accomplished each year.

Q. Well but they have been as far apart as seven years and twenty six haven't they?

A. I don't recall an instance of a variation of that amount, no sir.

Q. Well you do recall some very great variations?

A. In estimates of the amount of work done?

Q. The number of years now that it would be necessary in pursuing this hypothetical plant or comparative plant proposition for the purpose of ascertaining values, that is all a matter of opinion and judgment?

A. It is a matter of judgment based on experience.

Q. And I think you said before dinner you had used this same method you use here before?

A. Yes, sir.

Q. When did you first use it?

A. I used this method on two occasions prior to using it in the case that is now in court.

Q. I know, but when was the first time you used it, just as to the year, I don't care about the place?

A. In 1911.

Q. This same year?

1524 A. Yes, sir.

Q. I think your comparative plant begins to earn some money first in the third year, is it not, 1913 it begins?

A. I estimated gas would be turned on January 1, 1913 and that the earnings would start at that time.

Q. Why wouldn't you reach the average consumption of the going plant at that time if you have got the services all in and the people were all educated to the use and the fixtures were all there, why does it take any time to work up to this output of the going plant.

A. Because the reasonable amount of time required to lay all the mains and all the services is such that only the mains and services in District No. 1 are completed, at the end of the year 1912, in District No. 2 at the end of the year 1913 and in District No. 3 at the end of the year 1914. Now you must remember that it is assumed that the gas appliances, house piping and fixtures in the residences and in the buildings are in just as they were here on January 1, 1911, but it is estimated that during the years 1911 and 1912, no gas is turned on.

Q. Why not?

A. Well because you are just starting to build the comparative plant.

Q. I know, but why do you take all that time to build it if the demand is here, it is all prepared, the houses all ready and people

all ready to use it and the demand for gas is here why do you fool along for three years to commence serving it?

A. I do not estimate there would be any time lost as you suggested but I estimated that the rate of construction would be carried on as fast as it could be.

1525 Q. Do you also take into consideration, or was it part of your plan than while this comparative plant was being constructed and put into operation there would be competition in the gas business?

A. No, sir; I base my proposition on the assumption that I think it is most clearly understood if you assume a community identical with this one in every respect having all fixtures in the buildings and the people educated to the use of gas and then assume that there is no gas plant in that city you have got to build it, reproduce it and then start to develop business.

Q. Why develop business, the business is there?

A. From January 1, 1911, until gas is actually turned on in order to be logical it is necessary to assume that the people eat in the meantime and have light of some kind in the meantime but it would not be gas, naturally they would not eat gas but use it to cook with.

Q. Naturally have light or go to bed at dusk?

A. Yes, sir.

Q. In that connection Mr. Baehr why do you wait the other four years, why don't you take gas right away when you have got your plant finished and you have touched the button and started the machinery, why is it necessary to have a period of four years more in order to work out this scheme.

A. Because during two years that gas is not turned on it is necessary and people as I say have other means of cooking and lighting and when gas is turned on they would not immediately discontinue the use of the other appliances that they have put in, it is not logical to assume that they would do so and it is necessary to overcome the inertia of people.

1526 Q. I have had your testimony looked up Mr. Baehr, about your statement in chief and the basis you give for going value, it is found on page 1343 and you say this, and I only refer to it because it completes some of the questions I put to you about early losses and will bring to your attention just what you did say about it. In my judgment the method which lends itself to the most accurate computation and upon which I prefer to base my judgment of the going value of this plant is to measure the going value by the loss occurring during the period of development. Now the period of development of the Des Moines gas company of course was the early years of its existence, that is what you meant didn't you?

A. I see I did not make myself sufficiently clear. What I meant to say was that I was reproducing going value as well as the physical property.

Q. Well you did say that later?

A. And that this period of development naturally would have to take cognizance of conditions as they were the 1st of January 1911.

Q. Now you said this further which bears out exactly the notion I had in my mind in the questions. You say, in the instance of the Des Moines company I am measuring this loss by the loss incurred by the Des Moines company in developing its business to its stage and to the revenue as of January 1, 1911. Now applying that statement as broad as it is there to the actual plant itself and repeating one of my former questions to you if all those losses sustained by this company prior to and up to January 1, 1911, had been more than recouped by earnings of the company then
1527 on your own theory there would not be, could not be any just amounts for going value could there?

A. I believe the allowance for going value should be made.

Q. Just the same. Well now let's see. That to me sounds ridiculous, it may not be. Now this method of estimating going value is based on the idea of reproducing the entire physical equipment and the business of the Des Moines company in a given length of time. Now let us take the Des Moines Gas Co., and suppose that upon an actual demonstration it could be shown that for every dollar of money or property or time the Des Moines Gas Company had devoted to the business of supplying gas to the consumers the company had received from the consuming public more than a reasonable return so that on the 1st day of January 1911 there were no unremunerated losses upon the part of the gas company at all, it had already got its money all back and more and all it was entitled to. Would you still figure going value the same way?

A. You are asking me in that respect to assume a condition which I do not claim to be expert in, namely, the condition of fair return.

Q. You are to assume what I have stated in the question to be true and then give me an answer.

A. The only way I can approach a problem of this kind is as an engineer would approach it and if I were asked to value a property I would do so in that way.

Q. Just for a minute if you will get away from the engineering proposition, leave that out of the consideration entirely now, we are dealing with going value, that is not an engineering proposition at all. Now dealing alone with this question of going value it can have no other basis in your mind can it than simply making
1528 the gas company and its owners whole with respect to its investments, could not be any other theory upon which this item could be considered could there?

A. I think Mr. Byers that it is perfectly clear to me that in order to get as a developed business, that it costs money to get that business and as an engineer I would measure it in the way that I have measured it and I believe that that is an engineering problem.

Q. That is all right enough, but if that has been paid back they have that money, that has been made whole, made good then what about it?

A. I think going value exists just the same.

Q. The people have to pay it over again.

A. I am not saying the people have to pay it over again, but I am saying going value is there.

Q. Would not be there unless it earned something and if it earned something it has got to get that from the consumers.

A. It is part of the total value of the company.

Q. The consumers have to pay a return on that in order for it to have any value?

A. Well I consider it as a part of the total equipment of the company and business.

Q. Isn't this the position you finally *you* get yourself into that you do not deal at all with early losses, that early losses have absolutely nothing to do with your plan of figuring going value, your going value rests entirely upon a comparative set of figures the one set representing this going plant and the other a prospective or comparative plant to be constructed over a period of seven years, has nothing to do with the question of losses or whether they
1529 have been recouped or not.

A. The going value calculation as I have made it rests primarily on the fact that the company is a going concern and is doing business and is enjoying a revenue.

Q. How much of a revenue?

A. The revenue of the Des Moines Gas Company.

COURT: Let me see if I understand you. As I get your idea it is this. Here are two cities exactly alike, one has a gas plant like the one here and the other has none, hasn't any gas plant at all and the buyer has a choice between buying this plant here, a choice between taking one and building another one?

A. That is it.

COURT: Now then what you claim going value here is the difference between the present worth of the earning power of the plant as going and the one that you have got to reproduce, is that it?

A. That is it.

COURT: And without regard to whether the plant here in Des Moines is earning anything or not, that is net earnings?

A. I am using earnings of the company as they are.

Q. Then that brings you back to the proposition that losses cut no figure in it at all?

A. Well I can't conceive of any business, any company enjoying a business and having a connected business that has not cost money.

Q. How many dollars of losses is there in your $509,000?

A. That is my judgment of the fair amount to allow——

Q. The question is, how much do you allow for losses?

A. I don't know as I can answer that question.

1530 Q. Now Mr. Baehr have you got the three blue prints here?

A. Yes, sir.

Q. I wish you would let me have them please. Do you know who made them?

A. No, sir.

Q. Do you remember when they were delivered to you?

A. I wish to modify that former answer. I think they were made by some of the people connected either with the Des Moines Gas Company or the Unider Gas Improvement Company. They were delivered to me some time possibly two or three months ago, might be slightly longer.

Q. Do you have the detailed statement of gas sold from 1904 to 1910?

A. Yes, sir.

Q. I wish you would produce that. You have it there?

A. Yes, sir.

Q. Do you know who made that?

A. No, sir; I do not except I presume it was made by somebody in the company.

Q. Furnished to you by somebody for the company?

A. Yes, sir.

Q. Do you have the history of the price of gas as it was furnished to you?

A. Yes, sir.

Q. I wish you would let us have that. You have it there?

A. Yes, sir.

Q. Who furnished that to you?

A. The Des Moines Gas Co.

Q. Now do you have the records of mains laid by sizes during the years 1888 to 1910?

1531 A. Yes, I believe I have that.

Q. Please produce that?

A. All right.

Q. Cost of meters, do you have a statement somebody furnished to you of the cost of meters?

A. It was that same paper we were duscussing I believe yesterday.

Q. Is that the one you read in the record?

A. Yes, sir.

Q. Will you have the reporter mark there and you state what they are?

A. Defendant's Exhibit No. 9 is a blue print entitled Des Moines Gas Company Historical Development Curves No. 1. Defendant's Exhibit No. 10 is a blue print entitled Des Moines Gas Company Historical Development Curves hypothetical plant. In connection with this Exhibit No. 10 I wish to state there are some red inck lines which were made in my office.

Q. Perhaps it might be well unless it does show what they are for the purpose in making them it might be well enough to state just what the red ink changes represent?

A. These red lines there indicate the development as I estimated it. My report contains the figures, and that is just a picture of the figures. Defendant's Exhibit No. 11 is a blue print entitled Des Moines Gas Company Historical Development curves No. 2. Defendant's Exhibit No. 12 is a statement entitled Des Moines Gas Company, detailed statement of gas sold in cubic feet December 31, 1904 to December 31, 1910. Defendant"s Exhibit No. 13 is a statement consisting of four sheets entitled Des Moines Gas Company record of mains laid.

Q. Does that Exhibit show in addition to this record of mains laid the sizes?

1532 A. Defendant's Exhibit No. 13 shows the number of feet and sizes by years. Defendant's Exhibits No. 14 is a statement entitled Des Moines Gas Company, history of prices of gas. De-

fendants' Exhibits Nos. 15 and 16 are statements entitled Des Moines Gas Company statement of profit and loss.

Mr BYERS: As a part of the cross examination of the witness Baehr and for the purpose of assisting in the examination and consideration of his testimony and his exhibit 21, defendant offers Defendant's exhibits from 8 to 16, inclusive.

Q. Now just a few general questions. If you were called upon to construct a new plant to serve this field here, just as it was on the 1st day of January 1911, would you construct a plant just like the one that is here?

A. I think the present plant is efficient and if a man had——

Q. That is not answering at all.

Mr. GUERNSEY: He has not finished his answer.

Q. Of course I know what the explanation about that will be, but I just want to know of that was all there was to it, if you were called upon to construct for some client or was going to do it for yourself would you put in just such a plant as there is down here?

A. It might not be like that plant in every particular, but the important features are modern and satisfactory and I would use them.

Q. Now you know I didn't *you ask them* anything about what features or anything of the kind, simply wanted yes or no, whether that is the kind of plant you would construct?

A. Yes, sir.

Q. Now did you give any consideration in your report or in arriving at the values stated in your report to the original cost
1533 of construction of this physical property?

A. In arriving at my judgment as to the value I based it partly on construction cost not entirely, but based it probably mostly on experience.

Q. You considered that item to some extent, much or little?

A. I consider- it. yes.

Q. How about the amount expended in permanent improvements, Did you pay any attention to that in arriving at your value?

A. The only data I secured from the company -as the construction cost of parts not of the total.

Q. You didn't quite answer my question. I don't like to limit as fair a witness as you are if I can help it, but what I want to know *there* is just simply whether you considered the amount expended in permanent improvements by this company in fixing your valuation.

*Q*A. Will you kindly advise me if you mean the permanent improvements as it is on their books, the total of that amount?

Q. I mean just as they expended the money whether you considered that at all.

A. Only in a very general way.

Q. Did you give any consideration whatever to the amount and market value of the stock of the company?

A. I considered that in a very general way.

Q. Were you furnished with the amount of stock and its market value by somebody?

A. No, sir.

Q. Did you know anything about that aside from the information that might be furnished you by the company?

A. I have seen statements in such books as Brown's Directory of American Gas Companys which gives the——

1534 Q. That don't give actual value?

A. No it just gives amount of stock and bonds.

Q. Did you give any consideration or does your report show in any way that the master or counsel can determine how much if any importance you gave to the probable earning capacity of this property under the ordinance that is involved in this suit?

A. I did not consider that.

Q. I believe you said you did consider the operating expense quite an important item.

A. Yes, sir.

Q. Did you give any consideration at all in fixing your values to the cost of the present plant to the present company?

A. Meaning by that the purchase price?

Q. The cost price to this company, the present company was organized in 1906.

A. I did not look that up.

Q. And no one furnished you any information about it?

A. No, sir.

Q. Did you give any consideration and if so where can the details be found in your report covering the dividends earned in the past and paid to stockholders?

A. I did not consider that.

Q. Or surplus earnings still in the hands of the company and which has not been distributed to the stockholders?

A. I didn't consider that.

Q. Or surplus earned by the company and carried into capital?

A. I don't believe I can answer that question.

Q. Well did you give any consideration to anything of that kind aside from $150,000 you say you found the working capital?

A. This is working capital?

1535 Q. We are talking about capital stock now, not working capital.

A. I see. No.

Q. You have already stated that you do not pretend to know anything about what would be the reasonable return upon property here in Des Moines so of course you have not given that any consideration in arriving at your valuation?

A. I have not.

Q. I mean the reasonable return upon the value of the property used by the gas company in its business here in Des Moines. You don't pretend to know what that would be?

A. I do not.

Q. And didn't give it any consideration? Now I notice in a sort of an itemized statement here of organization expenses an item of $5000 for franchise. I don't quite understand that?

A. By that I mean the legitimate expenses in securing a franchise.

Q. What is the nature of tho-e expenditures?

A. Services of attorneys and hotel expenses and traveling expenses of men necessary to come here to lo-k after that.

Q. You regard it as necessary then to ha-e a franchise do you?

A. I assumed that a company that want-d to do business in the city of Des Moines would have to have a franchise.

Q. And how long a franchise did you consider in fixing the probable expense in getting it for $5000?

A. I made no detail of that account whatever. I made no detailed estimate of that.

Q. Would it make any difference in the value of the property whether the company had a twenty five year franchise or a perpetual franchise, would that make any difference in the value of the property as a going concern?

A. It would not change my valuation in any respect.

1536 Q. Would not re-uce it in any way if it did not have any franchise?

A. It would not change it no sir.

Q. You stated that you did give some consideration to the original cost of the construction. To what extent did you cover the original cost of construction?

A. I mean by that the bulk value of the plant.

Q. Did you have a statement of the original cost of the property of all buildings and apparatus?

A. No.

Q. Machinery and tools, monkey wrenches, wheelbarrows and so on.

—. No, sir.

Q. How much of it did you have any information about the original cost?

A. I believe I have enumerated the items that I got the cost of such as main pipe, fittings, specials, services, store room expenses and such items.

Q. Is that all now that you have information with respect to?

A. That is not all but I enumerated everything I had I believe yesterday.

Q. Have you furnished me a memorandum of all these items you have just mentioned that you had?

A. I have not furnished you all the memorandum no.

Q. I mean with respect to original cost?

A. No, I have not.

Q. What do you have a memorandum showing the original cost of, these buildings?

A. No.

Q. Any part of them?

A. No.

1537 Q. Of the iron?

A. No.

Q. Any part of it?

A. No.

Q. Of the services?

A. I have got a record of the actual cost of services laid.

Q. I wish you would produce that.

A. Yes, sir. Defendants' exhibit No. 17, is a sheet headed cost of services.

Q. And that is the sheet that you used in making up this report and fixing the values of the services?

A. No, sir; I simply studied that sheet.

Q. Let me put it in another way. It is the sheet you used——

Mr. GUERNSEY: I submit you ought to allow the witness to finish his answer?

A. I used this sheet merely as one factor in arriving at my estimate in the cost of services in Des Moines.

Q. That sheet is one of the things that you used to aid you in arriving finally at the valuation you fixed upon services.

A. Yes, sir.

Q. Did you have any memorandum of any kind purporting — the original cost of generators, holders, or anything of that kind?

A. No, sir.

Q. Any of the apparatus?

A. No, sir.

Q. And meters?

A. The only data that I had in the form of memoranda concerning meters is the one already read into the record.

Q. Now Mr. Baehr I would like to have Exhibit 8 for a few minutes for further examination, tha- is the pamphlet study
1538 of life in years.

A. I think I would like to have my attorneys say what to do in that respect.

Mr. GUERNSEY: We have no objections. I don't know whether Mr. Baehr understands the situation, this is his personal property, I don't know whether he wants to retain these or not, if they are offered in evidence, I think they ought to be copied.

COURT: Do you want to retain these?

A. I would like to as they are part of my material on which I base my report.

COURT: I was going to suggest that the reporter make copies of all of them and then you compare them and see they are right and then Mr. Baehr can have the originals.

Mr. BYERS: I would like before the re-examination is begun, I would like to recall Mr. Lea for a moment before Mr. Baehr is re-examined or excused.

1539 HENRY I. LEA being recalled for further cross examination by Hon. H. W. Byers, testified as follows.

Q. I wanted to know if you were furnished with a copy of what the reporter has marked Defendants' Exhibit No. 8 and what has been called by Mr. Baehr a study in life and age?

A. I believe I was furnished with a copy of this same thing, but I have never read it.

Q. Can you tell us about when the copy was furnished to you?
A. No.
Q. Was it before or after you completed your report?
A. It was before I completed the report.
Q. And who furnished it to you, do you remember?
A. I believe Mr. Klumpp did.
Q. Mr. Klumpp?
A. I think so.

Redirect examination by N. T. GUERNSEY, Esq.:

Q. How did he come to furnish it to you if you can tell us?
A. Mr. Klumpp had been working out a lot of figures on the different rates of depreciation on some assumed values. I don't know where these values were obtained nor what they were, but he was working out for his own information as I understood it some studies to see what the different rates compounded annually on different schemes would result in and as an abstract study I was naturally interested in the thing and asked him if he would not give me a copy of it. He said he would. He gave it to me, but I have never yet read it.

COURT: Didn't use it in yours?

1540 A. I used three pages from it in my report. I glanced through it and saw a table there of composite age of services and meters were in that book, those three pages I had copied and the balance of it I have not used in any sense.

Q. Referring to pages 10, 11 and 12, of your report, Exhibit 20, are those the three pages you have just referred to?
A. They are.
COURT: While Mr. Lea is on the witness stand I would like to ask him a question. Can you figure the cost per foot of relaying the pavement or refinishing pavement over mains?
A. Can I figure it, yes.
COURT: And for services?
A. Yes, sir. I have that already worked out in my room at the hotel and I can get it not if you wish or in the morning.

Mr. BYERS: I want the record clear, Mr. Lea is excused for the time being, but we will recall him under the conditions stated the other day.

Witness excused.

1541 WILLIAM A. BAEHR continued on cross examination by Hon. H. W. Byers, testified as follows:

Q. You stated early in your examination in chief, perhaps in your cross examination that when you were out here in January you were looming this plant over and made a sort of an approximate valuation of the whole plant. What was that valuation?
A. The amount of it?
Q. Yes.
A. My recollection is that the total reproduction new was something in excess of $4,000,000.

Q. And about what time in January was that?

A. I believe I stated I was here on January first and second.

Q. And was that the time that you put this valuation on the property?

A. Yes, sir.

Q. And did you state that to the gas company's managers about that time?

A. I believe I did.

Q. And Mr. Haines, did you furnish him your estimate at that time?

A. Yes, sir.

Q. Now how do you understand this property is assessed for taxation?

A. I can't tell you what the method of assessment is, except that the rate for 1910 was 90 mills on 25 per cent valuation.

Q. I know, but were you not advised that in this state manufacturing plants of this character are not assessed like other property?

1542 A. I will try to answer that in this way that the only advice I had was that the tax rate was as I have stated and that in addition to that there is two per cent tax on gross income and then of course the federal corporation tax.

Q. That is not what I mean.

A. That is all I know.

Q. In this state the method ordinarily is that real estate is assessed by itself independently and personal property is assessed separately, moneys and credits are assessed separately and as to practically everything except manufacturing property but there is no separate assessment on manufacturing properties and that assessment is made on the value of the whole property as a completed plant. Did you know that?

A. I did not. I took the taxes as they were paid, the amount.

Q. Your computation proceeds on the theory that all property whether it is worked up into the finished product or not, whether it is a machine or real estate or what it is it was assessed at 90 mills on the taxable value, assessable value.

A. The only way I use the tax proposition at all was to estimate the assessment and then take the rate plus the two per cent income and federal tax.

Q. If it should turn out the Des Moines Gas Company were not subject to assessment at all upon any of its property except after it is in the completed plant and is part of the completed plant, and then is only chargeable with taxes on the plant as completed and operating, would that make any difference with the method in which you figure out the taxes if you had known that?

A. I don't think it would because I used the rate of taxation that I was told was being paid.

1543 Q. I know, but you have charged up taxes on material and taxes on capital and taxes on idle money and taxes all along the line haven't you?

A. I have added taxes to the construction account according to the rate of two and one fourth per cent on full valuation.

COURT: On the amount of work done per year?

Q. On the amount of work done during the year, but on the assumption of taxes, that the rate of construction followed a straight line and therefore for the current year only half of that amount. So that if it should turn out that money invested in a manufacturing plant was not accessible or taxable at all, but that it was the plant itself after finished, upon which the taxes were levied, your method of figuring taxes would be altogether wrong wouldn't it?

A. Well, I don't know whether it would or not.

Q. Take your so called comparative plant you have got a lot of taxes in there the first three years haven't you before you get any plant finished.

A. In the comparative plant, I will find that exactly, in the comparative plant during the years 1911 and 1912, there are no taxes charged to operation.

Q. No, but are there any at all charged to anything? Of course you haven't any charged to operation because you were not operating?

A. There are taxes chargeable to the capital account during those years.

Q. That is true all the way through the whole period, taxes charged up regularly on all of these items according to the value of the separate items as you found it?

A. I didn't compute them separately on each item, but the total of my computation is shown in my report.

1544 Q. You need a percentage method to figure it in the total?

A. Yes, sir.

Mr. BYERS: That will be all the examination now, subject to recall.

Redirect examination by N. T. GUERNSEY, Esq.:

Q. Referring to this January valuation that you speak of. Have you in mind the affidavit that was made by you in connection with the application for temporary injunction or restraining order in this case?

A. That was what was in my mind, yes, sir.

Q. That is what you refer to. How much time were you allowed to look the thing over and make your estimate?

A. I was allowed very little time. It was a very hurried job. I was here two days all told.

Q. Did that valuation give what was then your best judgment taking into account the time you had to go into it and examine the plant?

A. It did.

Q. Now one other matter here that is not in order, but before I forget it. You were asked something about contractors' profits on holders and generators and things like that. I wish you would state, because I don't think your testimony is very clear on that,

whether you have added anything to apparatus, holders and generators and things of that character in addition to the price which the person who is supplying them would in your judgment charge.

Objected to as incompetent, immaterial and not re-examina-
1545 tion.

A. I did not.

Q. Are these things such as I have described ordinarily built by the gas company or ordinarily constructed by somebody else?

A. They are usually purchased by the gas company and erected by the company or party selling them.

Q. In other words they are bought set up in place?

A. Usually.

Q. And for a lump price?

A. Yes, sir.

Q. And in estimating these matters have you taken what you believe would be a fair lump price for them as they are ordinarily bought?

Objected to as incompetent, immaterial and a mere repetition.

A. I have.

Q. And to such prices have you added anything on account of contractors' profits?

A. I have not.

Q. It was this contractors' profit that the man who manufactures and sells these things makes that you said you could not compute and did not compute but was involved of course in their cost.

A. Yes, sir.

Q. Now then Mr. Baehr with reference to this Exhibit 8, will you please state just how you came to get it and what use if any you have made of it?

Mr. BYERS: That has all been gone over.

Mr. GUERNSEY: Hardly by me, has it, with this witness?

Mr. BYERS: Perhaps not.

A. I saw it in the possession I believe of Mr. Klumpp and I understood that it contained among other things studies on
1546 methods of depreciation and among other things a list of the meters installed each year from 1886 up to and including the year 1910. This particular statement of meters installed during these years I wanted and I asked for the book or pamphlet for that reason and it was given to me.

Q. I see on page 31 and page 32 there are some figures written in ink. Do you know when they were put there and by whom?

A. I inserted those ink figures.

Q. Now I wish you would tell the Master fully what if any use you made of this Exhibit 8 in connection with the preparation of your report, excepting as to this matter of age of meters which you have referred to.

A. I didn't make use of the report in relation to the age of meters. All I did was to take out of it the number of meters installed during the years 1886 up to and including the year 1910

and that statement did not take into consideration all the meters installed during 1910 and I made the ink corrections. Otherwise I made no use whatever of that report, merely glanced at it and am frank to say I don't know what it contains.

Q. You were asked by Mr. Byers whether if the plant had earned enough to reimburse itself for the original expenditure on account of the factor which we call going value, whether there would be any going value. Now I want to ask you if the plant had earned enough to reimburse itself for the cost of real estate would you say the real estate had no value or would you say it affected the value of the real estate?

Objected to as incompetent, as well as ridiculous.

A. Not in any way.

Q. In other words Mr. Baehr will you state whether to your mind going value or that factor or what real estate or any
1547 other factor is worth today is affected by whether or not the company *the company* has been reimbursed for it.

Objected to as incompetent, immaterial and not re-examination.

A. Not in the slightest.

COURT: I will state and see if I am wrong as to what I understand this witness. I understood this witness that this going value is estimated upon the difference between the plant as it now exists or the present value of the difference and one that would be reproduced taking the time necessary to reproduce it covering seven years. That is the way I understand this witness. Whether that is properly speaking going value is another question. Your theory as I understand it is that you are entitled to have added to the reproduction cost this amount?

Q. In your valuation Mr. Baehr, if I understand you correctly you have assumed to measure the going value by what you assume to be the cost of reproducing it?

A. I have.

Q. And you have ascertained that cost of reproducing it by comparing the net returns from the going plant with the net returns from the hypothetical plant during the period of reproducing the business and taking their present worth.

Mr. BYERS: My only objection to that is having counsel state the witness' position and then have the witness assent to it.

A. I have.

Q. In order to make this entirely clear will you please state whether in measuring going value by your method you have taken into account any of the losses which the Des Moines company, the existing company may have incurred in its early history or
1548 prior to this time in building up its business or as Judge Carr suggests very properly in addition to that do you confine your losses on account of operation, do you take into account those which will ensue hereafter in reproducing the present earning capacity?

A. I did not take the early losses into consideration, but approached this problem as an engineer and confined myself to the difference in estimated earnings of the going and comparative plans as indicated, measuring cost of reproducing going value in that way.

Q. Now to digress for a moment, I am not sure whether you testified on your direct examination as to what in your judgment was the proper amount to charge against the operating for depreciation and if not will you state what it is?

A. I believe a fair and a reasonable charge in the case of the Des Moines company is a charge which is computed on the basis of ten cents per thousand cubic feet of gas sold per year.

COURT: I don't get that. I wish you would explain more fully what you mean by that.

A. You don't care for me to go into the entire explanation again how I arrived at that.

COURT: No, just what you mean.

A. Well the Des Moines gas company in the year 1910 sold in Des Moines 525,101,954 cubic feet of gas. Now to determine a proper charge in my judgment for the amount of money to set aside during the year 1910 for depreciation I would reduce that to thousands of cubic feet, namely, 525,101 and then the depreciation would be $52,510.19½.

COURT: That is the money you would want to put at interest for depreciation?

1549 A. Yes, sir; in the year 1910.

Q. Now to indicate perhaps why you do it in that way, I call your attention to Exhibit 16 and ask you to state to the Master whether in the gas business it is customary to figure all of these costs per thousand cubic feet?

Objected to as incompetent and immaterial.

A. It is usual and customary to reduce these matters to per thousand feet of gas.

Q. For instance you have perhaps thirty or forty items there?

A. Yes, sir.

Q. That go into the operating cost here?

A. Yes, sir.

Q. And each one is treated that way?

—. It is.

Q. What do they call this in the business?

A. Usually called per M's.

Q. Or pers.

A. Or pers.

COURT: That means one tenth of the amount of gas goes for depreciation?

A. In a case your honor where the gas is sold at a price of $1.00 per thousand, it would be one tenth. In a case where it is sold for $1.10 per thousand the charge would be ten cents but it would be one eleventh.

COURT: That is without regard to the price of gas?

A. Yes, that is without regard to the price of gas.

Q. Now returning to going value for a little you were asked on your cross examination if the percentage of increase in the business which you estimated for the next four years was not lower that for the immediate preceding four years and I believe you said
1550 that it was.

A. Yes, sir.

Q. If you had made this estimate of the gas to be sold during the period of reproducing the income higher, how would that have affected the result in going value?

A. You are referring now to the time of the development of the going plant?

Q. Well it don't make any difference because both plants must get together.

A. That would result in a somewhat increased going value.

Q. Your attention was also called to the fact and you were asked to make a computation showing that the numercial average of the per cents of increase for four years in the hypothetical plant I believe was 68.92.

Mr. BYERS: The comparative plant in this case?

Mr. GUERNSEY: I would as soon call it that, I mean the same thing. Now if you had assumed that this business had been reproduced less rapidly how would that have affected the ultimate result of your going calculations.

A. That would have resulted in a material increase in the going value.

Q. Now I wish you would turn to your report and tell us how many meters there are installed and using gas in your assumption in the first year?

A. In the year 1911 it is estimated that no——

Q. I mean the first year that you begin to operate?

A. In the year 1913 which is the first year of operation it is estimated that 80 per cent of the meters in District No. 1 only would be installed and 30 per cent of the meters in District No. — on the average and none in District No. 3.

1551 Q. That is in the first year 1913?

A. Yes, that is the average figure as of July 1st.

Q. Can you tell me in meters how many that would be?

A. I would have to figure that.

Q. You can do it in a moment can't you?

A. Yes, sir.

Q. That means in District No. 1, about 7600 meters and in District No. 2, 1870 meters and in District No. 3 none, this being the average number of meters in use in these districts on July 1st of the year 1913.

Q. That was 7600 and 1800?

A. 1870 or a total of 9470. That is not accurate to a decimal.

Q. For the next year where you have such a big increase in percentage, how many additional meters are added?

A. The next year in District No. 1, that is in 1914, it is estimated

that 100 per cent of the meters would be in use or 9501 an increase over the preceding year of 1901 meters. In District No. 2, the number of meters would be about 5000 or an increase of 3130 and in District No. 3, about 2076 where there were none the year before making a total increase of 7100 meters approximately.

Q. And during this same period tell us whether you assumed that the number of meters of the going plant would increase in the same ratio?

A. I certainly assumed that the going plant would increase from year to year the number of meters.

Q. What I want to know is whether it would practically double in a year.

A. Not at all. The increase in the going plant would be very small compared to this.

1552 Q. You were asked some questions on your cross examination which assumed that the income or the net revenue of the going plant last year was $175,000 without taking out depreciations and about 122 or '3 with depreciations out and also included some estimates as to the computations as to what return this would afford on your valuation and was asked this in connection with your determination of going value. Now I wish you would tell the Master what income you assumed to reproduce in measuring this going value?

A. The actual income of the Des Moines Gas Company as of the date of this valuation.

Q. And what is the fact as to whether these are the actual income figures used in making this computation?

A. I did use the actual figures of the Des Moines company as given to me.

Q. And if the income were higher and afforded a higher return on the value of the plant how would that affect your going value generally?

A. Generally it would increase the going value.

Q. You were asked a question on your cross examination as to the use of brick of a poorer quality when these buildings were built than common brick is furnished now. I wish you would state whether in your judgment if the brick used in the buildings had been of a poor quality that would manifest itself in their per cent condition?

Mr. BYERS: That is not a very competent question.

A. I think undoubtedly it would.

Q. And if the brick had been of a poor quality, how would that have affected your estimate of the depreciation which I under — you is based on actual inspection.

1553 A. It would have caused a decrease in my estimate of the present value.

Q. I think at one time during your cross examination Mr. Baehr you stated that you had devoted your entire time up to April 1st, 1909 to the operation and construction of gas plants. Elsewhere you stated you had made quite a number of inspections and valua-

tions of plants prior to that time. Which of these statements is accurate?

A. The statement as I gave it in my qualifications is accurate.

Q. Now you were asked whether Mr. Klumpp had been here checking up and you said you did not know. What did you understand this question to mean?

A. I took it that it was intended to mean or to ask whether Mr. Klumpp was here checking up my report or not.

Q. What if anything has he had to do with your report?

A. He may have seen it, but that is about all, but he has not done anything with it because I did not allow the report to go out of my possession until the day I came to court.

Q. Now you stated in connection with your cross examination that the company furnished you a copy of Exhibit 15 which is the volume of the inventory which contains the quantities and the specifications of the various kinds of material. Please state whether or not you were also furnished with a copy of the other volume, Exhibit 16 or with copies of the plans which are contained in it.

A. I was also furnished with a complete set of blue prints or plans as you call them which are contained in the exhibit referred to.

Q. You have produced here and there have been identified as Exhibits a number of papers containing information relating to the history of this ppant. You also produced a letter that
1554 has been read into the record which gave some figures that were given to the gas company by a contractor stating prices at which he would replace some paving. Now I wish you would describe in just what way you used this information in making your estimates.

A. Such information as that letter referring to cost of restoring pavement, the cost to the company of purchasing cast iron pipe, the cost to the company of specials, cost to the company of laying services I use as one of the factors upon which to base my judgment for the purpose of placing a value on this property. I did not take the exact figures in any instance that I know of. In fact I don't believe I took the figures in a single instance. I used it as one of the factors on which to base my judgment, predicating my judgment very largely upon my experience in the business.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

1555 Thursday Forenoon Session.

AUGUST 3, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

WILLIAM A. BAEHR, re-called for further re-direct examination, examined by Mr. Guernsey, testified as follows:

Q. I wish you would turn to your report, Exhibit 21, immediately following page 149 you stated that you made some adjustments

in the operating cost for 1910 on account of Valley Junction which resulted in reducing the total as shown on this page from .5908 to .5897. Now the total operating as shown on this page, not including taxes and depreciation, is how much in dollars for that year?

A. The total operating expense is as I have shown it not including taxes and depreciation $314,328.77.

Q. Now what would be the difference—what does this difference cost by your adjustment of these matters amount to in dollars?

A. Approximately $2,160.

Q. You have been asked with considerable detail as to various conferences in Chicago and perhaps elsewhere. Now I wish you would state generally, without going into the details of these matters, Mr. Baehr, whether there was any effort made by anyone in those conferences or at any other time to influence or affect your judgment as to the value of this plant?

A. There was not.

Q. Also please state whether in making up your valuation you have acted entirely upon your own judgment as to the fair value of this property?

1556 A. I have.

—. Now, on your cross examination your attention was called to a number of things, all of which you said were considered by you and were of more or less importance in making up the valuation which you reached, or your conclusion as to the value of this plant and including the history of the price of gas in Des Moines, some blue-prints that you have produced here and have been identified as exhibits, the report of the annual gas scales, the holder cost of gas, the gross revenue of the company for a considerable period and its operating expenses for a considerable period, its net earnings, taxes paid by it, its annual gas sales, population of the city of Des Moines, manufacturing cost and consumption by meters. Now aside from the matter of taxes, as to what item of your report were these factors that I have referred to considered by you to be material?

A. Those items I used in connection with the going value calculation.

Q. And aside from taxes, did you use them in any other way in making up your report?

A. I did not.

Q. Or in reaching your conclusion as to value?

A. No.

Q. The taxes you used both in the going value and in the other items?

A. I did.

Q. Now, then, I think you have stated that these things and the other things furnished to you were used by you as checks or guides to your judgment in arriving at your various unit prices or other factors which you used in making up your valuation; is that a fact or not?

A. That is true.

1557 Q. Now, in looking over the transcrip-, I see on page 1392, at the top of the page, referring to the Western United Gas & Electric Company, you say this latter company owns or controls

the property at Elgin, LaGrange, Aurora and Joliet and I think about smaller villages in that neighborhood. Now what was the number of smaller villages you referred to?

A. About twenty.

Q. Now, in the question that begins on the fourth line on page 1409 of the transcript it is said that if several engineers were to deal with this property for the purpose of arriving at a valuation you would want to know before you started where you were all going to end, and you answered "I would think so." I call your attention to this and ask you whether there was any concert, or attempted concert among the engineers as to the value which they were to arrive at?

A. None whatever.

Q. Now at the top of page 1423 I notice this question: "And the history of the price of gas you regarded that as important?" Answer, "I did." On what subject was that important?

A. That was a mistake on my part. I did not consider the history of the price of gas in connection with my calculations.

Q. With reference to cast iron pipes you gave some prices, running four or five years, as you obtained them from the company here. In the first place, is this information that is available from other sources, the price of cast iron pipe?

A. Cast iron pipe—there are market quotations available pretty nearly all the time.

Q. And the prices in the various localities vary with the freight rates?

Objected to on part of defendants as leading.

1558 A. The prices in the various localities vary with the freight rates.

Mr. BYERS: A large part of the examination is simply your statement with the assent of the witness.

Mr. GUERNSEY: I have assumed there was no objection to a question there was no possibility to dispute.

Q. I will change the form of the question then. Now after you had obtained this information, please state whether you took the average price which the company had paid for these five years, or some other price which in your judgment was a fair one to apply to the plant.

A. I took an entirely different price, which in my judgment was the correct one to use in this work.

Q. Now, Mr. Baehr, you have been asked whether as to a great many of these things you regarded them as important in making up your estimate, referring to these matters ascertained from the books of the company as distinguished from your experience in the business. In that connection I would like to ask you of what value in your judgment an estimate would be that was made up from statistics and was not predicated upon actual experience in the gas business?

Objected to on part of defendants as being incompetent, immaterial and not a subject of expert testimony.

A. I would consider such an estimate worthless.

The MASTER: Speaking about pipe here, is that the ordinary cast iron pipe; have you got any standard weight per foot?

A. There is a standard weight per foot for the different sizes gotten up and adopted by the American Gas Light Association and gas companies in ordering cast iron pipe specify usually the stand-
1559 ard of the American Gas Light Association.

The MASTER: What is the standard weight?

A. I can give you that——

The MASTER: Say for six inch?

A. Six inch pipe, standard weight is 30 pounds per lineal foot.

The MASTER: Four inch?

A. Four inch, 19 pounds.

The MASTER: For 8 inch?

A. 42 pounds.

The MASTER: For ten inch?

A. 56 pounds.

The MASTER: For 12 inch?

A. 12 inch is about 72 pounds.

The MASTER: 16 inch?

A. 108 pounds.

The MASTER: 20 inch?

A. 150 pounds.

The MASTER: 24 inch?

A. 203 pounds, as I have it. Now I haven't got the figures in my book of the American Gas Light Association standard and I have deduced those weights by the use of a sliding rule and it may be I am off a fraction of a pound.

The MASTER: These are not the weights you figured?

A. No.

The MASTER: Can you ascertain the excess of pound by taking those figures?

A. I have added two per cent for over-weight. From my experience I have found that cast iron pipe runs two per cent or more overweight of standard.

The MASTER: You figured these as standard?

1560 A. Yes, sir.

Q. Does that include pipe as laid in the main, shoulders and all?

A. It does.

The MASTER:

Q. So that gives how much you allowed per pound; you used it as you give it?

A. Yes, if you add the two per cent.

Q. That is, if those figures—if I understand you—were taken and applied to the inventory, the lengths of the various sizes of pipes as given in the inventory, with two per cent added, how would that compare with your total weight of pipe?

A. That ought to check out exactly or as close, within several decimal points to the weights I have used.

Q. Now, on your cross examination I thought that you emphasized the word actual in talking about the number of brick in a wall. What significance do you give to this in your testimony, how does it differ from the ordinary estimate?

A. Various contractors have various methods of figuring brick work. Some contractors, for instance, figure a wall as solid, without deducting the openings for windows and doors. Other contractors make certain deductions and it is rare that two contractors figure just exactly alike on that subject. Now all my figures are based on actual number of brick, making the most careful computation of the actual number of brick there are and my price that I have used is figured accordingly.

The MASTER: Brick masons double it in turning corners?

A. They have various ways of doing it. I don't know how they all do it. In talking with a number of them I found different methods of calculating and I found it difficult to get them to tell me just what they did do.

The MASTER: You figured counting out openings?

1561 A. Counting out the openings and allowing for projections, etc.

Q. You were asked on your cross examination whether during two or three years of this five years for which you were giving the price of pipe this price was not high. Now this period began when, this five year, for the price of pipe?

A. Beginning with 1906.

Q. Now what effect did the panic of 1907, when we were on a clearing house basis in October, have on the price of pipe?

A. The prices of cast iron pipe were high during 1907 until the latter part of that year when the panic became acute, the prices then began to drop and became low during the succeeding year.

Q. How have they been since then?

A. They have never been as high as they were just prior to the panic.

Q. You spoke about computing the cost of the additions which it would be necessary for the company in your judgment to make to the plant in the near future on a percentage basis, but I think you did not explain what that basis was. Will you please do so.

A. I used the percentage basis in connection with my estimate of mains, services and meters. In my judgment the increase in investment in mains will be about thirty per cent during the next seven years, and I took thirty per cent of my estimate of the reproduction value of these mains as of date of this valuation. Now in connection with the meters and services I estimated that the population would increase during these seven years about twenty per cent—about twenty-three per cent—and I applied this percentage to the estimated cost of the meters and services. In that way I arrived at my estimate.

Recross-examination by Mr. BYERS:

1562 Q. Now, Mr. Baehr, last evening for the first time during your entire examination, and after counsel had stated to you that you figured out the going value in this case on prospective and

future losses, rather than early losses, we reach an understanding of your method. Now was that because you was uncertain yourself as to just how you proceeded, or was it because I did not put the question to you in such a way that you knew what I was trying to get at?

A. I think the difficulty was in arriving at an understanding between you and myself.

Q. You understood me when I was talking about early losses, didn't you?

A. I don't remember what the condition was at that time, Mr. Byers.

Q. Well, now, Mr. Baehr, since Mr. Guernsey told you what your method was in his re-examination, and you assented to it, do you want to take back what is written in your report?

A. No, sir; I want to stand on my report.

Q. Now, what you have written in your report does that square with the method Mr. Guernsey tells you you adopted?

A. If you will kindly call my attention to the portion of the report you refer to, I will see.

Q. I refer to all of the explanatory matter of your report as to how you arrived at the going value.

A. That explanatory matter did not detail my method of estimating going value at all, because I stated clearly in the beginning. at the bottom of page 15 as follows: Now what will it cost to develop the business of the conceptional plant to exactly equal that of the actual going Des Moines Gas Company? The answer to this question is figured in our calculation as herein and we feel the foregoing viewpoint will serve to greatly simplify the principles
1563 that control this question." Now that explanation did not in my opinion, and does not in my opinion explain the method that I used for arriving at my judgment of going value.

Q. Well, then, why didn't you explain it promptly—was it necessary for you to wait until Mr. Guernsey stated it to you before you would tel- us?

A. I tried to answer your questions, as I understood them, Mr. Byers.

Q. I spent a half a day trying to find out from you just what method you pursued in arriving at going value and you at no time mentioned the fact that you proceeded on the theory of future of prospective losses as stated to you by Mr. Guernsey.

A. That must have been due to a misunderstanding on my part, Mr. Byers.

Q. Well, so we have an understanding now. Your whole scheme then of going value in this case and the amount of $509,000 that you have figured out here rests entirely upon your judgment as to what the losses would be in constructing now a gas plant here and operating it over a period of say seven years?

A. You would have to add to that that it is my estimate of what it would cost to reproduce the condition as of January 1, 1911.

Q. I know—I am trying to get away from the cost now, because that is not the word you used and that is not the word Mr. Guernsey

used, and I don't want to be confused about this matter of going value because it is worth something to me to know all about it. Mr. Guernsey used the word losses and I want to know whether that is what you understand your method to show, the losses that would result to the promotor or builder of a comparative or hypothetical gas plant in this city and operate it over a period of seven years?

1564 A. I think I can make that clear to you by stating that the figure I have arrived at is my judgment of what it would cost or what the loss would be to reproduce the business that the Des Moines Gas Company has and is doing as of January 1, 1911.

Q. Well, now you use both terms, which do you mean, losses or cost?

A. I use them in a synonymous sense, as meaning the same thing in that sentence.

Q. How do you apply cost to this $509,000 value that you got into this old plant, how do you get it into the going plant in the shape of cost?

A. It is merely my estimate—I will use the word losses this time because I see that perhaps I have not made myself clear there. It is my estimate of the losses that would be incurred in reproducing the business as of date of this valuation.

Q. Well, then, with that understanding, let me see if I have the right notion of your attitude and your understanding as it relates to this case. Now if you have proceeded on that theory that this $509,000 is the amount of money, or the amount of return on investment that would be lost by a prospective builder of a gas plant in this city and operating it for a period of seven years, beginning with the first day of last January, and does not have any application to any other plant, why then I understand you?

A. Maybe I can express it in still another way that might be of service—put it this way: The revenue of the Des Moines Gas Company was so much on January 1, 1911, and my figure on going value is my judgment of what it would cost to reproduce that.

Q. Yes, in other words, this $509,000 you have said in your testimony numerous times, said it to Mr. Guernsey and to me, that this $509,000 attached to the value of the Des Moines Gas Com-

1565 pany property. Now, if I understand you, that is not what you mean at all—that all you mean is that if a prospective builder or investor was to start out here in Des Moines on the first day of January to reproduce a similar property to this property now being operated by the Des Moines Gas Company, that prospective builder in a period of seven years, as compared to what the Des Moines Gas Company is making, would lose $509,000 and therefore there would be that much in his comparative or prospective plant that would be carried on into its operation beyond the seven years and be a part of that prospective comparative plant's value—that is what you mean, isn't it?

A. I would like to modify that slightly because I consider that the revenue of the Des Moines Company attaches to the property of the Des Moines Company.

Q. Oh, yes; I am not questioning that at all.

The MASTER: What do you mean by revenue, net earnings?

A. The gross revenue in this instance.

Q. I am not questioning that at all, but what I am trying to bring out clearly now—it has not been clear to me, may have been to everybody else—is the fact that so far as you are concerned, your attitude, your plan and method is concerned here, it has nothing whatever to do with the Des Moines Gas Company's experience of losses or their property, except that you have used it as a comparative or a part of your comparative proposition of building a new one, and you have simply used the Des Moines Gas Company's figures, their gross revenues, their net revenue, their operating expenses, their apparatus, the number of miles of mains and meters and services, and all that sort of thing—you have simply used these figures for the purpose of fixing the limit to your new and comparative plant
1566 that is in size, quantity, quality and number and in business, revenue and so on, and then with that as a comparison to your new plant you figured out from your standpoint that a prospective builder would have in his plant at the end of seven years this $509,000 in going value; isn't that exactly what you mean?

A. I have based this calculation on the facts, that is, the business of the Des Moines Gas Company as of the date of this valuation.

Q. Just as I have stated it. You simply used those figures I mentioned of the Des Moines gas property as I mentioned them, you simply used those for the purpose of a limit or plan or specifications and plans for your new plant, and that is all?

A. No, I used that method of calculation to arrive at my estimate of the going value of the actual Des Moines Gas Company.

Q. You do not mean to convey the idea to the court or any of us that this $509,000 is money that the Des Moines Gas Company, or value that the Des Moines Gas Company has put into this plant at some past time or covering some past period—it didn't represent anything of that kind?

A. I mean that is the amount of money it would cost to reproduce the business as of that date.

Q. And that is all you do mean?

A. I further mean it is my judgment of the proper amount.

Q. I know, to go into this comparative plant, but you do not undertake to say to this Master, and all along where you have said so, you would want it modified by your present statement that you know anything about the losses of the Des Moines Gas Company, or how it produced its business or how it got it, or how much money it put in it, or what it cost the Des Moines Gas Company to get this
1567 property, you don't know anything about those things, do you?

A. I haven't got the data on those things, but as I stated before, this amount of going value which in my judgment is fair, is my estimate what it would cost to reproduce the condition.

Q. Exactly, I thoroughly understand you when you put it that way, because that puts an entirely different phase upon the whole

question. Let me put this question to you and see if that don't bring out very clearly what I have in mind: Suppose you had two cities exactly like the present condition in Des Moines, that is, you have two cities with the same population you have in Des Moines, with the same conditions as to education and all that sort of thing, everybody educated up to the use of gas in both cities, they are both exactly similar to Des Moines; now you were going to build a gas plant in one of the cities, and I want you to assume that all other conditions are just alike, freight conditions and climate, seasons and everything else, so that there can be no complication in the property; you commenced on the first day of January, 1911, in one of those cities to build a gas plant; now if you should proceed on the theory that you have figured out here to build your prospective plant and should carry it out and it should work out according to your method and plan, and you put into it the amount of money you have estimated here, and at the end of the seven years you had reached exactly the state you say you do on the paper here, your report, in your plant, would you have then $509,000 of going value in your plant?

A. Yes.

Q. Now, suppose that the other fellow had proceeded to build exactly the same kind of plant that you talk about and he would
1568 get his plant to going in that city and selling gas a year and a half before you did yours; there would be an entirely different situation as to the going value in his case, would there not?

A. That would result in a different figure.

Q. Very different, if he got started a year and a half before you did in the sale of gas and ran seven years as you say your plant run, all other conditions being alike, his going value would be reduced very much, wouldn't it?

A. If I understand you to mean by that that the comparative plant would catch up to the going plant in less than seven years—

Q. We haven't got any going plant here. Here is two cities without any plants. The only comparison is between your new plants; the one fellow has got his going a year and a half before the other, serving the population that uses gas.

A. The basis of this calculation is a comparison between the going plant and the comparative plant.

Q. I mean you have got no plant now.

A. That is a different proposition; if you are starting to develop the business in an entirely new city, that is where there is no gas company—I am trying now to get myself to see just what you have in your mind—and if you assume that there are two such new cities and one develops business faster than the other, without comparing the condition in either of those hypothetical cities with the actual company or actual city, I am not so sure that that would make a material difference in the going value.

Q. Then if I understand you, you cannot have going value unless you have some plant to compare with the one you reconstruct in your mind, is that right?

A. In order to have going value I figure that a company must

be doing business and the entire calculation rests on a com-
1569 parison between a going and a comparative plant based on actual conditions?

Q. Well, this fellow is going a year and a half before you are. Let us take it another way: Here is a city just like Des Moines, conditions all the same, everybody educated up to the use of gas, no difference in any other respect, except that this city I am speaking of now where you are to build your comparative plant, there is no gas company and no gas property in existence, but everything else is there, the same number of people that there is here in Des Moines, and they have the same education as to gas; now here is another city exactly the same in all respects, except that it has a gas plant in operation just exactly like the Des Moines gas plant, in every respect as to mains, apparatus, real estate, service, fixtures and the whole business exactly like the Des Moines Gas Company; now we are just beyond the first day of January, 1911, just at that date; along comes an owner of the Chicago Gas Company and he buys this gas plant in the city where it is operating for exactly $2,000,000 not a cent more, not a cent less; buys it from the owners for exactly $2,000,000. Now on the first day of January 1911, the same date that he buys this plant, you commence the construction of your comparative plant in Des Moines or in this city with the conditions the same as in Des Moines, and the Chicago Company goes right on operating their plant, just exactly the same as this Des Moines Company will go on, as you figured it out, how much going value would the Chicago Company that paid exactly $2,000,000 for their going concern, how much going value would they have in their plant, worked out on your theory?

1570 A. If I understand your proposition correctly, that resolves itself exactly into a comparison between an actual going gas company and the comparative plant as I assumed it.

Q. That is an actual going plant; the other you are building yourself; you are going to build this plant you worked out on paper here, if you work out your scheme just as you got it in your book, when you reach the end of your seven years, on your theory you would have $509,000 going value in your plant; you would have that much according to your theory in your plant, wouldn't you?

A. Yes.

Q. What I am getting at is that would not be putting it in anybody else's plant unless they had exactly the same experience you had.

A. I think that comes right back to the proposition that it is a fair estimate of what it would cost the other fellow to reproduce it.

Q. The other fellow don't have to reproduce; he is running, he has got his plant?

A. But wants to know what it is worth.

Q. He don't. He just paid $2,000,000. He don't have to have anybody tell him what it is worth.

A. I don't see that that resolves itself in a parallel proposition to this at all.

Q. You don't?

A. No, sir.

Q. Well, now, Mr. Baehr, I wish you could, if you would, for a minute get out of your mind the fact that you are a witness for the Des Moines Gas Company case, and that there is any question now of sustaining your theory or anybody else's theory, and just
1571 give me as brief an answer as you can to this one proposition, and that is whether it is not your theory and your understanding and is your own plan and method of figures, that all it has to count for or weigh in this case, is that it is your judgment that if a new plant was constructed here like the Des Moines plant under the plan that your worked out, and covering the period you have stated in your book, that there would be $509,000 of what you call going value in that plant?

A. I don't understand it that way, because I am basing my entire calculations on the conditions of the Des Moines Gas Company.

Q. Well, let's put it another way, Mr. Baehr, if you don't understand it that way: Suppose that at the end of the seven year period, instead of the beginning of it, you had actually gone on and carried out your hypothetical scheme here, where would this $509,000 in value, so far as you are concerned, be in your plant, or the Des Moines plant?

A. In referring to my plant, you mean comparative plant, and further assuming that $509,000 in round numbers was spent in developing the business, if I was asked at the end of the seven year period to place a value on such plant I would figure what it would cost to reproduce it at that time.

Q. No, you wouldn't; you would know exactly what you had put into your property at the end of seven years.

A. Even so, the question that would be put to me would undoubtedly be, what is it worth now.

Q. No, I am taking just the plant you worked out; suppose we were at the other end of that period and you were trying to figure out for this Master, just as you are now, just how much money you had gotten into that plant, what its reproduction cost what that total cost was, covering all those items you mention,
1572 you would state to the Master that it cost in addition to what you paid for pipe and all that sort of thing, this $509,000, and therefore you would say it was worth $509,000 more than just the reproduction cost of the physical property?

A. If the Master asked me what it would cost and that was thamount of money I had spent, I would say yes.

Q. And therefore and because it did that, you would say it was of that value, wouldn't you?

A. No, sir; that is where we don't agree apparently.

Q. Would it be worth more?

A. I have it clearly in mind that the value at that time might be considerably different from what it cost.

Q. Is that so—then what becomes of your plan for use in this case if you haven't figured it out right?

A. I might try and illustrate my idea on the question—supposing I had bought a piece of ground a good many years ago and paid

a thousand dollars for it, and it subsequently rose in value and would be worth five thousand dollars, I wouldn't sell it for a thousand dollars.

Q. Is that the way you mean it might be worth more—you have already tried to figure out to this court and anticipated seven years in the history of this city; you figured out what you think it *it* would cost to reproduce the property like the Des Moines Gas Company?

A. I see where your difficulty is.

Q. You see where your difficulty is?

A. I have reduced those future net earnings to their present worth and it is the estimate as of January 1, 1911. These future earnings have been reduced to their present worth and therefore the $509,000 in round numbers does not result from taking the
1573 actual difference of the actual earnings each year, but it results from the difference of these earnings reduced to their present worth.

Q. That doesn't affect the proposition at all. That simply makes your present figure $509,000, the difference between that and what that would be worth seven years hence. It is the principle I am getting at. You would at the end of seven years, if you were putting a value on your property, all conditions being just as you anticipated, you would work out this going value just as you have in this report, wouldn't you?

A. If you mean to say that I would take cost and use cost, that is one thing, but I didn't do that. Maybe I don't understand you, at least that is what I did not do; I did not use cost, I attempted to place my value on my judgment what it would cost to reproduce it at the time.

Q. I will state it once more, and then I will leave it. I am just as anxious to get it right as I can be, not only for my own account but on yours. I want the record clear. Assume all conditions just as you have anticipated in this computation you have made here as to the comparative plant; assume that it works out just as you figured it; you built the plant, actually built it as you figured it out here; we are at the end of the seventh year instead of at the beginning; leave out of your mind this question of $509,000 as the present going value item, but consider that as the going value at the end of the seventh year, if you were asked to put a value on the plant you have just constructed, upon the plan you set out here in your report, all other conditions being exactly as you anticipated them, what would you tell the Master was the value of your plant?

A. Well, if you predicate the condition that I am to
1574 consider that amount of money as the going value at that time, that seems to me to be the answer.

Q. How is that?

A. In your question, as I understood you, you said to me to consider the going value at the time that you have in mind as being in round numbers $509,000. Now if you are asking me to consider that, that would be the answer.

Q. No, I didn't mean that at all. You have undertaken to figure out the going value of a plant, the construction of which commenced

the first of January, 1911, and you carried your figures up to a period of seven years hence in comparison with the going plant of similar character operating over the same period, and you have arrived at a sum that you say would be the going value—I don't remember what it was as you figured it out before you reduced it to its present value, but letting the question rest upon the figure as you figured it out, without reducing it to its present value, and you are at the end of the seventh year period instead of at the beginning of it, and you work out your scheme just as you state in this report, and the Master at that time was to ask you for the value of your plant on the assumption that everything was just as you anticipate it, what would you tell him was the value of it?

A. I don't believe I can answer the question, Mr. Byers.

The MASTER: You figured first the earnings of this present Des Moines Gas Company up to the end of the seventh year?

A. Yes.

The MASTER: Then you constructed the comparative plant over that same period and figured what its earnings would be during that period under like circumstances?

A. Yes, sir.

1575 The MASTER: And then you ascertain the present value of that?

A. Year by year, yes sir.

The MASTER: And that present value is the difference between the going plant and the comparative plant without regard to the question of whether the going plant is getting a net income or not.

A. It is the net income possibly as you have it in mind that *are* being compared.

The MASTER: The net income is being compared?

A. Yes, sir.

The MASTER: Not the net earnings?

A. I want to be sure, to be perfectly clear on that, I will state as well as I can express myself, just what I mean. We are comparing what I call the net earnings reduced to their present worth, and by net earnings I mean the gross revenue less the operating expenses, less taxes and less depreciation; that is what I call net earnings. Now I am taking the going plant and the comparative plant, I am taking these net earnings year by year and reducing them to their present worth, taking the difference and add the sums of this difference over the period under consideration, seven years, and that sum, in my judgment, represents what it is fairly worth to reproduce the business of the Des Moines Gas Company.

The MASTER: That is to reproduce the business?

A. Yes, sir.

The MASTER: Starting and building a new plant covering that seven years?

A. Yes, sir.

The MASTER: I understood you yesterday you did not take

1576 into consideration the net income of the gas company at all.

A. This whole estimate is based upon a careful study of the gross

income and operating expenses and the net earnings of the Des Moines Gas Company.

The MASTER: That is the difference between the two plants?

A. The two plants are compared on a basis of the net earnings between the two plants; in other words, what a man would make out of them after paying operating expenses and depreciation.

The MASTER: But you don't take into consideration whether or not the present company is earning a reasonable return on its physical value?

A. I am not paying any attention to the rate of the return in this calculation. This is based entirely on the present rate for gas as of January 1, 1911.

Teh MASTER: You do not take into consideration whether or not it is earning what may be termed a reasonable income on its present physical value as you make it?

A. No, because all I am trying to do is to reproduce the condition as it was on the date of my valuation.

Tehe MASTER: It is altogether predicated on what is known as the reproduction idea in getting your valuation?

A. Yes, sir.

Q. Now, I want to put another question. I don't think I misunderstand your positions at all—I don't want to put you in the record in a way that you would not be satisfied with it after you got through with this case. Now let us assume a little different situation than what we have here. Assume, if you will, for the purpose of this question, that the Des Moines Gas Company began its operation in Des Moines seven years ago; assume that all the con-
1577 ditions now necessary to an immediate sale of gas, that is education and a knowledge of the use of all these different gas appliances existing in Des Moines seven years ago; now the Des Moines Gas Company begins its operations on the first day of January, seven years back; just as — commenced to build your new plant, they commenced to build the present in the city of Des Moines; now they have continued down to the end of the seven year period, we will say, the first of last January, they were right at the end of the seven year period; now if you were asked as an expert engineer to take the Des Moines Gas Company as a real thing, just as it existed, and pay no attention to this prospective or future method that you have used here, but if you were asked to fix a value upon the property of the Des Moines Gas Company on the first day of January, after its seven years of operation, basing your valuation upon the actual operation of the plant itself, how would you proceed?

A. I would proceed just exactly as I did.

Q. I say, leave that out of it entirely now, this new method you have used here, just take the actual operation of the plant, take the actual experience, the amount of money put into it and all that sort of thing, if you were asked to ascertain for them just what the property has cost them to produce it during those seven years, would you get any going value in it, and if so, how?

A. I don't believe I could say that I could figure it the way — predicate that.

Q. Wouldn't the actual experience and the actual building of a plant and the actual expending of money, the losses and return and all that apply to a going concern just as well as to a hypothet-
1578 ical proposition?

A. I think you inject another factor there that I have not considered, namely, the rate of return.

Q. You have not considered that at all?

A. No.

Q. I don't care whether you considered it even now, take this actual plant and start back seven years ago, if you did not adopt this reproduction plan of building in the future comparative plant, how would you proceed to ascertain just how much the Des Moines Gas Company had put into its property and upon which a return ought to be based, whether it is a fair one or not?

A. Well, if somebody undertook to assume the responsibility of saying to me what a fair rate of return was, I might be able to base some sort of a study by which to arrive at the losses.

Q. Somebody did undertake to tell you in this case?

A. No, sir.

Q. Why did you use the rate you did use?

A. I didn't use a rate of return in my calculation.

Q. Don't you call interest a return on money?

A. Interest is a return on money, but is not to be confused with a fair return on the investment of a public service corporation.

Q. Didn't you notice in this confidential communication we had trouble with here the other day, that statement, didn't you notice this interest suggestion here "interest during construction" the interest to be allowed during construction of the manufacturing plant and the distribution system of the Des Moines Gas Company consists of such amount as would pay for the use of the money during the time it is employed in the development of the property before the plant itself is on an operating basis, figured at six per cent. Didn't you notice that very clear and definite information as
1579 to return?

A. I did not. I did not pay any attention to that pamphlet, if I may call it so, except the one tabulation which I referred to yesterday giving a statement of the number of meter installations by years.

Q. You have some exact duplicated of it of tables in your report?

A. If there is any duplicate of that in my report I don't know it.

Q. How did you come to use six per cent interest?

A. Because I considered that a fair figure for general interest rates in Des Moines.

Q. By that you mean a fair return on the money in Des Moines?

A. Don't misunderstand me to say that I mean a fair return on money invested in the Des Moines Gas Company.

Q. No, you considered that a fair return on money in Des Moines?

A. I considered that simply as market interest rates.

The MASTER: Did you take into consideration the fact that the taxes were deducted from the real estate, the way you calculated it?

A. I deducted the taxes from the revenue of the company as one of the factors to determine the net earnings, if I understand what you mean.

Q. Well, now, let us get back to our question again. Seven years ago the Des Moines Gas Company commenced to build a plant, and suppose you would follow that progress right down to the first of last January, and in following it you would discover that these different items of added cost, that your judgment convinced you would have to be put into the construction of this prospective or future plant, was only about a third or one fourth as much as you figured, that would reduce the going value of the plant at that time to a
1580 third or one fourth, wouldn't it?

A. I don't know whether our minds are together on this subject or not.

Q. I am afraid not, at least we are not trying to get at the same thing. Let me put it in another way: If the figures could be shown here, showing the construction and operation of the present Des Moines plant, the beginning of it the first of January seven years ago and running over this seven year period, just as you done in your new plant, and you were to figure everything that the company did, all the money it put in, and what it earned and all that, and then at the end of the seven years the result showed that the Des Moines Gas Company from within six months of the time it commenced its construction had received in revenue more than a fair return upon its money, all of it, every dollar, that went into the property it was operating, would that have any effect upon the question of going value as you understand that proposition?

A. I don't believe it would.

Q. All right, we will leave it that way.

The MASTER: There was one matter yesterday, this question of the amount necessary to set aside each year for depreciation you gave as ten cents per thousand cubic feet of gas?

A. Yes.

The MASTER: And the next year it would be ten cents on that?

A. Yes.

The MASTER: It would be ten per cent?

A. At a dollar rate it would be.

The MASTER: Do you know what the composite life of the gas company is estimated at?

A. In the case of the Des Moines Company, I can
1581 & 1582 give you the figure. I had figured the composite life of the Des Moines Gas Company's property, that is, considering the buildings, the apparatus, equipment and distribution system at 37.6 years.

The MASTER: Did you ever figure the amount set apart each year at compound interest for these thirty seven years at six per cent per year and ascertain what it would amount to?

A. I have not, but I have used that same method of figuring in arriving at my estimate of the fair amount to allow; that is I used the compound interest basis in two calculations, or two studies rather

and one study I made on the strength of my basis. I didn't figure the total dollars.

The MASTER: The first year it would be $51,000 and the next year say $55,000, and you take each of those amounts and figure them at compound interest up to the end of 37 years, it would make a pretty good sum of money?

A. I didn't make that calculation, your honor, that way.

The MASTER: It wouldn't take you long to do it?

A. I don't believe you would want me to do it here in court.

The MASTER: You would have to take each year for instance, the first would be 37.6 and the next would be for 36.6 so that you would have different amounts each year and larger amounts each year, as they go into the summary, and that at compound interest of six per cent or five per cent or four per cent, would make a large sum of money?

A. If my figures are correct it ought to take up just about the value of this property.

The MASTER: What rate of interest did you figure?

A. You mean the interest paid on that?

The MASTER: The rate of interest, six per cent?

A. I figured 6.4 per cent for 1911 and then a decreasing
1583 percentage until 1917, my estimate was 4.15; in other words, at a decreasing percentage.

The MASTER: You have one figure there where you put the amount at thirty-three thousand and some odd dollars and another at $38,000.

A. Yes, sir. I have figured on the straight line basis that the amount of money to set aside is $76,352, that is a proper amount on that basis. If you figure the compound interest at four per cent, then I figured the proper amount to set aside each year was $33,359.

The MASTER: From what you term a composite rate?

A. Yes, then that figure is $38,733.

Q. Right at that point there where you start with six and a fraction rate of increase and then gradually run down to four, that had to be done in order to get these two plants together in seven years.

A. No, sir; that is my estimate of what will take place irrespectively.

Q. You had to make that estimate in order to make that scheme work?

A. If I had used a larger per cent it would have resulted in a somewhat greater going value?

Q. If you had used a per cent lower than that what would have been the effect?

A. It would have resulted in a slight decrease.

Q. So that you have to have that sort of a graduated downward scheme in order to make your whole scheme work?

A. It is predicated on judgment based on the facts of the operation expense of the company.

Q. Did you have to make your figures square with the judgment?

1584 A. I certainly had to use my judgment.

Q. If somebody else had to use a different judgment they would not have come out at the same place you did?

A. One of the things about this method of calculation that is perhaps peculiar to it is the fact that if several men who are experienced in the business, who know the business, make calculations entirely apart from each other, they will perhaps naturally and undoubtedly differ some on the estimate of percentages of increase, but as a matter of fact it has been my experience in these calculations under the various assumptions provided they are reasonable assumptions, that the results harmonize very well.

Q. In this case there wasn't very much difference in the result of the engineers after their meetings together?

A. I havn't Mr. Lea's result; I don't know what he testified what was his judgment as to the amount of going value.

Q. There isn't enough difference to take an hour's time in this hearing. You heard him tell what his total- were the other day?

A. My impression is he said about $583,000.

Q. Now, Mr. Baehr, in this state the tax laws among other things provide that a merchant's property, the merchandise of a merchant, such property as is carried up here in the Gas Company's store, stoves and fixtures and lights, and all that sort of thing, is taxable upon the average value of the stock carried during the year, not on the amount on hand at any particular time, but on the average amount carried during the year. The statute further provides that manufacturing properties, the product of the factory, is taxable in the same way, that is, the product of a factory, the average amount

1585 of it, the average value for the year, not for any particular time, and all apparatus which in this case would include the machinery down here, the buildings, the mains, the services and everything, it all is a part of the hook-up, the machine becomes a part of the real estate for the purpose of taxation and is valued as a complete machine; have you proceeded in allowing your tax values on any such theories as that?

A. No, the theory that I have proceeded on is indicated in my report; I have given the detailed figures there.

Q. You figured out your tax proposition on the theory that all property, no matter what it is used for in Iowa or in Des Moines is taxable at two and one-fourth per cent of its actual value, that is the way you proceeded?

A. Yes, but in order to arrive at the taxes I also looked at the actual taxes that the company had paid in the past years, and in tabulating the amounts from year to year I saw that my allowance for taxes increased from year to year. But I predicated it on two and one-fourth full valuation, plus two per cent on gross income, plus federal tax.

Q. How much did you allow for the federal tax?

A. In the year 1911 I estimated that the federal tax the Company pay would be $795.29.

Q. How did you arrive at that?

A. From my going value calculation you will notice I have estimated gross income operating expenses, etc., and I followed the

rule which is laid forth in the federal corporation tax of taking the earnings of the gross income of the company and deducting the operating expenses, deducting taxes and depreciation, and if my memory does not fail me, the bond interest, and from what is left deducted $5,000 and then took one per cent of what is left.

1586 Q. That is the way you arrive at the federal tax?

A. Yes.

Q. You got how much for 1911?

A. I estimated the amount would be $795.29.

Q. Does that amount show in your report right along for each year?

A. Yes, sir, on pages 146 and 146½.

Q. Now, Mr. Guernsey asked you about this conference in Chicago and asked you whether anybody tried to influence your judgment and you said no, that you exercised your own judgment. Was there any difference of opinion among the engineers that met there as to what method ought to be adopted in this case of arriving at valuations?

A. The discussions, Mr. Byers, were a discussion of theories and interchange of ideas, and in my mind the discussion was entirely free from any attempt to influence my figures in any way.

Q. What was it for, what were they there for?

A. We were there I presume to discuss theories and interchange ideas.

Q. About valuation, was that the purpose of this meeting?

A. It was more on theories.

Q. I mean theories of arriving at valuations?

A. I would prefer to answer a question like that as applied to specific things.

Q. Who, at the first meeting of the engineers, first proposed the method of arriving at going value that you and Mr. Lea have adopted?

A. My recollection is there was no discussion of any kind at the meeting you mention about this going value method; that is my recollection.

Q. What did Mr. Alvord say about it?

1587 A. Mr. Alvord was not there, according to my recollection.

Q. You told me the other day he was?

A. Not at the first meeting; Mr. Alvord was, I believe, at one of the subsequent meetings.

Q. It was at that meeting he gave his theory and notion about this going value proposition?

A. We discussed the principles of going value with Mr. Alvord.

Q. You knew Mr. Alvord had advanced this same theory of arriving at going value that you and Mr. Lea had worked out before he was called in, didn't you?

A. I don't — how far before that I knew it or not.

Q. He told you himself that he had used that method or substantially that method here in the water case in this city?

A. I understood that he had used it in the water case and had been working on that for some time.

Q. Well, now, Mr. Haganagh was at one of those meetings?

A. For a very short time.

Q. He had just made up a report on the Chicago Gas Company, hadn't he, for the city of Chicago?

A. I don't know whether that report was made up at that time or not, but he had made up a report this year.

Q. That is, he completed it some time this year?

A. At least it was published.

Q. Now at this meeting he gave his views about the method and theory of fixing valuations on gas properties?

A. I don't think Mr. Haganagh did, as I recall it, if he came in at all he was in for only a very few minutes.

Q. Did he talk at all about valuations?

A. Not to my recollection.

Q. Mr. Klump gave his notion about it?

1588 A. I don't remember that we discussed what you call valuation. I don't know what you mean by that unless you mean the entire valuation. I don't believe we discussed that.

Q. I mean these theories, you talked about the theory at which you arrived at the so-called added costs, weren't those the things that were the subject of a conference?

A. There was probably some interchange of opinion on the principles of these matters.

Q. That is what the conference was for?

A. I presume it was arranged with the idea that any of us could derive benefit from the interchange of opinions.

Q. When you say there was nothing done there, nobody attempted to influence your judgment, all you mean is there was no one tried to force you to arrive at a particular conclusion?

A. I think the meetings were entirely free from any coercion of any kind, either direct or implied.

Q. Certainly, but they were both called and held for the purpose of exchanging views on this theory of added valuations to gas property, and those are the things you talked about?

A. Well, we discussed principles and interchanged ideas, but I must repeat as far as my figures were concerned, there was not the slightest influence brought to bear on me.

Q. Now at this conference, not only the engineers who were present, but counsel gave their ideas too about these theories of added values?

A. I presume counsel joined in the discussion.

Q. Now, Mr. Baehr, you say that you took the actual number of brick down here in these buildings?

A. As shown in the inventory.

Q. That is the fact?

1589 A. Yes, sir, as shown in the inventory.

Q. You don't mean by that answer you yourself had measured those buildings and ascertained the number of bricks; you simply took the measurements Mr. Brodnax made and his figures as to the actual number of brick?

A. As I believe I stated, I actually checked one or two buildings by very careful calculation to see that the quantities of brick were correct.

Q. You mean if their measurements were correct?

A. No, sir; I actually checked one or two buildings through for the quantities.

Q. How did you get at it?

A. I got the cubic contents of the wall and multiplied by the number of brick per foot.

Q. He used 22, didn't he?

A. I don't know what he used. I estimated mine on the basis of 20 brick and I got so close to his figure that I found it substantially correct.

Q. His figure I know was more than 20, but that was not ascertained by actual measurements in the building but is somebody's rule?

A. No, sir; I figured that out myself; bricks are various sizes- —

Q. That is the reason I don't know how you could do it by rule.

A. I got the sizes of brick from local manufacturers. If you were reproducing these buildings here you would have to use brick supplied by local manufacturers.

Q. So your figures have no reference to the invoice as to the identical brick down here?

A. Indeed they do have.

Q. I thought you took the size of the brick as they are made now?

A. You referred at that time to the rule for estimating the
1590 number of brick per cubic foot. I was going on to say for various sizes of bricks the number is determined per cubic foot, knowing the size of the brick and allowing proper space for joints.

Q. What would the size of the brick, if you were going to reproduce the plant, you would use the same size of brick down here wouldn't you?

A. That wouldn't make any difference in the value of the buildings.

Q. Would it make any difference in the number of brick. I don't care about the value of the buildings.

A. If you had bricks twice as large of course.

Q. Suppose they were an inch larger each way, what effect would that have?

A. That would reduce the number of brick.

Q. In adding thirty per cent to the present reproduction cost new of mains for the needs of the next seven years, did you add thirty per cent of the mains with paving?

A. Yes, sir.

Q. That is to say, in your figures this thirty per cent of extensions of mains you have also added thirty per cent to the cost of paving on the theory that those mains would all be laid after the paving was down rather than before?

A. I took thirty per cent of the total reproduction value of mains as I had figured it, estimating that would be the increase in investment in the mains.

Q. Did you do the same thing on services?

A. On services, yes.

Q. So those amounts and values are included in your figures of thirty per cent for increased cost over this period for extension of mains and services?
A. They are.

1591 Redirect examination by Mr. GUERNSEY:

Q. I wish you would state so as to make it clear whether your assumption was all new mains would be under paving or whether it was not?
A. My assumption was not specific in that matter; my assumption was the total investment would be so much. I based it on the percentage method, I based on no specific assumption as regards paving.

Recross-examination by Mr. BYERS:

Q. Do you know of any reason why this Exhibit 8 should have been refused us the other evening?

Mr. GUERNSEY: We object to this question and if counsel wants to know why it was refused, I refused it.

Q. Do you know of any reason why this Exhibit 8 should not have been delivered to us promptly the other evening?
A. I don't know anything about Exhibit 8.
Q. Is there anything in it you know of which in any manner affects your testimony or anything that you have included in your report in the way of valuations that you do not want us to know?
A. It is just as I stated, I glanced through it; I haven't the faintest idea what is in it except the meter tabulation I referred to.
Q. So that you do not understand why counsel insisted that we must get an order from the court?
A. I do not.

Mr. GUERNSEY:

Q. You also do not understand why counsel concluded that they would insist?
1592 A. I don't know anything about it at all.

Excused.

WILLIAM W. RANDOLPH, being first duly sworn on part of complainant, examined by N. T. Guernsey, Esq., testified as follows:

Q. Your name is William W. Randolph?
A. Yes, sir.
Q. What is your avocation?
A. Consulting engineer.
Q. Where are you located?
A. 165 Broadway, New York.
Q. Have you specialized as to any particular business that comes within your profession, if so, what?
A. I have specialized in connection with the gas industry.
Q. I wish you would state in a general way what experience you

have had in designing, contracting and operating gas plants and distribution systems and the apparatus used in them, and also in a general way what experience you had with reference to the valuations of such plants?

A. You want me to begin a brief historical——

Q. Give an outline of your engineering experience.

A. My experience in the gas business began about three years after I graduated from Stephens Institute of Technology. In 1889

1593 I went to work for the Gas Company at Kansas City. At that time I was employed in the design and construction of an electric light plant. From Kansas City I went into the employ of the United Gas Improvement Company. While working for them which covered a period of probably between three and four years, I was in the various departments from constructing various kinds of gas apparatus, both in their own plants and a number of outside properties, to being second in charge of engineering and the construction department of the Philadelphia office. In that position I designed a construction and operation in many cases of the various properties in which they were interested both as constructors and as operating them, came within the scope of my department, the department in which I worked. About 1894, I resigned my position with the United Gas Improvement Company and went with the firm of Humphreys & Glasgow Consulting and Constructing engineers, having offices in London and New York. My experience with them covered a period from 1894 up to January 1st, 1910. And during that period I was in charge of the engineering and examination of properties, operation of properties with which they were interested and actively connected, with both buying and selling and operating gas and electric companies.

Q. Through what territory?

A. My experience pretty well covered generally the larger towns I think in the east and middle west, and one or two in the far west.

Q. Was this firm of Humphreys & Glasgow engaged in the manufacture or selling any apparatus?

A. Their specialty was water gas apparatus; the apparatus that I have heard described in court here.

1594 Q. Now after you opened your own office about January 1, 1910, since you opened your own office, what business have you been engaged in?

A. I have followed the same line of work for myself that I followed for the firm and Company of Humphreys & Glasgow.

Q. Have you made a valuation of the property of the Des Moines Gas Company, complainant, in the city of Des Moines which it uses here in its business of manufacturing and distributing gas?

A. Yes.

Q. Now, I wish you would state somewhat in detail what you have done in the way of examining the property and examining the conditions in Des Moines and things of that character in order to aid you in making this valuation?

A. I first received what purported to be a schedule of the physical property of the company; that schedule I took with me to Des Moines and used it in checking up the apparatus that the company

has in its gas plant, visiting the property and examining the various pieces of apparatus; the various buildings enumerated in the schedule and identifying the same. I also familiarized myself fully as possible with local conditions relating to the company's business.

Q. What do you mean by familiarizing yourself with local conditions—please state whether you done anything with reference to familiarizing yourself with local prices or anything of that kind to effect the valuation?

A. In general by that I mean to cover familiarizing myself with local prices of materials and supplies in Des Moines and looking through the records of the company to familiarize myself with prices paid in Des Moines.

1595 Q. Have you prepared a memorandum which summarizes the results of your conclusions as to the valuation of this plant?

A. Yes, sir.

Q. Is this paper which is marked Complainant's Exhibit 22 the memoranda to which you just refer?

A. Yes.

Q. Now turning to page 22 of the report—before I ask you any question with reference to the buildings there referred to will you state in a general way what method you adopted in valuing this property and why?

A. In all of my values given here, all of my values given here are based upon the theory of reproducing the physical property as of the time of this examination December 31, 1910.

Q. Why did you adopt that theory?

A. Because that is a period in which the investigation is being made and I am advised by counsel that is the period and date that the valuation is desired as of, and you have to take some date in order to produce definite figures.

Q. I don't think you understood what I have in mind. What I wanted to get at was why in making this valuation you adopted what you call the reproduction theory?

A. I thought you were getting at the date. The reproduction theory is one of several that have been considered at different times: the cost of the property is one method if that can be obtained; that is very difficult to ascertain, and in this case I do not think the records would have permitted it, and if I had the time to go through their detailed——

The defendants object to this statement of the witness as incompetent and a statement of a conclusion so far as it pertains to the condition of the records of the company.

1596 Answer continued:—The reproduction theory represents to my mind the best method of ascertaining the fair value of a piece of property of this kind as of the present time. There are certain things that have market value and you can go into the open market and ascertain them. There are other things you have to measure by some comparison, because there is no ready market value for them. You might take as an example cast iron pipe, or wheat or any commodity in which the price per bushel or ton can be ascer-

tained as of a certain time and certain place; that would to my mind be the measure of its value at that time. Take something else for instance, you might take a portrait or painting the value of that painting could not be determined very well because a private party might place a sentimental value upon it.

Q. In a case of that kind one method that would appeal to me would be to go back to the original cost, or rather to go back to the cost—take an artist of equal talent with the artist that produced that product, and see what it would cost in the element of time or service to reproduce it. I don't know that I can answer your question very clearly. Those are the various elements it seems to me make the reproduction value one of the stringest upon which we can base our judgment as to the value of the property.

Q. Can you tell me Mr. Randolph about how long you have been using this reproduction method as a method for obtaining the value of properties of this character?

A. I don't think I can tell you exactly how long; ever since I can remember doing any work in this line I have been working upon reproduction, when no other measure was available. In many cases in the past there have been other measures in the purchase of gas companies available.

1597 Q. Can you tell me in a general way whether this method has been in use generally among gas engineers for say fifteen or twenty years?

A. Yes, I think the reproduction method has been for that length of period given very material weight by engineers.

Q. You referred to a list of physical property, a description of it furnished you by the company. Was that what we call Exhibits 15 and 16, the inventory?

A. No, I was furnished something very much like that, but was not exactly the Exhibit that is in the case. Since I have been here this last time I have borrowed a copy of the exhibits from Judge Carr and have compared the exhibit that was given me with that to see that it was substantially the same.

Q. That is what I wanted to get at, whether the list of property which was furnished to you was substantially the list of the property shown in the two exhibits 15 and 16 constituting the inventory?

A. Yes.

Q. Now, returning to these buildings, take the first building here, the purifying house, as an illustration and explain to the Master what you did in your effort to value it?

A. I examined the description and the drawings and made sufficient measurements on the building to satisfy myself that the details in the description were substantially correct. Having ascertained that fact I calculated the quantities of material in the buildings, using the drawings as a basis of my calculation, not in as great a detail as the company had developed theirs, but by *usi* using some shorter cuts and different methods I arrived at the ultimate price. I converted the excavation into cubic feet and put a price per foot on it. The brick work into cubic feet and put a price per foot on

1598 that. The brick work I think in most cases I figured solid and added for windows and doors, if there was anything to

be added for that item. The item of roof from a consideration of the drawing and inspection of the building on the ground, I would place a unit price on the roof as a whole per square foot, going through the building in that detail would produce a certain set of figures which approximated in my judgment the cost of reproducing that particular building. The same process was used in regard to each one of the buildings. I grouped as much as I could those things together as a whole, using as few items to put prices on as I conveniently could.

Q. Now you have referred to unit prices in your answer. I wish you would state now generally whether in each instance the unit prices which you took or the prices of labor or material which you adopted or of apparatus or anything else that went into this plant, was in your judgment the fair, reasonable price for the article in question to be used for the purposes of a valuation of this plant as of January 1, 1911.

Objected to on part of the defendants as incompetent, immaterial and the witness is not shown to be competent to answer it.

A. It was.

Q. Now, Mr. Randolph, did you have any experience in connection with the buildings, the character of the buildings that are involved in this plant?

A. I have.

Q. For how long a time?

A. Covering a period of 18 or 20 years probably.

Q. What is the fact as to whether that experience has gone to designing construction and supervising construction?

A. It has.

1599 Q. How general has that been in the localities of the United States?

A. It has covered a very considerable territory, covered those points in the state of Massachusetts, North Carolina, Alabama, Pennsylvania——

Q. Did you get any further west than Pennsylvania?

A. Kansas City. I could enumerate a good many places.

Q. I do not care to have you enumerate them all. Did you make any special investigation as to these matters locally in Des Moines?

A. Yes, I found that the company's representatives had accumulated considerable data on the subject, and from local contractors and other sources as to the costs of material, the cost of labor, etc., that I saw, and I also conferred with two of the contractors that furnished that data, checking up first hand their ideas as to the correctness of the figures that I saw tabulated.

Q. And are those statements true generally as to all the items that go into your estimate. I don't want to ask you about each one unless counsel insist on it. That is, as to your knowledge and experience and checking up as to local conditions if there were any local conditions.

A. I have endeavored in each case to make my experience conform to local conditions.

Q. And you have experience as to each of those matters that is involved?

A. Yes.

Q. Now, I will ask you again whether the unit prices adopted by you and the prices for labor and material, for apparatus and the prices for all the various items that go to make up this property which you valued, as they have been used by you were fair,

1600 just and reasonable for the valuation as of January 1, 1911.

Objected to on part of the defendants as incompetent, immaterial and the witness not having been shown to be competent to cover these general features, and it already having developed by the examination of this witness that as to a large number of items his knowledge is based entirely upon hearsay.

A. In my opinion they are.

At this time an adjournment was taken until 1:30 P. M.

1601 1:30 P. M. THURSDAY, *August* 31, 1911.

WILLIAM W. RANDOLPH, being continued on direct examination by N. T. Guernsey, Esq., testified as follows:

Q. Mr. Randolph will you please state what in your judgment is the estimated cost new of the building we have been referring to, the purifier house?

Objected to as incompetent, the witness is not competent.

A. $10,500.

Q. Under this building I see in parenthesis a statement, pages 16 to 24 inclusive. What do these pages refer to?

A. On the first page of this statement you will find a note which says the following page and sketch references are to pages Exhibit 15 and sketches of Exhibit 16 found in complainant's Exhibits 15 and 16.

Q. So that refers to these exhibits with reference to these buildings here?

A. Yes, sir.

Q. That amount $10,500 which you call estimated cost new is what we have been calling the cost of reproduction?

Objected to as a statement of counsel and not an in inquiry, incompetent and immaterial.

A. Yes, sir.

Q. Now proceeding will you please state whether or not this Exhibit 22 shows as to each of the buildings the estimated cost new or reproduction cost?

A. It does.

Q. And please state whether these amounts as you have

1602 given them here are in your judgment fair and reasonable?

Objected to as incompetent, irrelevant and immaterial, the witness has not been shown competent to make such general answers to general questions.

A. In my judgment the prices stated here are fair and reasonable.

Q. The total of the estimated cost new of the buildings is in your opinion what?

Same objection.

A. $93,960.

Q. I notice just preceding that two items yard paving and fence. Please state whether or not they are included in this total.

A. They are, both items of yard paving and fence are included.

Q. Now you have another column in these pages two to 5 inclusive of Exhibit 22, which is estimated physical decay. Will you please state what you have covered in that column?

A. By estimated physical decay I meant to define as specifically as I could the depreciation I take into consideration there. That is the amount that if you could do it, would be required to put that building into as good condition as new.

Q. Now how do you arrive at these amounts?

A. By inspection of the buildings and placing an estimated depreciation on the elements in the building that were depreciable.

Q. Now I notice in boiler house station and generator house on page 3 and in carpenter shop barrel oil house pump house, oil pump house and meter house on page 4, there is nothing in this column opposite the items that have been referred to. What does that indicate?

A. I didn't notice anything on those buildings that I thought was depreciated or decayed.

1603 Q. What does the amount, $8,282 in the last line of page 5, where the figures appear represent?

A. It represents my judgment of the amount of physical decay as previously explained that exists today or at the time of my inspection which was practically the same as of December 31, 1910, exists in the buildings described in those pages.

Q. As we have these totals page 5, $93,960 estimated cost new and $8,282 estimated physical decay, will you please state whether they are carried into any summary and if so where we shall find this summary?

A. On page 1 of the statement you will find buildings page 5, of this appraisal estimated cost new $93,960 estimated physical decay $8,282.

Q. Now what general items do you next take up?

A. The items of machinery and apparatus in the plant.

Q. And do they appear under the head of machinery beginning with page 6?

A. Yes, sir.

Q. Now please state whether you have estimated the cost new of each piece of apparatus or machinery which you have specified in your report on pages 6 to 12 inclusive except where you have grouped several items and whether you have in these cases estimated cost new of the items so grouped?

A. They are to be taken together and the estimate is as of reproduction new. There are two or three items in here which I did not produce the original detail figures, but took figures which after look-

ing over them commended themselves to my judgment. One of these was the item of furniture and fixtures in the west side office, meter and fitting shop shown on pages 239 to 243 of the com-
1604 pany's schedule. That I took largely from the company's inventory, that is from the company's I don't mean inventory, but from the company's costs. I think the same is true of tools and the same is true of stable equipment. That was taken from an estimate made by the company which in looking over it, it looked to me reasonable.

Q. Aside from the items which you have mentioned I wish you would state whether the estimated cost new, as it appears under the heading machinery in Exhibit 22, is as to the various items there set out your judgment of what would be a fair and reasonable cost for the item in question if the plant were to be reproduced as of January 1, 1911.

Objected to as incompetent, irrelevant, the witness not having been shown to be competent.

A. It is.

Q. And what does the column estimated physical decay as to these matters of machinery and apparatus cover?

A. That represents the state or that represents the amount of money which in my judgment would be required to be expended on those pieces of machinery if it were possible to put them into as good condition as new.

Q. And what is the total amount of the estimated new cost of machinery?

A. The total amount as found on page 12 and as total machinery $534,058. This is transferred to the summary of totals on page 1 the same amount.

Q. And what is your total estimated physical decay?

A. $84,710 which is also transferred to page 1 in the summary.

Q. You say that also appears on page 1 of Exhibit 22?

A. Page 1, yes.

1605 Q. What is the next matter which you took up?

A. The distribution system, first taking up the mains, street mains.

Q. I notice that you have the mains here subdivided under the various sizes two and one half inch and under up to 24 inches with the number of feet of each size of main. State in a general way how you arrived at your estimate of the cost of the reproducing of the distribution system, that is the mains that form part of the distribution system first.

A. The company gave me the schedule showing the lineal feet of mains that they own. That I accepted as correct. That schedule showed the lineal feet of mains in use November 1st. To the extent that they have added to the mains between November 1st and December 31st, I find I have made an omission. In other words my figures here do not include additions to the plant from November 1st to December 31st. I examined the conditions that existed in Des Moines as to soil, general conditions of the streets, etc., that you

had to contend with. I had an opportunity to study the company's description of the conditions that existed here, I took occasion to discuss with the people who were most in contact with the distribution system, the conditions that existed, the condition in which *th* the main was found upon examination. I saw very little of the distribution system proper myself, because since I have been here comparatively few streets have been open. Those streets that were open that I knew of, I made it my business to make an inspection or to verify as far as possible my origial judgment.

Q. Now then you say where a street was opened you made
1606 it your business to make an inspection. What sort of an inspection did you make, what did you do?

A. I examined the nature of the soil, nature of the street covering, got down in the trench and examined the pipe to see whether it was as stated to me, the nature and condition.

Q. Now what did you find as to the condition of the mains as far as you examined them?

A. As far as I examined them myself I found them to be good.

Q. What in your opinion is the estimated cost new of the mains that is what in your judgment *is what* would be the reasonable fair cost of reproducing the mains which are a part of this system?

Objected to as incompetent and the witness is not shown to be competent.

A. $1,227,612.

Q. What did you do with reference to services, that is did you ascertain what their value was in your judgment?

A. Yes, I pussued the same general method as to services. I had access to all of the company's records that I wanted to go into and I used both on the mains and on the services that data to check up my judgment with.

Q. And as to house services as they existed on the first of November, 1910?

A. I assumed that the number of services given me were correct and my judgment of the fair value new, fair cost of reproducing new was $—.

Mr. BYERS: Wait a minute please. If that answer is to go in I want an objection to it. I don't understand counsel has asked that question *yes*, however.

Q. What in your judgment is the reasonable actual cost of
1607 reproducing the house services that you have referred to?

Objected to as incompetent, no proper foundation having been laid for the inquiry and the witness is not shown to be competent.

A. Total services $393,647.

Q. These services are what? What do you mean by a house service?

A. They are the physical connection between the gas main and the gas meter.

Q. Above or below ground?

A. Below ground, wrought iron pipes in most cases in fittings

running from the main in the streets to the inside wall of the house.

Q. To what extent is it physically possible to make an inspection of the services without digging up the pipe?

A. It is impossible to inspect the underground work without digging up the pipe.

Q. What proportion of it is under ground?

A. All of it except possibly something that might be in areaways exposed pipes, small sections, but it is under the street or under the paving or under the lawn.

Q. Turning a moment to mains, you said you had been given some information about them and that you had attempted by taking all of the opportunities of which you knew while you were here to verify this by examining the mains themselves where they were exposed for any purpose. So far as your examination of the mains went, pleases state whether or not it tended to confirm the information that had been given to you with reference to them or their condition.

Objected to as incompetent and immaterial.

A. Yes, sir. In every case before I went to examine an
1608 opening of a main I made inquiry of people that I thought were best posted on that particular subject and then when I got there I examined the conditions as stated by them and got a check in a way on their judgment on other matters to see whether we agreed on that particular subject.

Q. Who was the person whom you have referred to as best posted you talked to about this?

A. One of the persons was Mr. Vincent, another was Mr. Henry Moul.

Q. Now your next item here is what?

A. Lamp services and posts.

Q. And what in your opinion is the reasonable cost of reproducing this item as of the date we have mentioned.

Objected to as incompetent, the witness not having shown his competency and no proper foundation laid for the inquiry.

A. $23,256 which is carried forward to page 1,—no that is not carried forward, it is the total.

Q. Your next item is meters in use. Explain what you did with reference to meters.

A. I made no attempt to ascertain whether these meters were or were not in use, accepted the company's inventory having questioned them as fully as I could as to the method of arriving at that inventory and having placed a value after having gotten the information in that way.

Q. And what in your judgment is the actual reasonable cost of reproducing these meters as of the time referred to.

Objected to as incompetent, the witness not having shown his competency.

A $240,057.

1609 Q. What is the next item?

A. Meters in stock.

Q. What in your judgment is the actual reasonable value of these meters as of the date referred to?

Same objection.

A. $7,924.

Q. Now you have against this distribution system under your column estimated physical decay the amount $189,249. I wish you would state what that is and how you arrived at it?

A. That is 10 per cent of the estimated cost new and represents my judgment of the amount that would be required if it were possible to put these mains, meters and services in to condition as good as new, that would *respote* them.

Q. Can you explain to the Master how you arrived at this amount?

A. Well only partially. It is largely the result of experience taken in connection with what I can learn locally of the condition of the several parts taking them up in detail. The mains for example I have been unable as I stated to examine those mains except in a very few instances to determine what the present state of the case is but that pipe that I have examined has not shown any appreciable decay and I have examined pipe as near as I could get from the best posted men here up to 45 or so years old. That indicated no physical decay on pipe itself. Then you take into consideration the condition of the mains as shown by the unaccounted for gas or leakage as it is commonly called, the condition that exists as regards electrolysis which I inquired into very carefully and so far as I could learn there is no appreciable amount of electrolysis that has taken place in the gas mains. An *ex*-examination of the soil would

1610 tend to confirm in my mind the fact that the electrolysis would not take place very rapidly here, conditions appear to be more or less favorable, the pipe that I examined myself don't show any signs of it. I made no critical examination to determine how much current the mains may or may not have been carrying. Taking these elements into consideration and also my past experience with mains I have formed an opinion that there was not much depreciation that really existed there. Now as to house services in some cases I have seen services here that were twenty-five years old that were good. The actual condition of these services in real *use* I don't know but that in a way again is reflected in the leakage account. If the services were in very bad condition, deranged badly, you would naturally expect to find the leakage high. The same line of inquiry made as regards mains was made as regards services and an effort was made by me to reach as near as I could the actual physical decay by these people in daily contact with the mains and services. As regards meters I was shown a sheet that gave the so-called age of the meters. So many meters, I have forgotten the years, between 1886 it began with and ran on down by years. That I had before me in a way to represent the length of time that they had been operating a certain number of meters and I also had access to the records of the company which showed the number of meters *if* different sizes that have been renewed and condemned and re-

paired and the number that have been removed. I knew from observation of the number of meters in the store room, repair shop here, what the general methods of taking care of meters were, satisfied myself that they were well taken care of and from data
1611 of that kind I arrived at the conclusion as to depreciation of meters, while apparent age would be gotten by multiplying the number of years that a certain number of meters were said to be in use by the number of years that had elapsed between that period and the present and averaging that might show a pretty long period of use or it might not still the meters themselves are frequently gone over. It would be difficult to say from my examination so far just how often every meter is examined, but I noticed in the past five years from 40 to 45 thousand meters have been taken out and taken to the repair shop. Of that probably four or five thousand have been actually repaired and condemned, when a meter is condemned a new takes its place so that is renewed in toto in effect. Then 40 to 45 thousand total meters that have come back to the shop, they are gone over and tested each time before they are sent out and if they are not in good condition as represented by tests then they are sent off to be repaired. From consideration of all that class of information I have formed my judgment on meters and while it might be if you attempted to differentiate there, there might be more than ten per cent on one item and less than 10 per cent on the other still on the whole it seemed to me that ten per cent was a reasonable figure for depreciation that exists up to the present time irrespective of the age. That seemed to me to be as good as any other judgment I could arrive at for depreciation.

Q. Now are the tota-s of this page 13 carried by you into this summary on page 1?

A. Yes, sir.

Q. The next item in this summary is land value $240,000.

1612 *Q.* How did you get your value of the real estate?

A. I assumed a value taken from the company's figures that were given to me and since I have been here I have noted in the testimony the valuation put on the land by some of the experts that have already appeared and that tended to confirm the value that I previously assumed so that the original assumption I left stand.

Q. You don't claim to be an expert on real estate values in Des Moines I assume?

A. No.

Q. What in your judgment is a fair and reasonable amount of the item that we have been referring to as working capital?

A. $160,000.

Q. Tell us how you arrived at that if you please?

A. From a consideration of the different elements that go in to make up the amount of money tied up in the company's business, the stocks of material, outstanding gas, cash required to operate the business.

Q. What do you mean by outstanding gas?

A. Uncollected gas, gas made and the expense of making the thing past as far as manufacture goes but money not yet received or collected.

Q. Now what in your judgment is the amount which should be allowed on account of the item that we have been designating as going value?

Objected to as incompetent, immaterial, the question is based upon an assumption that is not in the testimony of this witness.

A. That element in going value which is represented by the cost to develop the sales of gas from zero to the present, to the
1613 present—to the amount that they were selling as of December 31, 1910, which exceeded $510,000 in my judgment was five hundred thousand dollars.

Q. You said the amount they were selling, I guess you stated what you intended to, did you intend to state in dollars or feet?

A. I meant to state in feet.

Q. How many feet?

A. 510 million feet.

Q. Now will you please explain to the Master fully and in your own way how you got at that?

A. It is a problem that I hardly feel able to explain in detail the processes, but it is the result of my experience and the conclusion I reached based on all of the elements that I take into consideration that enter into the problem of what it would cost after you have gotten a developed plant to develop sales from nothing to the present volume of sales. That may not be at all convincing to the Master's mind or to any one else's, but it is difficult for me to analyze my mental processes or to bring up and say in detail how I arrived at an opinion or conclusion of that kind. The various measures that have in the past been put on that each and all have some merit and are worthy of some consideration. The method of placing a certain amount per consumer gotten as representing the expense applied to the individual consumer, you would find some examples of that in the company's present method of doing business. They have a new business department which cost them a definite amount to operate. They will in a given period make certain expenditures for the development of new business and the result of that *are* shown in
1614 the increased number of consumers that they take on. Roughly speaking as I recollect the figures the year 1910 sho-ed an increase in consumers and by consumers we will say that a meter represents a consumer, an increase of meters of about 1300. The cost of the new business account showed about $24,000. Now all of that new business is not entirely due to the expenditures of the company in its efforts there. Some of it accrues to it by reason of the natural growth of the town. You might say that—it would be purely an assumption, but I recall looking up the population in 1900 and 1910 and I thought that the probable rate of growth was at least 2000 per annum. If you make an assumption of that kind estimating five people to the family you would get about 400 consumers that would come to you from the natural growth of your city. That would leave a balance of 900 that would accrue to you from the business department. Assume roughly that there was a thousand that the new business department obtained, that would give you approximately $24.00 as the expenditure of the com-

pany during the past year for such new business and new customers as they acquired. Now that is just one example. I don't know that there is any particular conclusion to be drawn from that, but it is just given as an example. You will find in other cities that the same thing can be adduced which will result in different figures, sometimes more or sometimes less per consumer. And from that kind of experience some engineers have taken as a basis so much per meter connected which as I said before has some merit and is worthy of some consideration. The cost of developing your business will depend largely upon the assumptions that would make in your estimate, length of time that you take to get your business and
1615 fair rate of return is involved in that because it is not only the direct cost that you spend in getting business such as is reflected in the accounts as kept by the company now, but it is the loss of interest, loss of the fair return upon your dollar invested from the time that the plant is completed and ready to begin delivering gas up to the time that the period is reached when you are selling the full output of the plant taking at the time at which this valuation is made. I don't know that I could explain—I could talk a long time on the subject, but I don't know that I could tell the court any more clearly exactly how I arrived at it than by mentioning those various elements.

COURT: Practically the same method as these other gentlemen?

A. No, I have not gone through any such process of computation at all. As I see it, it is an opinion estimate, opinion as a result of all considerations. That is the only method I know. I know that is used by competent engineers, it is used in water cases, it is used in gas cases, has been used recently in gas cases. That I have not compiled myself but I had the benefit of knowing what those figures resulted in, what those computations resulted in.

COURT: You had the benefit of that?

A. I had the benefit of that. I heard that testimony in court.

Q. When did you first learn what the going value computations of Mr. Lea and Mr. Baehr had resulted in?

A. When I heard them in court.

Q. When you heard them testify?

A. I did not in every case hear them, but when I speak of hearing I either heard them in here or was told about them after they were on the stand, because I was not in court every day.

Q. You as I understand it did not follow that method at all?
1616 A. No.

Q. What in your judgment Mr. Randolph was the total estimated cost now or the actual reasonable cost of reproducing the property of the complainant, the Des Moines Gas Co., used and useful by it in its business of manufacturing and distributing gas in the city of Des Moines as of January 1, 1911?

Objected to as incompetent, and the witness not having been shown to be competent, no proper foundation laid for the testimony.

A. $3,420,514.

Q. And what at the same time was in your judgment the amount which should be deducted from the amount you have just stated

on account of physical decay or depreciation in order to get the actual reasonable value of the property referred to at that time.

Same objection.

A. That question calls for an answer which does not seem to me quite right, what I mean by those figures.

Q. Tell us then in your own way what you mean by those figures. What I want to get at is as near as I can the actual reasonable value of the property January 1, 1911, in your opinion?

Objected to for the same reasons as the former question.

A. What I mean by estimated physical decay there or perhaps to my mind what is in the valuation appraisal there is to represent the amount that the property has depreciated in value due to physical decay and to represent a sum of money which will have to be put back into the property from some source in some way to make it fully up to the cost new. Now that does not represent that the plant in my mind is depreciative so far as operating efficiency is concerned. It is good as far as the public—it has got as far
1617 as the public is concerned 100 per cent efficiency. The fair rate of return, the amount upon which you should get a fair rate of return in my opinion is the first column or as new and not the depreciative cost. For that reason I say that I could not answer your question directly because you charge off of the cost new the depreciation. If you want to get at my opinion how it should be used I had to go into that explanation.

COURT: Should be the cost new less $500,000?

A. I think the $500,000 stands in the same class with the other elements in there. The $500,000 is part of the expenditures in one form or another that the company has made to complete its plant and complete its business, to build this plant and acquire this business and that from the cost new so long as the company has to maintain and does maintain its plant that you should not depreciate for the purpose of determining the fair return. The fair return should be once you invest a dollar you should get your fair return on that from the time the dollar is invested until it is returned to you in some form if at the end of your existence you should have acquired a sinking fund there to return your original investment. If you are going to keep on indefinitely then that sinking fund does not necessarily have to be prepared. If you started and invested your dollar in the first instance if you later come along and put a depreciation of 50 per cent upon that because of its present condition, then you have depreciated that original dollar invested 50 per cent and won't get a fair return only on one half of what you originally put in and I still have to maintain my plant and am going to maintain it. Therefore, I think the value new is
1618 the basis for the return in the case of this particular company. I have made some inquiry as to what the depreciation they have written off or they have charged up before this amounted to. I have not taken this directly from the books, I have been advised that the surplus the company now has and the depre-

ciation that it has written off within the past two or three years exceeds materiall- the amount of physical decay that I think exists there today.

COURT: You would not allow anything or you would not charge off anything annually for physical decay upon that principle.

A. Upon this principle I would not charge off, I would keep my investment intact. I do not judge the depreciation over future years by the exact amount of physical decay that is represented there today and that I find exists because I don't know how many years, I can't tell without more detailed examination than I have made how many years that decay has been accumulating. The company has been in existence here for a great many years, but it may have renewed and maintained, it has maintained in various ways its plant and that represents to my mind the amount of decay that exists. Now when you come to deal with the future, that is another problem. I don't feel I am bound by that figure in dealing with the future. I feel that there I have got to exercise my best judgment in the physical decay that is represented at the present time. I can't go through and look at it, but I can estimate in the mains but like a building I can go through and see how much decay has taken place and it is immaterial to me whether that building is one year old or a hundred years old so far as I am concerned if it is there of useful design and adopted to the purposes of its use at the time I make the examination. The age has no bearing whatever on it. Now when you are dealing with the
1619 future you have got another situation there. You take into consideration another set of problems. But when you come to say what is the physical condition of the property now, my contention is that all you have got to do is to get that account by looking at it irrespective of age. If a man tells you a building is fo-ty years old, the building is there and I can look at it. The same is true of everything else. You can tell me mains are a hundred years old, but I have got to get some ther evidence additional to that before I can determine what the present condition of those mains are.

Q. Did you make an estimate Mr. Randolph, I don't know whether you did or not as to the amount which should be charged off annually or charged to the operating expenses annually in the future on account of depreciation of this property either in dollars or in cents per thousand.

A. I have not yet Mr. Guernsey. I have got the elements to use in forming that judgment, but if you desire to go into that detail with me I will have to take a little time to consider this and bring them togethe- before I would want to give you an opinion on that subject.

Q. Then we will pass that for the present. Now Mr. Randolph what can you say in a general way as to whether this plant is adapted to the requirements and the services which are demanded of it here in the city of Des Moines?

A. I have examined the plant and my opinion is that it *as* adapted to the purposes of its use.

Q. What is your judgment as to its adequacy, as to whether overbuil- aand things like that?

A. Well in some respects it is a little underbuilt I guess.
1620 The holder capacity is getting pretty close to the limit where they will need more capacity there. They have far exceed- the day's output—that is in the day's output they have far exceeded the holder capacity. The other elements that c-me into *into* the main part of the manufacturing plant are not overbuilt I don't think. Take the generating capacity you have there five units. One of those units alone at the present time can maintain the output of the plant if everything is all right. You are very close to the period in your future history probably where one machine alone will not. Now take another combination you have got two other units smaller, the two 8 foot six sets which combined will do as much as the one ten foot six set I have just referred to. Then as a spare you have the old six foot sets which by themselves you would be unable to produce enough gas to supply the demand here in the maximum condition but they are useful up to the point that you can throw them into use in the case of an emergency. So taking all these things into consideration the generating plant is not overbuilt.

COURT: I see you have got on page 11 2 8 foot 6 sets at $29,760 and one *t0* foot 6 foot set at $21,380. What is the difference in the co-t?

A. Water gas apparatus is not bought on its capacity alone. Two 8 foot six sets, you will note that these water gas sets include an additional item there of *s*cubber, that is one more item than the third set has got, that ends at the washer. Then they are an entirely different size and they result in a figure which is not necessarily and directly proportional to the output of the machine. The capacity of these machines var*y* from the rating, given one capacity with one kind of fuel and another capacity with another kind of fuel.

1621 COURT: I just wondered why the larger one cost less than the smaller one that is all?

A. The larger you go under certain lines and capacity the more efficient the machine is from the view of investment. It will turn out a larger amount of product for a given investment, per unit of invest*j*ent you get a larger return in output. It costs less per unit of output that is one reason why the small units are not built to go into a very large plant.

Q. Did you make any estimate as to what expenditures will be required in the plant here in the near future in the way of additions?

A. I did some estimates on that but I have not got them in completed form for use now because I didn't know that that was going to come up.

Mr. GUERNSEY: We offer complainant's Exhibit No. 22 in evidence.

Objected to as inco*n*petent, irrelevant, no sufficient or proper foundatio*j* laid for its introduction.

Cross-examination by Hon. H. W. BYERS:

Q. How much of your experience during the years since 1889 has been as operator of gas plants?

A. It would be very difficult for me to say in percentage of time. From 1896 on I think I have been pretty intimately connected with the operation of plants.

Q. And at different localities in the country difference points throughout the *company,* or has your experience been largely in one place during that time?

A. No, my experience has been in different localities.

Q. From Kansas City on the west and south on east to the
1622 Atlantic coast?

A. Well no I never had any definite experience in the operation in Kansas City since the period I spoke of. I am referring to the period after I left Kansas City.

Q. You left Kansas City in the 90's?

A. I probably left Kansas City in the 90's.

Q. And during the years say since you left Kansas City and up until the time you opened your present office in New York City did you own any gas properties?

A. I have owned stock in gas companies.

Q. I will come to that later. Have you owned and operated any gas plants on your own account during these years?

A. I have operated in an advisory capacity plants that I have been interested in, but as I say stockholder.

Q. How recently have you been *superiving* the operation of a gas plant in which you had a financial interest?

A. Why I suppose for eleven years.

Q. And you still are occupying that relation to the same plant?

A. I am consulting engineer for the same plant.

Q. You have a financial interest in the plant?

A. Yes, I am interested in some of their preferred stock.

Q. Now how many gas plants do you have stock in at this time?

A. I don't think I have got stock in any of it.

Q. Is it hard for you to settle that in your own mind?

A. Yes, because I have got several cats and dogs of stock that I am not sure whether I have let them go or not, it has been so long ago that I saw them.

Q. I am speaking of gas properties, not any other property?

A. That is the kind of stock I am talking about too.

Q. Do you think of more than one concern that is in oper-
1623 ation now and in which you have financial interest whether by stock or what it is?

A. Yes, there is probably two that I am interested in.

Q. If I remember your examination, I didn't take very careful note of it, you opened your present office in New York City within the recent year?

A. Within a year and a half, January 1, 1910.

Q. Prior to that time you were an employé of the Humphries and what is the other name?

A. Humphries & Glasgow up to the October a year before I left

them I was in the employ of a firm called Humphries & Glasgow, but for the following year I was vice president and also in the employ of the same company but continued as an incorporated company, concern.

Q. Now Mr. Humphries of that concern, what relation does he bear to any gas properties that you know of?

A. Well I really don't know what his relationship or companies are now.

Q. When you were with the United Gas & Improvement Company did he have any relation to that company?

A. He was the general superintendent — company *of* that time.

Q. And what relation did his firm bear to that company?

A. They were in the position of competitors.

Q. Weren't they consulting engineers, wasn't the firm acting frequently as consulting engineers for the United Gas Improvement Company?

A. No.

Q. At no time while you were with them?

A. No, I think as near as I can recall there were probably two or three minor pieces of work that the United Gas Improvement
1624 consulted us for.

Q. Mr. Humphries is president at this time of the Buffalo Gas Company isn't he?

A. Yes, sir. I answer yes, I don't know whether he is or not.

Q. Do you have any present employment with the United Gas Improvement Company?

A. No, sir.

Q. You say you have no employment now?

A. No.

Q. Where was the last employment you had with them?

A. I think it was in 1894.

Q. Now since you opened your office in New York City in what way have you occupied your time?

A. In consulting work.

Q. How much of the time since you opened your office in New York have you occupied in fixing values upon gas properties, furnishing information for the purpose of arriving at values if any, or advising with respect to the value.

A. I have devoted considerable time to that work but I don't remember just what percentage.

Q. How many cases do you have on at this moment?

A. You are getting into personal work that I don't know whether I have to answer or not. I don't want to go into my private business.

Q. No, I will not press you for the particular places at all, but just the number and it is proper for me to do that to test your relationship to this case and as it might affect the weight of your testimony here.

COURT: He says he don't want to know the names of the company.

Q. (Question read.)

1625 A. Two.

Q. Not counting the Des Moines case?

A. Yes, counting the Des Moines Company.

Q. One other besides the Des Moines?

A. One other besides the Des Moines.

Q. Now how many in a general way, without going into details, similar cases have you handled since you opened your office in New York?

A. Do you mean by that similar to this?

Q. Cases where your employment was similar to what it is here?

A. Employment before a court?

Q. Well not necessarily before a court, but in making up and estimating values either before courts or commissions or for investors or for gas companies.

A. For any purpose you mean?

Q. For any purpose, yes. How many in a general way without going into details, similar cases have you handled since you opened your office in New York?

A. I should say half a dozen or so.

Q. Were any of these matters within very recent months?

A. Yes, sir.

Q. Have you occupied any of your time during the period since you opened your office in New York in doing this class of work for municipalities or cities?

A. No.

Q. You specialize along gas lines as a gas engineer?

A. Yes, sir.

Q. In fact you are making that your life work now as I understand you?

1626 A. Well I have made that my life work for a good many years you might say.

Q. Gas engineer as distinguished from other kinds of engineering?

A. You might put it this way that my engineering experience has been divided for twenty years along the lines of gas and electric light and street railway property.

Q. Now has that been in fising values upon their property largely?

A. That has been in a comparatively small way in—it has been to a considerable extent in fixing values upon property.

Q. Well is fixing values upon gas property your specialty now?

A. No.

Q. Have you had any other kind of employment for gas companies recently than fixing values?

A. Yes, sir.

Q. Along what lines?

A. Along the lines of advising as to operation, design of plant operation of plant.

Q. These several instances that you answered a few moments ago were confined to valuation cases were they?

A. It was a general proposition. No, you made it general.

Q. Yes, I made it general and your answer was general?

A. I answered it generally.

Q. Were you ever in Des Moines before last January?
A. Yes, I was in Des Moines in the early 90's, I can't recall exactly the year now.
Q. Did you stay any time?
A. I think I was here for several months.
Q. And what were you engaged — here at that time?
A. At that time I was assisting Mr. Pratt the manager of
1627 the plant in a fuel gas trial he was making.
Q. You were here when the company had a law suit and trial in 1895 were you not?
A. No.
Q. And in 1892?
A. No. I have not been here in connection — any other work than what I have just stated to you until I came this last year.
Q. When you were here in 1894 what was your work?
A. Well I didn't say I was here in 1894. My recollection is not perfectly clear, I would have to refer to some further data to know exactly when I was here. The only time I was here before was in connection with this fuel gas experiment that Mr. Pratt was conducting and that was either in 1890 or '92, I don't recall which.
Q. It is not so important about the time as it is what you were doing. You were assisting Mr. Pratt in that experiment.
A. Yes, sir.
Q. And you were here as an employé of the United Gas Improvement Company?
A. I think I was at that time. I was assigned to Mr. Pratt, but whether I was on Mr. Pratt's pay roll or not, I don't know. That was immaterial and I was in effect in the employ of the United Gas Improvement Company.
Q. Now were you ever here after that time again until last January?
A. I think not.
Q. And how long were you here last January?
A. I don't think I was here in January. I will have to refer to my memorandum, I assume you wish to know when I was here.
Q. Yes, I do.
A. I came here on February, Monday the 13th, Monday
1628 morning the 13th and I left Wednesday night the 15th of February.
Q. 1911?
A. 1911.
Q. How did you come to come here at that time?
A. I came here to make the appraisal I have just completed, start the appraisal I have just completed.
Q. I know, but in response to somebody's request?
A. Yes, sir.
Q. Who requested you and when?
A. The date I do not recall and I think it was the secretary of the Des Moines Gas Company.
Q. Was it by letter or how?
A. I am not sure now. I had several communications on the subject I think the first one was by telephone.

Q. Don't you have a memorandum of that date?
A. No.
Q. I mean when you received your first or had your first communication with respect to valuing this property?
A. I may be able to get back to it, but I have no data here that would enable me to do so.
Q. It was however, before the 13th of February?
A. It was early in February. It was some time between the 13th as I recollect it and the first of February.
Q. That you first received a communication?
A. That I received any communication in regard to the appraisal of the Des Moines company.
Q. And you came on and was here then three days in February?
A. I was here two days in February, the 13th and 14th of February.
Q. Then when did you return again? I will sho-ten it up by asking you how long you were here altogether prior to the open-
1629 ing of this trial?
A. I was again in Des Moines coming on Sunday the morning of the 12th, no Thursday morning March the 9th and I left Monday night the 13th.
Q. From the 9th to the 13th?
A. From the 9th to the 13th and I was away from here one day at that time, Saturday I was out of Des Moines.
Q. Well we will call it all here from the 9th to the 13th, four days. Now when again if at all before the trial of this case?
A. At no time.
Q. So that altogether since your first communication from the gas company asking you to come here you have not been in Des Moines to exceed 12 days?
A. Whatever that time results in. It was two days the first time.
Q. It is not near that much, but I made it large enough so you would not have any question about it. Ten or twelve days at the outside?
A. Yes, sir.
Q. Now while you were here the first time who did you see?
A. I saw Mr. Haines, Mr. Vincent.
Q. Mr. Haines is the president of the company?
A. Yes, sir.
Q. And who is Mr. Vincent?
A. Mr. Vincent is the engineer of the Des Moines Gas Company. And I saw employés under them. I saw some of the contractors in town.
Q. Who of the contractors do you remember you saw?
A. Mr. Brereton is one name.
Q. He is the man that built some of these buildings down here?
A. I think so. I am not sure about the other name, seems to me it was Mardis.
1630 Q. Yes, there is a contractor Mardis here. Now any others?
A. No, no other contractors at that time.
Q. Well any other persons whether contractors or not?

A. Oh I saw a good many persons here.

Q. I mean connected with this business of course?

A. I saw the employés of the company.

Q. You stated that I think. I mean now any other person that had any relation to this company or to your figures?

A. Upon either of these trips?

Q. Yes; put it on either.

A. At either time, there were upon one of these trips I don't recall now which, I think it was the last one, several of the men that I see in Des Moines today that were not there the first trip that were connected with the inventory in some shape or form.

Q. Mr. Lea, did you see him?

A. No, I didn't see Mr. Lea. I didn't see Mr. Lea or Mr. Baehr here. I saw Mr. Brodnax I think and——

Q. Klumpp?

A. Mr. Klumpp.

Q. Douthert?

A. Mr. Douthert was here yes. And there were a number of men here at the time, I don't know as I can call all their names.

Q. Well in connection with this matter, they were here in connection with this matter?

A. They were here in connection with the case in some capacity or other.

Q. Now Mr. Brereton furnished you with information with respect to what he received for building some of these buildings down here didn't he?

1631 A. No, I didn't ask him any question along that line.

Q. You didn't have that matter up with him at all.

A. No, I had up the question with him of the cost of materials and cost of labor that entered into that class of work in Des Moines and under the conditions that existed here.

Q. You didn't want to know about what his contract called for under which he constructed these buildings?

A. Yes, I would have been very glad to know it but I would still——

Q. He was right there, why was not that inquiry made of him?

A. Because if he had a contract his contract would not enlighten me at all except as to the total figure, it would not eliminate the detail at all or enable me to form judgment upon which I could reproduce more or less in quantity than was covered by the specific contract that he had.

Q. But if he had a contract there under which he had built one of these buildings, there would have been absolute positive information with respect to this particular building anyway wouldn't it?

A. That would have been the total cost of that particular building.

Q. Yes, the total cost. Well now since you did not inquire about that we will pass that for the time. You have given me now so far as you remember the persons that you met here and talked with with respect to this property?

A. I think so.

Q. On any of your trips?

A. There were a number of assistants here with Mr. Klumpp and Mr. Brodnax that I might have met but they were——

Q. Well they were outside probably of the business con-
1632 nected with the company, they were not important in this matter that we are inquiring about?

A. I don't think it is material.

Q. That is all I want is the parties who had something to do with these values. Now were you present at any of the conferences at Chicago.

A. I was present at one meeting in Chicago.

Q. Who was there with you at that time?

A. I think the three attorneys for the company that are present were there, Mr. Douthert, Mr. Lea, Mr. Baehr, Mr. Klumpp, Mr. Heminger, Mr. Brodnax, and I think that pretty nearly covers the list.

Q. Was Exhibit 15 and 16 there, or copies of it?

A. I will have to see the Exhibit.

Q. Exhibit 15, you say you will have to see it?

A. I will have to look it over to see whether I have any recollection of it.

Q. You ought to know all about that, you have got them in your report haven't you.

A. You have my report, if you can discover it in there, it is there but not otherwise.

Q. Well didn't you put it in there or is this report made up recently?

A. Oh, I thought you were referring to some other exhibit. Yes, they had the exhibits, they had Exhibits 15 and 16, which were the descriptive matter prepared and the graphical matter prepared.

Q. And that meeting was early in February, wasn't it?

A. That is my recollection.

Q. Now what other papers, documents or figures did they have there at that time?

A. Why to my knowledge I don't know. I didn't go into
1633 any figures at that time with them and I don't know what they may or may not have had.

Q. You saw other papers and documents?

A. I saw all the papers and documents but I didn't examine them, I don't know what they were.

Q. They had blue prints there and maps?

A. They had some blue prints as I recollect it at that time.

Q. Maps?

A. I don't know whether they had maps or not, they may have.

Q. And wasn't there discussion there about *cirve* sheets, tables and so on and figures?

A. As I recall the discussion it hinged very largely on the inventories, in the first place they were discussing as to how the inventories were made up and whether they were of such nature to enable a man, an expert to use them and place valuations on them without going into too much detail himself, discussion of that character was part of it.

Q. Didn't Mr. Baehr and Mr. Lea and Mr. Brodnax tell you that they had gone over the inventory carefully and checked it all up and taken measurements to test the accuracy of the invoice and all that sort of thing?

A. Mr. Brodnax did, Mr. Lea did not.

Q. Didn't Mr. Baehr?

A. No.

Q. He had been here long before that?

A. If so, he did not make a confident of him.

Q. He didn't mention it. Now did any of these gentlemen that were as you remember it furnish any studies of life and age and methods of figuring and so on?

A. I recall some discussion with reference to depreciation.

1634 Q. Who started that discussion, who was the person who opened up the subject as you remember?

A. I would not like to say who started it.

Q. You would not like to say?

A. What I mean by that, I have not any reason for not saying if I recollect it, but I don't just remember who did start it.

Q. Was it Mr. Kulmpp?

A. I don't remember.

COURT: I expect it was some of these lawyers, wasn't it?

A. They usually start a discussion.

Q. Was it Mr. Klumpp?

A. I don't think Mr. Klumpp started the discussion, as I recollect it; Mr. Klumpp was rather quiet at that meeting.

Q. Have you ever seen Exhibit 8. Was he the only quiet one? I will withdraw that, I don't care to turn this into any matter that is not entirely serious. Just notice that, that is called Exhibit 8, did you ever see that before, that Exhibit 8 or a copy of it or the original of it?

A. The first two pages I have never seen before. The third page looks a little familiar there where it talks about contingencies and omissions. I think I have seen from pages 3 to 16. I would not state that positively because my examination of it was purely of a cursory or critical nature.

Q. That is all right, but if you did see them when did you first see them?

A. I am not sure as to the time. It might have been at the Chicago meeting and might have been at a later meeting.

Q. Let me see if I can't refresh your recollection. Don't you remember of hearing that Exhibit 8 substantially as it appears there read at that conference?

1635 A. I certainly do not.

Q. You say you think that you may have seen it at that conference, these pages?

A. Yes, sir.

Q. Now let us know the fact about it, where did you see them, when the first?

A. I have to my best recollection.

Q. Wasn't it that meeting?

A. I am not sure, I think more than probable.

Q. If it was not that meeting, where did you see it?
A. I was not its keeper.
Q. I didn't ask you that.
A. I saw it in Des Moines, I told you that.
Q. How often?
A. Probably once.
Q. When?
A. At the same period.
Q. What time?
A. I don't recollect the day or hour.
Q. Was it when you first came to Des Moines?
A. It was the second time I came to Des Moines.
Q. And that would be in March?
A. That would be in March.
Q. Was that before or after the Chicago meeting?
A. That was after the Chicago meeting.
Q. Then if you saw it in Chicago you remember now of having seen it at least twice?
A. If I saw it in Chicago, I have seen it twice. If I did not, I have seen it once.
Q. When did you finish your report?
1636 A. I have had it in the rough for, I don't remember that, probably a month or so.
Q. That is not what I asked you, when did you finish it, the one introduced here as Exhibit 22.
A. I had this typed up within the past two or three days.
Q. You have had it typed up since the testimony of Mr. Lea?
A. Yes, sir.
Q. And since the direct examination of Mr. Baehr?
A. Yes, sir.
Q. At these conferences in Chicago was there some discussion about theories and methods of arriving at the valuation of gas properties?
A. Yes, I think there was.
Q. Did you take part in them?
A. I think occasionally I did.
Q. Do you remember the discussion about the so-called element of value in property, going value?
A. That was a subject brought up.
Q. Was that discussed there among the engineers that were present and the attorneys?
A. I think the subject was talked over.
Q. And you took part in it yourself?
A. No, I think I was principally a listener.
Q. Well, did you talk some about it?
A. No, I don't think I talked anything about it because I was not familiar with it.
Q. Didn't you give your view of it?
A. No, I don't think I did.
Q. So up to that time you were not familiar with that element of value of a gas property.

1637 A. No.

Q. Your experience with respect to that commenced about the time of that conference didn't it?

A. That was the first time that I had noted that method or theory of arriving at going value.

Q. That fact is, isn't it Mr. Randolph, that you have been a witness a number of times and you have also prepared numerous reports in which you never entered or suggested any such thing as going value, isn't that so?

A. I never used that term going value, but the first thing of the kind that I can recall going into a case of this kind is much talk about the going concern and going concern value and all that sort of thing and there were opinions that were arrived at which appears to me to cover the same element but the term going value was a new name and they had tak*ing* a method of computing it which was new to me.

Q. Didn't you tell them so at that meeting?

A. To that extent I may have commented on it.

Q. And didn't Mr. Lea at that meeting give his views about this item of going value and what was the proper method of figuring it out?

A. I don't remember what Mr. Lea said.

Q. Or Mr. Baehr?

A. I don't remember either of them.

Q. And didn't some of the other gentlemen there state the method that has been adopted here by Mr. Baehr and Mr. Lea as being the right method and the one that ought to be persued in this case.

A. In the discussion do you mean?

Q. Yes, in the general discussion that took place there.

1638 A. No, I don't recall anybody pointing out that this, that or the other should be specifically used in this case.

Q. You say that was not said and done in that meeting?

A. I have no recollection of it.

Q. What was said in that meeting about these items that have been testified to here and called added costs by Mr. Baehr in his report, he calls them items 1, 2 and 3, and then taces and interest, were those items discussed there in that meeting?

A. I don't think they were as I recollect it discussed in detail. They might have been in inquiring of each man what his method was, his method may have been suggested, but it does not come back to me that any—in any way that I can answer definitely your question.

Q. Do you know Mr. Charles C. Brown, of Chicago?

A. No.

Q. You don't remember ever hearing his name do you?

A. I may have heard his name, but I don't know him.

Q. You remember such a person being at that conference?

A. Not while I was present.

Q. Well were you present all the time?

A. I don't think I was all the time.

Q. Where was the meeting that you attended?

A. It was at the Blackstone.

Q. You know Mr. Alvord? Don't you?
A. No.
Q. Was there a man by the name of Alvord present?
A. Not while I was there.
Q. Do you know Mr. Williams, a gas engineer.
A. What are his initials, I know several Williamses.
Q. Benezet Williams?
1639 A. Connected with the Chicago People's Gas Light Co.?
Q. I don't know what his business is, who he is connected with, a water works engineer the boys say?
A. Not that Williams I don't know.
Q. Do you know Col. Pratt?
A. Yes, sir.
Q. Was he present at that meeting?
A. No.
Q. At no meeting you attended in Chicago?
A. No.
Q. Now as to these so-called added costs, taxes and interest and items one, two and three, have you given them in your valuation?
A. Not in that sort of detail. I have an element in there for what is commonly termed overhead charges.
Q. What is included in the term overhead charges as you understand it?
A. As I understand it, it is the elements of interest during construction, taxes during construction, organization, engineering.
Q. Have you got those items in your report?
A. Yes, sir. I have not got them separated, I have them—they are all included in the figures given here. They are not shown separately.
Q. Have you any memorandum anywhere that shows the amount that you have added to the reproduction cost of the physical property?
A. Yes, I can tell you that. In every item of the buildings, machinery, distribution system and land value there is included an item of 20 per cent for overhead charges.
Q. You have lumped it at 20 per cent.
1640 A. I have lumped it altogether at 20 per cent.
Q. Now I will be obliged to you Mr. Randolph if you will give us the value or rather I will change that, the reproduction cost of the physical property itself free from any added items of overhead charges that you arrived at.
A. That is just a question of computation on the figures for I have got 20 per cent overhead charge included in here and these items divided by 1.20 would give you the result.
Q. It is just a question of taking of 20 per cent of the value.
A. Just a question of taking off 20 per cent.
COURT: Here you have tar extractors $1,200. The original net construction cost as Mr. Lea calls it would be a $1,000.
A. Yes, sir.
Q. Does that cover distribution system too?
A Yes, sir.

Q. You added 20 per cent to the physical valuation of the distribution system?

A. Yes, sir.

Q. For these overhead charges? Now what did you add for paving?

A. I added an estimated cost of paving which included in the first cost, I mean before the 20 per cent went on. The 20 per cent went on to the paving just as it went on to the mains.

Q. If we take your report, the figures as they appear there, and take 20 per cent off of the amount you have set over to distribution system and then 20 per cent on that?

A. No, it is the cost of the given item, let us use it as in this——

Q. I want to know how can you ascertain it from your report, how can you work it out, the paving I am talking about?

1641 A. You can't work the paving out of course, no way you can tell how much I have got in that for paving.

Q. Now you have had as you say a great amount of experience, you own now stock in gas companies, one or two at least I wish you would give us the benefit of your information as to the lowest price that you remember of just now that gas is being manufactured and sold for, and the kind of gas manufactured in this plant?

Objected to as not cross-examination, but no objection to the making the witness their witness on these matters.

A. You mean the general rates to private consumers?

Q. No, I don't mean general rates, I mean the lowest rate that gas such as is made here is furnished to consumers anywhere in the country where you are acquainted.

A. That is a very variable proposition, and——

Q. It is only one rate, it is not variable, it is just the lowest one you can think of?

A. It is hard to get at the lowest rate because they often allow special rates to special large consumers.

Q. I don't mean that.

A. It is difficult to duplicate in your mind the exact conditions existing here. These are particular conditions peculiar to Des Moines.

Q. I am not asking that at all.

A. I am going to try to answer you as fully as I can, not going to try to side step the question. The question of illuminating power comes in the value of the gas that is to be distributed got to balance that up in your mind and know whether you are comparing them alike and also take cities of equal size I should say.

1642 Q. I am not asking anything of that kind, simply asking without reference to comparison to give me the lowest price that you have in your mind now that gas such as is manufactured here is being sold?

A. That it has been sold this year, was during the past year?

Q. Yes.

A. I think 70 cents at Cleveland is as low a figure as I happen to have in mind.

Q. That is the lowest one you think of?

A. That was 70 cents, but now I come to think of it, it was raised to 80 cents.

Q. Is there any other place you think of 70 cents?

A. There are probably some places, but I don't recall them.

Q. Now what is the highest rate that you know of that you have in your mind just now for such gas as is made here?

Mr. GUERNSEY: You mean the same candle power or water gas?

Mr. BYERS: No I mean water gas, the same kind of gas manufactured here, I mean the same kind of gas made here.

A. There are places probably that sell gas as high as $2.00, possibly more, but I have not anything specific in my mind that would exceed probably $1.25 or something like that, possibly $1.50. Most places are mixed gas propositions, have both coal and water gas, a different set of conditions. This place is water gas alone.

Q. Does the difference in candle power have much of anything to do with the cost of gas?

A. Yes, it enters into it, is an element of the cost of manufacture it does not have so much to do with the price at which it is always sold.

Q. Take for instance the difference between 22 and 17
1643 candle power in Des Moines would that make any difference in the cost of manufacture?

A. Yes, it will make a difference in the cost.

Q. What per cent?

A. It will add to the cost of manufacture.

Q. How much?

A. I am not prepared to state that off hand.

Q. Well just give your best judgment?

A. That is a difference of five candle power. This is a very rough proposition, but probably nearly three cents.

Q. Is that a difference in the fuel or in the oil?

A. Practically in the additional oil that is required for bringing the candle power up.

Q. That is if there is a difference in the cost it is due largely to the difference in the amount of oil necessary.

A. That is the principal element in the cost of added candle power.

Q. You figure the difference would be something like a half a cent to the candle power?

A. Somewhere between a half cent and three quarters of a cent, possibly three quarters of a cent would be nearer the average than half a cent would.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

1644 Friday Forenoon Session.

AUGUST 4, 1911—at 9:30 A. M.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

WILLIAM W. RANDOLPH, recalled for further cross examination, examined by Mr. Byers, testified as follows:

Q. Mr. Randolph, in your examination in chief yesterday, you stated there were several methods of ascertaining the value of gas properties. What, briefly, did you have in your mind as to the method, what were the several methods?

A. I don't remember in what connection I used it, whether it was past or present.

Q. Well, you stated there had been other measures or methods of ascertaining the value of gas properties than the reproduction method—what did you have in your mind?

A. The thought at the time in my mind, I endeavored to give in a general way expression to those general methods which—my recollection is I was talking about going value——

Q. No, it was in response to the question of Mr. Guernsey as to why you adopted the reproduction method and in your explanation you stated that you adopted it because you thought it was in this case the only available—I think you used the word available—it was the only method you thought could be used to reach a fair valuation. Now what other methods in that connection did you have in mind?

A. I think in that connection I must have had in mind——

Q. Here is just what you said Mr. Randolph—page 1596 of the transcript—after the question "I don't think I can tell you exactly how long." You further answered: "Ever since I can
1645 remember doing any work in this line I have been working upon reproduction, when no other measure was available. In many cases in the past there have been other measures in the purchase of gas companies available." Now what others?

A. Just what I think I had in mind was something relating to the past and in that connection I had in mind the measure of earnings, measuring the property by the earnings that was produced.

Q. Well, that is still a recognized measure, isn't it?

A. Yes, I think it is a recognized measure under certain conditions; but every specific case has got to stand on its particular conditions.

Q. Yes, that may be all true enough, but I want to get the different methods that have been used. Now in addition to the reproduction and earning power, earning capacity method you yourself have used other methods in arriving at values of gas properties, haven't you, than either of these?

A. Why I combine all known methods to me in arriving at any value of the property I want to purchase—I would want to know all about it. I would want to know the cost as nearly as I could get at it, its earning power and all the various elements that I could think of.

Q. And the reason you want to know that as a purchaser of gas property is because you recognize that all of these things have something to do with the worth or value of the property?

A. I think so; have some bearing on it.

Q. Now take this very case, for instance, the Des Moines Gas Company, if it was of recent organization; that is to say, suppose when you were called out here you were informed that the Company was organized five years ago and commenced its business new
1646 then, and had kept a complete and full record *record* of its business and its books, simply been running for five years, and you were asked to fix a value on the property how would you have proceeded?

A. Why I would have gone into the details of the books and also into the details of the physical property and seen what they had.

Q. Yes, you would have ascertained how much money they actually put into the business, what they had been earning in the business, gross and net, and all the other facts you mentioned a moment ago that might assist you in forming a judgment as to the worth or value of the property?

A. Yes.

Q. Now, in that connection, Mr. Randolph, is it not true that in at least one or more cases you fixed the value upon gas property by ascertaining its original cost to the owners of the property and then measuring or deducting the depreciation as you found it and the remainder being taken by you as the value of the physical property?

A. You mean that is one of the methods I have used in a rate case?

Q. In a valuation case—don't matter whether it was a rate case or not—in fixing value on a gas property.

Question repeated.

A. I don't recall such an instance.

Q. That method has been pursued to your knowledge very often in gas cases, hasn't it? I mean now to get at the value of the physical property—I am not talking about these added costs or items that have been referred to.

A. I can only tell you what comes within the range of my experience. I don't think I have known, at least I don't recall a specific instance where that exact method has been used in the trade or barter between individual purchasers of the companies.
1647 Those questions always come up, how much a fellow paid for it and how much he is going to sell it for and they are given for what they are worth; but to determine the question you raise is an exceedingly difficult thing, what was paid for the company.

Q. I know—you seemed to give as one reason yesterday why you accepted the reproduction theory rather than the original cost theory, yesterday you gave as a reason that it was often difficult to get the original cost and the figures for original cost were not always available. Did you mean us to understand that because these figures were not available because the cost was hard to get was the reason why you adopted the reproduction theory?

A. No, that is not the controlling factor there. When you purchase anything you purchase as of a given time and it is immaterial to you really what the other fellow paid for it and what it cost him, providing your minds have met and he wants to sell and you want to buy. If he is not going to separate himself from his property for less than a certain amount, the fact that he gave more or less for it is not a controlling factor. It is largely a question of time as to when you wish to determine the value.

Q. Well, would you as an expert adopt that theory in a rate case where it was simply a question of a reasonable return?

A. I think so; I think that as of the time that the inquiry is made appears to me would be a reasonable period for determining the values.

Q. I thought you said yesterday with considerable emphasis that your theory was that in a case of this kind and of every kind where the question of value of the property was at stake, was the
1648 theory that the owner was entitled to a return of each dollar that he put into business and that it was that dollar that went into the business and a fair return upon it that you took into consideration in measuring values?

A. Well, yes, if you can follow that, that relates more to equity.

Q. Equity is what we are trying to get here.

A. If you are getting down to equity of the original dollar that we are discussing, then if you can trace that dollar from its origin to the present time and give it a fair return——

Q. That would be your idea of what would be fair?

A. Well, I am not sure that I would. Follow that to its logical conclusion there on the facts, if that dollar was invested one hundred years ago and they had never gotten any return on it up to the present time, I don't know that I would want to make a person and future generations suffer for the errors of the past.

Q. Of course that would be an extreme situation.

A. We take extremes to illustrate the point.

Q. If I got your idea yesterday I agree with it fully, and I think it ought to —applied, if it can be, and especially in the case of bargain and sale. Now if you could ascertain from the books of this company every dollar that has gone into the business of the Des Moines Gas Company, and then in addition to that, ascertain just what that dollar has earned up to the first of January last year, that would furnish a fair basis, or at least one of the necessary items that the Master should consider in fixing the value of the property?

A. I think that would be an item I would give consideration.

Q. Now, to get a little ahead of my examination to get going value right in here, or rather, cost of development is the term you
1649 used rather than going value—in stating your theory yesterday or your notion of investment and in using this item as you call it, development of cost, that according to your theory and your method represents actual dollars put into the business, does it not?

A. Yes, that is my effort in this case, to measure the tangible

assets of the company and those things, to my mind, are tangible that you spend the money for, put the money into.

Q. You wouldn't of course add anything to the value in this property that in itself did not represent investment, would you?

A. It works itself out in my mind that this is the least value I would put on it. I would qualify that by saying that if a franchise is recognized by the law as having value, that right is theirs and it belongs to them as property and they should be given credit for it. That is a matter of law, and I am simply going along the line that I can specifically measure and be of aid to counsel.

Q. That is all right; I understand you that all the items that enter into your gross valuation in your judgment represent the actual expenditure of money?

A. As far as I have gone. I think there may be some other values there if we can measure them, but I have not yet seen how to measure anything that——

Q. Well, if it should appear—let me put another question: In arriving at these values you proceeded all the time on the theory of a fair return upon the dollar invested, haven't you?

A. Yes.

Q. And it would be impossible to arrive at anything like an intelligent valuation of property of this kind without considering a fair return, wouldn't it?

1650 A. I would find it difficult to reach a conclusion.

Q. Now with that in mind, if you could start at the beginning of this company and trace the first dollar of the investment and follow that on down to the first of January, 1911, and you were satisfied from your examination and the proof you had as to these dollars that were invested that from the beginning more than a fair return had been received by the company on each of these dollars down to 1911, there would be nothing left upon which you would want to fix value, would there, except the actual physical property that the company had to show for its investment?

A. Why, I think there would be.

Q. What would it be—what would be the nature of it?

A. I think it would be whatever they owned at that time. Now I think that this point is probably not stated with the qualification stated by me, that in thinking of *of* the past you must also think of the conditions that existed in the past. If you are going to see that a company gets a fair return, you must see that they get fair protection, you must see that they will not have to fight for their lives and are not subject to excessive hazards and all that during the early period.

Q. Well, but when people are getting a fair return on their money they ought to be able to take care of themselves?

A. They may get more than a fair return; there is no regulation, no law; the question does not come up, just the question of an open sale of whatever article you have, providing no laws or regulations are broken; it seems to me there is no reason why *why* the company should not get all the tariff would stand.

Q. Yes, that would be perhaps all right in a cold-blooded bargain

and sale deal of property; but we are dealing now with the question of a fair charge for the public use of property. Now you
1651 wouldn't contend a minute, would you, that the Master ought to allow the value or add the value of a single article or a single element, if I may use that term, to the value of the property of this company which represents something that is not used in giving the public service, would you?

A. Which is not used or useful or could be used——

Q. No, not used in giving the service for which the rate is to be fixed?

A. I would think it was all right in taking in things that were used, useful or could be used.

Q. But this company might have a lot of useful things that do not belong to the gas business at all?

A. Well, if they have got some other industries on hand not applicable to the gas business, the profit or loss of those particular departments I don't think——

Q. Suppose it had $50,000 of surplus earnings on hand in the bank, undivided profits, ought that to be added to the value of the property for the purpose of fixing a fair rate?

A. If I understand the term surplus correctly, that surplus, if it has been legitimately earned, belong- to somebody else; it belongs to the stockholders; it is for the stockholders to say where that shall be put, whether in their pockets or back into the plant.

Q. You wouldn't add it to the value of the property for the purpose of fixing rates unless it went in?

A. No, not taking into consideration surplus. It is immaterial to me whether the surplus is put into the property, whether going first into the hands of the stockholders and then coming back in some other form.

Q. If it actually goes into the property and is in the property and being used to furnish service, then I would agree with you
1652 fully it should be counted. Now suppose this company on your theory had a holder down here somewhere that was not being used in the business; they had no need for it in the business; it was down here, worth say fifty or sixty thousand dollars, but it is not connected up and it is not serving the people in any way, but it belongs to the Gas Company; now you would not add that to the value of this property for the purpose of rate making, would you?

A. If I saw that holder was there, that it could be used, that the management were not using it for some reason unknown to me, but that I could see there was a ready use for it, I would say certainly.

Q. That is begging the question.

A. I am qualifying it.

Q. I mean on the first day of January, if they had this piece of property there and if the money went back into the business and was doing a part of the service, of course it ought to be added, and I would readily admit if this holder should later be put into use and become a part of the property, then it ought to be added; but here on the first day of January they get a holder that is not being

used in any part of the connected up property, but stands there, and is worth fifty or sixty thousand dollars, that you would not add to the valuation of the property that is to be considered in fixing a fair rate?

A. If I was going to buy the property I would add it.

Q. That is, if you was going to buy and wanted to buy that?

A. And thought it was useful in the business. If you will frame a question that will show that there is something down there that they have got which is not used and cannot be used and do not want to use and I see no particular use for it in the near future,

1653 then I admit your reasoning.

Q. Suppose if they had down there in the plant the piece of machinery that is no longer fit for the business, I don't mean because it is worn out or decayed or anything of that kind, but because it is out of date and is not the thing to be used here, and if used it would not be economy, but it might be used somewhere else and it might have a value of fifty or sixty thousand dollars to be used somewhere else, would you add that to the value of this property?

A. I would in this sense, when the investment is made on a piece of apparatus of that kind, the over-period it becomes obsolete, that apparatus must be found there in the cost of your product, or in the fund set aside for it; it belongs in the cost but not as a reduction to capital; it is a part of depreciation, but not a part as a reduction from capital.

The MASTER: Here is an item on page 6, benches, $20,500.

A. I classed that in the same category with all the other elements of depreciation. I don't know but one other item, the old water gas apparatus I put an excessive depreciation on both benches and water gas apparatus; the benches are not absolutely decayed, but they come in that class you just mentioned where it would probably not be economy to use them longer.

Q. I don't want to get away from what I started to do; you get back to my question; the apparatus I am asking you about is not connected up; it would not be profitable to connect it and it could not be used in the business with the other machinery of this plant, the gas plant has outgrown it, yet it is so far as its condition is concerned, it would answer somewhere else; it would fit in in some other system, so it has fifty or sixty thousand dollars value, but is not useed in the service here and will not be, you would not

1654 add that, would you, for rate making purposes?

A. I would take some of the other elements into consideration which we talked about. I would take into consideration whether that piece of property had already been wiped out in some form in depreciation; whether it was theoretically in existence on the books and had gone into operation and was wiped out there, then that would answer itself. If on the other hand a fair return had not been gotten in that original investment, hadn't had a fair return, then I would look to see if they had a surplus and if the surplus was sufficient so that you could switch it to the depreciation

instead of into the stockholders' pocket, then it seems to me an open question as to whether it should not be considered as capital.

Q. What would the consumers here have to do with paying a return after the first of January, what do they have to do with furnishing this Gas Company a return upon a piece of machinery that was not being used to serve them at all; do you see any sense or justice in such a rule as that?

A. There seems to be some force in your statement there, but I don't think you have stated the case specifically enough for me to answer quite definitely yes or no.

Q. Let me put it in another way then so that you can answer yes or no. Suppose that the maanger of this gas company in the exercise of his discretion on the 31st day of Last December, to make an illustration more definite, say on the first of last October, had purchased at the cost of a hundred thousand dollars a piece of gas machinery, some new device that was thought would revolutionize the gas business and brought it on here to Des Moines and set it up down in the plant and found it wouldn't work at all, they could not tie it up to this system and make it go, had no use
1655 whatever so far as the people who are going to buy gas in Des Moines are concerned, but stands down here and costs one hundred thousand dollars, and it is worth something to take it somewhere else; would you add that?

A. No.

Q. Can you tell the Master where one single dollar of this five hundred thousand dollars that you added is of use in serving the consumers of this city from the first day of January on?

A. I don't know that I can; the——

Redirect examination by Mr. GUERNSEY:

Q. Had you completed your answer to that last question?

A. I was going to think loud and see if I could produce a reason for the faith that is in me that the five hundred thousand dollars as an element of cost should be added, to see wherein specifically it was serving the public. It has cost getting these new consumers and it has a loss of interest, and it seems to me those elements stand exactly in the same category as interest on the plant during the period of construction which it is generally admitted is one of the elements of cost.

Q. Now just a few words, you referred a few moments ago to two or three items including benches for coal gas which had, you said, depreciated very heavily; you depreciated one hundred per cent; now aside from the items which you so depreciated, I wish you would state what if any items you found in the plant that were not either used or useful in the manufacture and distribution of gas here in Des Moines.

Objected to on part of defendants as incompetent, as not re-examination.

1656 A. I have referred to the benches as heavily depreciated, they were not being used at the time. The water gas ap-

paratus, the two six foot sets I depreciated unduly heavily really because of physical decay in that apparatus—it is really not very great—it just looks bad because it has not been run for several years, but it is ready to run. I am inclined to think that could be classed as an emergency apparatus. Take the rest of the water gas apparatus, they are of modern type and economical in their operation as much so as any water gas apparatus that is made. The only criticism that a layman might make on that is that there are three sets there that with their combination would make in a day possibly twice as much as one day's out-put; but you have to take into consideration that the mechanism of that kind don't run indefinitely; they would have to be shut down; that the daily output of the gas must be maintained, so that you have to have spare machinery, and that comes in under the head of spare machinery and also in the class of useful machinery, so that with these exceptions at the moment, I do not recall anything down there that was not used or useful in the business. There might be some minor things.

Q. Mr. Byers asked you about the valuation of a plant that was five years old and going into the matters of cost and so on, in arriving at the value; please state whether in such a plant you would also go into the present physical condition for your value?

A. Yes, sir.

Q. You spoke about measuring the value of earnings, what do you mean by that?

A. In the ordinary talk I mean capitalization of earnings.

Recross-examination by Mr. BYERS:

1657 Q. In your examination in chief yesterday you said you had data showing the meters scrapped and repaired, have you that data with you?

A. I think so.

Q. I wish you would produce it?

A. I will tell you what it is. I don't care to let you see the original. I don't care to separate it from the rest of the papers. I have got them all intact. If you want to make a copy of it——

Mr. BYERS: I would like to have the reporter make a copy of it.

A. I could give you all the substance of the data that you want, I think.

Q. I don't care a cent about looking at any private memoranda you have. I simply called for that data and if you can read it into the record, all right.

A. What were the elements you wanted?

Q. The number of meters scrapped and the number repaired and renewed.

A. The number of meters repaired, renewed and condemned for the year 1906 amounted to 703; for the year 1907 amounted to 519; for the year 1908 to 851; for the year 1909 to 819; for the year 1910 to 536. Now while I am giving that data, I also referred in chief to a number of meters that were removed and repaired.

Q. You stated in that answer there were 45,000; did you mean 45,000 or did you mean 4,500?

A. I think I said 3,400.

Q. You said 45,000.

A. The sum of the figures I have just given you covering the period of five years, amounts, according to my figures to 3,468.

Q. Now, when I was referring to the number of meters taken out and removed I only had four years before me and I was
1658 carrying an average in my mind. I will give you the figures as far as they go; number removed in 1907, 8,708.

Q. I want the record to show, not that you are swearing now to the numbers, but that you are simply giving data into the record.

A. I am giving data that was furnished to me. In 1908 there were 8,226; in 1909, 9,482; in 1910, 9,297. Now to complete the five year period, for comparison, you would have to have the year 1906. I saw it, and saw further back the record; I not only looked over this particular thing, but looked the whole bunch over.

Q. Now what was it you gave us for 1910?

A. 9,297.

Q. And what does that number represent?

A. That represented the number of meters that were removed for one cause or another from the consumers' houses in the city of Des Moines and brought back to the company's shops and tested because every meter is by their rules tested and if found within certain limits of error, it is regarded as correct, painted and put back in the stock and ready to go out; if upon test it is not within the limits of error then it is sent off to be repaired, and if it is very bad it is condemned.

Q. That testing business is for the purpose of making sure that the meter is registering all the gas that the consumer gets?

A. It is for two purposes: to make sure that the company is getting all that is coming to it, and to make sure the people are getting all that is coming to them.

Q. Is that the plan that is followed here, that a meter must be taken out and taken to the shop in order to tell whether it is registering correctly?

A. That is the only time I understand the meter is tested,
1659 unless there is some particular cause or complaint when they specially test the meter.

Q. They can be tested right in the house?

A. They can be tested in place by a mechanism that is not as accurate as the mechanism set up in the gas company's office.

Q. Now there is one thing more, does your physical decay as you have used it in your typewritten report, Exhibit 22, include depreciation from inadequacy and obsolescence?

A. The only two cases I have given there which come under that class are the benches and six foot water gas sets. The only explanation I can give for that is inadequacy and obsolescence, but I have taken in these elements something more than decay.

Q. Aside from this wherever you have figures in your Exhibit 22 representing in your judgment physical decay as applied to the present condition of any article there is no depreciation or inadequacy or obsolescence in it?

A. No.

Redirect examination by Mr. GUERNSEY:

Q. Mr. Randolph, one word more in connection with this matter of original cost, in referring to original cost, do you mean to have us understand that when you take that into account you disregard appreciation in items like real estate or anywhere else where it may appear?

A. No; I don't mean to say I am governed by the cost; I should say that is an element and I would consider it, and also consider appreciation from whatever cause I found it to exist.

Q. To go into these meters for a moment, you gave first a list of meters that were condemned, is that it?

A. No, I gave the total condemned and repairs.

1660 Q. Do you know whether that includes meters destroyed by fire?

A. I am not sure whether it did or not. I think it is more than likely it may have done so. I have no item specifically that indicates there were any meters destroyed by fire.

Excused.

WILLIAM J. HAGENAGH, being first duly sworn on part of Complainant, examined in chief by N. T. Guernsey, Esq., testified:

Q. Your name is William J. Hagenagh?

A. Yes, sir.

Q. Where do you reside?

A. At Madison, Wisconsin.

Q. What is your business?

A. I am a Public Utility Statistician.

Q. What official relation, if any, do you sustain to the Commission of Wisconsin?

A. I am chief statistician of the Railroad Commission of Wisconsin.

Q. How long have you occupied that position?

A. I was appointed to that position the second or third day after the passage of the Wisconsin Public Utilities law and assumed my duties on August 1st, 1907.

Q. This commission you have referred to is the Wisconsin Commission that has to do with public utilities?

A. It has jurisdiction in the regulation of rates and serv-

1661 ices of all public services in Wisconsin, both railroads, local utilities, embracing telephones, street railways, water, gas and electric light and power companies.

Q. Now in connection with your work for that Commission, what have been your duties?

A. When the public utilities law was passed in Wisconsin, the commission had authority over only railroads, steam roads, and interurban and electric railways. The utility law extended its authority over all local utilities. One of the provisions in that statute was that the commission should prescribe a uniform classification of accounts for all public service corporations. That duty was assigned to me. I spent the greater part of my *fir* first year in designing such classi-

fication of accounts, together with blank forms of reports to be used by the companies in their business of reporting to the commission. The work of course embraced the preparation of such classification which would furnish to the commission all the information which it needed in connection with the work of cost analysis and rate adjustment. The conditions under which the utilities operate in Wisconsin are rather complex. Owing to competitive conditions, water companies and electric companies have combined in the interest of economy because both could use a single boiler plant. The gas and electric companies have combined because they are competitors in the field for furnishing light. The fact that many utilities in Wisconsin are owned by cities, also served to complicate the accounting requirements. The classification therefore had to embrace, not only technical problems for accounting for each utility in its own field, but it was required to be sufficiently elastic and thorough to permit of
the accounting requirements of the largest companies, such
1662 as those operating in Milwaukee, and the very smallest companies, and to permit the reporting upon the same classification of accounts where one corporation was operating two or more utility services. Another element which served to complicate the work was the fact that many companies in Wisconsin furnishing public utility service are also engaged in private service, such as large lumber companies and general stores and saw mills and logging companies; those companies often practically own the entire city and in connection with their private duties furnish utility service and in our classification of accounts we had to recognize that situation, and we spent practically a year to fit this complication of inter-relationship between the different classes of service.

Q. Now in addition to your work in preparing this classification of accounts and the reports made by the utilities for the use of the commission, what other work have you had charge of there in Wisconsin in connection with the commission?

A. In my position as chief statistician I had a force of about thirty assistants; all the companies under the jurisdiction of the commission were required to make annual reports. Those reports were all referred to my department; in connection with reviewing those reports and their analysis when the particular utility became a party in interest in a case involving rates of service before the commission. We had according to our last report something like 1,080 public service corporations and 8,000 miles of steam road reporting to the accounting and statistical department. Those reports were all classified tabulated and audited to find if there were any errors in accounting, or any studied effort to avoid the requirements of the public
utilities law. Wherever we found any inaccuracies in a report
1663 it would be necessary for some one to visit the utility in question and to audit the books. This was especially necessary when the utility became a party in a rate case. I finally reviewed all those reports before the commission and I was responsible for it and practically all of the outside auditing work performed for the commission was done by myself. This auditing covered street railways, electric light companies, telephone, water, and gas companies, and

occasionally the checking of reports of steam railroad companies having offices in *in* Chicago, St. Paul or Minneapolis. In connection with my work there I was also assigned the duty of classifying and distributing the operating expenses of the companies when they became a party to a case, and that necessitated more or less elaborate analysis of the engineering conditions of the plant, which engineering data was furnished by our engineering department, but the distribution of the accounts both operating and capital for the purpose of rate analysis was done in my department and under my direction. I also assisted in the preparation of practically all the utility decisions which the commission handed down, until a little over a year ago when I was given a leave of absence, and have been connected with the commission since then only on odd intervals on particular pieces of work referred to me.

Q. Do I correctly understand you that all this mass of accounting and reports were under you?

A. They were under my direction and much of the work I did myself. At least checked it and put my signature to the work before it was referred to the commissioners or the commission itself.

Q. In connection with the matter of the form of these reports and all this classification you refer to, having in mind the require-
1664 ments of the commission with reference to the accounts which would be material in connection with rate making, I wish you would explain the fundamental things that you wish to derive from these accounts for use in the regulation of these utilities, and why you would separate them—you referred to the capital account, for instance, and operating and things like that?

A. Our public utilities law defines and prescribes the process which the commission is to follow in prescribing a rate which is considered reasonable for the service in question, and as the basis of its work of analysis along this line, the utility law requires that the engineering department shall make an appraisal of the property and that all utilities shall keep their accounts and records in accordance with the classification prescribed by the commission. The engineering department and accounting and statistical department were therefore required to shape their work largely to suit the necessities of the commission. Our basis of rate adjustment in Wisconsin is largely on the cost theory. We do not have that absolutely; that to us is a guide. We take into consideration every other element which affects the subject. In order to determine the proper cost of a service it is necessary to have a proper and scientific classification of accounts and our classification therefore follows naturally the chronological order of service production. To be specifi*f*, I can refer to the gas industry. The first logical step to satisfy the public demand is the manufacture of gas. Having manufactured it, you distribute it. Having distributed the gas it becomes a problem for the commercial department, advertising, service, making delivery of the bills, the collection of the funds and the office work incidental to that service. The
1665 next logical step is the general office expenses, embracing salaries, expenses of general officers, taxes, insurance, and those items which are of a general and overhead nature in the course

of operation. Over and above these logical steps there are certain accounts which do not naturally fall in any one of these particular groups, which we distinguish as undistributed accounts, making it optional with the utility to carry those into the clearing account, or directly into the major groups of operating accounts. Whatever course is followed by the company must be reported in great detail to the commission. Since our companies are of the largest kind, those operating in metropolitan cities, and very small companies, our classification must naturally go farther and carry these accounts into the proper logical groups. The manufacture of gas in a small company might be reported in one or two accounts. The simplest classification would be two accounts under each group, namely, labor and material; labor covering all human service, and material including the material consumed in operation and in maintenance. Maintenance in its broadest sense would include current repair and depreciation, or what is often called deferred maintenance of the service. Our classification of accounts considers depreciation as an operating account.

Mr. BRENNAN: Is this for the purpose of qualifying this witness or to put into the record the method pursued in Wisconsin?

Mr. GUERNSEY: It is partly for the purpose of qualifying him and partly preliminary to some other matters.

Mr. BRENNAN: We object to this answer as being incompetent, irrelevant and immaterial.

Answer (continued). With these major subdivisions we classify every expenditure of the company between capital accounts
1666 and operating accounts, entering into the operating column only those accounts which according to our classification are to be charged to the cost of the service in the operating department. To these accounts as actually expended by the company we add such amounts as our analysis of the question of fairness and reasonableness in each case makes necessary, and upon that analysis we base the rate which we deem to be fair. This distribution would of course be carried further into such accounts as fixes an available portion of each expenditure to show that part independent of the output and that part directly connected with the output.

Q. You have talked mostly about operating, what care do you take to distinguish between operating and capital accounts?

A. We take the greatest care.

Q. Why?

A. That is very material to the rate. If the capital accounts were charged into the operating expenses, it would very materially increase the book statement of operating expenses or costs per unit of service; if it is charged to the capital account it is not then affecting the operating expenses nearly so much, because the operating expenses must then carry only a reasonable rate of return upon the amount charged into the capital account; whereas, if it were put in the operating account, it would have to carry all the expenses.

Q. What if any connection did you have with the preparation of the classification of accounts used by the public service commission in New York?

A. Shortly after the passage of the New Lork law, the officials of that commission decided that it would be of great advantage if all the public service commissions would follow a uniform prac-
1667 tice. The officials called a conference in New York which was attended by representatives of the Massachusetts commission, the state commission of New York, or the second district, and the first district or the Manhattan commission, and the Wisconsin commission; I was the Wisconsin commission representative at that conference. We spent about five or six weeks in New York City in preparing what we hoped would be a single classification of accounts to be followed by all public service commissions in the country. We invited to that conference representatives of several of the largest utility interests in the country in order that we might also give proper consideration to the corporation side of the problem of accounting. Owing, however, to certain differences existing in the Wisconsin law as compared with that of the New York and Massachusetts laws, the final classification- as adopted are not exactly alike, but in sufficient detail that anyone familiar with the classification may easily distribute the operating expenses. Our classification is a little more detailed owing to our greater adherence to the cost theory in the classification of operating expenses.

Q. Are you familiar with the classification of accounts which is used by the Des Moines Gas Company?

A. Yes, they follow the classification prescribed some years ago by the American Gas Light Association. That association in order to permit its members to compare operating results prepared a classification of accounts, with instructions to *to* all their companies to adopt. They had just as we have in Wisconsin large companies and small companies, and their classification embraced a major and junior classification. It differed principally from the Wis-
1668 consin classification in that it is not so detailed in its requirements. It is possible however for any company to subdivide its accounts and getting into them as much refinement as may be desired, as long as it does not violate the principal provisions.

Q. Have you made any investigation of the books of this company in which its accounts are kept?

A. I have.

Q. Have you made sufficient investigation to enable you to say whether in your judgment the accounts of the company are kept properly?

Objected to on part of defendants as being incompetent, in the form the question is put.

A. I observe that this company follows the classification prescribed by the American Gas Light Association. I have taken that classification and the accounts as carried by this company an- compared them to the accounting requirements of public service commissions and I find they do conform to the proper accounting requirements. There are, owing to the requirements of the classification they follow, some different methods of handling different accounts, but that is a matter that can be easily arranged and merely affects the question of unit departmental cost. The principles followed are proper

and they have been correctly followed and their accounts are correctly kept.

Defendants move to strike the answer as incompetent.

Q. What period did you examine?

A. The period following, as I recall, March 1, 1906, to January 1, 1911.

Q. Now, passing this question, you said a leave of absence for about a year; have you done any work during that year in
1669 connection with public utilities, if so, what?

A. I have. I secured my leave of absence for the purpose of assisting the committee on gas, oil and electric light of the City of Chicago in arriving at a proper schedule of rates for telephone service. The company there had an investment of about $23,000,000 and is furnishing nearly a quarter million telephone subscribers with service distributed over 27 different classes of service. My work for that committee was to prescribe a proper schedule of rates for the city of Chicago for those 27 classes of telephone services. Before I had completed that I was requested by the same committee to prepare and analysis of the books and records and accounts of the People's Gas Light & Coke Company of Chicago, and to report to the committee what I deemed was a reasonable rate to be charged for gas for the next five years. Both of these reports were submitted to the council committee during the spring of this year; the telephone report in May and the gas report in April. During this time I was also engaged in similar work for the Wisconsin commission and in work involving the preparation and criticism of rate schedules in other cities; those schedules being for gas, water, electric light and telephone service outside of Chicago.

Q. Now, in connection with your examination of the accounts and the method of keeping the records of this company, what study did you make of the forms and blanks used in the conduct of the company's business and what conclusion did you reach?

A. That was one of the first steps which I undertook in the examination of the company's books—I examined the forms which they
1670 use and the voucher blanks and the reports which they make of their business at the end of the year, and in the ordinary course of their business. I should say that those blanks were well adapted to conducting a business of this kind. Every company naturally adopts forms which suit the peculiarities of its own business, or the notions of the men who are to keep the accounts. In this case as far as I know the blanks are practically those which every large company could use in the conduct of its business. I know nothing about their forms to their prejudice. I should say they were designed for an economic conduct of the business.

Q. Do you remember whether you did anything towards examining and checking the authorizations during this five years' period?

A. Yes, I did. The company under its relation here with the United Gas & Improvement Company is not permitted to expend money except on authorizations from the Philadelphia office. My recollection is the amount they are allowed to expend without author-

ization is limited to only fifty dollars. This is a very decided check upon the expenditures of the local office and insures accuracy and care in keeping the account and also economy.

The MASTER: Fifty dollars for improvements?

A. They cannot expend any more than fifty dollars without securing authority from the Philadelphia office.

The MASTER: Do they pay their salaries through the authority of that office?

A. Not on the operating expenses.

Q. I believe you said you done something in the way of checking these authorizations; what was the result of this check?

A. I checked that in connection with my review of the company's maintenance accounts. In general I found that they were adhering very closely to the prescribed classification, distinguish-
1671 ing carefully between what is capital expenditure and what is maintenance expenditure. The Company has not been carrying a depreciation reserve and I therefore was interested in knowing if any replacements had been charged into the maintenance accounts and for that purpose I believe, I checked the authorization for three years. I found some accounts which I felt should have been charged to the capital account or depreciation account which have been included in the operation expenses. These of course should be deducted in order to properly show the cost of the business in question.

Q. Now in the course of your auditing of these books, what attention did you give to the vouchers for the three twelve month periods beginning December 30, 1908, 1909 and 1910 and also for the entire year 1910?

A. All the vouchers for that period were examined by accountants in my employ. I might say in that connection I have a rather large staff of engineers and accountants in my employ, and the checking of these accounts was in part performed by my assistants, but I supervised the work and approved all the classification and prepared the report. But I did personally examine every voucher for the calander year of 1910.

Q. I think in my question I referred to those periods as commencing September 30th, when I should have said ending September 30th. Did you find any vouchers missing?

A. There were a few vouchers missing. Some had been mislaid in other parts of the building by the different employees and some few could not be located at the time I requested them; so the company supplied me with a carbon copy of what I understood to be an exact copy of the voucher and which satisfied my desire for information on that particular subject.

1672 Q. Now during what period did you, or for what period did you analyze the construction account?

A. In connection with the auditing and analysis of the vouchers, we of course took into consideration every expenditure for capital purposes during these last few years. I think it was from March

1, 1906, at the time the Des Moines Gas Company succeeded to the com*a*pnies operating here before that date. I did not audit the books prior to that time but did call for and was furnished with statements showing the detailed charges to the construction account for all years prior to 1906 to as early a date as 1886. These individual expenditures I did not personally examine but I did examine the total amount added at the end of each year to the capital account, and then analyzed that total by reference to the detailed charges which were furnished to me to satisfy myself whether they were proper construction charges.

Q. Now I wish you would turn to page 24 to that memorandum which says that the construction account was analyzed from 1886 to 1910, no records being available prior to 1886, and that during these years each charge to construction was examined and traced. The memorandum I just referred to is the one marked Exhibit 23; now do you remember whether in making this audit this was done by yourself or your assistants under your direction?

A. The earlier work for the earlier years was performed by my assistants under instruction and direction from me and they reported their data to me. But the work for the last year I did personally and I performed such checks upon the work from time to time as would assure me of the correctness of their work.

Q. Take the profit and loss account, what did your analysis in that show?

1673 A. They show the earnings and operating expenses of the company for the years in question, the profit and loss statement which I prepared being carried out to the surplus for the year as shown by the company's books, to verify any inaccuracies of the company's books. In my analysis of these vouchers I learned of course of the relation between this company and the United Gas Improvement Company. I had known before this that this company was one in which the United Gas Improvement Company was interested.

Q. Now, how do those relations affect the financial strength of this company, for instance?

Objected to on part of defendants as incompetent.

A. You ask a question which is as broad as the whole utility question. The problem before most utility companies had been the financial problem, of properly providing for its financial requirements. The tendency because of these conditions and many others which are peculiar to individual utilities, has been for the formation of operating companies or syndicates either owning outright and operating many utility companies or buying control in these companies through the ownership of stock. By a single company owning a large number of utility companies, this company is able to supply the individual companies with a character of professional skill which the individual companies could not possibly afford if operating along, and the stability which is furnished to such a corporation owing to the fact it is operating over a very large territory and the interests so greatly diversified gives a very large credit to a

single company. It really amounts to in this particular instance of the Des Moines Gas Company borrowing or having extended
1674 to it credit of the United Gas Improvement Company. Ordinarily in my work of examination I would want to examine very carefully the relation between such a subsidiary company and a holding company because of the opportunity which is afforded when there is no regulation for an abuse of such relationship. I may add in this particular case I was particularly anxious to satisfy myself if there was any such abuse of the power which would be given to a controlling company by virtue of its ownership of the stock. I examined their relations very carefully for that reason, and I have not found anything which would be to the detriment of the local company. On the contrary, I would say that any utility which is a member of such a large operating family will receive substantial benefits from such control if the work is conducted in a perfectly fair, scientific and legitimate way. As far as I know the work is so conducted in this case. My attention was particularly called to that question by some of the vouchers which I met in the analysis during the year 1910.

Mr. BRENNAN: The defendants move to strike from the record the answer of this witness as incompetent, irrelevant and immaterial. Because the answer states a number of conclusions upon which the witness has no right to a conclusion and those conclusions are so intermingled with *with* the rest of his answer that it would be impossible to separate them and we therefore object and move to strike the entire answer.

Q. On page 25 you refer to the services performed by the purchasing agent of the United Gas Improvement Company.
1675 What did your examination of these records disclose in these accounts as to that matter?

A. I found in the operating expenses a charge for ten thousand dollars in the form of salary vouchers for parties connected with the United Gas Improvement Company. Some of the names I recognized and entered a question as to who the other names were and I was informed they were parties connected with the United Gas Improvement Company and that these men furnished services of a technical character, such as engineering, accounting and advice from an operating and construction standpoint. Generally, they are men of wide experience and whose services could probably not be secured by the companies at anywhere so small a compensation as that which the company pays for them.

The defendants object to this testimony as wholly incompetent and a waste of good time.

Q. Had a charge been made for those services prior to 1910?

A. No, sir; such charge had not been made during the earlier years, the company furnishing those services so far as the books are concerned gratuitously.

Q. What is the fact as to whether the Des Moines Company profited by these purchases through the purchasing agent and purchases made in large quantity by him?

Objected to on part of defendant as incompetent, irrelevant, immaterial and not the subject of expert testimony.

A. The purchasing of supplies in large quantities is one of the economies which result from a single company owning a large number of utilities. The purchasing agent will purchase supplies for all the companies or a large number of the companies in a single lot and will order shipments to be made from the factory or dis-
1676 tribution point to the different companies as directed from the Philadelphia office. The bills are rendered to the utilities at the reduced price through the economy resulting from such large purchases and those prices are often lower than what the company could obtain if purchasing them for its own use.

Q. Did these purchases go to matters of construction as well as to things used in operation?

A. I don't know exactly whether there is any restriction upon the purchasing authority of the purchasing agent. I don't think so. I believe he would purchase for all the companies just as a single company would purchase supplies. I know he does purchase a large amount of operating material, merchandise, fixtures and stoves which the companies handle. I have every reason to believe the benefits resulting from this central purchasing department apply to all classes of equipment, machinery and supplies which the company controlled by the central office would require.

Q. Did you analyze the construction account—in the middle of page 26 I see a memorandum—if so, what do those reveal, whether that account was charged with all the expenses properly chargeable to it?

A. The construction account in this case like that in most utility companies has been charged only with the cost of labor and materials and expenses directly incident to such materials which has gone into construction. In so far as I was able to determine there was not charged to the construction account those items which would ordinarily be included in the value of a plant if determined by appraisal, nor were there charged to the construction account by these items properly charged there in the course of constructing
1677 and building up the present plant of the company. I mean by that in so far as I have been able to determine there has not been charged to the construction account the ordinary appropriation for supervision expenses on construction and engineering expenses. The interest during construction and the charges which we generally call indirect or overhead expenses on the construction undertaking.

The defendants move to strike the answer as incompetent, irrelevant and immaterial.

Q. I wish you would state whether what you call here on page 26 overhead charges, embracing engineering, supervision during construction, interest and taxes during construction, salaries of officers during the construction, etc., are proper and necessary elements in the cost of such a plant as we have under consideration?

Objected to on part of defendants as incompetent and the witness is not competent to testify.

A. They are and are so provided for and prescribed in our Wisconsin classification.

Q. How about the New York commission, do you know whether or not such items are treated by the New York Commission as proper elements of the cost of construction, such as this gas plant and distribution system?

Objected to on part of defendants as incompetent and not the best evidence.

A. I have not refreshed my memory on their classification for some time. My recollection is they do specifically provide those charges shall be made to their capital.

Q. Now I wish you would refer to page 27 and take up this question of depreciations.

A. I referred to that a moment ago, I probably anticipated your question. The operation of the company results in wear and
1678 tear of its service; at the same time there are such forces as obsolescence, inadequacy and supercession applying to the property, all of which lead to a division of the so-called repair accounts into the current maintenance and depreciation. All these charges due to the current wear and tear of a plant in operation are strictly maintenance accounts. When however over and above current wear and tear, obsolescence, inadequacy or supercession of the property, replacements are required which are in the nature of extraordinary renewals or replacements, these should be charged properly to a depreciation reserve which has been set up through credits and corresponding charges to the operating expenses for the purpose of representing the estimated depreciation of the property during the year in question. This cannot be determined with accuracy but the best one can do is an approximation. The company in this case has not carried such reserve and I therefore looked carefully at the vouchers to see if replacemony have been charged in the maintenance account, and I found some evidence of that to a small degree.

Q. Referring to the bottom of page 27 of the report, what would be the eventual result if this policy is continued of not building up a depreciation fund?

A. The inevitable result would be to show a large investment on your books as a plant account and a very small present value of the property representing such charge on the books, and if an appraisal were taken of the property at that time it would show a very disappointing result as compared with the book figures or capital liabilities of the company outstanding. It would mean that the stockholders' property has gradually disappeared and been consumed in operation.

1679 Q. It is legitimate to consider as profit the net earnings until there has been deducted from that a proper provision for these items of future depreciation you refer to?

Objected to on part of defendants as incompetent and immaterial.

A. No, sir; neither ordinary business nor law would regard the difference between actual current operating expenses and gross earnings as representing profits.

Q. You refer to a second method of taking care of depreciation in the last paragraph of page 28; will you explain what you had in mind there?

A. I said one method of caring for depreciation through building up the so-called depreciation reserve which would be built up out of charges to operating expenses; another method, one which has been followed a great deal especially up to within the last two or three years has been the method of making no charge to operating expense for depreciation, but at periodical intervals creating the crediting the construction account thus reducing the amount standing on the books and showing the investment. The result however is practically the same because a corresponding charge would have to go on the profit and loss account. It is a book keeping transaction. In this way it does so reduce the property account and to that extent recognizes the element of depreciation.

Q. Now, I see on page 29 of this Exhibit 23 a reference to three per cent per year on gas plants as an accepted depreciation rate. Will you please state what the fact is about that, what in your judgment would be a fair rate of depreciation to charge against this property on account of this future depreciation not taking care of any ordinary maintenance and repairs?

1680 A. The rate of depreciation is a matter which is very difficult to determine with any degree of accuracy. In order to determine correctly there should be an analysis of the character of all items of depreciable property of the plant, a study of the type size and the age of the property, and a computation of its composite life. That calls for information which I at the time I prepared this report did not have, and as the depreciation rate is not the same for all gas properties, I preferred to leave it to the engineer's analysis of the property here. In the absence of such analysis a rate of three per cent of *of* the depreciable property has been very often used. The rate is based upon the more or less generally accepted idea that the composite life of the average gas plant operating in a large city is approximately 33⅓ years. In general my experience leads me to believe that three per cent on the depreciable property is rather high, rather than accurate. That I really refer to the engineers here and in the absence of that data have used this for an assumption.

Q. Now, you state from an analysis of the maintenance account it appears that certain items have been incorrectly charged as current maintenance and that they are depreciation replacements or capital charges. Will you refer to Exhibit 7, a part of this Exhibit 23 that presents the detail of this matter?

A. That distribution of maintenance accounts there shows that my analysis reveal- charges to maintenance accounts which should have been charged either to capital or depreciation reserve, if such a one had been carried on the company's books. Since I made some

computations where an allowance for depreciation became
1681 material, it would have been unfair against the subscriber for service if I had added such a depreciation allowance to the present operating expense. I therefore had to make an adjustment by reducing the operating expenses to the amount of incorrect charges, and when so reduced add back to the amount a fair allowance for depreciation in so far as I could at that time compute it.

Q. Return to schedule 5 and see whether under columns adjustments, debit and credit, we have the matters you have just been referring to?

A. I have there for the years 1908, 1909 and 1910 made the adjustments through crediting the operating account with the amount which I thought was incorrectly charged to it, and then charging such balance with what I felt was a reasonable allowance for depreciation, and then deducting such total operating expenses from the gross earnings for the years in question, it gave me according to this computation, what I believed was the proper net earnings, after making an allowance for depreciation and it is very much lower than what the books show to be the net earnings.

Q. Referring again to this column headed adjustments, I wish you would state what the items under the sub-head debit in schedule 5 shows.

A. The debit item shows my allowance as assumed on the basis of three per cent of the depreciable property for depreciation. I don't want to be understood as saying just now that that is the proper amount, because it was not computed upon a basis such as I would ordinarily follow. My engineering staff was not engaged upon this work. I had no engineering data whatever regarding this plant and in the absence of that I used the ordinary rate of three per cent to give me a sort of trial figure, what really the net
1682 earnings were.

Q. You show your results contained in schedule five after your depreciation is deducted for these four periods; also at the end of this Exhibit 23 that is devoted to the subject of depreciation?

A. Yes, sir.

Q. They are compared with the net earnings as shown by the books without your corrections?

A. Yes, sir.

Q. Did you append to your report some more schedules—we will take them up in their order—take schedule 1, that is what?

A. That is the balance sheet or statement of assets and liabilities as of December 31, 1910, taken from the books and verified by the men under my direction to be correct.

Q. The next is schedule 1, Exhibit A?

A. That shows the investment in the plant on March 1st, 1906, and the adjustments through additions to the construction account and a charge to profit and loss on account of depreciation which was made in 1909. The final figure there shows the plant account as contained in the balance sheet at the close of that year.

Q. Before you leave that, you stated this was an adjustment by

the additions to the plant account; are those the items that make up $525,360.76?

A. They are.

Q. What is the item charged off on account of depreciation?

A. That is the second method of making a credit to the construction account and the corresponding charge to profit and loss. During the period I examine the books of the company there had been no adjustment other than this single item.

Q. What was the amount of the item?

1683 A. $264,108.78. Now that might be assumed as being the only provision for depreciation at the Des Moines Gas Company during its corporate existence.

Q. Now, what is schedule 1, Exhibit B?

A. That is a tabulated and classified statement of charges to the construction account from 1886 to 1910. These items embraced in the total at the right hand margin of the page were in a much greater refinement on the books of the company, but for simplicity they have been condensed under the five principal heads embraced in this table. The table shows the total charges to construction from 1886 to 1910 on account of this plant as $1,928,016.65.

The MASTER: The figures in red there, what are they?

A. Credit during construction. The black figures represent charges. You notice in the total instead of adding anything to the property they actually reduce the property account by $149.

Q. Now what is Exhibit C to schedule 1?

A. Exhibit C, schedule 1, shows the inventory of the stock of merchandise of the company at the close of business December 31, 1910.

Q. And Exhibit D to schedule 1?

A. That is a classification of the accounts receivable of the company.

Q. And Exhibit E to schedule 1?

A. That shows merely the single item of cash which the company had in the bank in its current working funds at that time.

Q. And Exhibit F of schedule 1?

A. A schedule of the stock account as shown on the company's balance sheet.

Q. That is an item of the capital stock in schedule 1,

1684 Exhibit A and schedule 1 also.

A. Yes, sir.

Q. And what is Exhibit G to schedule 1?

A. That is merely an analysis of the bond account shown on the general books. It shows the amount of bonds authorized, the amount issued, the amount outstanding, and the characteristics of the bond, and the amount of bonds issued from time to time, making up the present outstanding liability on account of this issue.

Q. And it explains the items of bonds in the first page of schedule 1?

A. It refers back to schedule 1, the item of bonds on the liability side of the balance sheet.

Q. What is Exhibit H to schedule 1?

A. That is an analysis of the preferred stock contracts which were

issued in 1906, but which have since been reduced to the present amount of $411,000, and refers back to the third item on the liability side of the balance sheet in schedule 1.

Q. Then is Exhibit I to schedule 1 in the same way a detailed statement of the accrued accounts, making up the item $58,817.07 in the balance sheet?

A. It is.

Q. Exhibit J is what?

A. That is a statement of the profit and loss of the company shown from its books at the close of business for the calendar year December 31, 1910.

Q. And is explanatory of the item profit and loss on the balance sheet?

A. Yes, sir.

Q. What is Exhibit K to schedule 1?

1685 A. That is an analysis of the company's revenue accounts. It also shows the income and the cost of the appliances and fittings and merchandise handled by the company, showing the net profit or loss from each of such department-, which refers back again to the profit and loss account for the year in question. The total also shows the quantity and cost per unit of the boiler fuel used by the company, the generator fuel, oil and purification supplies.

Q. For instance, taking that, your cost per unit appears under the word "rate."

A. Yes, sir.

Q. Coal, so much a ton?

A. Yes, sir.

Q. The oil is by the gallon?

A. Yes, sir.

Q. That is something under three cents?

A. Yes, 2.8.

Q. What are the purification supplies that you get by the bushel?

A. They are all supplies the engineers describe in the purification process as shavings, corn cobs sometimes, usually the general purification material embraced in the stock account for that purpose.

Q. What is schedule 2?

A. That is a statement of the profit and loss covering 12 month-ending September 30, 1908.

Q. And what is Exhibit A to this schedule?

A. That is an analysis of the revenue which the company has received from gas sales and sundry sales. The table also shows the cost of manufacturing material and supplies, both the quantity, the unit rate and the amount for that year.

1686 Q. What is schedule 3?

A. Schedule 3 shows the statement of the profit and loss for the 12 months ending September 30, 1909.

Q. And Exhibit A to that schedule is what?

A. That contains the statement of the revenue from gas and sundry sales of the company, the cost of its manufacture, materials and supplies, showing both the quantity and the rate and the amount expended for the year.

Q. What is schedule 4?

A. Schedule 4 shows the statement of profit and loss similarly prepared for the twelve month- ending September 30, 1910.

Q. What is Exhibit A to schedule 4?

A. That shows an analysis of the revenue account of the company for the year embracing gas sales and sundry sales; also the cost of the manufactured material and supplies, showing the quantity and rate and the amount included in the operating expenses for that year.

Q. What is schedule 5?

A. It is the one I have referred to already as an adjustment of the operating expenses for these four periods, containing a debit on account of my estimate allowance for depreciation, and a credit on account of adjustments which I made, of what I considered incorrect charges to the operating expenses.

Q. It also shows the gross revenue and operating and net as shown by the books.

A. Yes, it shows the corrected net earnings.

Q. What do you mean by fixed charges?

A. They really cover interest on mortgage liabilities, interest on bonds.

Q. Now, referring generally to these schedules, 1 to 5
1687 inclusive, included in Exhibit 23, and to the exhibits to these schedules 1 to 5 inclusive, I wish you would state whether they were all made up by you or by your employés under your supervision from the books of the company and whether they correctly show the facts set out in them as shown by those books, except this matter of adjustment in the last schedule you have referred to.

Objected to on part of the defendants as incompetenr, irrelevant, immaterial and not the best evidence.

Mr. GUERNSEY: As to not being the best evidence, the situation is this: for about three weeks perhaps, the accountants for the city have been working on these same books. We have not brought the books in here, but we can bring every one of them if they want them. Under the circumstances I don't think the objection ought to be made because the books are not here, or if it is made we ought to be permitted to interrupt the work the city's accountants are doing on the books.

Mr. BYERS: The trouble, Mr. Guernsey, is in the form of your question.

Mr. BRENNAN: You ask if this correctly shows the condition of the company's books.

The MASTER: This evidence may go in and if there is any question about the books, they can be introduced hereafter.

Mr. GUERNSEY: The question is made now. I want to ask counsel whether they require us to bring them in?

Mr. BRENNAN: No, but this witness ought not to be asked if this shows correctly the condition of the company's books.

Mr. BYERS: It is the form of the question we object to.

Mr. GUERNSEY: I think I know what counsel have in mind and I will change the form of the question.

1688 Q. I am not asking you Mr. Haganagh, to state whether the books are correct, but what I want to know is whether these exhibits, and this is what I think I asked you before, correctly show the matters that are contained in them as these matters appear upon the books of the company, except only the adjustments indicated by you in schedule 5?

Objected to on part of defendants as incompetent, irrelevant and immaterial.

A. These schedules and exhibits have been prepared from the company's books in the city of Des Moines. The work was performed largely by men in my employ and under my direction. The work of preparing and writing the report was done by me personally. I personally examined all the vouchers for the year 1910, and except for such typographical errors as may have crept into it, it is a correct statement of the condition of the company's books.

At this time an adjournment was taken until 1:30 p. m.

1689 1:30 P. M., FRIDAY, *August* 6, 1911.

W. J. HAGENAH Being continued on direct examination by N. T. Guernsey, Esq., testified as follows:

Q. Mr. Hagenah, just as we adjourned I asked you to take up the matter you have discussed in this Exhibit 23 under the heading value of investment and state whether you have made a valuation of this property based upon the investment and state in detail how you made this valuation and the reasons for it?

Objected to as incompetent, irrelevant anl immaterial.

A. In financial statements and schedules described this morn' I confined myself solely to the actual cost of the gas property and these profit and loss statements as shown by the book. The cost of the plant, however, does not represent the full investment upon which the stockholder in that plant is entitled to a reasonable rate of return. He is entitled in all fairness——

Mr. BRENNAN: To avoid interruption here by objections I would like to have the record show that in all cases where the witness endeavors to decide what is a reasonable return for the investor that testimony is objected to as being incompetent and a subject upon which the witness has no right to volunteer or express an opinion.

COURT: That will apply to each and every question and answer and each and every part of the answer without being repeated.

Mr. GUERNSEY: No objection to that.

A. It is my belief that the investor is entitled to a reasonable rate of return not only upon his voluntary investment or the
1690 actual money which he has expended in the physical plant but that he is entitled also to a rate of return upon the in-

voluntary investment which he has named and an audit of the *the* company's books will show only the actual cost on the company books. In order to find the value of the property or rather the investment which the stockholder possesses and upon which he is entitled to a rate of return it is necessary to go farther than the mere cost of the plant and to consider all the elements of value. These elements embrace the reproduction cost of the property new, the reproduction cost new of the property less this depreciation to show its present value. The cost of the plant in dollars and cents to the stockholder as he has actually built it up from year to year through expenditures and additions to the plant. The stock and bond account of the company and also its gross earnings and net earnings. There is no mathematical rule, there is not one single principle by which the value of any property for rate making purposes can be computed. It must be determined from the consideration of all these elements of value giving proper weight by one whose judgment is as such reinforced by experience as to give it value. In order to determine therefore what the value of this plant for rate making purposes should be I have gone further than the mere analysis of the book accounts which I stated this morning and as contained in this report to be roughly $1,928,000. I say that the investor is entitled to a return over and above that amount because of the involuntary investment which he has made. The amount shown on the books of this company is merely the value of so much dead material, steel, brick, apparatus for manufacturing gas and
1691 the labor element which have gone into it. It contains no item of expense *wo* represent the value of the company as an actual live operating going and revenue producing corporation. Such a corporation, such a property, or the investment representing that property is the amount which in a rate case should be used as the basis for applying the reasonable rate of return. Now plants, referring to public utilities companies, seldom produce a profit from the first year of their operation. In common law and under all our rate regulating statutes in this country a public service corporation stands in an entirely different light than a private corporation. As a public service corporation it is entitled to charge only such rates as will yield a reasonable rate of return upon the investment. Without considering now what that reasonable rate is the stockholder or the investor in a public utility company can never charge more than what constitutes a reasonable rate. If he does not secure that reasonable rate of return upon his investment he is incurring losses which must be met by someone and in this particular instance of the public service utility owned by individuals these losses fall upon the stockholder. A public utilities industry and its business is developed at considerable hazard and through the expenditure of large sums of money. That money must go for example in paying cost of advertising soliciting, demonstrating the cost of introducing the public to the values and benefits of its service. It goes to the depreciation of the plant. If now a rate of return or the price of gas which the company is charging is not large enough to meet

the necessary operating expenses together with depreciation, there is incurred in the operation of that plant a deficit and a
1692 definite loss which must be assumed and borne by the stockholder. If one should engage in a private business he would be enabled in later years to recoup these losses which he incurred in the early years. Since, however, he cannot when in this industry charge a higher rate than one which will yield a reasonable rate of return these losses which are incurred in standing by the utility business during these periods of deficits should be considered as a part of the investment. In a private business a man may retire from the business the moment he finds to his satisfaction that his investment is not profitable and may remove from the city entirely and engage his enterprise in some other city. In the utility business the moment his investment is made it is fixed and there is no choice on the part of the investor. He must stand by his utility furnishing public service even at a loss until such time when he fails or leaves the field entirely or remains only in the hope that some day the public will appreciate the service and use it to the extent of giving him that reasonable rate of return to which he is entitled in law. If for example a man has made an investment in his plant of $1,000,000 and finds that during the five or ten years of his operation he loses five thousand or ten thousand per year, the amount of his investment upon which he should be entitled to a reasonable rate of return should not be the mere physical value of his property but that value plus the amount of loss which he has sustained. If these losses are not considered as part of the investment then the application of what constitutes a reasonable rate to the investment will not yield that reasonable rate becauuse the actual in-
1693 vestment is larger than the investment upon which the rate of return is computed. If therefore the investment shown by the books is one million dollars and the accummulated losses are $200,000, the application of the specific rate to the one million dollars would not yield the reasonable rate to which the investor is entitled by law but will give him a rate considerably less per cent and therefore the accummulated losses must be considered as a part of the investment and the rate of return computed upon the investment so increased or else the amount which is deemed a reasonable rate should be increased to the extent that during the years of prosperity the stockholder will have returned to him these amounts which he has originally expended in standing by his plant during the period of development. Since a public utility——

COURT: This is an argument rather than evidence.

A. I merely want to outline this for the table I built upon these elemtents of value as shown on the company's books.

COURT: Yes, but it is argument just the same.

Mr. GUERNSEY: We thought it was not improper to have the witness state the reasons which impelled the Wisconsin commission to adopt their system.

A. It is this explanation or argument or logic whatever you want to call it which led the Wisconsin Commission to adopt a basis for

computing going value entirely different from what had ordinarily been used before that time. We build our going value table therefore from an analysis of the company's accounts and analysis of the losses during the period of development on the theory that these losses represent the amount which must be added to the physical value in order to determine the fair amount which in a rate
1694 case must be considered as the actual and reasonable investment. This theory of the Wisconsin commission differs from the other elements of going value which have been discussed in that a plant may have a large going value but it does not necessarily follow that the value must be allowed in a rate case. That is the distinguishing feature between this and other methods of computing going value. And carrying my statement a little farther if a company in later years after its plant has been formally established is earning more than a reasonable rate of return the excess in such earnings over and above a reasonable return that would apply to wiping out the going value which had accummulated during the years of the company's unprofitable operation. If then a company lost money for ten years and was very profitable for ten years, it is entirely possible and in many utilities it is a fact that for rate making purposes the element of going value which at one time was actual has been entirely wiped out since it has been earning extra profits which the stockholder has received during the period of prosperity and a portion of the losses have been recouped and he has received from and on account of his investment the amount which is deemed a reasonable rate of return on his investment. On that theory I have prepared a table——

COURT: What page is it on?

Mr. GUERNSEY: The fourth page from the end, page 42.

A. In order then to determine not whether the company has a going value, but whether the element of going value should be considered in this rate case, I have prepared the tables in this report. The table covers the years from 1887 to 1910. That is a table where depreciation is computed at two and one half per cent, the
1695 first of these last two tables. Going back to the beginning of 1887 the company's books show an investment which according to Exhibit "B" of schedule 1 of my report amounts to $285,383. I consider that which is the actual cost as the investment of the company at that time. The investment consists not only of the physical property but an amount to be considered as reasonable working capital at that time and that amount from an analysis of the company's balance sheet I place at $13,600 as I recall which is the working capital at the beginning of 1887. My second assumption for this table is that reasonable rate of return for the Des Moines Gas Company is 8 per cent. Eight per cent on this investment for the year 1887 would yield $24,719. During that year the company added to its investment $18,394. Since this investment is as well entitled to the return as that which was put in at earlier periods and since the construction was being carried on throughout the year I have applied that rate of eight per cent for only six months.

That gives an interest on the construction for the year during the period when we can assume it was in service in the amount of $736. Their operating expenses that same year as shown by the company's books amounted to $51,753. I have assumed for the purpose of this table that the depreciation of the company's property was at the rate of two and one half per cent on the depreciable property. This would amount to the application of the rate of two and one half per cent to the investment less land and working capital, making then for depreciation $7,497. Now the question arises how much during this year did the stockholder put into the business and then how much did he take out of the business. If he put into the business more than he took out that year he sustained a loss for the
1696 time being. If he took out more over and above his expenses than 8 per cent certainly no going value for *are paming* purposes occurred during that time. To prove this I add in the next column all the preceding figures to determine what total amount the investor up *ro* this time has put into the business which *es* $412,082. Through the operation of the plant that year he took out the business in the form of gross earnings, $78,793 leaving the value of his investment on the 8 per cent basis at the end of the year $333,289. That is the condition of his investment at the end of that year and consequently the next day which is the opening*ing* of the new year. During that year he is entitled to 8 per cent. He added to his plant in the form of physical property and he added to his working capital. The investor is entitled to the 8 per cent for six months upon such addition. His operating expenses are shown in the next column. Likewise the depreciation. Then I again add the total amount which the investor put into the property during that year and subtract the amount which he took out of the property showing that the investment at the end of 1888 was $381,821 this amount representing his then physical property plus the condition of his loss or profits as computed on the 8 per cent basis. The amount at the close of this year is again carried forward for the beginning of the next year and this process I have carried on from year to year for *for* every year during the time the accounts of the company can be obtained giving me a total investment value on January 1, 1911 of $3,343,394. In this table I have assumed that 8 per cent was the reasonable rate of return on investments of this Character and in this particular instance that the depreciation allowance should be two and one half per cent of the depre-
1697 ciable property. These two items are largely a matter of judgment. In order to arrive at any figure which I would want to use as the basis of valuation in a rate case I would want to compute the going value upon different basis*es* or assumptions. So I have prepared another table allowing again 8 per cent as the reasonable rate of return and assumed that *the* depreciation during these years had been at the rate of two and three fourths per cent on the physical property. This table is compiled on exactly the same basis as the one described but gives a somewhat higher valuation of $3,484,586.

Q. Have you also since you made this report and after a further study of the situation compiled a final computation?

A. I have.

Q. That I believe is being type written now?

A. Yes, sir. This report and these returns which I have just described were prepared and submitted on March 8th. After I arrived in the city and familiarized myself to a greater degree with the records of the company I came to the conclusion that the amount which I had assumed as a fair allowance for depreciation was probably high and that in the interest of the consumer and subscriber for gas service a somewhat lower rate for depreciation should be used in all justice to the public and I think that the two and three fourths per cent which I used giving a valuation of $3,484,586 is too high. I worked the table over again on an 8 per cent earning basis, however, but placing the depreciation at two and one fourth per cent instead of two and one half per cent. Now that table has just been completed and is being typewritten and I have no*y* a copy of
1698 it here but the amount shown to be the fair investment value at this time and upon which I would apply the 8 per cent is $3,240,000. I made a further analysis assuming without knowing definitely because I did not have the necessary engineering valuation data when I made these tables that my two and one fourth per cent for depreciation was still too high and I worked the table out again on a two per cent allowance for depreciation which appeared to me as being a reasonable and conservative allowance. On that basis of computation my final valuation is $3,136,241. To say definitely what I would consider the fair value of this property for rate making purposes would be a process of analysis, would require a process of analysis in which I would examine these tables and the reproduction new of the property, cost as shown on the company's ledger, its earnings, all its financial exhibits and I would certainly have to come to the conclusion that the amount upon which the rate of return which should be allowed for the benefit of the stockholders on January 1, 1911, was, the very minimum from all these analyses roughly three million dollars. My tables here, the one which I think most conservative, that of 8 per cent for the rate of return and two per cent on the depreciable property to reimburse or replace property through wear and tear or general depreciation, is $3,136,241.

Q. I wish you would state again whether the method you have adopted here is the method which is adopted by the Wisconsin commission in making its valuations where these data are available.

Objected to as incompetent, irrelevant, immaterial and calling for a conclusion of the witness.

A. In our early rate cases there we were confronted by a maize of——

1699 COURT: That don't answer the question.

A. This method was used in the case of Hill vs. Anigo Water Company and appears in the printed decisions of the Wisconsin Commission. That is the first time that method was used. It was used again in the Marinette and Menominee Light & Traction case. Further used in the case of the state journal prin*gint* Co.,

against Madison Gas & Electric Company and in all rate cases since that time we have worked outgoing value upon this basis as an element to determine the value to be considered for arriving at what is a fair value upon which rate of return should be computed.

Q. Recurring to something you mentioned this morning, $1,928,016.65, which you referred to as cost as shown by the books, I wish you would state whether that includes what we have denominated overhead charges.

A. There is no evidence on the books showing that it does. It is possible that the amount——

Defendant moves to strike out the answer and I think this witness ought to be cautioned and informed he is simply here to answer questions and to testify.

Mr. GUERNSEY: I think you were answering my question.

A. I could only answer there is nothing on the books showing that overhead charges had been included in the construction account.

Q. You made this estimate from the books?

A. Yes, sir.

Q. You have no personal knowledge of these transactions back there in 1886, 1888 and 1890 and so on.

A. No, sir; they are just copies from the ledger and the details which go to make up the total as shown on the ledger do not show any charges for the indirect expenses for construction pur-
1700 poses.

Q. Now I asked you this morning something about whether the so called overhead charges were allowed by the New York Commission in construction account for gas companies. I wish you would look at the book that I now hand you and state whether or not this is the book prescribing the method in which the account of gas companies are to be kept as shown by the order of the commission there in the second district which is in the first part of the book.

A. Yes, I recognize it as a copy of the classification of accounts prescribed by the second district commission of New York state that is the public service commission.

Q. I wish you would look at the bottom of page 15 here and read into the record such requirements as you find there with reference to these so called overhead charges during construction and how they are to be taken care of. I have the right place have I.

Objected to as incompetent, irrelevant, immaterial.

A. On page 15 of this classification of accounts appear the instructions for charging to the construction account expenditures incurred during construction, for engineering and superintendents, law expenditures, injuries during construction, taxes during construction and miscellaneous construction expenditures which embrace such items as the general office, clerical salaries and insurance and items of that general nature during construction.

Q. And on the top of page 17 what have we?

A. On the top of page 17 is the item of interest during construction also chargeable to this account.

Defendant moves to strike from the record the matter just
1701 read therein for the reason the same is incompetent, irrelevant and immaterial.

Q. Have you also before you a copy of the classification of the Wisconsin Commission relating to the accounts of such companies?
A. I have.
Q. Is that the classification which you referred to this morning which was prepared by you?
A. Yes, sir.
Q. As we do not intend to put it in the record, about how many pages has it?
A. It embraces the classification for I should say roughly between five and six hundred pages.
Q. And what is the size of the book?

Objected to as irrelevant and immaterial.

A. I don't remember the dimensions, it is probably four by seven inches.
Q. A bound book?
A. Yes, sir.
Q. Counsel for the city asks me to ask you whether it is bound in leather. Please state whether this copy is so bound?
A. This copy is, but the commission do not bind them in leather for general distribution.
Q. Now will you please turn in that classification to the requirements of the Wisconsin Commission as to these overhead charges and state what are these overhead charges they recognize as part of the capital account.

Objected to as incompetent, irrelevant and immaterial.

A. On page 79 of the classification prescribed for gas utilities and on the several succeeding pages are instructions to charge to the construction account such items as salaries during construc-
1702 tion, office supplies and expenses during construction, stationary and printing during construction, law expenses during construction injuries and damages during construction, insurance during construction, taxes during construction, interest during construction, miscellaneous during construction and a discussion of the subject of treatment of discounts on bonds issued for construction purposes.
Q. Is engineering specially mentioned?
A. It is not specifically mentioned in any accounting here. It is covered by instructions to charge engineering and superin*rents* during the construction to the construction account. It is not the subject of an account title.
Q. I will ask you to state Mr. Hagenah whether this paper marked complainant's Exhibit 24 shows as the same appear upon the books of the company the revenue and the operating expenditures of the complainant the Des Moines Gas Company for and including the

first two months of 1906 when the property was owned by the Capital City Gas Light Company and then for the twelve months ending February 28, 1907, the twelve months ending February 29, 1908, the twelve months ending February 28, 1909, the ten months ending December 31, 1909, and the twelve months ending December 31, 1910.

A. It does.

Q. And does it also show the various items per thousand cubic feet of the operating expenses?

A. It does.

Q. I wish you would state whether you have yourself since you have been here checked this Exhibit 24 with the books of the company and whether or not it is correct as shown by these books?

1703 A. I have checked this against the company's books every item of revenue or expense except one single item in the first column amounting to $32.40 I did not check because the book in which that was happened to be in use at the time and I have not had access to it since then, but just that one item $32.40. Excepting that I have verified every other figure on the statement.

Q. And what is the fact as to whether this exhibit 24 is correct, that is whether it correctly shows the facts which it purports to show as they appear upon the books of the complainant and for the first two months on the books of its predecessor.

A. It correctly shows the revenue and operating expenses in detail for the period shown on this table with the additional addition to show the operating costs and revenue per thousand cubic feet.

Cross-examination by R. O. BRENNAN, Esq.:

Q. Now Mr. Hagenah, I understand you to say that you are an expert statistician?

A. Yes, sir.

Q. You are not a consulting engineer?

A. No, sir.

Q. Don't pretend to be?

A. No, sir.

Q. You have attempted to tell the Master the various methods pursued by regulatory bodies in arriving at the valuation of gas plants and water plants?

1704 A. I have indicated simply the method which we had adopted for Wisconsin and the various methods which we considered in arriving at such valuation.

Q. Also methods pursued to some extent at least by the commission in New York State.

A. In so far as their accounting classification goes which they have used there for rate cases, but I don't know their position.

Q. As I understand you you were employed by the commission in Wisconsin to classify and suggest methods for keeping accounts for public utilities within that state?

A. Yes, sir; and further than that I was made chief statistician of the department and that was one of my duties, my first duty in connection with the organization of the department.

Q. What other duties did you perform in the organization of the department in that respect?

A. Examined all the reports made to the commission by all public service corporations of Wisconsin.

Q. Those were checked over by you to ascertain whether they had been filed in accordance with the rules of the commission.

A. And the accounts had been kept as prescribed by the commission.

Q. Did you go over the books of the respective companies to ascertain whether they were correct, is that part of your duty?

A. In many instances if the report showed any error which we could not correct through correspondence or showed great discrepancy, or an effort to avoid classification I would go to the office of the company and verify the report or prepare a new one.

Q. You got a leave of absence when?

A. July 1, 1910, which has been extended on two occasions since then.

1705 Q. When did you take up your work for Chicago?

A. I went to Chicago the first time in connection with my work there I think on the 26th of June 1910 to make a preliminary survey of the situation.

Q. And when did you first come to Des Moines in connection with this case.

A. February 18, 1911.

Q. Had you been in Des Moines prior to that date?

A. No, sir; my first visit to the city.

Q. Did you come to Des Moines in pursuance to some correspondence?

A. Yes, sir.

Q. Or by telephone message?

A. Correspondence.

Q. Who corresponded with you with reference to your coming to Des Moines?

A. I received a letter—I presume you want the first letter?

Q. Yes.

A. The first letter I received in regard to the Des Moines work was received about the 24th or 25th of January, it was written to me by Mr. G. W. Curran of Philadelphia.

Q. Mr. Curran is an officer of the——

A. Comptroller of the United Gas Improvement Company.

Q. And that was the first communication you had received with reference to the Des Moines case from that source?

A. Yes, sir.

Q. Was that in relation to your employment in Des Moines in connection with this case?

A. As I recall that letter Mr. Curran wanted to know what my work was at that time and if I would be available to pass upon some questions which he might want to submit to me involving the

1706 question of classification. He stated I believe in that letter that the company with which he was connected was interested in the Des Moines Gas Co., and that there was some difference in regard to the rates in the city and what he would want me to pass

upon was the question of the classification of accounts which the company was keeping.

Q. He told you in that letter that the inquiry involved the question of rates?

A. I recall it so, at least I understood that was what the difficulty was over.

Q. And that was the only information that you had on that subject is what you received from Mr. Curran, wasn't it?

A. At that time, yes.

Q. That was in January 1911?

A. Yes sir.

Q. About the 24th I think you said?

A. I think the letter was posted in Philadelphia the 24th of January, I probably got it the 25th or may be the 26th.

Q. You were in Chicago at that time were you?

A. Yes, sir.

Q. From whom did you receive the letter asking you to come to Des Moines in February?

A. I think from Mr. Curran. If I might explain in answer to Mr. Curran, if that is material——

Q. It might be later on, but I wanted to know now——

A. I told Mr. Curren, in my reply that I thought I could pass upon the matter that he had in mind but no specific arrangement was made at that time. I received a letter later asking me if I could come to Des Moines with him for the purpose of look-
1707 ing at their classification.

Q. About what was the date of that letter?

A. I don't remember, but it must have been, that would be just assumption, possibly eight or ten days after the first one.

Q. You referred to the first letters about the 25th of January?

A. Yes, sir.

Q. I presume you answered that by return mail?

A. Probably answered it the same day, I think so.

Q. Then you got another letter in due course of mail from Mr. Curran?

A. Yes, sir.

Q. In which he asked you if you would be in position to go to Des Moines with him?

A. Yes, sir.

Q. Well from this it was about the early part of February you came out here?

A. No, I came on the 18th of February.

Q. Did you meet anyone else connected with the United Gas Improvement Company besides Mr. Curran?

A. Mr. Curran was bound for Des Moines at that time and I met him in Chicago on the night of the 17th, he was accompanied by a young man from his office in Philadelphia and I went with them to Des Moines leaving Chicago on the night of the 17th.

Q. Upon your arrival in Des Moines on the 18th how long did you remain?

A. I went back to Chicago Sunday night on the 19th being here two days.

Q. When did you next return to Des Moines?
A. I came out here again on the 26th and stayed here one day.
Q. 26th of February?
A. Yes, 26th of February spending Sunday in Des Moines.
1708 Q. Leaving Sunday night for Chicago?
A. Yes I want back to Chicago Sunday night.
Q. When did you next return to Des Moines?
A. March 5th, I was here one day.
Q. On Sunday.
A. Sunday.
Q. You left Sunday night again for Chicago.
A. Yes, sir.
Q. When did you next come out to Des Moines?
A. I think I came here the next time the day this trial opened, I think that was the 12th of July.
Q. How many assistants did you say you had from your office employed here in the gas office?
A. I had one man here in Des Moines who was here five days, my chief accountant.
Q. What was his name?
A. Charles A. Honecker.
Q. He was here five days?
A. Yes, sir.
Q. During what part of the year 1911?
—. Mr. Honecker left Chicago on the night of February 28th and left Des Moines going back to Chicago on the night of March 5th. That is the same night I went back to Chicago. We went back together.
Q. Was he out here after that?
A. No, sir.
Q. Was anyone representing your office out to Des Moines?
A. No, sir.
Q. Mr. Honecker spent five days in Des Moines?
A. Yes, sir.
1709 Q. Of which time you were here one day?
A. During these five days yes I was here Sunday.
Q. He went with you back to Chicago Sunday night?
A. Yes, sir.
Q. Is your contract of employment from the United Gas Improvement Company?
A. No, sir; from the Des Moines Gas Company. I have no contract if by that you mean a statement in writing.
Q. No, I don't mean a written contract, I meant Mr. Curran on behalf of the United Gas Improvement Company requested you to come out to Des Moines?
A. Yes, as comptroller of the United Gas Improvement Company which owned this property.
Q. I am not asking you now what your contract was as to the amount but did you arrange with Mr. Curran, the amount of compensation which you were to receive for your services in this case?
A. No, sir; not at that time.
Q. Did you afterwards?

A. Not until about five or six days ago I think it was.

Q. Made your arrangements with whom at that time?

A. Mr. Curran spoke to me about it, asked me if I had rendered a bill and I said I had not. Later Mr. Haines requested me to file my bill since the matter had been pending so long and they wanted to have mine closed for the time being.

Q. They made settlement with you for the amount of services?

A. Yes, I rendered my bill and received a check for it.

Q. Just a few days ago was it?

A. Not over three days ago.

1710 Q. You say you were employed by the city of Chicago.

A. Yes, sir.

Q. In connection with some investigations down there?

A. Yes, sir.

Q. Were you employed by the city council of Chicago?

A. No, sir; by the committee on gas oil and electric light which has a membership of about twelve or thirteen aldermen, and this investigation was referred to a sub-committee of three with whom I dealt occasionally but my principal relations were with the chairman of the sub-committee.

Q. You were employed through this sub-committee of the city council.

A. Yes, my negotiations were entirely with the chairman of the sub-committee.

Q. What were you employed to do in Chicago?

A. To make an appraisal of the property of the Chicago Telephone Company and the People's Gas Light & Coke Company to make an audit of all their books, records and accounts, make an investigation of matters which I deemed material to the question of rates and to prepare from such material what I believe was a reasonable and proper schedule of rates for the service in question.

Q. And you were to make an appraisement of the property as well?

A. Yes, that did not necessarily mean, however, I was to do that myself. I was given authority to build up a staff for all this work but I was to supervise it.

Q. You are not familiar with nor pretend to be familiar with unit values that go into construction of a gas plant or water plant or other public utilities are you?

A. I am not an engineer, but in my work on the Wisconsin

1711 Commission on rate cases I have figures which refer to the making of many appraisals and the analysis of public service corporations and I am in a way familiar with it although not an engineer.

Q. You did not expect yourself to make this appraisal in Chicago so far as physical property was concerned?

A. Oh no. Just direct the methods which were to be pursued on the properties to be valued.

Q. And employed engineers for that purpose?

A. Yes, but I had a wide discretion in arriving at what should be the elements of value in each case and how it should be compiled.

Q. I believe something has been said in this case about a meeting of engineers or some of them or their counsel at the Blackstone Hotel in Chicago. Were you present at any of those meetings?

A. I was present at one meeting at the Blackstone.

Q. At what meeting were you present?

A. I am really not familiar with the transaction there, I did*n* nit know until I heard some testimony here that there had been several meetings. I attended one which was on Sunday February 12th I went to the meeting about noon time and I learned then that there had been a meeting before that time, I stayed to dinner with a number of men connected with the gas question in Des Moines and spent the afternoon with them. That is the only time I ever met any people in connection with this case in Chicago.

Q. Was that before you filed your report in this case which you read this morning?

A. Yes, this report I filed here is dated March 8th. I met
1712 there February 12th.

Q. That was also before you filed your report with the city council in Chicago or with this committee?

A. Yes, my gas report there was filed I think April 17th which was the day after Easter and the telephone report was filed I believe May 2d. So it was before all these reports were filed.

Q. What was the general nature of the discussions that were had at this meeting at the Blackstone Hotel?

A. I did not participate in any general discussion or general meeting. My part in the conference was to discuss with the members present but not all the members of the conference were in the room at the time, this method of going value which I explained to the court here today.

Q. That was discussed there was it?

A. Yes, I outlined what we call the Wisconsin Commission Method.

Q. Did any other engineer outline for the benefit of those present his personal views with respect to some method?

A. As I recall it there were in the room at the time I explained my method no other engineers except Mr. Randolph was there. I met other men there but they were not in the room at the time I explained my method.

Q. Mr. Baehr nor Mr. Lea were not?

A. They were not in the room, they were there, but were not in the room when I discussed my method.

Q. Were they about the hotel?

A. Yes sir. I met them before dinner and I believe they were at the dinner table with us.

Q. Did you meet Mr. Alvord at the hotel in Chicago?

A. No, sir.

1713 Q. In connection with any of these conferences?

A. Not at Chicago.

Q. Did you talk with him at any other place in reference to this case and theory which you were going to evolve or outline for the benefit of the Master in this case?

A. No, sir.

Complainants object to the question because it assumes the witness is going to evolve a theory for the benefit of this case which is not in accordance with the facts.

A. No, sir. I met Mr. Alvord only once, was merely introduced to him and never have discussed the question of values with him.

Q. Did you submit to the people of Chicago in your report the same theory of going value in that case that you have in this?

A. I did in the gas case.

COURT: I have heard Mr. Alvord's name repeated two or three times here. Who is Mr. Alvord?

Mr. GUERNSEY: He is a water works engineer who lives in Chicago.

COURT: I could not understand what *was* the reference was to Mr. Alvord is the reason I asked the question.

Q. Mr. Walvord you know is the same man who was out here in the water works case in Des Moines?

A. I met him in Des Moines, I was introduced to him in the hotel here, I was in his presence not over two or three minutes I am sure.

Q. You met him here in Des Moines?

A. Was introduced to him here.

Q. When was that?

A. I don't remember the date, it was one Sunday.

1714 Q. One of those visits you were here in Des Moines?

A. Yes, one Sunday.

Q. That was your first meeting with Mr. Alvord?

A. And the only meeting with Mr. Alvord, yes.

Q. Now you think you advanced the same theory for going value in your report to the city council of the city of Chicago?

A. Yes, sir.

Q. In the gas case?

A. Yes, sir.

Q. Now in that case you understood to recoup the company for the early losses which it incurred in getting rid of competition and for the moneys which were expended on behalf of the company ostensibly for the purpose of securing franchises.

A. No, I have not allowed in that amount which I assumed as going value in Chicago any allowance for franchise value.

Q. But didn't you conclude from your investigations that the stockholders of the Peoples Gas Light Company when they formed their reorganization and got rid of certain competition and secured certain franchises that there had been expended in that behalf some twenty or thirty millions of dollars but that as a matter of fact but about ten millions of that went outside of the company and that therefore you concluded that about ten millions would be fair and just to be considered in connection with the going value, isn't that true?

A. Not exactly. I think you have put certain elements into your question which I eliminated in my analysis of that account on the Chicago Gas Company's books. You have some of the elements in there.

Q. You did recommend the allowance of ten million dollars as going value did you not in your report?

1715 A. Approximately that amount, I don't remember the exact figure.

Q. In what manner did you arrive at that ten millions in that case?

A. The Peoples Gas Light and Coke Company, do you want me to go back through the——

Q. I would like to have you tell just in a general way by what method you arrived at ten millions as representing the going value?

A. The Peoples Gas Light and Coke Company of Chicago as at present constituted is the consolidation of a large number of gas companies which prior to 1897 had been engaged in bitter rate wars. It had been the policy of the council of Chicago during a great many years following 1855 to issue franchises for gas companies for the purpose of inciting and inducing competition. As soon as any single company seemed to be making money or at any rate some member of the council believed that they were making money, some people in Chicago thought it would be the proper method and policy to pursue to enfranchise another gas company. The result was that as soon as any gas company became comfortably established on its feet it was forced into competition with another company. The second company would enter the same field construc- a plant, to satisfy the same district, lay mains in the same streets, which were already supplied with mains and engage in a competitive struggle to master the gas business in that particular district. My theory is that a public service corporation having a franchise for the purpose of supplying the public with a public service should be given that franchise with the least possible restriction and with the least possible obstruction in its operation. Since the company can-

1716 not avoid engaging in a rate struggle and since to compel it to engage *it* in such struggle is contrary to all reason and political economy——

Q. I think you are getting far outside of the scope of the question. I want to know this, in making your valuation for the city of Chicago of the property of the Peoples Gas Light and Coke Company if you allowed in connection with the valuation anything which represented expenditures made by that company or its predecessor on account of moneys expended in securing franchises or whether you eliminated that feature entirely from your report?

A. Tried to eliminate that feature entirely from my report in so far as I was able I did.

Q. Did you allow anything in the sum for franchise?

A. I made an effort to exclude that wherever I could determine it on the books.

Q. But you allow do you not something for it?

A. Not intentionally or not knowingly. I made a special effort to eliminate it.

Q. Isn't it a fact in your report ten million approximately you allowed as going value represented items of that character?

A. I did not.

Q. Are you still serving the city of Chicago in connection with their investigation of litigation which has grown out of your report?

A. I left the service of the city of Chicago on July 8th.

Q. 1911?

A. Yes, sir.

Q. And since that date a suit has been commenced by the Peoples Gas Light Company against the city of Chicago?

1717 A. I noticed that in the newspapers.

Q. Did you get any other information from any other source?

A. No, sir.

Q. Except the newspapers?

A. That is the only information I had on it.

Q. I believe you said that in Wisconsin they attempted to arrive as nearly as possible at the actual cost of the utility in fixing rates.

A. When you say actual cost do you mean cost of operation or investment cost?

Q. I mean the actual investment?

A. We try to arrive at that to use it as one of the elements in arriving at the value upon which the rate shall be applied.

Q. In other words you endeavor to know just what amount has been invested in the property from its inception and installation up to the time of the inquiry with respect to the rates.

A. Yes, we try to analyze the construction plant.

Q. And try to know what the actual investment is don't you, the amount of money actually put into the plant?

A. We want to get at that yes.

Q. You want to know what their buildings cost don't you?

A. Yes, sir.

Q. And what their holders or other apparatus cost?

A. Yes, sir.

Q. You want to know the actual cost of the distribution system?

A. Yes, sir.

Q. Every part of the plant?

A. Yes, sir.

Q. In this report that you make Exhibit 23, you have found a valuation of this property of something over three millions

1718 of dollars approximately three millions as I understand it?

A. I would call that the value of the investment, not the value of the plant, just a little distinction of the term.

Q. You make a distinction between the value of the investment and value of the plant?

A. Yes, the plant I would call the physical property and the value of the investment the amount upon which 8 per cent ought to be applied which would be the physical property plus any other allowance which might be found necessary?

Q. You did attempt to ascertain what the actual investment was in the city of Des Moines?

A. Of this company, yes.

Q. And your figured go back to the year 1887 do they not?

A. My figures or analysis of the construction account goes one year earlier than that June 30th, 1886.

Q. You have used some figures commencing at that date and I wish you would tell us from what source you received that information, that is to say the amount which you used in this report as representing the investment of the company in 1886.

A. That is taken from the company's books, the ledger.

Q. You have no way of verifying that except that you adopt these figures from the books?

A. The first figure of course I would have to adopt, I had nothing prior to that or any means of ascertaining it.

Q. Now in your summaries the way you have worked out this valuation I will ask you if you have considered in connection with the valuation of the investment anything for mains below pavement?

A. Only to this extent where the main was laid by cutting through pavement and the pavement restored the cost of such restoration appears in the records of the company and that amount only
1719 is included in the construction account.

Q. So that you arrived at the value of the investment of three million dollars without considering the item at all of mains under pavements?

A. Only in so far as the books show that the company has actually cut through pavement and restored pavement.

Q. That is to say if a main or service has been constructed in advance of the pavement or at a time when a street was being repaved you make no allowance for that?

A. Not unless the company incurred any cost in connection with it in which event it is on the books and this table embraces no items not on the company's books.

Q. I wish you would tell me if you will, on December 31, 1910, what the actual amount invested by the company was as of that date?

A. $1,928,016.65.

Q. Now can you tell from your report the amount of gas that was sold by the company up to that time?

A. In cubic feet?

Q. Yes.

A. No, sir.

Q. Haven't you got it summarized there each year?

A. The gas sales each year.

Q. Yes, that is shown in your report is it not?

A. No, sir.

Q. Is there any way by which you can refer to this Exhibit 23 and tell us the amount of gas sold by the company up to the 21st day of December 1910?

A. No, I could not. There is no information that is accurate on that subject in this report. I have not analyzed the sale
1720 statement to determine the volume of gas sales.

Q. Do you know what the receipts of the company were up to that date from all sources, the gross receipts?

A. I have in my totals the gross earnings of the company for the years 1887 to 1910 inclusive but it is not totaled. Shows it for each year.

Q. Do the books and records which you examined show the receipts for the years preceding 1887?

A. My recollection is that the company has no books prior to 1887.

Q. They have no books?

A. No, sir.

Q. Showing any transactions prior to the year 1887, is that your understanding?

A. No, sir; I inquired for them, but have been unable to secure any records prior to that date. The company then was very small and I presume the same practice prevailed, they became lost. I at any rate have seen no records prior to that.

Q. Did you ask for any records prior to that date?

A. Yes, I wanted to get this back to the date of incorporation if possible.

Q. When was the incorporation do you remember?

A. I don't know when the orifinal company was incorporated, the Des Moines Gas Company I think——

Q. That was in 1906?

A. Yes, sir.

Q. The Capital City Gas Light Company, do you know when it was incorporated?

A. No, sir; I do not.

Q. Can you tell us from your report what the total revenue received by the company from the year 1887 to December 31, 1910 was?

1721 A. I have the column of figures here, there is no total to them. It is not added but the data is here.

Q. Do you have it in years as shown by your report?

A. Yes, 1887 to 1910.

Q. You have shown here the last column of page 42 Exhibit 23, the value of plant at the close of the year?

A. Yes, sir.

Q. Does that have anything to do with the income from sales of gas?

A. Yes, it is computed in this way as I have explained, consider each year what the stockholder put into the business and what he took out and determine loss and profits for that year and make adjustments, used this cumulative progressive analysis and gives the financial transaction from the period of 1887 to 1910.

COURT: That means upon 8 per cent interest upon the investment including depreciation from the time you begin until you close.

A. Yes, at per cent on the losses which are shown by considering depreciation as operating expenses during this year and they do not actually set aside anything to deprecation, reduced by applying profits which the company make during the same time showing a net deficit accumulating plus physical property equal to the amount at the bottom of the last column.

COURT: And that has tripled as I understand in about 22 years 'nasn't it?

A. Well during that time of course the plant has grown, the valuation has increased from $308,000 to $1,928,000 the books cost has increased that much.

COURT: That is three times the actual investment, three times the actual money put in?

1722 A. No, not quite twice. The actual money put in is $1,928,000, the construction account is $1,928,000.

Q. As I understand this table at page 42 you have shown for instance for the twelve months ending June 30, 1887, in the first column the value of the plant at the beginning of the year $308,383.

A. That is 983.

Q. Does that represent the actual investment up to that point?

A. The actual investment in plant plus the amount of working capital shown by the balance sheet on that day which as I recall it was $13,600. I may be wrong, may be one or two hundred dollars difference but it was 13,000.

Q. That includes the working capital outside of actual plant at that time and represents working investment?

A. Yes, sir.

Q. The next column you have 8 per cent of the value of the plant. That is to show to the credit of the stockholder 8 per cent of that amount?

A. Yes, sir.

Q. In the next column you show the additions to the plant?

A. Yes, sir.

Q. Including the working capital?

A. Includin*d* additions to the working capital during that year. that is the average addition.

Q. Then in the next column you show 8 per cent on additions to plant including working capital for six months.

A. Yes, sir.

Q. And the next purports to show the operating expenses for that year.

—. ——.

Q. The operating expenses of $51,755 that I take it you secured from the books of the company?

1723 A. Yes, sir.

Q. You made no *ettort* to check that over to ascertain if that amount was correct?

A. No, I didn't go over the individual vouchers. That is the total operating expenses from the closing of the books.

Q. The depreciation was two and one half per cent on depreciable property that you have incorporated into this report to carry out your theory, that you did not get from the books did you?

A. No, that is in this report on the statement of the details of plant, investment, schedule 1 Exhibit B and in order to find the depreciable property that year I deducted from the total that appears in this page the amount which does not depreciate which is the land.

Q. If I understand you right the company in 1887 did not take off anything for depreciation.

A. No, sir.

Q. Kept no depreciation account in other words?

A. No charge for it.

Q. You have stated that in your report by including it in this report?

A. Yes, sir.

Q. Now the column under the heading total, does that represent the sum total of all these other columns preceding?

A. That is the total of the foregoing six columns.

Q. You have gross earnings in the next column, $78,793.

A. Yes, sir.

Q. What information did you receive to lead you to believe that amount was correct?

A. That is taken from the ledger at that time and is checked against the ledger to verify its accuracy.

1724 Q. There were no vouchers or anything to show that amount was correct?

A. No, I did not go over any subscribers' ledgers to verify the total.

Q. They have no books prior to that time?

A. Not prior to that time but they had for that year.

Q. For 1886, that is prior to June 30, 1886, the company as far as you know have no books or records?

A. Yes, I so understand.

Q. So that assuming that your report is correct in that respect taking this first item—I do this for the purpose of getting your view point, under the first column $308,983 represents the amount actually invested as shown by the company's books.

A. In plant and working capital.

Q. And for the month of June 30, 1887, the value of the plant at the close of the year by including these several items, you arrive at the conclusion that the value of the investment was $330,289.

A. Yes, sir.

Q. Now how much of that is represented in so called overhead charges?

A. Not any of it in this way unless the company has during that year charged these overhead expenses which would properly be construction charges into these operating expenses. I don't know the amount.

Q. Do you know anything about it whether they have or not?

A. I don't know the amount, no sir.

Q. Would that make any difference if they had in your computations?

A. It would not affect the result, but it would affect some

1725 of the columns in this table. The amount which had been charged to operating expenses for that purpose and should have been charged to construction account and show as an addition to the plant during that year. Since both these columns are

added in the total it would not affect the total at all. This automatically adjusts that.

Q. The $18,394 representing additions to the plant including working capital that is the additional working capital, did you check that over to find out if that was correct?

A. I checked the total construction of this amount and then asked for the detailed expenditures that went into that amount and in that way verified the amount before the table was made up.

Q. Do you know how much additional capital was added?

A. Working capital?

Q. Yes.

A. I assumed there — an average of $5000 per year. If I may explain if I had analyzed the balance sheet each year during this period it would have shown some years the working capital materially increased and take some years it might have been slight, another year the particular day the books were closed the working capital might have appeared rather small——

Q. What I am getting at is if you can tell us——

Judge CARR: I think the witness ought to be allowed to complete his answer.

A. I merely wanted to add this statement. I computed the working capital at the beginning of this period and the working capital at the close of the period and then took the average increase each year which would give exactly the same answer as if I analyzed each balance sheet over these years.

Q. Take that balance sheet for 1887, I want to ascertain
1726 how much you include for working capital, how do you find it.

A. You will find it by referring to Exhibit "B" of schedule 1, the last column. That column shows the additions to the physical property that year.

Q. Schedule I, Exhibit "B" additions to plant 1886 to 1910?

A. Yes, sir. You will find that the additions to the physical property that year were $13,393.52. Wherever an amount of cents is in excess of 50 I make it $1.00 and where less than 50 I drop the cents, so if you will refer now to the table of going value you will find that the addition to plant that year is $18,394 which is equal to this figure from schedule 1, Exhibit "B" plus the $5,000 representing average increase in working capital over these years.

Q. You just assume that there was added to the working capital for the year 1887 this $5,000?

A. I assumed that the avarage was added because I know what the working capital was at the beginning of this period and I know what it was at the conclusion of the period. I can see from the earnings there and expenses that the business has greatly increased and I can safely assume that the working capital has kept pace with such advancing balance sheets. Rather than work it out each year I carry each year the average increase in working capital shown to have actually occurred over these years.

Q. In making your estimate for working capital if you take the

working capital as shown upon the company's books during the years covered by this report, or whether you have assumed a certain percentage to represent working capital covering that period.

A. No, sir; my working capital data is taken from the balance sheets of the company, no assumption.

Q. Each year you show in this report do you what the
1727 actual working capital for the company was for that year?

A. I am afraid we don't understand each other. There are here a period of twenty three years. I have seen the balance sheets for all these years and I have worked out the working capital for each of these years. In some years the advance is so much as fifteen or eighteen or twenty thousand dollars.

Q. What I want to know is, do you find anywhere any working capital account?

A. There is no working capital account on the books. It is balance sheet information.

Q. You get that showing how much that was each year?

A. I really take it, yes.

Q. How did you get at the working capital account.

A. From an analysis of the balance sheet.

Q. How do you analyze the balance sheet, in what way?

A. For determination of working capital?

Q. Yes.

A. Analyze the cash account, inventory account, accounts receivable and accounts payable.

Q. The reports or records which you saw on the question of extension of mains, did the company's books show the actual cost to the company for those mains?

A. Yes, and that is shown in detail in Exhibit "B" schedule 1 of my report.

Q. Extension and improvement, the first column page 5 of this report that represents the item to which I have called your attention?

A. It does not include mains if tha- is what you are inquiring.

Q. What does that include?

A. Includes land, buildings, and station manufacturing equipment.

Q. So that on June 30, 1886, $189,423.33 represented all
1728 these values.

A. Yes, sir.

Q. That includes real estate as well as the other property.

A. Yes, sir.

Q. Did you inquire as to how much they paid for the real estate or did you accept the company's statement?

A. I accepted the book figures.

Q. Do you remember whether the books you saw had any record of the amount which had been paid for real estate?

A. I believe they did.

Q. Were you furnished by the company with any information aside from the books with reference to that?

A. No, sir.

Q. Have you treated that in any other manner in this report except to accept the figures of the company?

A. No, sir; merely taken the ledger figure.
Q Now where are the mains and s-rvices shown here?
A. Mains are shown in the third column and services in the 5th column.
Q. That is extension of street mains?
A. Yes, sir.
Q. This $62,618.82 represents the amount paid that year for extension does it, extensions of street mains?
A. Yes, but that being the first year it represents the main account on the books. You see the company have been operating some years at that time. This represents the value of its street mains at that time.
Q. All the street mains?
A. Yes, sir. The item below that would be the amount for that year?
Q. Do you remember how many miles of mains they had at that time?
1729 A. No, sir. I saw a record of it, I don't know what it is.
Q. Had invested in meters $14,380.80.
A. Yes, sir.
Q. Invested in services, $18,957.10.
A. Yes, sir.
Q. $295,385.08, what does that represent?
A. That is the total cost of the plant as shown by the books on June 30, 1886.
Q. Now I believe you made some reference to the be-efits that accrue to this company on account of the fact that the United Gas Improvement Company had taken it under its wing for which they already received at least in 1910, $10,000.
A. Yes, sir.
Q. And I believe you wanted to give the inference that the Des Moines Gas Company was somewhat of an infant industry and needed the protection of the Uni-ed Gas Improvement Company, was that the thought?
A. No, I did not care to give any inference like that. I hadn't that idea in mind at all.
Q. You say economy can be practiced by having the advantage of a purchasing agent in the buying of materials and things of the sort.
A. Yes, you will secure more favorable prices that way.
Q. Do you know how much money the Des Moines Gas Company made say, in the year 1910, on account of these advantages to it?
A. No, I could not determine that.
Q. Did you try to determine it?
A. Whenever I pass on a matter of that kind I always like to satisfy myself that the company is not squandering the money, that it is not merely a device to pay money over to the holding company.
1730 Q. What I am getting at is did you attempt to inform yourself on that subject as to how much the company had actually earned by reason of this advantage?
A. I made some inquiry about that, yes.

Q. Did you satisfy yourself?

A. To the extent that I believed it was a good investment to spend the $10,000 a year.

Q. How much had they saved?

A. I don't know how much they saved, I didn't carry it all the way through.

Q. You didn't carry it through. How far did you carry the investigation.

A. I made inquiry and I also saw from the vouchers the prices which this company was paying for material which it was securing through this central purchasing agent.

Q. Can you recall any particular item upon which you noted there was considerable saving to the company?

A. While I have no specific figure in mind I recall that the company was getting very favorable prices on gas stoves and fixtures which were being purchased in very large amounts at the Philadelphia office and distributed among the subsidiary companies. The cast iron pipe I believe that was also true of them, although I have no specific figure in mind. I recall though at the time that they were getting good prices.

Q. Do you know what the company was paying for cast iron pipe in 1909?

A. I don't recall the figures, no sir.

Q. You could find that out for us could you?

A. The vouchers are in the company's files, I went over these vouchers for one year.

1731 Q. In making up your report here showing the actual amounts spent for street mains, you ascertained did you not how much they were paying for cast iron pipe in that year 1909?

A. No, Mr. Brennan, in making up the table to which you refer in the report that is taken from the ledger and the ledger figure would not show the cost per ton of pipe.

Q. Did you just adopt the amount which the ledger showed as being expended for extensions?

A. In all years except these last few where either I or my assistant checked the vouchers to see that the money had actually been expended.

Q. The vouchers would show the amount that had been actually paid by the company for cast iron pipe in 1909.

A. Yes, for all supplies and material purchased.

Q. Can you get that information for us?

Mr. GUERNSEY: Are these the same vouchers the city's experts are now working with?

A. Yes, the same records.

Mr. GUERNSEY: Then I think he ought not be asked to do it at our expense. I have no objection to his doing it at their expense.

A. I have not the figures in mind. They are on the records which the accountants are working at now.

Q. Do you know whether the company bought pipe any cheaper in 1910 than it did in 1909?

A. I had no specific recollection or any item on that.

Q. Or these extensions or supplies sold?

A. I don't remember, I have no specific recollection of that.

Q. Did you notice any material decrease in the cost of materials to the company in the year 1910, as compared with 1909, or 1908 or any of the other years?

1732 A. There are some fluctuations of accounts and amounts paid but much of that is due to the general market fluctuation. If any concessions are made they are concessions from the list and concessions from the market prices and would reflect more or less some general fluctuation of the market price.

Q. Were you shown the contract between the Des Moines Gas Company and United Gas Improvement Company?

A. No, sir.

Q. With respect to this matter?

A. No, sir.

Q. Did you inform yourself with respect thereto in any way?

A. No, sir.

Q. Did you inquire if there was a contract?

A. No, sir.

Q. Were you advised by any one that such a contract was in existence.

A. No, sir.

Q. Did you attempt to inform yourself as to the general scope or nature of this contract?

A. I don't know there was a contract. I don't recall ever having heard it mentioned.

Q. Do you know why it was the company paid the United Gas Improvement Company the sum of $10,000?

A. Yes, because some of the employés of the United Gas Improvement company were from time to time sent to Des Moines for the purpose of giving service in this city and as soon as they were through here they would go back to Philadelphia. They received for that a salary which is more or less nominal.

Q. Didn't it occur to you as somewhat singular to find an item for the year 1910 in the sum of $10,000 notwithstanding the services referred to by you had been performed through other years.

1733 A. It did in this sense attract my attention because it did not show up in any of the preceding years and I did ask officials of the company for an explanation of that and they told me that the service had been rendered during those years, but it was not until 1910 that it appeared on the books.

Q. Now did the $10,000 item purport to pay the United Gas Improvement Company for the service rendered during the year 1910, or did it purport to cover past service as well?

A. My recollection of that is it applied only to the year 1910, salaries paid monthly.

Q. It is your notion, is it, as an expert statistician, that the Des Moines Gas Company, considering the length of time that it has been operating in the city of Des Moines considering the fact that it is enjoying a monop-ly in this city, considering the fact that it is serving the number of consumers that the record in this case shows

that it is serving, that it is necessary and advantageous to pay to some other company the sum of $10,000 for these accompanying privileges.

A. In this specific instance it is advantageous to do that though I should not say necessary.

Q. What did the Des Moines Gas Company or the consumers get in return?

A. They got the service.

Q. What service?

A. These men they paid salary.

Q. What did they do, what services were performed that could not be done by Mr. Haines, Mr. Vincent and the staff here in Des Moines?

A. Representatives of the United Gas Improvement engineering department make frequent trips to this city for the purpose
1734 of inspecting the operating condition of the company as to the degree with which the gas plant is capable of satisfying the demands of the company. They make the proper design for extensions and improvements at the plant, representatives from the financial and auditing department come to this city to examine the company's books and make periodical audits here.

Q. You understand this company at least ostensibly is an Iowa corporation organized under the laws of the state of Iowa under the name of the Des Moines Gas Company?

A. Yes, that is the name.

Q. With certain officers?

A. Yes, sir.

Q. And directors mentioned in the articles of incorporation and their successors in office, you understand that don't you?

A. I assume, I have no recollection just now, I assume it is an Iowa corporation.

Q. You know Mr. Haines has been recently made the president of the Des Moines Company a corporation organized and existing under the laws of Iowa do you not?

A. I learned that from hearing Mr. Haines testify in this case.

Q. Now can you conceive of any good reason why any operative business man or corporation would pay to some other corporation the sum of $10,000 for the privileges which you have stated here to the Master and then expect the consumers to pay for that.

A. I think the consumers are receiving the better of the bargain.

Q. In what way, I wish you would tell the Master.

A. Because this company is receiving the benefit of technical experience of men in the employ of the United Gas Improvement Company without any other charge against this Company.

Q. Well don't you think that the United Gas Improvement
1735 Company would be subserving some interests of its own by paying this money?

A. The United Gas Improvement Company stands in the position of a stockholder and I presume any stockholder that took any interest in his investment, but if he did any other work outside of

his interest as a stockholder or director he would probably want to be paid for it.

Q. Do you know the United Gas Improvement Company is a stockholder in The Des Moines Gas Company?

A. I have been told that.

Q. A stockholder?

A. Yes, sir.

Q. How much stock does it own?

A. I believe it owns practically all of it. I have not made an examination of the books, I made inquiry and was told it controls all the stock.

Q. It is the United Gas & Improvement Company as far as the consumer is concerned?

A. No, sir; it is the Des Moines Gas Company.

Q. Now the United Gas Improvement Company own all the stock of the Des Moines Gas Company and all of the principal officers are in Philadelphia and they are interested in performing this service are they not?

Objected to as argumentative and as to getting very close to arguing a legal proposition and therefore is not competent.

A. To the extent of being a stockholder they are, but to my mind it is immaterial who owns the stock, what is material in this case is the investment value and the cost of the service, character of the service.

Q. Is there anything else charged up to the consumer in
1736 addition to this $10,000 to represent the value of the investment by reason and on account of the protectorate that has been established in this case?

A. I know of no additional charge.

Q. In other words in reaching the value of the investment December 31, 1910, did you add to that value anything for and on account of the fact that the United Gas Improvement Company is back of the investment and will protect it?

A. No, sir; I added nothing to my valuation because of that fact.

Q. And yet with this corporation back of it, as a holding company you still think that the investor in addition to all these other items is entitled to 8 per cent?

A. I think the investor is regardless of who he may happen to be.

Q. You told them in Chicago did you that they were entitled to 8 per cent down there?

A. In what case?

Q. In this People's Gas Light and Coke Company.

A. I did not.

Q. Did you fix 8 per cent down there?

A. No, sir.

Q. How much did you fix as reasonable return there?

Q. 7 per cent.

Q. You raised one out in Des Moines?

A. Yes, sir. My idea of the reasonable rate in Des Moines in this case is 8 per cent.

Q. Did you ever have any experience in Des Moines in investments?

A. No, sir.

Q. Ever talk with anyone who has?

A. No I never talked with any local man about investments?

Q. Have you studied investment conditions in Iowa to
1737 any extent?

A. I have made a study of financial and investment problems in the United States for the last seven or eight years.

Q. Well in Iowa.

A. Iowa is a part of that yes.

Q. Of course Iowa is a part of the United States, but what I am getting at is if you have studied any financial conditions referring specially to Iowa. .

A. Not expecially to Iowa, as a geographic district but as an area of the United States I have as part of the area.

Q. Now in making up this report somewhere I believe I notice that you had tabulated the rates which this company had charged and received for selling gas in Des Moines.

A. Yes, sir.

Q. Can you tell me where that is?

A. I cannot from this copy because this is not paged but it is in this report somewhere. On page 33.

Q. Now Mr. Hagenah just what was your purpose in making reference to the ordinance rates for the years 1896 down to 1910?

A. Just as a part of the historical review of the plant.

Q. Now did that enter into your computation as to the value of the investment and those early losses which you were recouping?

A. It does of course since the gross earnings for these years are used. The gross earnings upon that page each year and the operating expenses each year.

Q. Why didn't you put in what rates were charged by the company during its existence?

A. I don't know what the early rates are.

Q. Did you try to find out?

A. I did. I inquired what they had been and got this particular statement.

1738 Q. Did you regard the rates in force prior to 1896 as important in analyzing the question of value of investment?

A. It is taken into consideration in this total automatically.

Q. You haven't answered the question.

A. They are important because the gross earnings for each year is computed on the basis of the rate charged that year on the amount sold.

Q. My question is why you didn't go back to ascertain how much the company had been charging for gas sold in the city of Des Moines from the time of the installation of the plant.

A. I didn't have any figures submitted to me for the earlier period and this is in here merely as part of the history, does not affect the table at all.

Q. The fact is in 1896 was the time when the first reduction in

rates went into effect in Des Moines, that is your understanding isn't it?

A. I really don't know.

Q. That is to say the company from 1896 January 1st, down to December 31, 1910, they had an ordinance prescribing the rates which are set forth on page 33 of this report. Is that your understanding?

A. I understand that there is some contract under which rates have been automatically reduced here. I have no information as to what rates were in Des Moines except the rate in effect of $1.00 and ten cents gross. I requested the company to give me some information on that and this is what was submitted to me, that is a copy of it. I didn't ask for any earlier because I didn't attach any significance.

Q. Suppose in 1887 the rate was $2.50 a thousand would that make any difference?

1739 A. It would not make any difference in my report because the gross earnings in that report already recognize that.

Mr. GUERNSEY: In the preceding paragraphs you refer to a $1.80 rate. Evidently you had a different rate?

A. That might be, this report was prepared in March and I have forgotten if there is any statement here.

Mr. GUERNSEY: Mr. Brennan said he did not object to me calling the attention of the witness to it because it is evidently an oversight.

COURT: My understanding of it is that at the beginning of his ordinance it was $1.50 wasn't it?

Mr. BRENNAN: Yes, and then before that the rates had been up as high as almost $3.00 at one time if I remember it. There were different rates enforced by the Capital City Gas Light Company covering a period of years from the installation of the plant down to 1896 when this first ordinance fixing rates within the city of Des Moines went into force and effect.

Q. Now what I wanted to know Mr. Hagenah was if you depended entirely in getting your results upon the gross revenues of the company why you set out on page 33 the rates which were in force in the city of Des Moines for the company covering the years 1896 to and including the year 1910.

A. As purely a part of the discussion of the history of the Des Moines Gas Company. The going value table which you refer to is built upon the gross earnings shown by the books for each year.

Q. But don't it form a part of this scheme which you attempt to outline or method for the purpose of recouping the investor on account of early losses and in this same connection do you not take up and discuss the proposition that the rates prior to 1896

1740 were fluctuated more or less and were the subject of change and matters of that kind. Don't you dwell at some length on that proposition?

A. I believe I state in this report, though I don't recall exactly what you refer to that there has been a very decided but gradual

reduction of the price of gas in Des Moines. As part of the history of treating the gas rate question.

Q. You knew did you not that prior to the year 1896 that the gas company fixed its own price of gas?

A. I had no knowledge one way or the other on that, total stranger to it.

Q. Well would you consider that as important?

A. No, sir.

Q. Did you consider the question in making up this report that the company had been the subject of regulation by the city or the state?

A. Did I consider it?

Q. Yes, did you consider that as important?

A. Only as affecting what is a reasonable rate of return.

Q. Then you did consider it?

A. That the company is not subject to regulation by commission, I took that into consideration.

Q. Did you take that into consideration in this report that this company prior to 1896 had not been regulated by the city?

A. No, sir; that in nowise affects my figures in the report.

Q. In arriving at this 8 per cent return you said something about taking into account hazard incident to the investment?

A. I did not say hazard, but I did take hazards into consideration.

Q. Is that one of them?

A. Hazards of the business, one of the elements.

1741 Q. The so called hazard as you term it growing out of the right of the city or state to regulate?

A. When I said hazard I had in mind hazards of a commercial sense.

Q. What I want to know is what importance if any you attached to the fact that the company was subject to regulation by the state or the city in reference to the charges and prices which it should put into force?

A. I did take it into consideration.

Q. Now tell the Master just how you took it into consideration, how you applied it in making up this report?

A. I took it into consideration only in connection with arriving at what I considered to be the fair rate of return. I believe that a utility which is subjected to the uncertainties of a more or less inconsistent policy of regulation under municipalities no matter how honest and well directed the effort may be is such as to lead a company to expect a somewhat higher rate of return than where it is subjected to the consistent regulatory policy of a permanent commission.

Q. Now just how much did you allow to cover that hazard.

A. I could not put it in a mathematical term.

Q. You allowed 8 per cent in all as a reasonable return. Now how much in your judgment represents so called hazard due to the fact of such regulation?

A. I would not put in a mathematical term, I could not say so

much to reduce it to a certain fraction. It is an element which I take into consideration in arriving at this conclusion.

Q. Do you make any distinction between municipal corporation or a state commission exercising powers?

A. I do. I think utilities subject to the regulation of a state commission are receiving benefits——

1742 Q. I am not asking your reasons, simply want to known if you do make any distinction or difference.

A. I do.

Q. Now you spoke of this Antigo Water case. Will you tell the Master how much was allowed in that case as going value?

A. I have not a copy of the decision with me here and I really don't remember the details of that although I worked in connection with the case.

Q. Now don't you know there was not anything allowed in that case?

A. I don't take the position as to whether what you say is true or not, I have not the case well enough in mind.

Q. Did not the utility commission of the state of Wisconsin after going through the history of the Antigo Water Company and considering rates it had charged during the period of its life, find that the consumers had paid for these early losses in the excessive charges that were made for the services rendered.

A. I do not recall the case well enough to express any opinion other than that the commission in its analysis undoubtedly took these elements under consideration and if they allow going value had a reason for doing it and if they did not they had a reason for it.

Q. Is not the fundamental idea in the method pursued by the Wisconsin commission in rate cases where going value is brought into question they take into account the early charges made by the company and the amount of receipts therefrom and if they find that the consumer during these early years has been paying an excessive rate that that recoups the investor for these early losses, don't they consider that and isn't that one of the fundamental ideas.

A. No, sir.

1743 Q. Now what do they do in that connection if you know?

A. The specific rate paid by subscribers in early years is a matter of interest and may be considered, but you must consider the reasonableness of the rate not in view of conditions today and present prices, but in view of those prices and operating costs at the time that rate prevailed.

Q. Take this report of your-, Mr. Hagenah and assuming that you are correct, that it don't make any difference what the rate was that they received, that your theory works out just the same upon the gross earnings. Suppose that the company here in Des Moines charging say the first five years of the operation of the plant $5.00 per thousand cubic feet of gas sold and the consumers have been paying it. Would that make any difference in your computation in arriving at what the value of the investment was say in the year 1890 and assumed that was at the end of five years, 1885 to 1890 had been charging $5.00 per thousand cubic feet of gas sold?

A. Will you add to that anything for what operating expenses were at that time?

Q. Well I am assuming operating expenses as you have shown them here for the purposes of the question.

A. Well if they had received $5.00 per thousand on all their business the rate at that time would have yielded sufficient revenue to wipe out a part of the going value.

Q. Now have you in your report considered the rates which were in force say prior to 1896 for the purpose of ascertaining whether or not the rates which were in force did offset it?

A. I did, my tables built on that theory gives me the gross earnings which I deduct each year, represents the rate charged that year whatever it may have been, even as much as you say multi-
1744 plied by the sales which were made under that rate.

Q. You take the gross income from the year 1887 and are you able to tell from that amount just what the company was charging per thousand cubic feet?

A. No, sir. I don't know but if they were charging $3.00 per thousand it is operating to reduce this element of value which increases to this figure at the bottom of the column.

Q. The fact that the company was charging and receiving without objection $3.00 per thousand feet of gas, now at the end of 1887 when you come to the fixing of value on this investment is that predicated in any sense upon the rate which is being charged?

A. Through the gross earnings being based upon the rate charged that year. It is not necessary for me to get the rate contained in the gross amount.

Q. Assume that at that point the court or some tribunal having authority decided that rate was too high, that $1.50 was all that the company should have charged and received for that service would that make any difference in the value of your investment on the first of January?

A. It would not.

Q. Why not.

A. Because finance does not always weigh the opinion of the court and——

Q. We are assuming that the court is right in its conclusion that $1.50 is a reasonable rate for the service rendered.

A. It does not necessarily follow do I understand it if $1.50 is found unreasonable now it has been unreasonable for any length of time before.

Q. What I want to know is this, assume that the gross earnings, the gross receipts shown as in this report are predicated on a
1745 rate of $3.00 per thousand cubic feet of gas. That in truth and in fact $1.50 is all that service is worth so that your gross earnings are that much in excess of what they should be. Now when you come to ascertain the value of the investment at the end of the year will the rate which was charged by the company make any difference?

A. Yes, under the case that you give it will automatically reduce this element of value because——

Q. Now what would be the value of the investment assuming that the rate should have been $1.50 instead of $3.00?

A. If the rate should have been $1.50 instead of $3.00 then to determine the reasonableness of that $1.50 you would have to make an analysis of the operating expenses including depreciation. You would find out then under the $3.00 rate so much to gross earnings and may have added so much that there would have been absolutely no deficit that year but showed a surplus which under this table would automatically apply to wipe out subsequent deficits is there were any. Now if the table was pursued right straight through on that basis we could arrive on the valuation in this case on your assumption say in a figure considerably less than the present physical value of the property.

Q. I understand you have no records, none furnished you and that you have no information with respect to the amount of the gross revenues of the company or the depreciation of the same for the years prior to 1886?

A. No, sir; I have no information prior to that.

Q. So in making up your estimates of the value of the investment of course you have not taken anything into account, the conditions into account preceding the year 1886?

A. No sir.

1746 Q. Now if it should appear that during the history of the plant, its operation up to the year 1887 that the company had earned more than that to which it was entitled under the law would that change your figures in this report?

A. Yes, I would take my table back beginning with the first year for which I had information and carry it forward from that year instead 1886. If then the company had had a large surplus at the end of each of these years it would show to lower the figure here. The surplus each year being dividends earned by the rate charged or by the difference between the operating expenses at that time and the rate at that time and the gross earnings at that rate.

Q. Isn't that in effect the theory pursued by the Wisconsin rate commission in rate cases in computing this so called going value, value of investment, going concern value or whatever you may term it? Isn't that the method pursued. In other words if the consumers during early years of operations of the plant have paid in these excessive charges that then there can be no such thing as going value in a rate case?

A. No, sir; that is not so.

Q. And isn't that the logic and conclusion of this commission in the Antigo Water case?

A. It is not.

Q. You say it is not?

A. No, sir. Based on the question as you put it because you do not consider in connection with excessive rate in years gone by the excessive operating expenses making it necessary to charge that excessive rate. There have been companies charging as high a rate as $1.50, $1.75, and $2.00 that have been forced into the hands of receivers whereas companies charging 85 cents, prosper.

1747 Q. You don't know of any gas company in Des Moines having been forced in the hands of a receiver?

A. No, sir.

Q. Do you know when it was the state of Iowa first undertook to regulate prices or charges of gas companies?

A. No, sir; I do not.

Q. Do you know that it is a fact that not until 1892 or '93 that any attempt was made on the part of the state of Iowa or municipalities to regulate the prices or charges for gas in the city of Des Moines?

A. No, sir; I have no knowledge on the subject.

Q. Would the fact that this was but the second attempt in the history of the gas business in the city of Des Moines to regulate rates, would that have anything to do with the hazard you consider in connection with the rate of return?

A. No, sir.

Q. The mere fact the right exists you think ought to be charged up to the consumer a-though never exercised?

A. It is not so much the extent to which you carry that exercise at any particular time as the danger that you may exercise it at any time.

Q. The fact it is there you think is a menace to the investor?

A. Yes, sir.

Q. That it may be exercised at any time and therefore the investor is entitled to a larger return.

A. Yes, sir. If I may add I think that a contract for a number of years say four or five years would justify a somewhat lower rate of return than where the rate question or reasonableness of the rate may be exercised at any time and as often as the coun- de-

1748 sires.

Q. Now the difference between the $1,928,016 and the amount which you finally arrive at as representing the value of the investment, the difference between those figures represent what?

A. What I would call the accumulated losses.

Q. Is there any difference between these accumulated losses and socalled overhead charges?

A. Yes, sir.

Q. What is the difference, where is the difference?

A. What I understand your idea of overhead charges to be that is an addition to the construction of the plant by virtue of its supervision during construction.

Q. You consider that at all in arriving at the value of the investment?

A. I have not in this table except as the items are included in operating expenses. I make no different computation.

Q. It is charged in somewhere along the line?

A. A very small degree of it has crept in.

Q. You do consider engineering charges and contingencies during the period of construction?

A. As I consider them part of the construction charge, but I have not made any addition for that purpose in these values.

Q. It appears somewhere increases the operating expense or some other expense account don't it. In other words, if you would just take the actual cost of operation without regard to these contingencies your operating expense account, would not be as large.

A. Be a difference amount of operating expenses, but charges which should be to capital account and it is automatically taken care of in this table. If the item is not construction work but is
1749 an item of overhead character they have charged there on the books it shows to that extent the reasonable overhead charges.

Q. Do you know of any such case to which you have referred?

A. I have not any in mind. I am merely stating how that would come. I know during construction of a building they are not charged on the books with what might be reasonable overhead charge what would be regarded as reasonable.

Q. That is an assumption on your part?

A. An assumption based upon an analysis shown by the facts established on the company's books.

COURT: You take two and a half per cent depreciation would give forty years' life on the plant.

A. I think that is a little high, that is the way I worked it, some tables use a lower rate.

COURT: I wish you would answer my question. Two and a half per cent depreciation is forty years' life of the plant?

A. Approximately.

COURT: And two and three quarters, how do you figure that, thirty seven and something?

A. I have not the engineering data.

COURT: I want simply some idea on what you based it?

A. It is about that much.

COURT: Two per cent would be fifty years?

A. Yes, but in arriving at the two per cent I allow the sinking fund method which amounts to a life of not fifty but would be probably around thirty four years.

COURT: Have you calculated compound interest on this money set aside?

A. No, sir; I have not worked out any formula on that.

1750 Mr. BRENNAN: Could you by tomorrow morning without too much trouble give us the sales by number of thousand cubic feet of gas in the years you considered in connection with this report. If you can do that without too much trouble, we would like to have it.

A. I don't know where that data is just now but I will make an effort to get it for you.

Here the further hearing was adjourned until 9:30 o'clock tomorrow.

1751 AUGUST 5, 1911, 9:30 a. m.

Counsel for respective parties all present.

At this time, 9:30 A. M., at the request of counsel for defendants, an adjournment was taken until 9:30 A. M. August 7th, 1911.

MONDAY, AUGUST 7TH, 1911, 9:30 a. m.

Counsel for respective parties all present.

At this time, 9:30 A. M., at the request of counsel for defendants, an adjournment was taken until 2 P. M. of this day.

1752 TWO O'CLOCK P. M., MONDAY, *August* 7, 1911.

W. J. HAGENAH being continued on cross examination by R. O. Brennan, Esq., testified as follows:

Q. Mr. Hagenah, I got the understanding from something you said on your examination in chief that you inclined towards the cost price of the property in arriving at its appraisement for valuation rather than at the duplication method?

A. I use one method to supplement the other. I would always ascertain if possible the cost in connection with the appraisal of the property for rate making purposes.

Q. And where you have the data and records from which you can ascertain the cost price of the property then you regard that as the most satisfactory do you not in making an appraisement or valuation of the property?

A. Not without making some analysis and adjustments beyond that point.

Q. And where you have the data and records to which I call your attention you would not go out in the realm of reproduction to the extent that you might do if the records and data were not available would you?

A. Yes, I would still make an appraisal but I would not be guided by either without supplementing or checking my figures with the other.

Q. Now at page 44 of Exhibit 23, which is the page following immediately the table showing annual investment on the 8 per cent earning basis—you were addressing this report to the Des Moines Gas Company were you not?

A. Yes, sir.

1753 Q. I call your attention now to page 44 commencing at the 5th line, your records are complete and admit of detailed analysis. You were referring to the records of the Des Moines Gas Co. in that statement were you not?

A. Yes, sir; the construction account.

Q. And the pronoun "your" had reference to the Des Moines Gas Co.?

A. To the company yes.

Q. It is believed that where the records covering early transactions are available the investment value should be determined in this manner rather than to base it upon the experience of some other plant

in some other city under entirely different conditions. When the early records are not available such investment must be determined from other sources more particularly on the cost of reproduction basis. This method was not necessary here so that the tables show actual cost and investments in Des Moines unaffected by conditions making for higher or lower values in other cities. When you made your report to the Des Moines Gas Co. in reference to your investigations you meant just what you have stated here did you not?

A. Yes, sir. That in arriving at the investment value of the property for rate making purposes I would analyze the construction cost and to arrive then at the final amount upon which the rate of return should apply I would use that construction record analyzed as I have shown in this report to determine my final value whoch includes the accumulative losses during the period of development.

Q. Well you followed that method throughout your report did you not?

A. In this report?

Q. Yes.

1754 A. Yes, there are no reproduction costs in this report.

Q. Therefore it is your idea is it not, Mr. Hagenah that where you have the records of the company such as you have in this case that you regard it as the most satisfactory way of arriving at the value of the investment rather than to produce that value or attempt to produce it on the reproduction theory?

A. I would not put it as strong as that.

Q. Well how strongly would you put it?

A. To explain my position I would have to go into more detail. The book figures show the prices which the company paid for the property at the time that it made the purchase. Land has appreciated under ordinary conditions since its purchase. We know the commodity prices have advanced materially. We know that labor prices have advanced. We find certain items after making an analysis are not always, and in this particular instance do not appear to have been charged to the construction account. Therefore even if the construction account admits of the most detailed analysis it would not in this case give the full value of the property or cost of the property rather upon which the rate of return should apply without making additional analysis.

Q. In other words you consider the changed conditions in the prices of labor or in the prices of materials since the items were placed upon the books representing the cost at that time.

A. Yes, sir.

Q. Now then if you found upon analysis and upon investigation that the prices shown by the records of the company were in excess of prevailing conditions at the time of the investigation would you make the credit in favor of the public?

A. Yes, that is the reason why a reproduction value of the property should be ascertained to use as a supplement to the cost of

1755 production.

Q. Well is that the entire property or just these items

which are affected by the conditions at the time of the investigation?

A. That would mean to separate the particular items where there has been a material enhancement or reduction in cost that would be satisfactory, but it cannot always be done so the proper way in my estimating of arriving at the valuation is that where your costs admit of a careful analysis to make that detailed statement and then to make an appraisal of the property on the reproduction basis less depreciation giving you present value and to place them side by side and from that information to exercise a reasonable and fair judgment as to what would be proper and fair to the public and fair to the investor.

Q. And that judgment is based primarily upon the conditions which you find on the books representing investment made by the stockholders?

A. One of the elements, but nor primarily.

Q. Isn't it the principal element which fixes your judgment in determining the value of the investment, the method you have pursued in this case your standpoint?

A. No, sir; I have sufficient specific instances in mind to guard me against doing that in my work.

Q. So far as this report is concerned you have not adopted the reproduction method?

A. No, sir; because I have no engineering estimates in this report to give present values.

Q. Your reason for that is explained on page 44 of Exhibit 23 is it not?

A. What line do you refer to?

Q. The matter to which I call your attention that occurs on page 44 where you state to the company the fact that the records
1756 were in such shape you were able to make an analysis of them from the records and from the records ascertain the value of the investment?

A. The quotation from the report to which you refer shows my analysis from the construction account here in the absence of any engineering data.

Q. I see you explain also do you not in that page 44, that it is not necessary to adopt any other method on account of the books and records being substantially complete?

A. It is not necessary if the logic of this report is carried through entirely. If, however, you were to put merely the construction cost of labor and material without carrying the analysis farther into the account of losses, then of course the analysis of the books alone would not give you proper value?

Q. I understand that, but what I mean to say is, you have told the Des Moines Gas Co. the method by which you arrived at your valuation of the investment and that you did not deem it necessary in view of the fact that its books and records were in the condition that you found them to indulge in the reproduction method or

theory in arriving at that valuation and that you have fully explained in page 44 of this report.

A. Because I had access to sufficient detailed information I was enabled to work out the actual cost and losses during this period of twenty odd years to give them what I considered the investment value today?

Q. I assume that in this report you have endeavored to include what the other engineers have termed going value have you not?

A. Not the same going value as defined by them.

Q. No, but it works out on the same theory, it is an intangible value is it not which you consider in connection with your

1757 appraisement?

A. I would hardly call it an intangible value, I call it the losses which the company could not avoid in operating its business and upon which it should therefore be entitled to a reasonable rate of return until the surplus profits wiped out these early losses?

Q. In other words you capitalize the early losses of the company do you not, by your process?

A. In these tables.

Q. Yes, that is what I mean. And why do you do that, what purpose do you have in capitalizing the early losses?

A. Because I believe the investor has not received that reasonable rate of return to which he is entitled in law and in business unless he is reimbursed for his losses. If that adjustment is not given, if he is not allowed to add to his investment the unavoidable losses, that amount which he may receive reasonable rate of return upon, what we call investment exclusive of these items it will not, as a matter of fact be the same rate of reasonable return upon his actual investment.

Q. The thought I am trying to bring out is whether that is the equivalent of the going value theory which has been advanced by Mr. Baehr and Mr. Lea?

A. I don't understand it so. There are logical differences.

Q. So you in this report do not treat of the subject of going value at all, is that correct?

A. The term going value has so many different definitions it is almost impossible to get two or three different people to mean the same thing when speaking of it that way. I would rather call it investment value.

1758 Q. Do you regard it as equivalent to the going value theory that has been advanced, that is in its final analysis and final results?

A. I would not want to say that the company was entitled to any going value over and above the allowance I make it here, yet I would not exactly say that this is the same element which they are trying to arrive at.

Q. Well is it the same method by which you reach a conclusion as to the value of the property of the People's Gas Light & Coke Co. at Chicago?

A. The same process of reasoning, yes.

Q. You treated it in your report to the sub-committee of the city council of Chicago as going value did you not, or at least took up the subject of going value and attempted to discuss it in your report.

A. I did take up the subject of going value and treated it at considerable length where in I made the statement that the term was so indefinite that very few people had the same conception of the meaning ordinarily conveyed by the term. I called it some broader term and in connection with my analysis referred to several methods of arriving at going value. This really approximates it although I would not say it is the going value.

Q. In other words what you intended to point out in that report was that you had reached the value of the property along the lines as you have stated in this case.

A. Yes, sir.

Q. And that you were saying to the committee of the city council in said report that this included that going value item.

A. Yes, I think this is the best and fairest way to both parties concerned in arriving at that more or less intangible and
1759 indefinite item which has up to this time been called going value or franchise value as some people call it, that also enters in this element under discussion.

Q. You of course did not undertake to define what going value is?

A. I attempted to define it in the gas report of which you have a copy.

Q. Have you a copy of your report?

A. Yes, sir.

Q. That you made to the gas sub-committee and submitted to the — of the city council of the City of Chicago.

A. I have.

Q. Now at page 44 of that report you use this language do you not? "The term 'going value' has never been defined by the courts or students of public service problems in a manner to meet with general acceptance. Its existence however, has been recognized by all the courts and public service commissions and it must be allowed in computing the amount of the investment. Whether such value exists as an incident of the physical plant, whether it is entirely independent of the physical value and to be determined from other sources of information, as, for example, the number of customers or the gross earnings, or whether such value may deserve no consideration as an addition to the physical plant, depends largely upon the definition adopted."

A. Yes, sir; that is the correct quotation from the report.

Q. Well now just how do you define it in this case, so that we may apply your reasoning to the testimony, I mean the case we are now trying, the instant case?

A. If you will pardon me just a moment I think I have my definition in the report somewhere, I don't know just what page it
1760 is on. I think I can find that definition quicker if I may refer to another paper.

Q. Refer to any record you may have.

A. I will quote here from an article which I wrote and in which I say that going value exists by virtue of a public utility being a live operative unit actually producing revenue and supplying service to its customers who have been induced to subscribe thus giving to the company its established income, in the development of which large expenditures have been made in one form or anot-er leading to the probable postponement of interests and dividend returns to the stockholders.

Q. That was the definition that you applied in the Chicago case was it, Mr. Hagenah?

A. That is the definition I have always had in mind and I must have considered it such at that time and I have defined it in this report although I cannot turn to the exact paragraph now.

Q. Now in placing a valuation upon the property of the People's Gas Light & Coke Co., was your going value predicated upon the thought of early losses sustained by the company in the conduct of its business or was it based on the thought that the company induced or had expended money in securing their franchises and relieving themselves of competition?

A. I endeavored to place my going value as I have defined it upon the facts as shown from the analysis of the various records which the officials of the People's Gas Light & Coke Company submitted to me in the quest for that. I desired to ascertain the losses which the company had sustained in the conduct of its business and endeavored and believe I succeeded in eliminating from my allowance for going value every element of franchise value.

1761 Q. But you did in your report to the sub-committee recommend an allowance approximately of ten millions did you not to cover the item of going value.

A. That is approximately the amo-nt that my tables sho-ed for the calendar year, 1909.

Q. And just what did that ten millions represent?

A. The losses as I analyzed them from this examination of the company's records through the period since 1897 when the consolidation took effect in that city.

Q. Were those losses that were incident to the conduct of the business in operating its gas works and in manufacturing and distributing gas in the city of Chicago, or was it to reimburse the company for the expenditures made by it in buying franchises or getting rid of competition?

A. To reimburse them for the element of loss and for expenditures which they could not avoid because of the policy which existed at that time and again I say that I placed no value upon the element of franchise.

Q. And didn't you put it on the basis of a penalty against the people of the city of Chicago from the fact that they had through the council granted franchises from time to time to other companies and thereby had created sharp competition and on account of the acts and conduct of the citizens of Chicago as declared by the city council that they should pay for the trouble that they had caused

the People's Gas Light & Coke Co. Wasn't that the sum and substance of the theory upon which you recommended this $10,000,000 as part of your valuation?

A. No, sir; not in the way in which you state it.

Q. Well now in what way did you state it in that respect?

A. I have stated it in a very detailed form in this report
1762 which covers a good many pages of analysis of that very item all of which is based upon the company's detailed costs and represent as I said an allowance for losses in business and the property which the company purchased in the form of expenditures which could not be avoided but no allowance for franchise value.

Q. Have you your typewritten report or a copy of it among your papers?

A. Which report?

Q. That you made to this sub committee of the council of the city of Chicago?

A. No, sir.

COURT: I want to ask a few questions. You found the book value of this concern on the 30 h day of June 1887 tp be $308,983?

A. Yes, sir; that includes the working capital on that date.

COURT: Now you add to that 8 per cent interest for one year.

A. Yes, sir.

COURT: And then you added to that the additions to the plant which amount to $18,394.

A. Yes, sir.

COURT: Then you added to that interest on the additions to the plant for six months at 8 per cent interest?

A. Yes, sir.

COURT: And then you also added to that the operating expenses, the entire operating expenses of the year?

A. Yes, sir.

COURT: Then you added one fortieth of the capital at the beginning of the year June 30th, 1887 for depreciation?

A. Yes, sir. This is not on the total property, but on the depreciable property. Not that amount but a smaller amount.
1763 That includes land and working capital which is not depreciable.

COURT: That total made $412,082?

A. Yes, sir.

COURT: Then you took from that the gross income?

A. Yes, sir.

COURT: That left you $333,289?

A. Yes, sir.

COURT: You took that for your original capital then at the beginning of that year?

A. Yes, sir.

COURT: This amount was contained in the treasury $7,497?

A. Not necessarily in the -reasury for any length of time.

COURT: Did you find it there at the end of the year, they had not expended it had they?

A. The amounts charged for replacement would not be charged

in the operating expenses. This is the amount which represents the depreciation during the year. They may not have replaced any property to represent that accrued depreciation, in that event you are correct in saying it will be in the treasury. If they did actually replace what is represented by accrued depreciation during the year they might have wiped that out so there would be none of it in the treasury.

COURT: But it would be depreciation made good?

A. It would in that event, yes sir.

COURT: That is included now each year isn't it in getting at these totals?

A. Yes, sir.

COURT: Did you ever calculate to know how much that would amount to at 8 per cent interest?

A. They include it this way so as to insure your plant in
1764 first class condition at the end of each year.

COURT: It would be in first class condition at the end of 24 years?

A. If you allow that amount for investment value.

COURT: This is figured at 8 per cent all the way through here, whether used or not used?

A. Yes, sir. They may use more than that amount some year and have to borrow.

COURT: To make good the depreciation?

A. Yes, sir.

COURT: I notice here in red $588.20 and then in the totals that red is taken out, how does that come?

A. You mean my figures are in red. They were credits on construction account that year, the property was reduced in value on the books? That amount on the construction account was taken out.

COURT: That is true also in the street lamp extension?

A. Yes, sir.

COURT: Also in the meter account?

A. Yes, sir.

COURT: If I understand you correctly the amount of money expended after deducting all these by the company taking its book value, $295,383.08, was that its book value at that time?

A. At the end of 1887, yes. I added to that the working capital.

COURT: This is minus working capital?

A. Yes. The amount total in the last column, $298,383.08 is the total amount of money invested in the plant on the 30th day of June, 1886 according to the books less the working capitale, the total value of the plant or property.

COURT: The total value of the property?

1765 A. That is the total value of the property.

COURT: In other words that is the total amount of capital invested at that time less the working capital?

A. Yes, sir.

COURT: You have ascertained that each year here?

A. Yes, sir.

COURT: And you find at the close of the first day of January there was $1,928,016.65 actually invested by the company according to the books?

A. Yes, sir.

COURT: Is that correct.

A. Yes, sir.

COURT: And you have examined these books carefully?

A. Yes, sir.

COURT: You are satisfied that is correct?

A. Yes, sir.

COURT: There is another thing I don't understand, that is what are your fixed charges I wish you would show me where they are?

A. The fixed charges represent the interest on the company's bonds for the year.

COURT: Also earnings on the preferred stock?

A. No, that is not a fixed charge, that is a dividend. Dividends are not regarded as fixed charges. The directors will not necessarily have to pay the dividend but they will have to pay the interest.

COURT: What I wanted to know in particular is what fixed charges are?

A. It is interest on the bonds.

COURT: And taxes?

A. No, sir.

1766 COURT: Fixed charges is interest on bonds?

A. Yes, sir.

COURT: What do they amount to?

A. The fixed charges for the year 1910 were $80,014.10, there were no dividends.

COURT: Table "B" is $84,493, page 22?

A. That represents the interest on bonds.

COURT: Now what was the interest on bonds?

A. For which year?

COURT: Well for the years given here.

A. The figure you gave is the year 1909. I just gave the figures for 1910, $80,014.10.

COURT: This is on a different year?

A. Yes, sir.

Mr. BRENNAN: I don't want to take up the subject of depreciation at this time, but there is one question in connection with the Master's inquiry I would like to have you state, that is in your table there, I believe you estimated two and three quarters per cent on depreciation?

A. That was my first trial table.

Q. Does the fact that the property is in say a 90 per cent state or condition, — that make any difference in your mind as to the amount of interest, two and a half or two and three quarters you have adopted there?

A. You mean depreciation not interest?

Q. Depreciation, yes.

A. I would not make any such an allowance. I want to be understood as not basing my final allowance on two and three quarters.

Q. And what do you say?

A. Two per cent on depreciable property and I have a
1767 second table at two and a quarter.

Q. By depreciable property I presume you mean all property subject to decay or deterioration?

A. Yes, sir.

Q. But not including real estate?

A. Real estate has been eliminated because that does not depreciate. Working capital is not included in computing this allowance.

Q. Of course current repairs, you don't include that do you as depreciation?

A. No, sir.

Q. Returning to the subject of your report to the sub-committee of the council of the city of Chicago, I want to get thoroughly fixed in my mind if I can your theory of this going value and I am not calling your attention to page 47 of your printed report to that sub-committee in this you use this language: "It is impossible to trace the history of the gas business in Chicago without realizing that the policy pursued has created tremendous losses." Now just what policy was pursued that resulted in these tremendous losses?

A. The unnecessary duplication of plants referred to in the succeeding sentence.

Q. Continuing you say "Plants have been built, streets torn up and the development of a business of established companies greatly hampered, if not partly destroyed, for all of which there was no real occasion. To protect itself in such a situation there was little which an established utility could do except to purchase its rival outright or to enter into an agreement at the earliest possible date before extensive investments were made. This situation in a sense
1768 created prior to 1897 a ready market for franchises and the prices varied with the possibilities of the newer companies, and probably also with the influence of grantees. That this situation with its opportunity for private profit in addition to the desired competition was clearly realized may be assumed from the number of franchises granted and the prices paid therefor. Unfortunately the records of these many transactions are not as complete as they should be in order to make possible the most satisfactory analysis of the intangible values due to the forced investment but there appears to be sufficient data to warrant a belief that some of those who were entrusted with the protection of the public rights and also certain officers of the purchasing companies found in the combinations means for mutual profit. When the public, even with the best intention, has thrown obstacles in the way of development of its utilities leaving them no option except to remove those obstacles at a heavy cost or to engage in a struggle in which the company must inevitably suffer, such burden in law and in common fairness must be regarded as an investment expenditure." Isn't it a fact that these ten millions which you recommended to this committee as representing that investment was predicated entirely upon

the expenditures which you have stated in that report namely the amount which the company paid or which did not go outside of the company.

A. It is not.

Q. Well what else do you have in mind?

A. I tried to explain that at length Friday but I was not permitted to. In the absence of my detailed record I cannot give you all the elements other than to say that I made a thorough analysis of that company's books along the same line of reasoning which I have done in this case, that I found certain elements of
1769 losses in operation, that I found expenditures which the company could not avoid due to this policy, that there were elements which I think it would be extremely unfair to charge against the public all of which I eliminated in those instances and that from the records to which I had access and which my men examined I came to the conclusion that an allowance of ten million dollars should be made to the benefit of the company and that the balance of such losses or expenditures should not be charged against the people of Chicago. In the absence of my record I cannot give you any more detailed statement.

Q. Continuing at the bottom of page 47 you say "Where such expenditure is increased because of private gain, this amount should not be considered as an addition to the investment. The problem in each case is to determine the legitimate expenditure which the existing company could not avoid because of the city's erroneous policy." Now did you determine from the investigations that you made and data which was furnished to you just how much the People's Gas Light & Coke Company or its immediate predecessor had paid to get rid of its competetive rivalry?

A. I made an analysis on that subject, yes.

Q. Do you remember what your figures were on that subject?

A. No, sir.

Q. Well you did find it largely in excess of ten millions did you not?

A. I found the losses and unavoidable expenditures exceeded ten million dollars.

Q. I am speaking now of the amount which was paid for these franchises and to get them out of the way and in retiring these rivals and competitors from the gas field in Chicago?

1770 A. Yes, that amount exceeded ten million dollars.

Q. You did find that while that amount exceeded ten million dollars that you were only able to find that those on the inside had expended ten millions?

A. I don't remember that.

Q. Now did you make a statement before the sub-committee of the city council of the City of Chicago with reference to the report?

A. The sub-committee and the committee on gas, oil and electric light in Chicago never gave me opportunity to explain my report.

Q. Did you make a statement to the committee or any member of the committee at any time in connection with your report or the full committee which was taken down at the time by a stenographer?

A. There was some discussion before the committee but I never was given opportunity to explain my report as I should have been.

Q. On the 6th day of June, 1911, Mr. Hangenah, or about that date, before this committee which you have referred to I will ask you if you made this statement in connection with your report as follows: "It was the cost of the franchises which the company had to purchase in order to maibtain its monopoly rights and losses in developing the business of these different companies that were absorbed in 1897 so far as I could compute it and the extraordinary legal expenses which the company could not avoid in connection with these various contests which they had for a number of years prior to 1897?" Did you make that statement?

A. I don't remember whether that is a correct quotation. The subject was discussed there.

Q. Or that in substance, was that about the substance of what you told the committee?

1771 A. We discussed that subject. I don't remember that particular quotation.

Q. Well you recollect that the subject to which I am calling your attention was the subject of conversation and discussion at that committee meeting?

A. We discussed that subject there yes.

Q. You made the statement to them in reference to the amount which you had allowed and recommended in your report?

A. We had a running argument there in which everybody took more or less of an active part. I don't remember the exact quotation to which you refer.

Q. Well of course you are not prepared — that is not what you said at the time?

A. I would not express any opinion on it.

Q. Did you state to that committee and at that same time or during that meeting that the company had on its books $23,000,000 spent to clear the field of competing companies and which you termed as parasites and that you thought that only 10 millions represents money that went to those outside of the company directly benefited. Did you state to the committee while you were discussing your report and making explanations of its contents that or that in substance to which I have called your attention.

A. I remember discussing the subject but I don't recall any specific remark. I would not want to express an opinion on that without refreshing my memory from my own notes.

Q. Does the amount 23 millions, does that refresh your recollection to the extent that you are able now to say that you did find upon the books of this company which you investigated this 23 million dollars representing this item?

1772 A. If you were more familiar with the situation in Chicago at the time of the consolidation of the People's Gas Light & Coke Co., the present corporation there that remark to which you refer I think would be more easily understood. At that time there was a consolidation under the act of the legislature involving about——

Q. I hardly think that is in the question, but of course I don't care, you may go ahead, proceed if you want to, if that is the only way.

A. I was trying to clear it up. There was a consolidation at that time of about eight or nine more or less competing gas companies and the company's adjusting balance sheet showed an issue of stock of substantially that amount in excess of the property which I found embraced in the consolidation. As to the details of the amount I can express no opinion now in the absence of my record.

Q. As I understand you in the city of Chicago prior to this act which authorized consolidation there were a number of competing companies engaged in supplying and distributing gas?

A. Yes, sir.

Q. And a sharp competition in the city. And the People's Gas Light & Coke company, or its immediate predecessors or one of them spent this twenty three million of dollars from time to time in taking up franchises and reducing competition.

A. I don't know that.

Q. I say that is what the books show which you investigated?

A. No, sir.

Q. That is what you stated the amount which the books showed expended of twenty three million for that purpose?

A. The books showed the issue of stock to the amount substantially of twenty three million dollars in excess of the amount of property which I could determine was turned into the new People's Gas Light & Coke Company and devoted to the public use.

1773

Q. You refer to these rival companies as parasites, don't you remember using that term?

A. Doubtless I called them that, I would consider them tha- now I think so.

Q. And before that committee you stated didn't you in substance that you found or rather you were not able to find that any more than ten million represented money that went to those outside of the company directly benefited.

A. The ten millions represented what I in my judgment felt should be the allowance made in addition to the value of the physical property.

Q. You did allow ten millions, recommended that amount as going value to cover this expenditure, wasn't tha- the sum and substance of your report?

A. I recommended the allowance of ten million dollars in addition to physical value.

Q. To cover these expenditures to which I called attention?

A. To cover expenditures as I analyzed them to the committee.

Q. Do you say you did not make the statements to the committee I have quoted?

A. I do not know. I have not the records here. I don't know whether you are quoting me correctly without the record.

Q. Did you state to that committee that the company, referring now to the People's Gas Light & Coke Company had on its books twenty three millions of lollars spent to clear the field of competing

companies and which you term parasites, but that you found
1774 only ten millions represented money that went to those outside of the company directly benefited. Did you state that to the committee or that in substance?

A. I don't recall *your* exact words. I have stated what I believe was my remark before the committee.

Q. I am not asking your exact words, did you state that or that in substance?

A. I don't remember all the details which you include in that question.

Q. Did you say that is not the substance of the statement which you made to this committee?

A. I don't remember. I understand a record was taken at that time and I have a copy of that somewhere in my records.

Q. Have you got that with you?

A. No, sir; I have not

Q. There was a transcript of the record that was made of the proceedings of this committee was there not?

A. I believe so.

Q. You say you have a copy of that?

A. Not with me. A copy was furnished me. Not of the entire proceedings because I didn't stay with the city during the proceedings on the gas question.

Q. You had a copy of what took place, what was said during the time you were present before the committee.

A. Not all of it. I was not furnished a copy of the proceedings which I participated in the last two days I was with the city of Chicago.

Q. What did you mean by the language I have quoted there and to which I called your attention?

A. I don't know that that was my language.

1775 Q. Now I will call your attention to page 47 of this report, your printed report where you use this language "When the public, even with the best intention, has thrown obstacles in the way of development of its utilities, leaving them no option except to remove those obstacles at a heavy cost or to engage in a struggle in which the company must inevitably suffer, such burden in law and in common fairness must be regarded as an investment expenditure." What did you mean by that?

A. That represents my honest view.

Q. What is your honest view?

A. That this statement as just given which expresses my view. I made an examination of the company's books in connection with that.

Q. What expenditure did you have in mind, what was it?

A. Expenditures which the company at that time could not avoid because of the property which it was compelled to assume in the exercise of its public service monopoly.

Q. You use the language here investment expenditure, now just what was that expenditure which you had in mind?

A. The term investment expenditure is not singular at all. I am merely referring to a class.

Q. Now what did you have in mind, what expenditure?

A. Legitimate construction items as I have analyzed them from the company's records.

Q. The total of the other items you were considering and then this particular item of going value which you recommended should be allowed by the city council of the city of Chicago in favor of that company to the extent of ten million dollars. I want to ask you what you had in mind when you said to that committee in your report that when the public even with the best intention has
1776 thrown obstacles in the way of development of its utilities, leaving them no option except to remove those obstacles at a heavy cost or to engage in a struggle in which the company must inevitably suffer, such burden in law and in common fairness must be regarded as an investment expenditure.

A. Will you permit me to give you an example?

Q. I would like to have an answer to the question as to what that referred to?

A. Referred to my analysis of the company's books and the conclusion which I drew from it.

Q. You concluded didn't you that the company had as you stated, was compelled to go out and retire these rivals from the field.

A. They did retire quite a number of them.

Q. And that you were able to trace a credit to the company of about ten millions, but the rest of it you could not tell who got the benefit of it?

A. That was substantially the result of my analysis of the equities at that time.

Q. You recommended to the city council at that time it was to the amount or extent of ten million? The going value.

A. I don't know as going value was the proper term, I allowed them as an element of value in addition to the physical property.

Q. You had going value in mind didn't you?

A. I discussed that under the subject of intangible property.

Q. And in this report you undertook to define going value and point out to the committee or sub-committee of the city council what it really was and what it represented?

A. I did discuss it at considerable length in this report.

COURT: Do the books carry a replacement account?

A. At the present time, no sir.

1777 COURT: Did you eliminate any items on account of replacement in this schedule?

A. Construction account, yes, which had been renewals charged into operating expenses.

COURT: To what extent?

A. I find in the year 1910 substantially $7,351.92 improperly charged to operating expenses.

COURT: That was for replacement?

A. Replacement, means that should have been charged to investment.

COURT: Where is that shown on the report?
A. Schedule 5, the one you last referred to?
COURT: How much is set over to operating expenses in the year 1908?
A. $135.07.
COURT: That is shown on schedule 5 of your report?
A. It is yes, sir.
COURT: For the year 1909?
A. $1,957.34.
Q. Where do you find that?
A. In schedule 5, of my report.
COURT: The third column?
A. Yes, sir.
COURT: For the year 1910?
A. $7,351.92.
COURT: That includes the entire year does it?
A. Yes, sir.
COURT: And from September 30th up to January 1st also of 1909, also from September 30th, 1909, to January 1st, 1910?
A. Yes, these expenditures occurred in that overlapping period.
COURT: They really occurred in 1910?
A. Yes, sir.
1778 COURT: And occurred between September 30th 1910 and December 31st, 1910?
A. No, sir; was made in the twelve months' period.
COURT: And that occurred between September 30th, 1910, and January 1st, 1910?
A. Yes, sir.
Mr. BRENNAN: Now I want to direct your attention to the balance sheet under date of March 1, 1906, at page four of your report, Exhibit 23. There you show the investment December 31, 1910, as per the company's books $3,853,975.22. Do you know what the balance sheet was say in the year 1905?
A. I have not a copy of it no sir.
Q. In making up this report did you examine the balance sheet for that year?
A. I did.
Q. Do you remember what it showed?
A. No, sir; I do not.
Q. In February 1906, is when the transfer was made was it not from the Capital City Gas Light Company to the Des Moines Gas Co.?
A. Yes, from February 28th to March first. The Des Moines Gas Company dates from March 1, 1906.
Q. Have you anything there, any memorandum showing the assets or book value of the property of the Capital City Gas Light company on that date?
A. No, sir; I have not. I analyzed that though.
Q. Can you tell the Master approximately what it was?
A. I can't give any figures except to say that the plant account of the Capital City Gas Company the last day of its existence showed

a plant investment considerably less than the items now shown on the balance sheet of the Des Moines Company.

1779 Q. Didn't it show there a book value of about $1,605,475.10?

A. I don't remember the figures. I took the construction account from 1886 and traced the charges and credits for that account down to the end of the calendar year, 1910, and wherever I found a charge to the construction account which I thought was not a proper charge to be included in the basis of investment for a case of this kind, I eliminated it so it showed a physical value of $1,928,000 roughly against its value of $3,853,000.

Q. You did examine the balance sheer for the year 1905 didn't you on the company's books?

A. I saw it. I analyzed not the balance sheet but the construction account in the balance sheet.

Q. Against that amount to which I have called your attention do you know what the liabilities were?

A. I don't recollect. I paid no attention to the amount of stocks and bonds which the company issued every year other than to include it in the final balance sheet and disregard it as an element covering value in estimating its valuation.

Q. Have you any record or memoranda under your control at this time from which you can tell the Master what the book value of the property was at the end of the year 1905?

A. No, sir: I have not.

COURT: The Des Moines Gas Company took charge of this in 1906.

A. March 1, 1906.

COURT: These totals represent the total.

A. These represent the additions for each year, this is the total at the end of the year.

COURT: You mean by that that the totals at the right hand side of the table represent the extensions do they?

1780 A. Yes, sir.

Q. For each year?

A. Yes, sir.

Q. These extensions for the year commencing February 29, 1907, and December 31, 1910, the sum total of those preceding that would make the amount?

A. It would not give the book figure, but give what I consider the fair figure, the book figure would be more than that, because I eliminate items that I thought were not proper.

COURT: This would give the book figure?

A. It would give a figure I considered fair at that time.

Q. On this schedule 1 of Exhibit A, at the opening of the balance sheet March 1, 1906, you have listed under assets property purchased $3,592,723.24. Now will you say to the Master, that the balance sheet at the close of business of the Capital City Gas Light Company showed property of a book value of that amount?

A. It does not. It shows property of a valuation less than this amount.

Q. How much?

A. I don't recall the exact figure, but quite a considerable amount less.

Q. How much water was put into it at that point, can you tell?

A. Just what do you mean by water?

Q. I want to know what the balance sheet was at the close of business of the Capital City Gas Light Company on the 28th day of Febru-ry, at the close of business the 28th day of February 1906, how much did the value of the property increase from 12 o'clock that night until this balance sheet was opened the 1st day of March, 1906.

To the best of my recollection the opening entry of the Des Moines Gas Company shows a plant valuation of approxi-
1781 mately one million dollars in excess of the socalled book value at the close of the existence of the Capital City Gas Light Company.

Q. You mean now it represented an actual investment in property that was substantially or approximately a million dollars?

A. No, sir; it did not represent an investment, that is why I eliminated it from my analysis of the construction account.

Q. The books showed there had been put into the business approximately a million dollars, isn't that truth of it?

A. The adjusted balance sheet for the opening of the business of the new company shows——

Q. I am not asking you about that, I want to know if it is not the truth that the books showed at the close of the business of the Capital City Gas Light Company the 28th of February 1906 that the actual investment in property was approximately a million dollars?

A. I don't remember it, I don't think so.

Q. Don't you remember it was approximately a million dollars?

A. No, sir; I don't recall the figure.

Q. And with the working capital in there included was about $1,156,000 something like that?

A. I don't remember it.

Q. Can you get that balance sheet and refresh your recollection on that subject.

Objected to as not cross examination and in that connection we will say that these books that they are talking about are now being examined by their expert so there is no question about their not having this information, if they want it, I think they ought to get it instead of trying to send this man to work for them.

1782 Q. Why did you start out in this report by showing this particular balance sheet, what is the purpose of it?

A. That is the beginning of the business of the Des Moines Gas Company.

Q. Then you wanted to show and have the Master understand didn't you that the books of this company showed an investment up to and including December 31, 1910, of $3,853,974.22 didn't you?

A. Emphatically no, because if I had I would not have presented

the Master as I have explained three times the investment in the books through analysis of the construction account as $1,928,016.

Q. What was the significance of placing the balance sheet in here?

A. Because that is what the books show but this is what I found upon analysis.

Q. That is the question I want you to answer, you did want the Master to know that the books showed an investment of $3,853,-975.22 didn't you?

A. I wanted to present to the Master an actual statement of the company's books but supplement that with my analysis of the statement and that it was not the valuation of the property there in question?

Q. If you want to be eminently fair to both parties why didn't you in connection with the balance sheet show the Master the condition of the Capital City Gas Light Company the immediate predecessor of the complainant company at the close of its business on the 28th day of February 1906?

A. Because in the analysis of the balance sheet for reproduction in my report I had to begin somewhere and the logical point was to begin with the beginning of the history of the Des Moines Gas Company. I made my analysis of the construction account in this balance sheet not only the last year of the Capital City Gas
1783 Light Company, but back to 1886 and through that analysis I eliminated every item which I consider was not the fair valuation excluding what you choose to call water.

Q. You went back to 1887, as far back as you could get trace of the investment, trace of these extensions and trace of the manufacturing plant and history of it and all these things?

A. I did.

Q. Why didn't you go back of 1906 in connection with your investigation of the books for the purpose of showing the trial balance when you were not pursuing the reproduction theory?

A. Because I attach very little significance for rate making purposes to the book cost as shown in the company's balance sheet. I believe that should be analyzed and eliminated if there have been any items which were not proper construction charges and I found such charges.

Q. But you have said in carrying out your theory and in arriving at the value of this investment that it is highly important to have the actual expenditures of the company and the books of account to show the amount actually invested, you said that haven't you?

A. Exactly and in accordance with that I produced this company's analysis and not merely the book figures.

Q. If it is the fact that at the close of the business the 28th of February 1906, the investment, according to the balance sheet showed approximately $1,000,000, you considered that didn't you in arriving at the valuation of this investment, didn't you consider that?

A. To this extent that I went through the year 1906, the last year that is up to February 28, 1906, I went through that year just as

I went through every year preceding and following in the
1784 analysis of the construction account. I saw the company's book cost and I have carried forward my analysis construction cost. I would find that the company would charge an amount say of $25,000 to construction and I made inquiry as to whether that was a legitimate construction account for the purposes of this case and satisfy myself it is not. I therefore correct my construction and analyzed the total record forward eliminating that item. The next year the company makes an additional item of construction and I analyzed that and see whether it should be eliminated or not and so that way I perform what you have in your mind in wanting to present to the Master the cost of the property rather than the book statement of the property.

Q. What did you find was the investment of the Des Moines Gas Company on the 31st day of December 1910, at the close of the calendar year 1910?

A. $1,928,016.65.

Q. Now have you information for the Master so that he may know what you found the investment in the property was actually on the 1st day of March, 1906?

A. Do you mean the actual investment as opposed to the book cost on that date?

Q. Yes, as determined by you.

A. That would be the total of all the amounts in the last column preceding the total for the year 1907 or to deduct from the total at the foot of the column the last five items.

Q. If you will turn to Schedule 1 of Exhibit "B" you have shown there the totals have you not of the expenditures of the Capital City Gas Light Company from June 30, 1886, down to and including February 28, 1906.

A. Yes, sir.

1785 Q. And under the column headed "Totals" you have left a space between the business of the Capital City Gas Light Company and that of the Des Moines Gas Company?

A. There is a space there.

Q. These items have a relation to the business of the Capital City Gas Light Company represent extensions and improvements, street lamp extensions, extension of street mains, meters and services, everything in connection with their business.

A. Yes, sir.

Q. Now I wish you would follow me. I have taken the totals of the Capital City Gas Light Company from the period to which I have called your attention and I find that these figures shown in this column total an aggregate of $1,117,655.89. I wish you would run over those figures and see if that is correct?

A. I get the same figure you have, $1,117,655.89.

Q. Now the credits that are shown in the 4th column, were those corrections made by you or are these credits shown upon the books?

A. They are on the books as I recollect it.

Q. That was the close of the business February 28, 1906?

A. Yes, sir. That represents my detailed book cost and not the

company's book figure. The company book figure was larger than that.

Q. How much larger?

A. I don't remember, must have been larger because I have eliminated a number of items in earlier years.

Q. Was it in excess of $1,165,230.09?

A. I don't remember the figures because I have not the record of the amounts I scheduled.

Q. It is a fact isn't it so far as the company's books are concerned and the value of the investment shown thereon your figures
1786 and your computation don't differ materially from those shown upon the books up to that point?

A. I have made some deductions, I don't recollect now what they were because I paid no attention to the company's book figures, but took the actual cost for rate making purposes.

Q. Your exhibit "B" shows all extensions, mains, meters and services covering the period from 1886 to 1906 is this amount $1,117,855.89?

A. Yes, sir.

Q. Now I wish you would take the years 1907, 1908, 1909 and 1910 and analyze those for us, tell us what they represent.

A. Actual charges to construction during those years in question.

Q. As shown by the company's books?

A. As shown by the company's books and after eliminating what I believe were not proper construction charges.

Q. The total to which I have called your attention is $1,117,-655.89.

A. Yes, sir.

Q. And the next column that is the business of the Des Moines Gas Company, the next item for the 12 months ending February 28, 1907, starts out with the figures $289,943.78. Now does that represent the amount of money expended by the company during that year for extensions?

A. It represents the amount of money expended and the value of the property added to the plant during the 12 months ending February 28, 1907, that amount being for extensions and improvements in the first column, Schedule 1, of Exhibit "B".

Q. Have you any way of telling us, Mr. Hagenah, just how many miles of mains, for instance were laid in that year?

A. No, sir; I have no record of mains.

1787 Q. Do you — — what works improvements were made?

A. No, I don't recall the individual construction operations carried on during those years.

Q. This $289,943.78 which is the first amount that you used in connection with the Des Moines Gas Company's business, in this inquiry, I would like to have you analyze that for us and tell us just exactly what it represents?

A. That represents expenditures for actual property added to the plant that I have placed the amount of $285,000 for property received and added to the plant during that year.

Q. Can you itemize it and tell us what property?

A. No, I can't recall the individual items of property making up the total items of charge that year.

Q. Can you get it for us?

A. It is all on the company's books your men are working on I suppose.

Q. You say that on the books everything is there representing what this $289,943.00 represents, you say it appears on the company's books?

A. It appears there though every item on the company's books is not gone into in detail like every other item. I received all my information from the books and records.

Q. That appears to be there much larger than the items following?

A. Exactly because that year the company added more property to its plant.

Q. Just what I want to know, I would like to have you give us the items or a statement of that particular item.

A. I can give some of the items I recollect.

Q. Give us some of them?

A. One of the items is the large million foot holder.

1788 Q. When was that million foot holder constructed?

A. I don't know when it was constructed, but this is the first time I find it in the records in the charges for 1907.

Q. When did you first see that account on the company's books?

A. In the opening of the company's books on February 28, 1907.

Q. So then it must have been constructed in the year 1907 to be properly in that account?

A. It is possible it was constructed earlier than that.

Q. It would appear in some of these other accounts?

A. Not necessarily unless the construction account covering this particular operation was closed into the plant account in that year.

Q. You have gone back to 1886, you have endeavored to show here the extensions of mains and the street lamp extension and street main and you have endeavored to show by this table the value of the investment covering this period. If that gas holder were considered or had been constructed back in some of these other years, can you explain why it should go into that account after February 1907, or covering that year?

A. Yes, sir. An item is not always put into the construction account at the day when the construction is begun. The policy in regard to that is to receive authority to undertake a particular piece of construction and during the construction of that article the expenditures in connection with it are charged to the particular authorization or work order and when it is completed it is closed into the construction account as it appears in the company's balance sheet. New construction may continue over a period of six months or a year or possibly longer and it will appear on the company's books as an addition to plant when the authorization or work

1789 order is finally closed into plant account.

Q. Of course I take it you have no personal knowledge or any information with respect to this particular item?

A. I have this much knowledge that the Des Moines Gas Com-

pany began business on March 1, 1906, taking over the business of the Capital City Gas Light Company and various other properties inclusing the Valley Junction property. The consolidation which took place really represented three forms in which the Capital City Gas Company was one specific item, the Valley Junction property, as I recall that and various other property then in course of construction which was closed into the accounts and first appears on the books of the new succeeding company, the Des Moines Gas Company.

Q. You can bring in I take it, Mr. Hagenah, tomorrow morning a list of these items that is $289,943.78 and the items which follow in that column.

A. I could bring in only what appears on the company's books and your men are working on that.

Q. You say as I understand you, these are not the exact amounts as shown by the company's books, your valuation?

A. The company's books for any one year may show a considerable more than the amount my figures show.

Q. That is what I want to get is the memorandum or data upon which you arrived at these amounts. I refer now to these figures in the business of the Des Moines Gas Company covering the period February 28, 1907, to December 31, 1910, under the heading extensions and improvements.

A. I don't know what specific items enter into a charge for property embracing a number of items at any one time. The books do not show that.

1790 Q. Do/'t the books show the amount expended for the purpose referred to in that column for that year?

A. Yes, with the detail which I give here and when I found that item it was so large my curiosity was aroused and I asked what were these specific items which went into this construction account.

Q. Have you got those?

A. No, sir.

Q. Where are they?

A. I haven't them.

Q. What did you do with them?

A. I never got them.

Q. From whom did you get your information?

A. Officers of the company.

Q. Is there anything on the books to show?

A. They do not refer to the books of the company. I asked for what construction there was to make that item so large and one of the items to which I was referred was the million foot holder. Another item to which I was referred was one and I think two parcels of real estate at that time which are inclusded in here. You will see my table has no solumn for land. I have put land in with improvements or extensions.

Q. That $289,943.78 includes something for real estate?

A. It does.

Q. How much?

A. I don't know. I don't know the value of the property and don't know exactly how much they paid. The cost might appear

upon the books but the cost of several articles, and I don't know how much each particular article was worth.

Q. The sum total of all the items would aggregate this sum, $289,943.

A. I might give the items going to make up one large
1791 item in that column amounting to $285,000. I don't remember what the other scattered items were to make up the other $4,943.

Q. The information you received in regard to that item was from the employés or officers of the company and not from the books themselves?

A. No, sir. The books show it in one item to the amount of $285,000 but I don't know what made up that.

Q. One *time* was the million foot holder?

A. One item was the million foot holder and another item was one and I think two parcels of real estate at that time. Now I also think there was included in that certain property in Valley Junction.

Q. You went over the inventory Exhibit 15 did you?

A. No, sir; I have not seen the inventory.

Q. Was it every furnished to you?

A. No, sir; I may add in explanation of my answer if it is proper, the reason I did not go into the proper value to be allowed for either one of these items was because of the fact there was an inventory and valuation here. Now if the holder is included in the $285,000 I respectfully suggest that one way of finding the reasonable co-t of that would be to refer to the appraisal and see what a holder is worth and what is the value of such parcels of real estate.

Q. Of course I thank you for the advice, but have you found upon the books of the company any record showing the several items going into this $285,000 item which went into that item?

A. Not detailed on the books, no sir.

Q. You relied upon the information that was furnished you by the employés or agents of the company?

A. Yes, I was informed that the holder and certain real
1792 estate and certain property in Valley Junction was included in that total charge.

Q. Now I would like to have you tell us just what items of property are included in the extension and improvement *ad*count as detailed in Schedule 1, Exhibit "B"?

A. In general all the property in the company's inventory and property which it possessed consisting of street lamps, mains, meters, services, to be specific, it would include land, buildings and making apparatus and holders.

Q. How about the furniture and that sort of thing?

A. That would be included.

Q. Take page 43 of Exhibit 22, being the table showing annual investment on the 8 per cent earning basis I believe you have stated that you computed the depreciation on a percentage of two per cent?

A. And two and one fourth, also.

Q. Where did you adopt the two per cent basis, where is that shown in this report.

A. It is not in there. I completed that work after I came here. I checked over my figures and came to the conclusion that the amount I used at the time I worked up this report was too high.

Q. Have you undertaken to compute what that depreciation would have amounted to at this time on a basis of two and three fourth-per cent compounded annually?

A. No, I think that is too high, I would not want to be quoted as favoring that now.

Q. I say did you?

A. I did not.

Q. I want to know if you computed the amount that ought to have been on hand on that basis?

1793 A. I did not.

Q. Did you compute the amount which would be represented in that fund on a two and a half per cent basis?

A. No, sir.

Q. Let us have the tables which you did use. Before we take up an analysis of the tables which you have prepared, I would like to ask first which of these amounts you stand on? You start out with two and three fourths, two and a half, two and a fourth and two per cent.

A. I favor the lowest one which is two per cent showing a valuation of $3,136,241.

Q. When did you reach the conclusion that two per cent was a proper amount to use?

A. I am not perfectly satisfied as to that yet. I have not had all the information which I would want to thoroughly analyze what constitutes a proper depreciation rate. In the absence of that and in order to be conservative I took what I thought was a conservative figure of two per cent.

Q. Circumstances and further investigation might cause you to change even the figure of two per cent and adopt something lower?

A. I might upon further information arrive at some other figure but from the information which I have had so far my best judgment is two per cent on the depr-ciable property.

Q. On a sinking fund basis what results or what amount would we have if we used one per cent compounded for forty years?

A. I don't know what it would amount to. I have not figured it out. If I had had tables showing the life of all the classes of property and ages so I could compute the composite life and composite age I would have arrived at a figure probably different from two per cent but not very far from that.

1794 Q. Well then as far as your report here, or in arriving at the value of this investment, you are willing to concede you were too high when you figure on the two and three fourths basis and two and a half basis?

A. I think those are too high.

Q. When did you make up the tables, Exhibits 25 and 26?

A. During the last week or ten days.

Q. Was it since you heard the testimony of either Mr. Baehr or Mr. Lea?

A. No, sir; I came to that conclusion entirely independent from anything that was said here. I didn't hear their testimony on that.

Q. I simply wanted to know if you learned through their testimony or from other reports the composite life or age of this plant as they had computed it?

A. I did not hear their testimony on that and don't know what their judgment is on that.

Q. Then even the tables, Exhibits 25 and 26, do not represent your judgment after a careful and painstaking investigation of the amount that should be charged off for depreciation?

A. Yes, they represent my present best judgment but I have not the information to arrive at the depreciation rate as I compute it in other cases. If I had that information I would arrive at the rate and then compute the table in the same way substituting the rate and I have analyzed the depreciation rate in other cities under conditions very much similar to those here and there I found a rate substantially two per cent as being sufficient, being near enough accurate for all practical purposes.

1795 Q. This table shown at page 42 of Exhibit 23, shows that on the two and a half per cent basis you reach a value of the plant at the close of the year 1910, of $3,343,794, that is on the two and a half per cent basis whereas where you reduce that to two per cent you secure as a final result, $3,136,241. In other words the substitution of the two per cent for the two and a half makes that difference in your final results.

A. Yes, sir.

Q. And where you adopt and use two and three fourths per cent as the basis of your calculations, you procure a sum of $3,484,586 so that it makes the difference between that and $3,136,241 a difference there of about in round numbers $300,000?

A. Yes, sir; and the lowest figure represents my best judgment as to the valuation to be allowed. The others were merely early computations from insufficient data.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

1796 Tuesday Morning Session.

AUGUST 8, 1911—at 9:30 a. m.

All Counsel for the respective parties present, except H. W. Byers, Esq.

Testimony on part of Complainant resumed as follows:

WILLIAM J. HAGENAH, re-called for further cross examination, examined by R. O. Brennan, Esq., testified:

The MASTER: Just one question as to schedule B. If I recollect

correctly you told me that the total last column did not include the working capital?

A. That is right; it does not include it.

The MASTER: Do you remember what the working capital was at the beginning of 1887—turn to page 43, there is a difference in the first column and the last column in Schedule B, working capital?

A. There is, and it amounts to $13,600.

The MASTER: And you found the working capital at the close of 1910?

A. Approximately $128,000.00.

The MASTER: But that is not included in your totals here?

A. It is not included in schedule B, Exhibit 1.

The MASTER: Do you include in that exhibit working tools and office equipment?

A. Yes, sir.

The MASTER: All but the working capital?

A. All but the working capital.

Mr. BRENNAN:

Q. But your final figures include working capital, do they not, showing the value of the investment?

A. They include the working capital, yes, sir.

1797 Q. Do you know how much you have included as working capital?

A. I included for the year 1910, $128,000.00.

Q. Where is that shown, in what total is the working capital shown?

A. That will appear in the third column of the table on the analysis of the investment value on the eight per cent basis.

Q. Third column, addition to plant including working capital?

A. Yes, sir. The amount of $128,000 is built up in thay column.

Q. And just what items do you use as representing working capital?

A. I arrive at the working capital from analyzing the current asset and liability items in the balance sheet at the close of any particular year.

The MASTER: To get total assets, schedule B, you have to add $128,000?

A. Yes, sir. That is not asset but the cost; there are other assets; That is cost of the plant plus working capital.

Q. Schedule 1—assets and liabilities December 31, 1910; is that the statement from which you made up the item of working capital?

A. For that year, yes, sir.

Q. Do you consider inventories, $77,410.46; is that part of the working capital acocunt?

A. It is, yes sir.

Q. And accounts receivable, $53,627.46?

A. Yes, sir.

Q. And the item of cash, $49,434.15?

A. Yes.

Q. I wish you would take these account-, Mr. Hagenah, and follow me, see if we understand each other. Take the amount of $77,410.46 and the next item, accounts receivable, $53,627.46—will you put down the figures please—and $49,434.15. Now the aggregate of those figures or total is how much?

1798 A. $180,472.07.

The MASTER: What is that?

A. That is the sum of the amounts shown in the balance sheet for 1910 for inventories, accounts receivable and cash.

Q. Now what do you do with account payable and bills payable?

A. You mean in arriving at the working capital?

Q. Yes.

A. I would deduct those items.

Q. Now those items amount to, bills payable $14,000; accounts payable $39,607.29, and the total amount is $53,607.29—is that right?

A. Yes, sir.

Q. That is to be deducted then from $180,472.07?

A. Yes, sir.

Q. And what is the amount after making the substraction?

A. $126,864.78.

Q. Now what do you do with taxes?

A. I don't consider taxes working capital.

Q. You don't consider taxes as working capital?

A. No, sir.

Q. Do you deduct taxes from the amount which you consider for working capital?

A. I pay no attention to the item of taxes in computing the working capital?

Q. Why not?

A. It does not appear in the balance sheet as being an item involving the use of funds other than as it appears in the expense statement of profit and loss.

Q. Where do you get the other two thousand, approximately two thousand?

1799 A. I add to that amount $905.20 which is unearned insurance and represents the payments for insurance in the form of premiums for several years in the future.

Q. Is that shown on the balance sheet?

A. It is.

Q. This $905.20 on the unearned insurance?

A. Yes, sir.

Q. You say you paid no attention to taxes?

A. I have not in the preparation of my working capital statement.

Q. What accounts are included in the item of accrued accounts amounting to $58,817.07, shown at page 3 of your report?

A. It includes taxes and interest.

Q. And at page 13, schedule 1 of Exhibit 1, you show accrued taxes?

A. I show the details there, yes, sir.

Q. Did you get the detailed information with respect to the items we were talking about last night, Mr. Haganah?

A. Which items do you refer to?

Q. The first item of your table at the commencement of the business of the Des Moines Gas Company?

A. Details of the item $285,000?

Q. Yes.

A. No, sir; I did not understand that you asked me to get any additional information on that.

Q. I asked you to get us the detailed information by which you arrived at that amount of $285,000, in round numbers.

A. That is the item which we were discussing. The details of that are not on the books and I got my information through inquiries. I told you yesterday what items were included in it, but as to the particular value to be attached to any specific item, I am unable to say. As far as I know it included the million cubic feet
1800 holder, one or two parcels of real estate, certain property in Valley Junction and a 100,000 gallon oil tank on the premises of the company.

Q. Now, let me understand you—the additions to plant from 1886 to 1910, both inclusive, your final totals are $1,928,016.65; that you say is the value of the investment?

A. No, sir; I say that is the cost of the property.

Q. Does that include any working capital?

A. It does not.

Q. Where you used extension and improvement in the first column what items are covered by extensions and improvements?

A. It includes all the property of the—that is, of the physical property of the Des Moines Gas Company and the Capital City Gas Company during the years shown on this table, except the street lamp extension property, mains, meters and services. Some of the specific item- included in that column are land, building, manufacture equipment, holders, oil tanks, etc.

The MASTER: What does it exclude?

A. It excludes the street lamps, mains, meters and services; everything else is included in the first column.

The MASTER: It excludes the street lamps?

A. Yes, sir; street lamps, mains and the street service pipes.

Q. Can you give us the detailed information with respect to the item of $32,781.82?

A. No, sir; I haven't those details with me.

Q. Did you include anything for discount on bonds?

A. No, sir; not to my recollection.

Q. Have you anywhere in this report considered that?

A. I have not.

Q. You make no allowance for that in any way in your report?

1801 A. I do not recall that there is any allowance in this report for discount on bonds.

Q. Well, in a general way, Mr. Haganah, can you tell us what you considered in this $32,781.82?

A. That would represent the additions to property in the form of lands, buildings, manufacture equipment holders and oil tanks during that year, if there were any—I do not recall what items of that character were added that year.

Q. These are all the items included in that amount $32,781.82?

A. Yes, sir; items of that character would be included in that amount.

Q. Are there any other items that you have not specifically mentioned?

A. I do not recall any.

Q. Now the next is February 28, 1909, $13,881.29; what are the items which are used to arrive at that amount?

A. They are items of the same character as were included in the same column for the preceding year.

Q. And that is true of the item $44,699.80 immediately below?

A. Yes, sir.

Q. And also of the item $23,470.09?

A. Yes, sir.

Q. And those amounts represent for the respective years the additions in the way of real estate or to the apparatus or buildings of the physical property of the company?

A. At the works, other than street lamps, mains, meters and services.

Q. There is no working capital or discount on bonds or accrued taxes or anything of that sort included?

A. No, sir; only physical property.

Q. Now, Mr. Haganah, to what extent did you go into the books of the company to get this information?

1802 A. I made a thorough audit of the company's books for the last few years. I believe my assistants covered five years in their detailed analysis of all the vouchers and authorizations, of which I personally examined every charge during the year 1900. We went further than that analysis of the construction account from the Company's ledger from 1886, as shown by Exhibit B, schedule 1, in my report. Wherever an item was classed into the construction account, as shown by the ledger, the details of that item were called for, examined and carefully analyzed. Wherever an item was charged to the construction account which I believed was not a proper charge to include in arriving at the cost of the property in a rate case, I excluded it.

Q. In other words, you made up a new set of books for the purpose of this report?

A. Not exactly that. I eliminated from what they called their construction account items which I think are not proper construction account; I have not altered their books in any way.

Q. Could you give us a list of the principal items which you changed so as to conform to this report?

A. I have not such a list with me; I could tell you in general the items which I excluded.

Q. Very well.

A. Expenditures made by the company in the form of investments, that is, for property not used and useful in a public utility; that is one character of items excluded.

Q. Do you remember the amount of that item and the character of the property?

A. I am not sure about that. That item appears on the Company's books.

Q. Well, give us an illustration as to property acquired
1803 which is neither necessary nor useful in the complainant's business?

A. I do not recall any specific item now, not having my data with me to refresh my memory.

Q. Well do you know anything about the amount of such an item as you have suggested?

A. In that particular case the amount was not large.

Q. About how large?

A. I think I am safe in saying it was not in excess of $4,000 or $4,500.

Q. Now was that real estate or personal property?

A. That I am not sure about.

Q. Can you, Mr. Haganah, furnish the Master the data for use a list of the items which you rejected?

A. You- accountants are at present engaged in making that very same analysis and doubtless have completed by this time the list which you desire.

Q. That hardly answers my request.

A. It would take a good deal of time, Mr. Brennan, to go back over these records and get the items which you desire.

—. About how many items were there that you considered erroneous and rejected?

A. I don't remember how many.

Q. About how many?

A. I would not hazard a guess.

Q. How much did the items aggregate?

A. The difference between the amount shown as the total in the last column in schedule 1, Exhibit B, which is $1,928,016.65 and the plant account shown in the balance sheet as of December 31, 1910, which amounts to $3,853,975.22.

Q. Can you give us a list of the large items?

1804 A. I can not.

Q. Haven't you any memoranda of that?

A. Not with me, no sir.

Q. When was this complete audit made of the books?

A. My report was completed on March 8th, 1911, and the audit was made during the month or six weeks immediately preceding I have since I have been in the city continued my work upon the Company's books.

Q. Do you maintain offices in the city of Chicago?

A. I do.

Q. And how many assistants do you have?

A. At present I have six, I believe.

Q. How many did you have in the month of February?

A. About seventeen at that time.

Q. They were working in connection with this Chicago report, were they not, most of them?

A. Yes.

Q. How many of them were assigned to the work of the Des Moines Gas Company?

A. Those who were assigned to the work of the Gas Company were not working for the city of Chicago.

Q. How many had you assigned as your assistants in connection with the Des Moines Gas Company work?

A. For about five or six days there were five people besides myself.

Q. What are their names?

A. Mr. Honnicker and Mr. Wellman. I am not sure now about the names of some of the others; I can explain why. We were completing about that time our analysis of the books and engineering records of the People's Gas Light & Coke Company, and when any person completed his work on the Gas Company's record, he
1805 was dismissed from my employ because I had no further work for him. When this work appeared, instead of them leaving me entirely, they were assigned to work of this kind, and they stayed with me probably five or six days after they had completed their work for me on the Chicago analysis.

Q. Mr. Honnicker was the only assistant who came to Des Moines, as I understood you to say on Friday?

A. Yes, sir.

Q. He was here some five or six days?

A. About that time.

Q. Did you have the books of the Gas Company at your office in Chicago?

A. Not the books, but a large supply of vouchers and authorizations were sent over there for analysis.

Q. Was there anything else sent besides the vouchers?

A. Our data and analysis sheets which were prepared on the ground here.

Q. By whom?

A. Mr. Honnicker and myself.

Q. Was there any other data furnished you by the Des Moines Gas Company?

A. Not for use in connection with this audit.

Q. Well, for use in connection with your report?

A. No, sir.

Q. You first came out here in February, did you not, about the first week?

A. I see I left in my room my note book on outside work. I was working on that last night and forgot to put it in this book. As I recall it I made two visits to this city in February.

Q. You made five trips in all, as I recall your testimony?
1806 A. I don't remember, but I answered your question correctly the other day in regard to that.

Q. I think you said you were here four Sundays, came from Chicago Saturday night and stayed here Sunday and left Sunday evening, and you were out here five times in all?

A. I don't remember how many times; I was here every time on Sunday except once.

Q. Mr. Honnicker was here some five or six days?

A. About five days.

Q. And in that length of time, you told the Master, you succeeded with Mr. Honnicker as your assistant to make a complete painstaking auditing investigation of the books and records of the Des Moines Gas Company covering the years from 1886 down to 1910 inclusive?

A. No, sir; we done nothing of the kind.

Q. Tell the Master what you did do?

A. We made an audit of the last few years in which we did analyze every item and analyzed the construction account of the ledger from 1886 to the end of 1910. Such work as we did not complete in this city we completed in Chicago. I had at once time five or six of my own people at work, and while working in this city both Mr. Honnicker and myself, whether we worked alone or together, we had the services of the employes of the Des Moines Gas Company who were familiar with handling the books and in bringing to us the books and records which we called for, so that we were not compelled to spend any time in searching through the vaults and shelves for records. As soon as we found it necessary to examine any particular document it was asked for and the party who was most familiar with that was assigned to get it for us and kept us supplied
1807 with everything we needed. We worked more than what you might assume would constitute a day; we began our work about eight o'clock and worked until about midnight.

Q. That is as definite, Mr. Haganah, as you desire to answer the question?

A. Yes, sir; that is the way in which I would describe it without specific memoranda or data.

Q. What years did you investigate and thoroughly audit?

A. Mr. Honnicker was instructed to audit all the records of expenditures and to verify the balance sheets and to prepare trial balances to see if the books were in balance and I analyzed the items in the trial balance to satisfy myself of their correctness during the history of the Des Moines Gas Company; that is the best of my present recollection.

Q. Those were the instructions to Mr. Honnicker now?

A. Yes, sir; and he brought to me the working sheets covering the analysis for the record at that time.

Q. Did you go over the records and verify them in any way?

A. Yes, sir, I did. I applied such checks and study of his records as I ordinarily do in analyzing data which are brought to me in the course of my work.

Q. Now, this depreciation account, Mr. Haganah, have you considered what the amount you have computed here on the basis of two per cent. invested at eight per cent, would amount to at the end of 37 years?

A. No, sir.
Q. Can you figure that up in a few minutes?
A. No, I can't. I can tell you why I did not do it.
Q. Tell us why you didn't.

A. Because no depreciation reserve would be permitted
1808 under practical conditions to accumulate for that length of time. A plant is constantly depreciating; to offset that depreciation the Company is required to set up a depreciation——

Q. Now——

Mr. GUERNSEY: I submit that the witness be permitted to answer the question.

Answer continued. That reserve is built up by crediting it each year with the amount representing the estimated annual depreciation during that period, which amount is included in *in* the operating expenses as one of the expenses of the business. Now, since depreciation is going on constantly and replacements must constantly be made, these replacements will be charged against the depreciation reserve which was credited to meet these renewals by an amount representing the estimates in the annual depreciation. Consequently under normal conditions the depreciation credit which has been charged to operating expenses will each year be exhausted by the charge for replacements. Under normal conditions the depreciation each year will not be the same as the estimated depreciation. Some years the replacement will be made to a heavier extent than other years, and it is possible at sometime you will have a debit balance and at other times accumulate a credit balance. The balance does never accumulate to the amount of eight per cent or any per cent on that credit for the period of thirty years. If that were so you would have at the end of the normal life of the property a balance representing the value of the property, and you would have no property. Therefore since your plant for all practical purposes in supplying the public with service can not depreciate below about seventy-five per
cent before the service is seriously impaired, your depreciation reserve could never reach the point you have in mind.
1809

Q. Did you go over the history of the plant and over the vouchers to test out that theory to see just what replacements had taken place the last five or six years?

A. Not for that long a period. I tested the company's books for about two years to see what its policy had been with respect to the renewals and the accounts charged.

Q. Now, Mr. Haganah, what replacements if any are there not included in the $1,928,000.

A. There are no replacements included in the $1,928,016.65.

Q. What about operating expenses?

A. They were included in 1910.

Q. To what extent have you got detailed information on that?

A. Schedule 5 of my report shows that there was incorrectly included in the operating expenses for 1910 the sum of $7,351.92 against which there should have been a depreciation allowance as shown in the same schedule.

Q. What schedule is that?

A. Schedule 5 of my report.

Q. Page 22, is it?

A. I don't know the page; my report is not paged.

Mr. GUERNSEY: Yes, it is page 22.

Answer continued: It is the last item in the third column on that page.

Q. What replacements have occurred in the last 24 years?

A. That I don't know.

Q. Did you try to ascertain?

A. I could not determine it.

Q. Was there any expense that you have not included either in this $1,928,000. or in your operating expenses?

1810 A. For which year?

Q. The entire period of twenty-four years shown on this report?

A. Yes, the expenses I referred to a short time ago as being made and charged to the construction account, but which I eliminated as not being proper construction charges for the benefit of this case.

Q. What were those items?

A. I do not recall them.

Q. Outside of these items, Mr. Haganah, were there any other charges not shown in the operating expenses or in the totals which you show here amounting to $1,928,000.

A. I have been trying to think of some; I can't recall now; there may have been some; I can't recall now.

Q. These items which you rejected as not belonging to the construction account do they represent replacements?

A. No, sir.

Q. What do they represent?

A. They were in the form of adjustments in the books to recognize the changed conditions. A specific instance of that kind, is what you had in mind yesterday afternoon in comparing the construction account in the balance sheet at the close of the history of the Capital City Gas Company with the construction account of the first balance sheet of the Des Moines Gas Company.

Q. I would like to know if you can tell us just what items you rejected as being improperly included in the construction account?

A. They represented expenditures for property of an investment character, as I told you a few moments ago, the expenditures for property which may at one time have been used or purchased with the intention to use it in the gas utility, but not actually

1811 so used.

Q. You know that?

A. I know there were instances, or at least one instance of that kind.

Q. Let us not deal in generalities so much; you rejected certain items which you found as being improperly charged in the construction account; now you had some reasons for rejecting those items, did you not?

A. Yes, sir.

Q. You thought they did not properly belong there?

A. Yes, sir.

Q. You say they did not represent replacements?

A. Yes, sir.

Q. Now, can you remember just what it was and won't you please tell us?

A. We got so far yesterday to show that the total———

The MASTER: Can you tell; say so, if you can't.

A. I cannot without referring to other data.

Q. What other data must you refer to in order to tell us just what items you excluded from the construction account.

A. The Company's ledgers.

Q. And by looking at the Company's ledgers you would be able to tell us?

A. I could cover the ground I covered in the first place and I am confident would eliminate the same items now I did then.

Q. Did you have any personal information outside of that shown on the ledgers or books of the Company?

A. Only with respect to the item of $285,000. which you discussed for some time yesterday.

Q. That you know all about of your own personal knowledge?

A. The information was given me after I inquired for details.

Q. Just mere hearsay so far as you are concerned per-
1812 sonally?

A. Exactly.

Q. You have not worked for the Des Moines Gas Company before February 1911?

A. No, sir.

Q. You have never been in the employ of the Des Moines Gas Company prior to that time?

A. No, sir.

Q. Do you remember talking with Mr. MacVicar in Chicago concerning this case?

A. Yes, Mr. MacVicar called on me one day.

Q. Do you remember when that was?

A. About the 22nd or 23rd of May.

Q. And Mr. MacVicar talked with you concerning securing your services for the city of Des Moines in this case?

A. Yes, sir.

Q. I believe you told him, did you not, Mr. Haganah, that two or three years before that you had performed some services for the Des Moines Gas Company. While you would be glad to take up the work for the city, you would have to get some sort of a release or felt that you should from the Des Moines Gas Company, or that in substance?

A. I didn't tell him anything of the kind. I never had any connection with the Des Moines Gas Company until this matter first came to my attention.

Q. Did you tell Mr. MacVicar that or that in substance?

A. You have included two questions; if you will separate them——

Q. Did you tell him that or that in substance?

A. I didn't tell him anything of the kind. I told him in substance all of a part of your question and nothing like the other part.

Q. Why are you dodging, why don't you tell us what he
1813 said to you and what you said to him.

Complainant objects to the form of the question and the suggestion to the witness that he is dodging, as being absolutely unwarranted by anything the witness said on the stand.

Q. Mr. MacVicar talked with you about serving the city of Des Moines in this case?

A. Yes, sir.

Q. And you said to him, did you not, that about two years prior to the date of this conversation you had performed some services for the Des Moines Gas Company and that you did not feel at liberty of entering into a contract with the city without first explaining the situation to the Des Moines Gas Company.

A. Absolutely not, in the slightest degree.

Q. Or that in substance?

A. No, sir. We discussed the Des Moines Gas case but nothing like what you say.

Q. There was nothing said about why you wouldn't work for the city without first getting their release?

A. That is a different matter. Mr. MacVicar came to me on the 22nd or 23rd of May and asked me if I could assist the city of Des Moines in this case. My report to the Des Moines Gas Company is dated March the 8th, and I told him I had made an audit of the Gas Company's books and for that reason I felt that I could not serve the city of Des Moines, telling him if it were agreeable to the city and to the Des Moines Gas Company I would gladly make an audit and submit this to the court for the examination of any data which both parties would agree to. That in the absence of the
Des Moines Gas Company agreeing to such an arrangement
1814 I could not accept any other services.

Q. Did you tell Mr. MacVicar at that time and place that you were then in the employ of the Des Moines Gas Company?

A. I do not believe I did. I was not in the employ of the Des Moines Gas Company at that time.

Q. Did you tell Mr. MacVicar you had made a report for the Des Moines Gas Company or the United Gas Improvement Company?

A. I don't remember that I used the word report. I told him I had made an audit of the Company's books and I had been in Des Moines to do that, and for which reason I felt it would be improper for me to accept the service of the city of Des Moines in the case against the Des Moines Gas Company unless both sides knew the character of my services.

The MASTER: I want to call your attention to page 30. There is $7,251.92; I see it there twice. Is that a duplicate charge?

A. No, it is one charge. I analyzed it on page 30 showing that of the total amount $7,351.92, the sum of $6,087.17 was really incurred for replacement purposes and should not have been called a maintenance charge, and that the larger sum also included $1,264.75 which should have been charged to the construction account and not

against the operating expenses; I have then carried forward this total of $7,351.92.

The MASTER: Evidently there is a clerical error in that; those two amounts do not agree and they should.

A. I will look at my own copy; I think they should agree. In making this copy the stenographer made a mistake. My report shows that amount should be $6,087.87; in copying it the stenographer used a nine instead of a cipher. The amount charged to
1815 replacements in maintenance for the year ending September 30, 1910. should be $6,087.17, instead of what the stenographer has shown to be $6,987.17, the nine should be erased and a cipher substituted.

Q. You were present at a meeting of the sub-committee of the city council of the city of Chicago, which was held at the city hall, I believe, on the 6th day of January, 1911?

A. I believe so.

Q. Among other proceedings had by that body was a discussion of your report that you had submitted to the Committee?

A. I would hardly call it a discussion of the report.

Q. Well what was it?

A. It represented rather an expression of disappointment over certain parts of my report.

Q. You did discuss the report?

A. I tried to defend my report against one or two criticisms that I thought were unfounded.

Q. The subject of going value was one of the very many questions that you discussed and were discussed with reference to your report?

A. Yes, there was a good deal of discussion.

Q. Let us find out if you said this—I am going to ask you if at that meeting you used this language, speaking of going value: I found that this amount was practically 23,000,000; that was so enormous that I was suspicious of its accuracy. We had a number of conferences in which the details entering into this enormous sum were discussed. Do you remember saying that?

A. I discussed the subject. I don't remember the exact words.

Q. Did you say that or that in substance?

A. Substantially that.

Q. Continuing: I found the price included an amount —
1816 which the officers were parties in interest and as appeared to me had secured for themselves, that is they took advantage of the market furnished for a franchise and found a comfortable margin of profit in it for themselves. Did you say that?

A. Substantially so.

Q. And further: Let me explain how that might have been done. A man might go to the council and ask for a franchise and there might be a very vigorous opposition, but through various means in which aldermen might be interested finally the franchise might issue on the ground that there was a reasonable cause for believing that a competing gas company in a certain district in Chicago was desirable. Did you say that?

A. Substantially.

Q. And further: Well having convinced the city authorities that there was reasonable ground for another gas company, a franchise was granted. Did you tell them that or that in substance?

A. Substantially so.

Q. Then to further illustrate your theory of going value, did you use this language: Let us assume that the actual cost of this franchise was $100,000 and that the price which the owners of the franchise ask from the company was $500,000; let us also assume now that the officers of the company which decided to purchase the plant felt that in order to relieve themselves of this competitive condition they might themselves become interested to the extent of some personal profit and that instead of paying $500,000 they might have paid $1,000,000 for the franchise, or might pay $700,000. Do you remember saying that?

A. Substantially so.

1817 Q. And further: What became of that $700,000. I don't know somebody got it. I had reason to believe some men connected with the gas company got some of it. I did not believe the people would have got an ordinance through the council because the price was very exorbitant. So I came to the conclusion which I verified to my own satisfaction that this $23,000,000 ought to be reduced by what I believed was the profits to those who have participated in the transaction. Did you say that or that in substance?

A. Substantially so.

Q. And thereafter you were asked this question, I think by Prof. Beemis: Did you make a separation so as to determine how much of that $10,000,000 represented what you talked about a few moments ago, losses of operation of those old companies before 1897? Professor Haganah: I tried to do that so far as the material which the company had was available. I believe they gave me everything they had; they were very anxious to sustain a much larger figure than I finally established. Was that question propounded to you and the answer given substantially as quoted?

A. I believe so in substance.

Q. And that so far as the Chicago report is concerned as to this going value you arrived at it upon that basis?

A. You read only a very small part of the testimony.

The MASTER: It strikes me, Mr. Brennan, this is a little collateral.

Mr. BRENNAN: I am trying to get at his theory of arriving at his going value.

Q. You found they ought to be compensated to the amount of $10,000,000?

1818 A. $10,000,000 I thought was a fair allowance for the elements which I considered.

Q. Mr. Haganah, when you state you did not take into account mains and services under the pavement in this report, do you mean you made no charge on that account?

A. May I ask whether I included in the cost of construction the

cost of pavement over mains not laid or paid for by the company.

Q. I want to know whether in this $1,928,000 anything is included therein for mains and services under pavements placed there in advance of the pavement?

A. The cost of the mains and services is in there.

Q. But as to any additional charge made by reason of the fact that the mains are now beneath the pavement or that the services are beneath the pavement?

A. No, sir; there is no cost included for the cost of pavement over mains and services not laid and paid for by the company.

Q. I would like to have you explain to the Master just how you treat pavements?

A. I have not treated it in this case. I just analyzed the construction record. Wherever the company did not pay for pavement it would not appear on their books.

Q. How much of this amount includes mains and services put under the pavement?

A. I don't know how much of the mains and services was under the pavement for which those charges went on the books.

Q. As shown by the books in the construction account, doesn't it show there?

A. No, sir.

Q. For instance, if they extend a main in a street now paved, will the construction account show that?

1819 A. Not the account itself; you would have to go further for additional information.

The MASTER: There is no way of ascertaining that so far as the evidence now is concerned excepting possibly through the evidence of Mr. Moul and Mr. Lea. Mr. Moul says about seventy-five per cent of the pavements were laid where there was no mains, and Mr. Lea's record shows, I believe, about 46-1/10 per cent.

Mr. BYERS: You mean 75 per cent of the mains were laid where there was no pavement?

The MASTER: Yes. Now Mr. Lea calculated, as I recall it now, it at 46-1/10 per cent. I am calling your attention to that because it becomes a material question in the case.

Q. So I understand you so far as the books of the company are concerned you do not include any item for street mains or services extra items growing out of street mains or services located under pavement?

A. There is no expense included for pavement which the Company did not actually incur.

Q. And if you found there had been any items of that kind showing that the mains had been put in the street before the pavement was laid, you would have considered them in your report; I mean now extra expense?

A. If there had been an adjustment of the books on account of pavement or accrued value because of pavement laid there and paid for by the city, in making a cost analysis of the plant I would have

to exclude that because the cost had not been incurred by the company.

Q. That would be true if you were valuing the investment?

A. In making a valuation of the investment upon the
1820 basis in this report, I would necessarily have to exclude it because I am dealing with book figures.

Q. I say in making a valuation of the investment and analyzing the books, records and accounts of the company you found the major portion of the mains and services had been placed in the streets in advance of the pavements you would not consider the *the* fact that since that time pavements have been constructed by the company and therefore the company should be entitled to have that fact taken into consideration?

Objected to on part of complainant as not cross examination, incompetent and because it is simply asking the witness for information which is one of the ultimate questions of law which will have to be submitted to the court.

The MASTER: There is a good deal of force in that.

Mr. BRENNAN: You take his report and it goes on to tell the *the* conditions existing——

The MASTER: Answer the question.

A. I would exclude it if I were making a cost analysis of a company's books.

Q. Why would you exclude it?

A. Because it would not appear on the books as a cost incurred by the company.

Q. Is that the only reason?

A. Yes.

Q. You have got some matters in this report not shown on the books, haven't you, and you used your own judgment as to how you analyzed it?

A. May I ask what item you have in mind?

Q. You have said that generally with respect to items that
1821 you have taken the books and records and made your analysis of them.

A. I have eliminated from the construction account certain items which do not properly belong there, and I think any accountant who has experience in public utility work would do likewise.

Q. Why would you do that?

A. Because they were not proper elements of value in a rate case.

Q. Suppose the books show in a rate case that the company had carried an account, in other words, every time the city paved a street in which the company have a main, you found that the company, every time that was done, would credit itself so much by reason of the fact that that street was paved and you were going to value this investment and came across an account of that kind, would you consider it?

A. As a book entry I would have to exclude it.

Q. Why?

A. Because the company has not incurred an expense and I am analyzing the records of expenditures.

Q. In arriving at your valuation of the investment you would have to exclude that?

A. I would, because my valuation as shown in my report is based upon book records.

Q. If you were valuing the property for rate making purposes, whether it is by this method or by the reproduction method, or any other method, would you consider, Mr. Haganah, that the company was entitled to have added to the physical cost of the property claims for extras on account of mains under pavements where mains were laid in advance of the pavement or at the time?

A. If I followed the reasoning of the court in the Consolidated Gas case, of course I would have to include the paving.

Defendants move to strike the answer as not responsive.

1822 Q. Now, Mr. Witness, just consider the reproduction method or the one which you have advanced in answering that question.

Complainant interposes the same objection last above made.

A. I must begin my answer—you are assuming a condition—if I am to reproduce this property——

The MASTER: You answered that question once.

A. Under my own method I excluded it, because I am dealing with actual cost as shown on the company's books.

Q. Isn't it your thought Mr. Haganah, and has it not been your policy wherever you have made, in rate making cases, where you have considered the reproduction method or the method you have advanced in this case, to exclude in all cases any items or claimed items on account of mains and services being under the pavement?

A. I never used the actual reproduction value of the property in a rate case; I always supplemented it with the cost data from the company's books.

Q. In your report to the city of Chicago, I will ask you if you did not treat the subject in this manner; Although strongly argued by the Company, no allowance has been made in the above total to cover the value of the pavement over the company's distribution system. It was claimed that since the valuation for the purpose of this investigation must be the reproduction cost, the company should be given credit for the value of the street pavement over all of its mains and services, even though the company paid no part of the cost of such pavement, since if the plant were to be reproduced as of this date it would be necessary to cut through such pavement for the purpose of laying the pipe. The fact- show that on
1823 many of the streets the mains were put down before any pavement was laid by the city and in many other streets the mains were laid at a time when the city was replacing the pavement, so that in either case the company was put to no expense because of the street improvement. You stated that in your report, did you?

A. Substantially so.

Q. And you further stated: The purpose throughout the appraisal of the distribution system was to allow a valuation where the

company incurred pavement expenditures and to exclude any allowance for pavement laid and paid for by the city. The pavement over the company's present distribution system of which the street mains alone are nearly 2,600 miles in length is reasonably worth $6,000,000, but this is the investment of the people of Chicago and not the investment of the Gas Company. Even if the reproduction theory is to be carried to the utmost extent, it does not follow that the same distribution arrangement would be followed and that the same number of pipes would be placed in the streets as they exist at present. It is probable that much of the distribution system would be placed in alleys and part ways where the construction expense would be very much reduced. If under the decisions of the courts the above amount, together with the additional reproduction cost of cutting through all the pavement, must be allowed in the valuation, the investment value and the interest requirement will be very much increased. In the leading utility rate cases the court has failed to hold specifically that the value of the pavement over the mains not paid for by the company must be included in the plant values. In all such cases the paving item was very large, and if it were intended to include it in the valuation, it is reason-
1824 able to assume that the courts would have so stated. On the other hand to exclude such pavement valuation has received the endorsement of the federal court and public service commisisons. Every legitimate expenditure in adapting the utility to the demands of progress and community growth is a proper charge to construction, and as such the investment therefor is entitled to participate in the distribution of earnings from operation. If expenditures for pavement are incurred by the utility in response to assessments levied by the city, or are incurred in cutting through the pavement for construction purposes, these are proper capital charges. It does not seem reasonable, however, that a utility should be permitted to capitalize expenses for municipal betterments in which it has not participated, and when the benefits which accrue to it are remote and incidental. To do so would be to compel the customers for utility service to pay increased rates because of their civic progressiveness. For the above reason the city's expenditure for paving the streets over the company's distribution system is not regarded as a gas company investment in rate adjustment proceedings; regardless of the value which may exist in a commercial sense because of such improvements. To include the cost of cutting through such an amount of paving and its subsequent replacement would seem to be carrying the reproduction cost theory further than justice warrants. Did you state that in your report to the sub-committee of the city of Chicago?

A. That in substance. I believe you have read my report correctly.

The MASTER: We are losing sight of one proposition and that is this is not a rate making court.

Mr. BRENNAN: This is a report to the council of the city of

Chicago. We have this thought in mind: There are certain
1825 witnesses introduced by the complainant in this case claiming this valuation must be predicated upon certain items. Here is another witness who has a different notion about it. When we come to discuss it we will find there is more or less inconsistency.

The MASTER: That matter on the question of rate making would not have very much weight as to the question involved here.

Mr. BRENNAN: Only in so far as the questions in dispute may enhance or decrease the value of the property of the complainany company.

The MASTER: There must be kept in mind that the Supreme Court of the United States has held that this court is not sitting as a rate making court. The only question this court has to settle is whether or not it is confiscatory.

Q. You do not find anywhere any record or any credit to the capital account for these pavements, do you?

A. You mean charge to the capital account?

Q. Yes.

A. No, sir.

Q. You do not find anything?

A. Not for expenditures not actually incurred in paving by the company.

Q. What do you find the cost value of the property now including the working capital?

A. $2,056,106.65.

Q. Where is that shown?

The MASTER: That is adding the working capital?

A. That is adding the working capital as shown in the last column of schedule 1 Exhibit B of my report.

Q. That is $128,000 for working capital?

A. Yes, sir.

1826 Mr. BRENNAN: I believe that is all, subject to recall.

Redirect examination by Mr. GUERNSEY:

Q. Before I forget it, Mr. Hagenah, you stated that in making these adjustments which you refer to, you had eliminated certain items from the cost of the property shown by the company's books?

A. Yes, sir.

Q. Now in making these adjustments I wish you would state whether you added any items?

A. No, sir; I do not recall any.

Q. So that the only change in this property account that you have made was to subtract from it?

A. Yes, sir.

The MASTER: What you call the replacement account there?

A. That is in the operating expenses; not included in the construction.

The MASTER: What you deducted for replacement is not in the total?

A. No, sir, not in the total.

The MASTER: That would be about $10,000?

A. That does not belong in the total.

Q. Now, Mr. Hagenah, you were asked very early in the cross examination whether your employment by the city of Chicago had not terminated and you said it had; I wish you would state the circumstances which led to the termination.

A. In short, my report was displeasing to the administration which succeeded to the administration under which I was employed.

The city desired me to turn over all my working sheets and
1827 data and records and all material which I had compiled during the course of my work on that case, for the purpose of criticism and review by other parties. This material had been given to me under a contract which was as binding as I felt any contract could be, and I could not violate that contract, and rather than to break the contract on my part I gave the city of Chicago my resignation.

Q. It was a question then of keeping your word or keeping your job?

A. And between the two I kept my word.

Q. Now, Mr. Hagenah who was employed to succeed you and to criticise your report, by the city of Chicago?

A. Mr. Bemis.

Q. Is he the gentleman sitting back of Mr. Brennan and making suggestions while he is cross examining you about this report?

A. Yes.

Q. Now, referring to this conversation with Mr. MacVicar, was the audit which you have made of the books of the Des Moines Gas Company two years prior to that time or about two months prior to that time?

A. About two months prior to that time. It was the first work I ever did for the Des Moines Gas Company.

Q. I wish you would explain some of the reasons why in connection with the sinking fund created to take care of depreciation, rates of interest are taken that are lower than the rates of interest that are taken at the same time as a basis of a return?

A. The depreciation rate is computed on a sinking fund basis, having a relatively low rate of interest. This fund must be invested by the company and only a comparatively small part of it is ever available for investment and that cannot be invested for a relatively long time; so that the disposition of these funds must be
1828 governed by the rules and conditions which affect the investment market rather than conditions surrounding an industrial or speculative basis. The rates governing in the investment market are quite well defined and vary in different parts of the United States from four to five and a fraction per cent. The rate ordinarily used in computing a return for the sinking fund plan in depreciation allowance is four per cent. The rate to which a company is entitled on its investment is necessarily a much higher rate, because it is the earnings from a business in actual operation and is therefore entitled to the same rate of return which a business operat-

ing under similar conditions of risk would be entitled to earn. The gas business is subject to risks and the investments there are for an uncertain time. There is no assurance that the money will ever be returned. There is no collateral to secure your investment and to a large degree it is beyond your own control. These conditions in the money market demand a relatively higher rate of return.

Q. Please state whether so far as you know it is the universal practice to take for your sinking fund rate of interest a rate that is lower than the rates talked about as rates of return?

A. As far as I know that is the practice.

Q. Now you were asked whether this investment valuation which you have made and which is set out in the final form in Exhibit 26, if my recollection is correct, and in a tentative form in Exhibit 25 and 23, took any account of appreciation on account of pavement over the mains; I wish you would state whether this valuation takes into account appreciation in the value of real estate that may have been purchased thirty or forty years ago?

A. It does not; it shows only the cost of real estate pur-
1829 chased at that time which in many instances is many years ago.

Q. In other words, what I want to get at is the reason why you did not refer to appreciation on account of these various matters is because it is investment that is the underlying idea in this computation which you have made?

A. It is; cost as shown by the books is the underlying idea rather than the value.

Q. Now, you have a good many times during your examination and cross examination referred to actual cost and actual investment and cost as shown by the books; I wish you would state generally whether throughout your examination or not, you have used these expressions as meaning cost as shown by the books without including what we have called the overhead items?

A. I mean by these several terms costs as shown on the books of the company.

The MASTER: That would not include interest actually paid?

A. No, sir; unless they charge it on their books to the construction account to which I find no charges.

Q. Taking up the other items, how about engineering, taxes, contingencies and things like that?

A. There are no charges for those on the books that I found.

Q. So that they are not included in this $1,928,016?

A. No, sir; to my best recollection all the taxes charged to operating expenses and the salaries of officers, even while they devoted their time to construction work were all charged to operating expenses and no part went into the construction account.

The MASTER: Then they would appear in the operating expenses?

A. They would, in the operating expenses.

Q. Now you referred to a payment of ten thousand dollars made during the year 1910 on account of services furnished to the
1830 Des Moines Gas Company by persons who were also in the employ of the United Gas Improvement Company and you mentioned as two matters that were included in services of this

kind, engineering and auditing and were then interrupted and did not finish your answer. Can you state any other matters that are included?

A. Another service probably more valuable than either of those two is the financial assistance this company receives from the United Gas Improvement Company.

The MASTER: He has already said that.

Mr. GUERNSEY: Yes, but the question stands on cross examination as if it was omitted.

A. The United Gas Improvement Company affords to this company its own credit and assistance in the way of furnishing bonds and ready cash.

Q. How about the purchase of materials and supplies?

A. The benefit is very material through the purchase of supplies in large quantities through the Philadelphia office and charging this company with the cost of its proportion of the larger purchase.

Q. In what way was this payment of $10,000 made?

A. That was paid in the form of salaries to four or five individuals who are themselves connected with the United Gas Improvement Company for services which they rendered to this company.

Objected to on part of defendants as not the best evidence and for that reason they move to strike the answer.

Mr. GUERNSEY: Do you really mean that?

Mr. BRENNAN: I really mean that the check which he says was paid to these people is not the best evidence.

Mr. GUERNSEY: He did not say check. At the very outset
1831 we were not to bring the books in here; I understood counsel to say they did not want us to do that.

Mr. BRENNAN: I am objecting to that part of it as not the best evidence.

Mr. GUERNSEY: Do you want us to bring the books in; do you waive our having the books to show these items here, while we are talking about these items?

Mr. BRENNAN: We object to this witness testifying as to the manner in which this $10,000 is paid, if he has testified from the books.

The MASTER: They have already waived that. This other matter is a different problem altogether. It is understood he is testifying from the books.

Q. You have no personal knowledge of these matters, have you?

A. Not at all.

Q. Now, then, Mr. Hagenah, to go back, you stated as I understand it, the books show these payments aggregating $10,000 in the year 1910 were made to certain persons in the form of salaries who were at that time officers or employés of the United Gas Improvement Company. Will you please state whether as shown *shown* by the books it appeared that these same persons were at the same time officers or employés of the Des Moines Gas Company?

Defendants interpose the same objection.

Mr. BYERS: It seems to me that is a waste of time; that item will

be fully explained by some person on behalf of the company before we get through here.

Mr. GUERNSEY: I do not see why counsel object to my asking the witness what he knows about it.

The MASTER: Answer the question.

A. I think they are.

1832 Q. Referring to complainant's Exhibit 27, I will ask you to state whether at the request of the complainant you have taken the expenditures of this company as shown by the books and the present value of the property as shown by the testimony of the witnesses Baehr, Lea and Randolph, and the average of the present value as shown by these witnesses and attempted to reconcile the differences?

A. I did.

Q. And is this Exhibit 27 the sheet which you have prepared to show this reconciliation?

A. This typewritten copy of the original which I prepared I believe is correct as to typewriting.

Q. Now then will you explain to the Master just how you made this up and what these differences are and what have caused these differences?

A. The first column in this exhibit agrees with the footings in schedule 1 Exhibit B with the single exception that for the purpose of this table I have combined the total in the column headed "extensions and improvements" and the total column headed "street lamp extensions"—I beg your pardon; the combination has been of two columns entitled "services and street lamp extensions." The amount for extensions and improvements is as per my report. The total agrees with my report to which I add the $128,000, making a total of $2,056,016.65 as the cost of the property plus working capital at the close of 1910 as shown by the books.

Q. Pardon my interruption. In this first column following $2,056,016.65 you have three items, paving, overhead and indirect charges and going value which appear blank in that first column?

1833 A. They are blank because there is nothing on the books which I have been able to find showing paving not paid for by the company, over head and indirect charges and going value as these terms are used in the engineers' reports for which I am trying to compare book figures. In the second column I take the sum total shown by the company's books and make certain distribution of these items to show more nearly the cost of the property opposite to the titles shown at the left hand of the page. This is done because the land in my report is included in the general title extensions and improvements and for the further reason that the item which we discussed yesterday amount to $285,000 covered every class of property. I distributed that total over the different columns in so far as I could do it with the degree of accuracy which I could obtain from requests of those who were supposed to know and in talking with the engineers who had valued the property included in that item. That gives me the same total to which I again add the

working capital and receive the same total as in the first column. The next three columns show the valuation of the property in its present condition as of January 1st, 1910, made by engineers Baehr, Lea and Randolph. To their totals of the physical property I have added their estimated working capital and show on the following line their total of the physical plant plus the working capital. They show in their appraisals the item of pavement over mains and certain indirect and overhead charges and estimated going value. The item overhead and indirect charges I could not take out from the major classifications of property because they were so involved and connected with the cost of the property that it would have
1834 necessitated going through every item as detailed in their report to make that separation. The allowance for indirect and overhead expenses with the exception of a small amount in Mr. Lea's report is therefore included in the major classifications above. Their going value is shown here as shown in their report and on the last line their totals. I have then averaged the three appraisals and the corresponding valuations appear in the next column of figures. This column I have compared with the second column in Exhibit 1 which shows the book cost as redistributed to absorb the $285,000 single charge of the company's books and find there are differences which appear in the last column under the heading "excess of present value over book cost." The first item shows that the average of present value from the reports of the three engineers exceeds the book cost by $188,145.74.

Q. What item is that?

A. That shows the difference in the appraisal as opposed to the book cost of the real estate.

Q. Under the heading of remarks opposite that item, what have you in the way of explanation?

A. Under that heading I tried to explain this difference. In this case it is my opinion that the difference represents the increment or appreciation in the value of the real estate as opposed to the book cost and the indirect charges which the engineers added to the value of the real estate.

Q. Now take the next item?

A. The second item shows—that includes buildings, equipment, machinery, holders, oil tanks etc., under the heading of extensions and improvements. I see in referring to this column the stenographer has omitted the minus sign in two or three places
1835 where the book value exceeds the present value placed on the property by the engineers.

Q. In those instances does the average present value exceed or is it less than the book value, as you call it?

A. With respect to extensions and improvements the book cost is greater than the present value of the property as appraised by the engineers and shown in the average of their three appraisals, it is larger than this average by $68,854.20. There should precede this figure a minus sign omitted by the stenographer.

Q. Will you tell us, so that Mr. Brennan and myself can straighten these out what minus signs you put in there?

A. I put a minus sign before the $68,854.20 and also before the item, $6,776.93; and also before the item $25,226.60 all in the same column.

Q. Now will you proceed—you had just started on this item of $68,854.20 which is the amount which the book costs of the extensions and improvement exceeds the average present value or cost of reproducing the physical property given by the engineers.

A. The engineers' reports show the present value and the book figures show the cost new to the company. The difference therefore represents the allowance for depreciation as compared to the book cost.

Q. Let me ask you what do you include by extensions and improvements here?

A. The buildings, machinery and equipment, holders, oil tanks, and in general the apparatus at the works.

Q. Recurring to this item $68,854.20 which takes up what depreciation was allowed if there were increased in the prices of
1836 commodity and labor and things that go into the costs of these various matters that are included in extensions and improvements, how is that taken care of?

A. That will be shown through the appraised value by the engineers. They are appraising the property on a reproduction new basis and a reproduction present value basis, and if there has been any appreciation in commodity prices for wages, it would appear in their valuation and not in the book figure.

Q. And in the same way if there were depreciation, that would appear in these figures and would affect the amount of this $68,854.20, which would be attributable to the depreciation.

A. It would take into consideration depreciation and appreciation neither of which the books cover.

Q. That is what I wanted to bring out—this may not check with their depreciation account because they may have taken either higher or lower construction costs of these items.

A. There must also be considered in connection with this the overhead and indirect expenses which are included in these figures by the engineers.

Q. Now, take the next item, street mains, what is the situation?

A. Comparing the book figures with the average of the three engineers' present value I find their figures exceed the book figures by $135,207.34. This item on the books covers the cost of laying the mains and the material and the cost of whatever pavement the company cut through to replace. The difference must be accounted for by the increase in commodity price and the increase in labor since the time the mains were laid and the charges therefor appear on the company's books and also shows an increase because of the engineers having included indirect and overhead charges in their appraisals.

1837 Q. Now the next item, meters, what is the situation as to that?

A. A comparison of the average of the three engineers present value with the book figure for matters shows that the present value

of the engineers is less than the book figure by $6,776.93. This shows the depreciation on the meters which the engineers have allowed, but they have added to the cost their usual allowance for overhead and indirect expenses.

Q. So that this would not equal the total depreciation allowed?

A. It does not.

Q. In the matter of services, what is the situation?

A. A similar comparison shows that the present value placed upon the services by the engineers, using their average, is less than the book cost of these services by $25,226.60, which is again explained by the element of depreciation which the engineers allowed and the charge for overhead and indirect expenses which they include in their appraisals.

Q. Now, going to the next line headed total, what do the figures $222,495.35 indicate?

A. That is the total excess of the average present value of the property taken from the three engineers' reports and compared with the total book cost shown in my report and again on this exhibit amounting to $1,928,016.65.

Q. What is the next item?

A. To the engineers appraised value I have added the estimated working capital and that average is shown in the sixth column. The difference between that average, working capital, and the amount as I computed it from the balance sheet is $22,282. and that represents the difference of opinion which existed between the engineers and myself as to working capital, and it also shows the element
1838 of danger which exists in taking working capital solely from the balance sheet as of a specific date, for the inventory account may be abnormally low at that time and the items current assets and liabilities may be such as to show an unfair condition to be assumed as an average for the year. My figure is $22,282. less than the average of the engineers.

Q. To put it in another way, your figure eliminates judgment and theirs does not?

A. Exactly. I base mine entirely on the balance sheet as of a given date in this case at the end of the business of 1910.

Q. Of course this business is like every other business, the items you took into account vary from time to time, the bills receivable, cash on hand and things like that?

A. They do fluctuate. I have added these two items which show the total excess of the engineers average from the book figures $344,777.35 their average as compared with the total I gave a few moments ago the cost of the physical plant plus working capital, $2,203,302.

Q. Let me ask you, this $244,777.35, what is the fact whether that is the difference between the total column of the average present value and the total of your first two columns which is the total in the sum as expenditures as shown by the books $2,056,016.65.

A. It is. The next three items show the average allowance by *by* the three engineers for paving and overhead and indirect charges and going value. Not any of these items appear on the company's

books. Consequently there is no figure with which to compare the item $22,674. and is not to be given the greatest consideration because it is an average of a single item from one report and rep-
1839 resents by no means all the expenses of that report.

Q. You mean this item of $68,023.

A. Yes, sir.

Q. That was overhead and indirect charges as you could segregate from the other items in Mr. Lea's report?

A. Yes, sir.

Q. You divided that by three and obtained $22,674.

A. Yes, sir.

Q. What is the $2,203,302.

A. That is the average of the engineer's present value of the physical property, plus working capital and allowance for paving and the average of the overhead and indirect charge and the going value.

Q. How did you get these columns to balance, how do we find out whether they balance or not?

A. The figures are taken from the engineers reports.

Q. I don't think you understood me. Do you balance by adding the sum of the last column excess present value over the book costs and the book cost shown in the first two columns to see whether that sum equals the total of the column of average present value?

A. To prove my total I deduct the amount shown in the total for the second column which is the figure on the company's books, from the average of the three engineers' figures $3,203,302, giving me an excess $1,146,285.35 shown in the last column which is also the total of the plus and minus signs in that last column.

Mr. GUERNSEY: The complainant now offers in evidence Exhibit 23, identified in connection with the examination of this
1840 witness.

Mr. BYERS: The defendants object to it as incompetent, immaterial and not sufficiently identified as to the items it purports to contain.

Complainant offers in evidence Exhibit 24, identified in connection with the examination of this witness.

Objected to on part of defendants for the same reasons last above stated.

Complainant offers in evidence Exhibit 25, identified in connection with the examination of this witness, this exhibit being the third tentative calculation, if I correctly recall the number, of the investment value by this witness.

The defendants interpose the same objection and add to the objections to Exhibit 23 and 24 the further objection that the Exhibits are merely conclusions of the witness, taken from the records and figures which have not been included in evidence, nor sufficiently identified.

Mr. GUERNSEY: That gets us right back to the original proposition whether you want us to bring the books over.

Mr. BYERS: We don't want you to bring the books over. This objection does not raise the question of the books being here at all. It is an entirely different thing.

Mr. GUERNSEY: Do you make a question that the books from which these statements were taken have not been identified as the books of the Gas Company?

Mr. BYERS: No, sir.

1841 Complainant offers in evidence Exhibit 26, it being the final calculation by this witness of the investment value of the plant of the complainant.

The defendant interposes the same objection last above made.

The complainant also offers in evidence Exhibit 27, which is the reconciliation of the expenditures as shown by the books, with the testimony as to the average present value which has been introduced by the complainant.

The defendant interposes the same objection as last above made.

The MASTER: I am afraid that is a little misleading.

Mr. GUERNSEY: I do not object to changing my description of it. That is what we called it in our discussion. That is simply the name of this paper.

At this time an adjournment was taken until 1:30 p. m.

1842 1:30 p. m. TUESDAY, *August* 8, 1911.

W. J. HAGENAH being continued on redirect examination by N. T. Guernsey, Esq., testified as follows:

Q. Mr. Hangenah, before I forget it, on your direct examination what you said with -eference to the matter of discount on securities may not be entirely clear, there may be some misapprehension about it. I wish you would state whether the books of the company take into account any items as part of the cost arising out of discount on securities.

A. My answer to that question was not clear and may lead to a wrong impression. There are charges to construction on account of discount on bonds.

Q. And where tho-e charges appeared do you eliminate them or recognize them as part of the cost?

A. I recognize them as part of the construction cost.

COURT: Do you remember what the amount of it was?

A. Not exactly, but in round numbers I think it was about $75,000. I am not sure as to that.

COURT: That was reckoned as part of the cost of construction?

A. Cost of construction, cost of getting money for the construction.

Q. I see a memorandum of another matter here that I think I might as well refer to at this time. You refer to Exhibit "B" Schedule 1, and name various items that were included in the first column headed extension improvements.

A. Yes, sir.

Q. Where did office furniture and fixtures appear?

1843 A. They are included in that column.

Q. Referring to schedule 5 where you make some adjurtments on account of construction items and depreciation as I understood you, you in answering one question referring to this amount

$7,351.92 gave that amount and then set against it there should have been a depreciation allowance. Now what depreciation allowance did you refer to as something against this $7,351.92 or the depreciation allowance which you estimated here as a necessary operating expense?

A. That bring- up the question which the Master asked this morning and I don't think it was properly explained. He asked the question in connection with another page of my report. What I meant was that taking the year 1910 I eliminated from the operating expenses for the purposes of schedule 5, the sum of $7,351.92, this amount contained $6,087.17 which represented replacement expenditures and $1,264.75 which represented capital charges. The replacement charges are excluded from the operating expenses because I added to the operating expenses an amount estimated to cover the requirements for depreciation. Since this item which represents replacement charges that year is really a part of and is included in the term depreciation if I had not excluded it, it would have amounted to a much larger charge for depreciation equal to the amount shown in Schedule 5, plus the $6,087. What I did was to make an adjustment there by reducing operating expenses by the amount improperly charged and adding to it the amount which should be charged to cover the estimated depreciation, both that covered by actual replacements, and the deferred maintenance for that year. As against the other number of $1,264.75, that might properly be charged to the construction account for that year
1844 because I have thrown it out of the operating expense, to be entirely accurate in that I should have charged to the total $1,928,000 this sum of $1,264.75 which I called improper operating expenses. For the three years over which I made that analysis the difference to the construction account because of this adjustment would be slightly in excess of $2,000.

COURT: Aside from that in your total operating expenses are included all charges and taxes and special taxes?

A. Yes, sir.

COURT: And interest?

A. Yes, sir.

COURT: And material?

A. Yes, sir.

COURT: But fixed charges are not included?

A. They are not included as operating expenses, but they are deducted before arriving at the profit and loss for the year.

Q. In your report Exhibit 23, in Schedule 2, and the exhibits which are attached to it, I think you have the statements of the operating expenses without taxes or depreciation for the year ending September 30, 1898, the year ending September 30, 1909 and the year ending September 30, 1910. Now I wish you would look at Exhibit No. 28 and state whether or not that shows a summary of the detail matters that I have referred to that are contained in your report and also the average for these three annual periods?

A. Yes, it does show the totals from my report for the year 1908 1909, and 1910.

Q. I think I made a mistake in describing this, that is I excluded taxes, it includes taxes and excludes depreciation I think?

1845 A. That is it.

Q. Now this gives not only the total operating and the total revenue and the difference for each of the three years, but also it averages the three years?

A. Yes, sir.

Q. And this is in effect a summary of these other more detailed statements?

A. Yes, sir.

Mr. GUERNSEY: We offer this Exhibit No. 28 in evidence in connection with the examination of this witness.

Defendants object to the offer for all the reasons urged to the offer of the other exhibits.

Q. Calling your attention to Exhibit No. 25, that covers I believe a five year period showing operating expenses and the revenue commencing with the organization of the present company and including the year 1910?

A. It does.

Q. Referring to the paper that is marked Exhibit No. 29 I wish you would state what that is?

A. This table shows in a condensed form the gross earnings, operating expenses, taxes, depreciation, the total operating expenses which is the sum of the three preceding items, the net earnings the miscellaneous sales, and lastly the net return as computed in this manner available and applicable for interest and profits for the period since the organization of the Des Moines Gas Company to the close of the calendar year 1910 and shows also the average of these several periods for each of the items in the table.

Q. I think you testified during your direct examination that you had verified this exhibit 24. Have you checked Exhibit 29

1846 with Exhibit 24 so as to be able to tell us whether it is a correct summary of what appears in detail in Exhibit 24?

A. It is, and is correct except for such matters as typographical errors which might have crept into it in making a copy of it. The figures which it contains are copies for the totals in the different states as contained in Exhibit 24, which I did check against the books.

Q. In 1909, the year ending December 31, 1909, there is an item in red $107,783.26 opposite net earnings from sale of gas. How does that happen to be in red?

A. That shows a deficit on the books for the year in question because of the fact that the company made a charge for depreciation that year to the amount of $264,108.78. This is the only charge for depreciation during all the years covered by this table and since this depreciation over the entire period is charged against the single year it wipes out all the net earnings and leaves a deficit on the books

for that period of $107,783.28 as opposed to the net earnings for these years.

Q. Now what is this item miscellaneous sales, what does it cover?

A. That covers revenue which the company received from transactions other than the sale of gas and residuals.

Q. And what kind of stuff does the company sell aside from gas and residuals?

A. Such as stoves and lighting fixtures.

Q. What we call gas appliances?

A. Appliances, yes, and performed house fitting services and sell to its employés some very small amounts of coal and coke I believe which those employés may from time to time want for their own domestic use. It is a facility and convenience afforded its own employés.

1847 Q. And opposite this item in each column for each period there appears the result of those transactions for that period?

A. From these commercial or miscellaneous sales.

Q. Now what is the last column here, this last column appearsong on Exhibit 24?

A. The last column is computed for the years covered in Exhibit 24, for the major items in this condensed income account.

Q. And what is the average result there as shown in this period of these miscellaneous sales profit or loss and how much per annum?

A. It is a profit, a very insignificant amount compared with the other figures. The average for this period is only $203.86 profit.

Mr. GUERNSEY: We offer Exhibit 29.

Objected to as incompetent, irrelevant and immaterial.

Q. Referring to the paper, Exhibit 30. I will ask you to state whether that is a summary of the same period, but excluding Valley Junction?

A. It is.

Q. And what does this Exhibit No. 30 contain?

A. It contains a condensed income account showing the earnings for the city of Des Moines and the earnings in Valley Junction, the operating expenses in Des Moines, or rather for the Des Moines proportion of these gas transactions, and the valley Junction proportion, the net earningsm miscellaneous sales and net return applicable to interest and profits for the period since the organization of the Des Moines Gas Company, including and up to the end of the year 1910, and the average for each year covered in that period.

1848 Q. And what appears as the average net return from the plant in Des Moines applicable to interest and profits after the deduction of the Valley Junction business?

A. The net return applicable to interest and profits after deducting the Valley Junction proportion is $112,972.03. That is the average for that period.

Q. And — what basis is the deduction for Valley Junction made, in the first place I suppose there is a reduction from the receipts.

A. Yes, sir.

Q. Explain to the Master how you got at that?

A. The gas sold in Valley Junction sold at a different rate than in Des Moines, the rate is $1.50 per thousand. I deducted from the total earnings of the company the amount representing sales of gas in Valley Junction and multiplied by $1.50 per thousand to show the Valley Junction proportion of the gross earnings. I deducted from the operating expenses the cost of manufacturing, that is the amount of gas sold in Valley Junction at the cost of manufacture as shown in the city of Des Moines.

Mr. GUERNSEY: We offer in evidence this Exhibit just marked Exhibit No. 30.

To which offer the defendants interpose the same objection that was heretofore made.

Judge CARR: We have a couple of witnesses here on a different subject whose testimony I think will not be very long, and as it is difficult *from* them to be away from their business I would ask that this witness be allowed to step aside and we will put on that testimony now.

Mr. BRENNAN: We have no objections.

Witness excused.

[End of Volume II,]

(23,459)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1913.

No. 397.

DES MOINES GAS COMPANY, APPELLANT,

vs.

CITY OF DES MOINES ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

VOLUME III.

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JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., JULY 18, 1913.

Q. And where was that bank located?
A. In Eagle Grove, Iowa.
Q. Aside from your experience in the banking business in Des Moines in what other place have you been in the banking business?
A. In Webster City and Eagle Grove.
Q. So that your entire experience in connection with banks has been in Iowa?
A. Yes, sir.
Q. Now has your business experience been continuously in the banking business or were you for a time engaged in some other business or was the other business additional to your banking business, pelase explain that?
A. No, I have been continuously in the banking business.
Q. During the time you have been in the banking business, what official position, if any, did you hold for a time?
A. Either cashiership or presidency.
Q. That is of the banks?

Mr. BRENNAN: You want to show that he was formerly bank examiner, just ask him.

Q. Were you for a time bank examiner?
A. Yes, for six years in Iowa.
1851 Q. During what years was that?
A. During 1893, 1894, 1895, 1896, 1897, and 1898.
Q. Are you connected at the present time with any other business enterprise or financial institutions in the city of Des Moines?
A. Yes, sir.
Q. What?
A. I have an interest in the Brown-Camp Hardware Company.
Q. And in what business are they engaged?
A. In whoesale hardware, jobbing business.
Q. Any other business enterprise?
A. I own a little stock in the Warfield-Pratt-Howell Co.
Q. In what business are they engaged?
A. Wholesale grocery business.
Q. Any others?
A. In Des Moines, not that I can think of.
Q. What if any official position do you hold in the Central Life Insurance Company?
A. I have some stock in the Central Life and I am a director there and treasurer.
Q. That is a Des Moines institution?
A. Yes, sir.
Q. Now any others that you think of?
A. Not that I think of in Des Moines.
Q. Now in the conduct of your business as a banker, and your other business transactions, have you become advised as to the financial interests and become acquainted with financial men quite largely in the city of Des Moines?
A. I think I have.

Q. And have you among your depositors a good many
1852 business men and other financial men in the city of Des Moines?

A. Yes, sir.

Q. And what is the fact as to whether you frequently have one or more of your depositors conversing upon the subject of business interests and financial investments and to what extent are you consulted by your various depositors along these lines?

Objected to as irrelevant and immaterial.

A. Why yes, I am consulted quite frequently.

Q. Do you know what was an or about the 1st of January of this year in Des Moines the current rate of interest upon money invested in first class securities such as first mortgages upon Iowa real estate at not to exceed half their value?

A. Yes, sir.

Q. And do you also know what was the current rate of interest upon first mortgages upon city property where the improvements were taken into consideration?

A. Yes, sir.

Q. Now what was the current rate of interest upon such securities where the real estate consisted of farm lands and what was the current rate where the mortgage was upon city property?

A. What was the rate on farm property?

Q. Yes, farm lands.

A. First mortgages on Iowa farms were bringing around six per cent the first day of January, the first of the year.

Q. Now the balance of the question where the mortgage was upon city property?

A. Well from six, seven and eight per cent.

Q. That is where the mortgage was the first lien or first mortgage on city property.

A. Yes, sir.

1853 Q. Where the improvements were considered in the valuation?

A. Yes, sir.

Q. You say that was along about the 1st of January. Has there been any change in the current rate of interest up to the present time?

A. Yes, I think there has a trifle; in Iowa farm mortgages the rate is from five and a half to six today.

Q. You think on the Iowa farm mortgages the prevailing rate is not quite so high as the first day of January?

A. Between five and a half and six to day and six the first of the year.

Q. Has there been any other change that you have noticed?

A. No, sir.

Q. I will ask you whether a higher rate of return on money is expected and usually received where it is invested in business enterprises from what it would receive where the investment is in securities of the character that you have spoken of?

Objected to as incompetent, irrelevant, immaterial and asking for an opinion of this witness upon a matter entirely irrelevant, the question is incompetent in form.

A. Yes, sir.

Q. Now will you explain why that is if you know?

Same objection.

Q. That is why it is that investors expect and usually receive a higher rate of return where they invest their money in a business enterprise than they obtain where they loan it upon first class securities.

Same objection.

A. There is a greater hazard.

1854 Q. Now is it or is it not true that the greater the hazard the greater rate of return on money is expected and usually received.

Same objection.

A. The greater the hazard the higher rate is wanted, the higher the rate that is wanted.

Q. That is, it takes an expected higher rate to overcome an i-terest capital does it where the risk is greater?

A. Yes, sir.

Q. Now referring to business enterprises what effect does the degree of safety of the business enterprise as viewed by the investing public have upon the rate of return expected from money invested in such enterprises?

A. Do you mean by that a business that is less hazardous than others as to what would be expected?

Q. No, I am not asking for amounts now but asking what effect it has.

A. I answered that, that the greater the hazard, the higher the expectation, the higher the desires for returns.

Q. And is it true that a higher rate must be expected and usually received to overcome the inertia of capital to making investments in that particular business?

Objected to as incompetent.

A. Yes, sir.

Q. How are state and national banks looked upon by the investing public of Des Moines with respect to whether they are or are not safe business enterprises?

A. I think that they are regarded as very safe investments.

Q. Is it or it is not true that state and national banks are regarded by the investing public in Des Moines as being among the

1855 very safest of business enterprises?

A. I think so.

Q. Do you know of any business enterprise in Des Moines which is regarded by the investing public and people generally as safer business enterprises than state or national bank-?

A. I do not.

Q. Do you know what was the rate expected and usually received by the investing public upon money invested in state or national banks in the city of Des Moines on or about the 1st day of January of this year? That you may answer yes or no, whether you know that?

A. Why, yes, a general idea as to the other banks, I know what our bank has been doing.

Q. This calls for whether you know, yes or no.

A. In a general way I know.

Q. Now what was the rate of return expected and generally received upon such investments, that is investment now in state or national banks state or national bank stock not confining your rate of return expected necessarily to the dividends declared and paid upon stock but speaking of it in the nature of earnings whether distributed as dividends, held as undivided profits or placed in surplus?

Objected to as incompetent and immaterial.

A. What would be ex-ected?

Q. And generally received?

A. Well I think that the average investor in bank stocks would want to see it earn at least ten per cent.

COURT: Ten per cent over and above taxes?

A. Ten per cent net, earn ten per cent.

1856 Cross-examination by R. O. BRENNAN, Esq.:

Q. I don't suppose they would object if they should get 15 per cent?

A. I don't think they would. I have always found them that way.

Q. What would be the effect, Mr. Miller, if you had nut one bank in the city and that had no competition, would that relieve the hazard in any way?

A. No, I would not think that it would.

Q. The fact that you had no competition in the banking business in the city of a hundred thousand people, would that make it a more safe and stable investment than if you had sixteen or eighteen banks?

A. I don't think it would.

Q. Would you say the element of competition is not a hazard in any sense?

A. Well that is something that—that element we have never had in the banking business, I have not given it thought. I would think that if the bank was conducted on right lines that it would make no difference.

Q. Well take it in the great financial center, suppose you had one bank doing all the business, would the investment in that bank be safer than if there were probably fifty banks transacting business?

A. I think if we had the total deposits, the combined deposits of the city of Des Moines on our present capital stock that we could make more money. I believe, I feel quite sure we could.

Q. It would be a safer investment wouldn't it?

A. I think so.

1857 Q. It would relieve the hazard of competition which is an element isn't it that enters into business transactions and investments?

A. It would be same hazard in connection with our loans to make our loans safely but I think that the profit would be greater if we had all of the deposits to handle, that is if we could handle them all as carefully as we handle the one bank.

Q. Well I understood you to say that state and national banks were the safe investments of which you knew?

A. They have proved to be very safe investments in Des Moines.

Q. The regular rate of interest in Iowa is 6 per cent?

A. 8 per cent.

Q. 6 per cent is the legal rate?

A. Yes, sir.

Q. The current rate not to exceed 8?

A. Yes, sir.

Q. Contract rate, you can contract up to 8 per cent?

A. Yes, sir.

Q. Not above that and 6 per cent in the absence of anything in the contracts statijg the amount of interest it is 6 per cent?

A. Yes, sir.

Q. About the 1st of January, 1911, when you say farm mortgages were earning 6 per cent was that anything abnormal about that time of the year, or was that the ordinary and usual rate of interest which obtained say for the year preceding?

A. Well for the past two or three years rates of interest on farm mortgages have been ranging from five and a half to six per cent. Prior to that for a little time they were loaning at five per cent. Prior to that it was even higher, six, seven and eight per cent.

Q. That is going back about 1907?

1858 A. Oh no I mean quite a ways back. That is rates of interest on Iowa mortgages have gradually dropped from 8 per cent down to five and around two or three years ago raised to six and have been higher than that.

Q. There was a slight advance and then a slight decrease again so they are back now to five and a half?

A. Five and a half and six per cent.

Q. Where it is a five years' loan, five or ten year loan they usually ger it for 5 per cent don't they?

A. No, sir; You can't do that now that *that* I know of.

Q. Do you know of any mortgages being executed at five per cent on long term loans?

A. No, sir; I don't know.

Q. Five and a half you think?

A. Yes, sir.

Q. What hazards do you take into account in fixing the rate of return?

A. Well I regard a first mortgage on an Iowa farm well placed has absolutely no hazard whatever.

Q. And what hazards are involved in the other investments?
A. Well there is the usual business hazards.
Q. The other investments to which you have referred?
A. The usual business hazards.
Q. What are some of those?
A. Well investments without security and the credits that a merchant takes or makes without security in the sale of his goods, the rise and fall of his stock on hand.
Q. And his failure to get customers might have something to do with it?
A. Yes, sir.

1859 Q. Now suppose that you had an opportunity to make an investment in a certain business in a city of a hubdred thousand people where it involved furnishing a necessity where there was no competition that would make a pretty safe investment wouldn' it?
A. I would think so.
Q. About as good as the Iowa farm wouldn't it?
A. No, sir.
Q. What would be the difference?
A. The usual business hazards.
Q. The usual business hazards?
A. Yes, sir.
Q. That is the element of mismanagement, the element of the failure *ot* get customers, all those things you think would enter into the enterprise I have suggested?
A. Yes, sir.
Q. Where it was a necessity which people must have and where there is no competition?
A. Yes, sir.
Q. And you think that the element of risk and all that, the usual hazard of the usual business would enter in do you?
A. I took that into account did you say?
Q. (Question read.)
A. Yes, sir.
Q. Notwithstanding the article or commodity furnished was a necessity and that competition was eliminated?
A. Yes, sir.

Redirect examination by Hon. GEORGE H. CARR:

1860 Q. You were asked Mr. Miller, with regard to lack of hazard and your opinion with regard to it where the business was one where there was no competition. Now let me ask you supposing that you had a business like the gas company where there is no present competition in the sale of gas but it is a public utility subject to regulation as to the price of its commodity by the public, the property can at any time under the law be taken and condemned by the public, rival institutions may be at any time put in the field by the public, where no contract can be made that is binding for the price of the commodity for a length of time, where under the corporation law of the state the capital must all be paid up in money

when issued, a loan can only be placed for two third- of the capital stock, where the rate may be fixed today and changed tomorrow at the will of the rate making body, the town council, now taking all these matters into consideration and what would — say as to whether there is and would be in the mind of the investing public very great hazards and risk in that sort of business?

Objected to as incompetent, irrelevant, immaterial, leading and suggestive.

A. I would regard the hazard as a great one, yes.

Q. In that connection I will ask you whether there is any capital in Des Moines for investment in public utilities and especially in gas companies.

Objected to for the reasons heretofore urged.

A. It would be my opinion there would be very little money in Des Moines that would be available for that purpose.

Q. And why Mr. Miller?

A. Well there would be more opportunities, there would be opportunities for better investments in my judgment.

1861 Q. Is that because of these many risks and hazards that you have mentioned?

A. Yes, sir.

Recross-examination by R. O. BRENNAN, Esq.:

Q. Do you know of any stock being for sale in Des Moines, gas stock?

A. No, sir.

Q. Have you ever heard of any being offered for sale in Des Moines?

A. No, sir.

Q. Has there ever been an opportunity afforded to the investing public as far as you know to purchase gas stocks and especially the stock of the gas company?

A. No, sir.

Q. Gas stocks are regarded as pretty staple securities aren't they?

A. It would not be so considered by me in this city with this plant.

Q. Well I mean generally speaking over the country on the stock exchange?

Objected to as immaterial, unless confined to states where the state law is the same as it is in Iowa.

A. I would regard it as being an investment with the usual business hazard.

Q. Well you know what consolidated gas is worth on the stock exchange?

A. No, sir; I do not.

Q. Have you looked up the market to see?

A. No, sir.

Q. Have you informed yourself as to the market price of the stock of the consolidated gas company in New York?

A. No, sir.

1862 Q. Or any other gas stocks?

A. No, sir.

Q. Have you attempted to inform yourself on the subject?

A. No, sir.

Q. Or bonds of gas companies?

A. I would think the bonds were a safer proposition than the stock.

Q. Do you know anything about the bonds?

A. No, sir.

Q. About how staple they are on the market?

A. No, sir.

Q. You haven't informed yourself on that subject have you?

—. No, sir; I have not looked up the stock or bond market.

Q. Now what would you say about an investment in a railroad company, railroad stocks, does that appeal to you as being surrounded with a great many hazards?

A. Yes, sir.

Q. But railroad stocks are bought and sold every day are they not?

A. Yes, sir.

Q. Pass current?

A. Yes, sir.

Q. Regarded as very staple investments?

A. Not as staple as other investments that a person might be able to select.

Q. You can usually realize on them for collateral can't you?

A. Yes, sir.

Q. If I have railroad stock in the Northwestern I could go to your bank I presume and realize on them?

A. Yes, sir.

Q. Take the 60 cent stocks, do they usually run at par?

A. I could not answer that question, I do not know.

1863 Q. And what would you say as to five per cent bonds, are they sold at par?

A. Yes; a great many of them.

Q. Have you informed yourself as to railroad stocks and bonds as to whether they sell above or below par or at par?

A. I have noticed the quotations.

Q. And what have you observed in that respect?

A. I have observed the market all the way from a very low price to a good big price.

Q. I know generally, but take 6 per cent, six and five per cent bonds what is the general average on the market for that class of security?

A. Well a good five per cent bond of a railroad in good standing ought to sell at par.

Q. Well now an investor in a railroad company his investment has th- same element of hazard with regard to regulation as an investor in a gas works hasn't it?

A. Yes, sir.

Q. They sometimes undertake to regulate rates don't they?

A. Yes, but they are — government control.

Q. Under government control?

A. Yes, that is government regulation or attempted by government regulation.

Q. That only affects interstate commerce?

A. Interstate commerce propositions but the city gas plant here is under city control.

Q. But the railroad is not subject to regulation and control by the government except in so far as it is conducting an interstate business, isn't that true?

A. Yes, sir. Otherwise by the state.

1864 Q. So that the rate when it affects the shipper within the state and it is in the state business, then it is subject to state regulation and control?

A. I don't know any state railroad that their bonds would be regarded specially valuable.

Q. What I had in mind was that the railro-ds which you say furnish a reasonably good investment are subject not only to control by the government with -espect to their interstate business but they are also subject to control by ever- state through which their railroads may run, that is true isn't it?

A. Yes, sir.

Q. That at least have the semblance of regulation in the states going on from time to time?

A. Yes, sir.

Q. Now Mr. Miller, you think it is a great hazard that the state guarantees practically a monop-ly to an enterprise. Do you think that is in the nature of a hazard?

Objected to as incompetent, immaterial and so formed it cannot be intelligently answered and for the further reason that as to gas companies the statutes absolutely prohibit an exclusive franchise.

Q. I would like to know what you consider as hazards in connection with a public utility?

A. Your thought is——

Q. Here is a gas company in the city of Des Moines for instance that claims to have approximately 180 miles of mains, spread out all over the 54 miles of territory, and in all the principal streets and situated in the streets of the city so as ti make it practically impossible for a competing company to get in here, and with a natural growth and development of the city, having tho-e

1865 things in mind you would not be much afraid of competition would you?

Objected to as assuming a fact that is not so, to-wit, the fact that it would be practically impossible for a competing company to be authorized to do business in the city, contrary to any evidence introduced and contrary to the fact.

A. I would think that if the gas company had a monopoly of the business here that it would aid them in their business.

Q. So that some of the hazards you have been speaking about would be eliminated wouldn't they?

A. Not enough of them to suit me, to make an investment.
Q. That would have some of them out of the way right there?
A. Yes, I would think that would.
Q. Now you were asked about the right of the state to regulate the rates, suppose you knew and it is the law that the rate which is prescribed must be a reasonable rate, that is to say, you are entitled to have the operating expenses and taxes and depreciation, you have got a right to earn all that and over and above that a reasonable return and the courts stand ready and willing to enforce your rights in that respect, isn't that some safeguard to your investment?
A. Would that be a help to the investment?
Q. Some safeguard?
A. Well would they guarantee a certain profit?
Q. They guarantee that you shall earn a reasonable return, earn a profit.
A. That is that you could earn a reasonable profit?
Q. I say the courts stand ready to protect you to that extent.
A. I would think that was a help, yes.
1866 Q. That would eliminate some hazards wouldn't it?
A. It would depend on how much they required for a reasonable profit for the hazard on the investment.
Q. That distinguishes the public utility from the private enterprise?
A. Yes, sir.
Q. So in effect you are guaranteed a monopoly and guaranteed a reasonable return in this state, isn't that true?
A. No, I would not think so.
Q. You would *bot* think so?
A. No, sir; I don't believe there is any state or any nation that guarantees any return that I know of.
Q. Judge Carr has asked you if you would consider all these things as being hazards. The fact that the city may regulate rates and the fact that the city cannot enter into a contract fixing rates and all those things. Now did you consider these other features in connection with your answer?
A. I considered all the features that I had in mind in connection with a business of that kind.
COURT: What was your rate that you fixed for the gas company?
A. I didn't fix any, I was not asked that question.

Witness excused.

1867 SIMON CASADY being called on the part of the complainants and sworn and examined in chi-f by Hon. George H. Carr, testified as follows:

Q. Where do you live?
A. Des Moines, Iowa.
Q. How long have you lived in Des Moines?
A. All my life.
Q. And what is your age?
A. 58 last June, 16th day of June.

Q. In what business are you engaged?
A. I am engaged in the banking business.
Q. And with what bank are you associated or connected?
A. Central State Bank of Des Moines, Iowa.
Q. What is your position?
A. I am acting president.
Q. How long have you been in the banking business?
A. I have been in the business since 1877.
Q. And it necessarily follows all of that time in Des Moines?
A. Yes, sir; all that time in Des Moines.
Q. To what extent are you acquainted with the financial men and financial institutions not only in Des Moines, but over the state of Iowa generally, Mr. Casady?
A. Oh I have a general acquaintance with the financial situation.
Q. You have among your depositors and *and* have you had during all these years many of the business men of Des Moines who are engaged in manufacturing and mercantile lines and general classes of business?
A. Yes, sir.
Q. And have you become familiar with the view taken by
1868 investors as to what are desirable investments to a greater or less extent?
A. Yes, sir; to a greater or less extent I am somewhat familiar with that.
Q. Aside from your connection with the banking business, what other business enterprises are you connected with?
A. I am not connected with anny profit making enterprise outside of the banking business.
Q. Have you any association with any of the insurance companies of Des Moines?
A. I am treasurer of the Bankers Life Association.
Q. Give the Master in a few words something of the volume of the business of that company?
A. Well it is rather extensive, I think it is one of the very few large insurance companies, not so recognized, however, by old line companies, but one of the large insurance companies of the United States.
Q. About what is the volume of its invested capital?
A. About fifteen to sixteen millions.
Q. And you are treasurer of that institution?
A. Yes, sir.
Q. Do you know what was on or about the 1st of January of this year in Des Moines the correct rate of interest upon money invested in first class securities such as first mortgages upon Iowa real estate at not to exceed half their value?
A. Yes I think I don.
Q. What was the current rate of interest upon such securities where the real estate consisted of farm lands and what was the current rate where the mo-tgage was upon city property if there was any differenfe?
1869 A. On farm loans I think that the best loans offered will range from five and a half to six and a half, that is within

the last year or two years, I think about that time. And city property it would all be owing whether the rate was higher or lower whether it was residence property or business property. Residence property would bear a higher rate than active income bearing property on our best streets.

Q. About what would be the rates on that class of property?

A. I think the residence property would average from one to two per cent higher than farm loans and the best of income property down on our best streets would equal if not sometimes be a little lower than farm loans.

Q. Has there been any change that you have noticed in the current rates of interest since January 1st upon securities of the character we have been speaking of?

A. Not much. No, practically the same. If any thing a little trifle lower in farm loans.

Q. Farm loans alone?

A. Yes, sir.

Q. Is a higher rate of return upon money expected and usually received where it is invested in a business enterprise over what is received at interest in first class securities?

A. Yes, sir.

Q. Now why?

A. Well because there is no risk in one and there is some risk in the other.

Q. Where one has the opportunity of investing his money in securities of the character we have been talking about, is it regarded by the investing public that there is any particular risk or hazard?

1870 A. None in the farm loans or finest income business property. There is more or less hazard in the residence portion.

Q. That is due to what?

A. That is due to depreciation of the houses and sometimes the temporary quality and way they are built and sometimes the desirability of the location is changed and various things like that.

Q. What are some of the hazards that affect the investing public in Des Moines that makes them demand and receive a higher rate of return upon their money before they will invest in business enterprises than they would be willing to loan their money for upon such securities as you have been speaking of?

Objected to as incompetent, because based upon an assumption that is not in the record and no attempt made to put it in.

A. Money invested in business enterprises is not always in the control of the owner of the fund unless he is in active charge of the business, therefore it is more hazard to him, he has to trust to the judgment and ability of some other party. That is one of the hazards that to me is quite pronounced.

Q. Do you think of any other?

A. If a man has control of his own property he can place it where he thinks it is safe, he feels he is exercising his own judgment, has

a good deal less risk though he may himself make mistakes as well as others, but he feels that way and willing to take a lower rate of interest and chance his money.

Q. What effect does the degree of safety of the business enterprise, as viewed by the investing public, have upon the rate of return from money invested in business enterprises?

A. Oh it has a good deal of effect. A man that feels he is
1871 going to get a pretty good return, get better than the law allows him to loan money for will take some chances. That is the reason why we speculate in gold mines and we generally lose it all.

Q. As I understand you, to overcome the inertia of capital the investor takes into consideration the degree of safety in the investment and the rate is in accordance with his view of the degree of safety of the business enterprise in which he puts his money?

Objected to as incompetent and immaterial.

A. Yes, sir.

Q. How are state and national banks looked upon by the investing public of Des Moines in respect to whether they are or are not safe business enterprises?

A. I think that the average investor looks upon them as a reasonably safe proposition when properly officered and managed.

Q. Do you know of any business enterprise in the city of Des Moines which stands higher in the public estimate in this regard or which are regarded as affording a greater degree of safety than state and national *and* banks?

A. No, I think no. I do not.

Q. Do you know, Mr. Casady, what rate of return is expected and usually received by the investing public upon money invested in state or national banks in the city of Des Moines on or about the first day of January this year? That you may answer by yes or no.

A. Yes, I think I know what is to be expected.

Q. What was the rate of return expected and generally received upon such investments not confining the rate of return expected
necessarily to dividends declared and paid upon stock, but
1872 speaking of it in the sense of earnings, whether it would be in the form of dividends or held as undivided profits or places in surplus?

Objected to as incompetent and immaterial.

A. I think that an investor in bank stock would not be satisfied with less than 10 per cent. I am speaking now of its earning power.

Q. Net earning power?

A. Yes, when I use any rate I mean net.

Q. You say that is or was on or about the 1st of January the rate that was expected and generally received upon such investments?

Same objection.

A. I could say expected, but not received.

Q. Having in mind that one who had money to invest would loan his money in the class of securities that you have been speaking of, where there was little or no hazard, now to induce him to invest his money in any business where there is this hazard that you have spoken of requires this added rate of return to induce him to make such investment?

A. Yes, sir.

Q. Now what rate in your opinion, what rate of return would the investor have to see in it, expect I mean before he could be induced to invest his money in any business enterprise rather than to loan it out in such securities as you have spoken of or loan it upon such securities as you have spoken of?

Objected to as incompetent and immaterial.

A. If one engaged in business he expects a good deal larger return than any return that can possible be expected by any loan investment. It would be all owing in my judgment to the kind of business he was about to engage in whether wholesale gro-
1873 cer or manufacturing or some other purpose. If he would engage in a bank I think he would feel very satisfied and pleased to have it ten per cent and then as much more as the institution might earn. But in a manufactory I don't think that would satisfy him at all. It would not me.

Q. Will you explain to the Master why, whether it is on account of the degree of safety that enters in?

A. Certainly it is the degree of safety and control that he has over his money. If he had it in a manufacturing enterprise he would not be able to dispose of it if there should be any unfortunate conditions surrounding that investment. He can practically always dispose of bank stocks at some figure. He can't always sell manufacturing stocks.

Q. Do you — Mr. Casady how investors in Des Moines look upon investments in public utilities and as to whether there is money available for such investments and if so what rate of return?

Objected to as incompetent and immaterial.

A. I have had opportunity to enlist people in the city of Des Moines to invest in local public utilities and have not been successful.

Q. Just why?

Same objection.

A. Oh ofr many reasons, political and otherwise. The lack of control or practical lack of control of their own affairs, putting it in the hands of a set of men that are elected by this community to control these affairs and there are very few men that have the possession of a little money want to do that. They would rather keep control of it themselves at a much smaller rate of interest.

Q. To what extent, Mr. Casady, does the law in Iowa, re-
1874 fering more particular to the provisions of our laws preventing a corporation from loaning money to exceed two

thirds of its capital invested and the provision of our law that all capital issued by a corporation must be paid in full, the provision of our law to the effect that the city council are empowered to fix rates cannot make a contract which abridges in any way their right to change the rate at any time they see fit, the fact that the city council may at any time it sees fit make or change a rate, the fact that other enterprises of a like character may be authorized to operate in competition, the fact that the city may at any time it sees fit condemn the property, take it away from the owners, those and some other provisions that may occur to you, what effect do those provisions of the law have upon the investor in determining whether an investment in a public utility like a gas company is a hazardous investment?

Objected to as incompetent, immaterial and it ought to be at least assumed in a court of law that the laws are just and reasonable and ought not to be the subject of expert testimony to impeach them in any way.

A. It does not help him to get investors from the outside public.

Q. The question was what effect would that have on a man, local investor?

A. It has a bad effect. It does not help to get money to invest in these corporations.

Cross-examination by Hon. H. W. BYERS:

Q. Is it your idea that because the laws proceed on the theory that the managers of property shall deal honestly makes a hazard of the business?

1875 A. I don't get what you are at.

Q. A law that requires the capital stock to be paid up does that make a hazard to the business?

A. No, that is not a hazard to the business.

Q. You don't include that in your question?

A. He had so much there I said it didn't tend to induce people to put money into a business.

Q. A law like that is an insurance to good business isn't it?

A. Well I would not enter into a discussion of that because I am not opposed to men paying for their capital, not at all.

Q. Now leaving that because that is a subject that ought not to be brought up especially in a hearing of this kind, you have been an investor practically all of your manhood years?

A. Yes, sir.

Q. And your investments have been for yourself and for your friends and customers?

A. Yes, sir.

Q. And you have confined your investment opportunities as I understand it and as I know something about it, to banking securities largely?

A. To a great extent. I have invested in other things.

Q. But that has been the principal line of your operations.

A. Yes, banking and to real estate.

Q. And to Des Moines all of that time?
A. Practically all the time, some little outside.
Q. Now what would an investor have to pay for a share of bank stock in Des Moines that is netting ten per cent every year?
A. I am unable to answer you that question. I can give you quotations on bank stock, but I can't tell you what it would pay today because I don't know what they are all doing. I know what they would have to do in bank stock in my bank, if you want
1876 me to make it a personal matter I would do that.
Q. Very well, let's do that.
A. He would have to pay $200.
Q. You until very recently were in the Iowa National Bank as one of the managing officers?
A. Yes, sir.
Q. And that bank stock, do you remember what it was sold for on the market?
A. I left there about two and a half years ago and sold mine for 125.
Q. And what was it paying?
A. Paying 6 per cent.
Q. Six per cent per annum?
A. Yes, and earning more.
Q. It is true isn't it that farm loans are being made right now for as low as four and one half per cent?
A. Not to my knowledge. I pass upon possibe thirty or forty thousand a day and I have not made one short of five and a half for two years.
Q. Well you passed on one just the other day for Mr. Caldwell $24,000 loan for a section of Cass County land, do you remember that?
A. Yes, sir.
Q. Was that loan made?
A. Yes, I think so.
Q. Five and a half?
A. I can't tell you*b* the rate, but it bore so it would give the loan company five and a half. The investor now gets five and a half.
Q. The Bankers Life Insurance Company gets five and a half?
A. Yes, sir.
Q. What is the rate at which improvement certificates in
1877 the city of Des Moines are issued for?
A. They are issued for six per cent.
Q. No lower than that?
A. None that I know of.
Q. How did they sell on the market here?
A. All the way from two to four per cent discount.
Q. What is the usual rate upon the bonds issued by the city of Des Moines?
A. I am not familiar with that. I never made any bid upon any bond of the city of Des Moines or Polk county.
Q. They just recently sold an issue of bonds?

A. I think they went about four, four and fourth or four and a half.

Q. They bring a little premium at that figures?

A. That I know nothing about, I never deal in that kind of stuff.

Q. Mr. Brennan calls my attention to the fact that the city hall bonds drew four per cent and were sold at a premium, you don't remember that?

A. No, sir; I don't know anything about that.

Q. What is the usual rate for the use of money in Des Moines say now at this time or on the 1st of last January for short time loans?

A. In Des Moines I don't believe it has been less than six per cent, may have been some individual cases as low as five and some paper has been sold here by our merchants for less than that in the so-called commercial or note broker's hands. I am speaking of local banks now.

Q. I guess you didn't quite understand my question. What I wanted to know is what is the usual rate over the counter?

A. Six per cent.

1878 Q. For short time loans?

A. I said some few cases down as low as five.

Q. Those loans at six per cent over the counter, sho-t time loans, they average small do they not?

A. They will average all the way from a thousand to five thousand and higher.

Q. Wouldn't it be nearer right to say that they would average much smaller, I mean short time loans——

A. I am speaking of three and four months loans, nothing over four months.

Q. About what would they average in amount?

A. Oh I could not tell you that. We try to get fair size notes rather than little bits of ones.

Q. Rather than small ones?

A. Yes, sir.

Q. What is the usual rate, I mean over the counter at the banks for long time loans?

A. Do you mean loans on real estate.

Q. No, commercial loans.

A. What you call long time loans?

Q. Six months or a year?

A. Six per cent.

Q. If one of the business men of this city wanted to borrow $20,000 of your bank and would furnish you gilt edge paper to secure the loan, say for ninety days, what would you charge for it?

A. We would charge him today six per cent. We might for one or two cases as a favor loan to him at five or five and a half, but would not be anxious to do it.

Q. Isn't loans made as low as four?

1879 A. Yes, some three or three and three quarters, but not by ban-s in Des Moines, not to my knowledge. By the commercial brokers on the outside who live in Chicago or Kansas City or St. Louis who will come here to some of our big firsm and say to

them can't you use thirty or forty thousand dollars' worth of our money we will make you a rate of three and a half or three quarters or four per cent.

Q. That has been done quite frequently?

A. Done all the time. Then turn around immediately and try to sell us that same paper.

Q. There was such an occasion as that not very long ago representing a large transaction?

A. That takes place here possibly every thirty days in the year except maybe the fall.

Q. What is the lowest rate charged on a loan of that kind?

A. I think three and three quarters this summer. On top of that you must add a quarter for each renewal which makes it possibly four per cent for a year. Each time you renew that loan a quarter per cent brokerage makes it about four per cent each year.

Q. If I understood you correctly, but I don't care to take any more of the time than necessary, but if I understood you correctly you have a preference for bank stocks as investments?

A. No, I have not. I have a preference for stocks that will pay a good return.

Q. That I suppose would be true of everybody if they knew just which ones.

A. By the way some people act I don't think that is so.

Q. That may be true of a good many of us but I want to get at your reason if you can for saying that investments in state
1880 and national bank stocks are preferable. If I understood you you measure the sucurity of the investment largely by the kind of control, that is, if you have control of it yourself it makes a good deal of difference to you?

A. Yes, I like it a little bit betters.

Q. Now people who invest in bank stock don't have control of the business do they?

A. No, but they are deucedly careful where they shall invest.

Q. Banks are subject to the same hazards of management that any other business is?

A. That is very true, but they are careful. You can't sell all national banks and state bank stocks in this town on the same basis.

Q. Isn't this the reason why bank stock is preferable to investors here and that is because it pays a larger return than some other investments?

A. No, all of them don't.

Q. Well of course if they didn't then they are not all good investments?

A. Well I said to you that it required, the bank required individual handling.

Q. Isn't this the better way to put it to say investments in state and national banks, that the preference if there is any in the way of investments is stock whether it be banks or what it may be that have a good strong earning power and that earning continued throughout a period of years, isn't that the better way to put it?

A. Well that is all right a stock that carries a good earning power right along has its value.

Q. Now isn't that exactly the way investors determine the
1881 question as to the desirability of the investment by the earning power.

A. I would think so, yes.

Q. And the permanency of the period over which it will earn money?

A. Yes, sir.

Q. And as I take it you do not want to be understood as stating here that state and national bank stock- are any more desirable or any safer or any better than different stocks in other enterprises with the same earning power and the earning continued over substantially the same period.

A. Generally with a great many people who are seeking investments and relying upon someone to advise them I think that they would much prefer a bank stock if it was all right and properly conducted than they would a manufacturing or commercial enterprise such as a store.

Q. Of course it might be an enterprise subject entirely to changing conditions that any one——

A. Some that prefer that kind.

Q. Take all other enterprises with earning capacity which covers substantially long years and is as permanent as state and national banks, in all such cases, an investment there is just as good as a bank?

A. Well a great many people have to be shown in that respect, they would prefer a bank if everything else was equal and prefer a bank for a little less in earning power.

Q. That is because they have more confidence in a bank?

A. Possibly that is true. I am not able to say, but that is true I think.

Q. Take it here in the city of Des Moines for instance, you don't think that bank stock is any safer than stock in Younker
1882 Bros., do you?

A. Yes, I do. There is a great deal more earning power in Younker Bros. than in any bank in town.

Q. It depends on the earning power?

A. I say the earning power in Younker Bros. is much more than any bank in town and yet I prefer the bank and 90 per cent of investors who have a thousand or five hundred dollars or a few thousand dollars to invest prefer it.

Q. I have an impression from your testimony and what we all know about you, that you have a very distinct preference for investments along banking lines, that has been your life work?

A. I want to bring the idea to you there if I can make myself plain to you that a commercial house such as Younker Bros., is far more hazardous than any bank in the city of Des Moines.

Q. What makes it so?

A. Because of the change in style, caprice of the people who have to patronize the store in order to make profits there and all that sort

of thing. They may make a great big profit and they may make a very small profit, but they are very successful men.

Q. Then we get back to the proposition that the desirability of the bank investment is due to the fact that the rates that may be charged for money are very well fixed and settled, they are regula- and continuous and the business is carried on with little expense.

A. I don't think so. The expense is enormous.

Q. Well I expect that is so. The business of the bank, the rates are pretty well fixed, you can tell pretty well the first of the year about what you are going to have at the last of the year, taking the average——

A. No, we are always glad at the end of the six months that we have as good a six months and hoping the next six month-
1883 will be equally favorable. We can't tell because we don't know -hat we will do, we don't know what sort of condition we will run up against. Nobody saw what was to happen in 1907.

Q. Not absolutely, but you can take the last twenty five years of your bank life and run over it and it will average about the same year in and year out with a little steady upward tendency, isn't that so?

A. Well I will have to confess I have been extremely fortunate.

Q. The reason now why money turned out over the bank counter is a better investment than in some of these other enterprises, is because the return is more certain and more definite and more fixed, isn't that so?

A. Well it suits me I said and I think it is to a great lot of people who have a small amount of money to invest.

Q. So if you were called upon to advise a friend of yours with reference to an investment and would go and examine the property if it was an enterprise that engaged in manufacturing, or whatever it might be over a period of years, and if you could find that the output was regular and steady and that every year the fixed charges were about the same and the net earnings were increasing steadily every single year of the history of the enterprise, the upward tendency being a considerable per cent every year over the preceding year, that kind of investment would appeal to you wouldn't it just as a banking business?

A. Well I would want to know a little bit more than what you state. I like what you have stated very well, but I would want a little more than that, want to know what kind of a manufacturing plant it was and who was controlling it.

Q. What difference would it make if it was making money?

A. It might be once you got your money in you might not get it out.

1884 Q. Suppose they were making a commodity the demand for which constantly increased instead of diminished, and everybody will concede that, and the history of the plant itself will show that that has been true, then what would you say, wouldn't you say that it was pretty good stuff?

A. Well I guess I can understand what you are leading to, but if you would ask straight out what it was, I would advise them to keep

out of it, I would indeed. I never told a friend in my life to do that, advise my friends to keep away from it.

Q. You must remember you are just a witness here.

A. I know it, but I would advise it on that business.

Q. You are volunteering something wholly improper now.

A. I beg your pardon. I would rather you would ask me straight out so I would know the situation.

Q. No, we will proceed just as counsel and witness, and I am going to treat you right.

(Question read.)

A. I can't change my answer to that because I must know more definitely what the institution is, what it manufactures and what it is going to pay.

Q. Suppose it was the manufacture of soap?

A. Then I would have some doubts about it because I would not know *e*nough about soap and would want to investigate all the things entering into the manufacture of soap.

Q. If it had earned and returned a large per cent on the investment every year for twenty five years and the prospect for the future was equally as good as the past you would not regard that as of very great importance?

A. Yes, I would regard it as important, but would not invest in it without I knew the facts more in detail than you have
1885 stated and what the future control might possibly be.

Q. Suppose it was standard oil?

A. I would not touch it. I had an opportunity and would not touch it.

Q. You would not touch it at all?

A. I could have made money by doing it too, but I didn't touch it. I am glad you spoke about that because there is an actual case in my life.

Q. You are giving your answers entirely on likes and dislikes?

A. No, I may use the wrong word in giving these answers, but I would not advise it.

Q. You would have made a lot of money off of the standard stock?

A. I possibly would have made some money, but I don't advise it, I don't want it.

Q. One time you say the question of the desirability of the security is settled largely by its earning power and the regularity of the earnings. Now you say that there are some kinds of stock you would not to-ch at all even if the earnings were ever so large.

A. I think some stock I would not touch, I am speaking now more of the advice I might give people who ask me.

Q. The last six years do you know of any gas company stock that has been for sale in this town?

A. I can't answer you whether I have had any correspondence on that subject in six years or not, but I have had inquiry as to whether there was any market for gas or water or street railway stock in this town.

Q. In the last six years?

A. In the last six years, I don't recollect whether I had gas or not,

but I have had information upon these subjects, I suppose I
1886 have had about gas, but I can't tell you that.

Q. Do you know what the market value of gas stock is in Des Moines just now?

A. No, sir; I do not.

Q. To sum this whole matter up if I understand you the securities of the city of Des Moines, its bonds sell on the market for at least four per cent, its improvement certificates sell readily on the market for six per cent——

A. Those are not city of Des Moines six per cent, they are against the abutting property.

Q. They are improvement certificates?

A. They are against abutting property, that is the same as a tax none of us *bet* away from that.

Q. They go at about six per cent do they not?

A. Yes, with a little discount.

Q. And loans over the bank counter, short time loan*ds* go at six per cent?

A. Yes, sir.

Q. Loans for six months or nine months go about six per cent?

A. I don't know about nine months, don't make them.

Q. Well six months.

A. Four to six months.

Q. And farm loans five and a half to six?

A. Five and a half to six per cent.

Q. Depending on the size of the loan somewhat?

A. Size of the loan and quality of the farm.

Q. And brick business blocks in the business center of Des Moines carry loans at from four and a half to five and a half?

A. Not good brick blocks, but income bearing property I don't care whether it has anything on it or not, just — it is good in-
1887 come property.

Q. I mean that kind of property carries loans at four and a half to six per cent?

A. Yes, that is right.

Q. And money plentiful at that for that kind of security?

A. Yes, reasonably so.

Q. And commercial paper like the notes of the buisness concerns of Des Moines have sold within recent months and during recent years at as low as three and one half per cent.

A. You must add commission, that means four per cent, that is average four per cent.

Q. Residence properties carry loans in the market where they can be carried readily at from five and a half to seven per cent.

A. Six and a half to seven and a half.

Q. And that has been true for several years in Des Moines hasn't it?

A. I think so.

COURT: Let's see if I understand you. You don't advise investment in anything that is speculative?

A. None whatever.

COURT: Whether standard oil or anything else.

A. Whether standard oil, railroad stocks or anything of that character.

Q. You put railroad stocks in with standard oil too?

A. They are speculative pure and simple.

Q. Speculative, you mean by that they fluctuate in value constantly.

A. Yes, sir.

Q. Day in and day out and for that reason you call them speculative?

A. Yes, sir.

1888 Redirect examination by Hon. GEORGE H. CARR:

Q. You told General Byers to get any stock in your bank a man would have to pay $200 per share.

A. Yes, sir. I didn't mean to quote a price in this audience.

Q. Is that based on any assumed earning capacity of the bank? Or upon the actual earning capacity of your bank?

A. Actual earning capacity of the bank.

Q. The way the question was put there was an assumption of the earning capacity and your answer was based not upon the assumption of that capacity but on the earning power?

A. Earning power of that bank so far, yes.

Q. You were asked about the bonds of the city of Des Moines, some issue of bonds being placed at four or four and a half per cent. Do you know where that money came from that went in those bonds?

A. No, I do not.

Q. Do you know whether it came from the local market?

A. It did not come from Des Moines, came from the east I imagine, I don't know where.

Q. What is the fact, speaking generally, about rates of interest on money in the east as compared with rates of interest on money in Des Moines?

A. Oh very much less.

Q. You were asked as to whether there was any market for gas stock in Des Moines. I think you said you didn't know. Do you know of any market in Des Moines for the Des Moines Gas Company's stock?

A. No, I do not.

Q. There is no market htre that you know of?

1889 A. Not that I know of.

Q. You were asked as to advising a friend to make an investment. Suppose a friend should come to you for advice as to investing money would you advise such a friend to invest his money in a business enterprise instead of an investment of the money in securities of the character of which you have spoken, first mortgage loans on real estate unless the rate of return was materially higher than the rate of return that could be obtained upon the investment in the real estate security?

A. If it came from a widow or from a guardian, I would advise putting it in securities as a sure thing. If it came from some man a little inclined to speculate I would tell him to take a chance if he wanted to.

Q. Would you advise him to invest in a business enterprise at the same rate of interest he could invest in the securities?

A. No, sir; I would not.

Q. How much greater rate of interest would you have to see in the prospect before you would advise a friend to invest his money in a business enterprise.

Objected to as incompetent, not re-examination and immaterial.

A. If he had a very big clear return offered him and could take the chances on that I might advise him but I might hesitate under such circumstances?

Q. Yes, but how much would you have to see or know from your experience and knowledge over and above the return that he could receive upon the investment in the securities we have been talking about before you would advise him to invest it? Take the banking business for example which you recognize as among the very safest of business enterprises?

1890 A. I would not want to invest my money in a bank unless it paid me 10 per cent net with a prospect of more in addition.

Q. Would you advise a friend to invest in a bank unless there was good assurance of such a return rather than to invest his money in real estate securities?

A. I would.

Q. And how about the investing public?

A. The investing public I don't think -ant to take very much chance.

Q. And it would require that much then?

A. Yes, require a very material advance.

Q. To move money into that line of investment?

A. It would a very material advance.

Q. You have been asked placing municipal bonds or attempting to place municipal bonds in Des Moines. Do you know anything about the history of the effort to place telephone bonds in Des Moines?

A. I know something from hearsay about that. I never invested any. Quite a number of my friends did.

Q. And what is your information on the subject?

Objected to as incompetent and immaterial.

A. It was not satisfactory to those who invested in the bonds.

Q. You drew a comparison between some personal enterprise like Yonker Bros., and banks in your cross examination and you have stated that investors have to expect a return of at least ten per cent net on investments in banks and you have also stated that in your judgment the investing public looks upon banks as the safest of business enterprises or at least as safe as the safest. Now will you

tell the Master what in your judgment the investing public in Des Moines would have to expect in the way of a return upon in-
1891 vestments in a well conducted business enterprise of a commercial character or manufacturing enterprise.

Objected to as all gone over, a mere repetition.

Q. Would it or would it not be something in excess of the amount it would have to see in a bank investment or what would it be?

A. I would not think they would want to expect, I should think they would want to be assured of at least ten per cent.

Q. In any kind of business enterprise?

A. Yes, sir.

Q. That is to say before the investing public could be induced to put their money in a commercial or manufacturing enterprise they would have to see assurance of at least a ten per cent net return upon their money.

A. That is my judgment.

Q. You have already said something on the subject and I want to put this question to you, how does the investing public in the city of Des Moines look upon investment in public utilities in the city of Des Moines with respect to the desirability of such investments?

Objected to as incompetent, the witness is incompetent to testify what the public thinks about it.

A. I don't think they look upon them favorably at all. I think they rather avoid them.

Recross-examination by Hon. H. W. BYERS:

Q. You said Mr. Casday that your friends' experience in the telephone business was not entirely satisfactory. Some of them have had the same kind of experience with banks, haven't they?
1892 A. Oh sure, yes. Banks have not proven always successful.

Q. The only reason I inquire about it is to see if I can tell how you measure desirability of stock. You say your own stock you would not think of selling for less than $200 a share. Now what is its earning power, about in round numbers?

A. That was gone over pretty thoroughly at the legislature last winter. I am perfectly willing to answer. We have not earned less than 20 per cent for quite a number of years. I won't say whether any more or not, but we have not earned less than 20.

Q. That is evidently a very satisfactory investment?

A. Very satisfactory, yes. I am pleased with it and delighted.

Redirect examination by Hon. GEORGE H. CARR:

Q. You stated that the investing public in Des Moines did not look favorably upon investments in public utilities. I wish you would state to the Master why that is so.

Objected to as incompetent and immaterial.

COURT: I think you fully explained that. If there is anything else you want to say about it, you may add it.

A. I don't think of anything else.

Q. Nothing occurs to you to add to what you have already said?

A. I don't know of anything I can add except I don't like anything that I don't have some control over. I don't want to leave it in the hands of men living down there at the city hall much as I respect them as friends otherwise, I don't think they are fellows that handle my business as well as I can myself.

COURT: In other words you want to boss your own job?

A. Want to boss my own job and I don't think they know as much about it as I do if I am conceited about it.

Witness excused.

1893 W. J. HAGENAH being continued on redirect examination by N. T. Guernsey, Esq., testified as follows:

Q. Calling your attention to this paper marked Exhibit No. 31, I will ask you Mr. Hagenah, whether you have checked that so that you can say whether it is a correct statement of the working capital as shown by the books of the company on the 31st of December, 1910?

A. This table is taken from the balance sheet of the company at the end of 1910 and shows correctly the item of material and supplies, accounts receivable, cash, advance insurance and the item of accounts payable.

Q. Those are the items contained in the statement aside from the additions and subtractions?

A. Yes, sir.

Mr. GUERNSEY: We offer Exhibit No. 31.

Same objection.

Mr. GUERNSEY: I think that is all except we have three or four other exhibits that have not been sufficiently rechecked that I will recall Mr. Hagenah to offer.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

1894 Wednesday Morning Session.

AUG. 9, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant resumed as follows:

WILLIAM J. HAGENAH, re-called for further re-direct examination, examined by N. T. Guernsey, Esq., testified:

Q. Mr. Hagenah, I call your attention to the paper marked Complainant's Exhibit 32, and ask you whether that is a compilation showing the gas sales in Des Moines for the first six months of the current year as shown by the books of the Company?

A. It is; and it also shows the sales in Valley Junction for the same period.

Q. And these gas sales in Des Moines shown by that are divided in what way, or classified in what way?

A. They are classified to show the sales to general consumers through regular meters and prepaid meters as well as for public street lamps, private lamps and the amount used by the Company.

Q. Then what is there here in the way of comparison between the sales for each of the first six months this year and the sales for the corresponding months last year?

A. There is a comparison between the sales of the first six months of 1911 with each of the corresponding months in 1910, the column showing the increase in cubic feet and the per cent of increase for each month.

Q. Where the months do not happen to have the same number of days in each year, does that in any way affect the returns for *such* particular month?

A. It does not over a period of six months.

Q. It would for a single month?

1895 A. Yes, the meters might not be right for single days, but over a period it would be absolutely accurate.

Complainant offers Exhibit 32 in evidence. To this offer defendants make the same objection heretofore made to the other exhibits.

Q. I call your attention to the paper marked Complainant's Exhibit 33, and headed, "Statistical Date" and ask you whether you have checked this with the books of the company except as to population?

A. I have checked this statement with the books and records of the company, with the exception of the column showing population.

Q. And is it correct?

A. It is.

Complainant offers Exhibit 33 in evidence.

To this offer defendants make the same objection heretofore made to the other exhibits.

Q. I call your attention to the paper marked Exhibit 34, headed "Detailed Statement Gas Sold in Cubic Feet June 30, 1888, to December 31, 1910." Have you checked the total sales shown under the column headed "Totals" in this exhibit with the books of the Company?

A. I have.

Q. Are they correct?

A. They show the facts as they appear on the Company's books.

Q. You have not had time to check those other columns yet?

A. Not all of them.

Mr. GUERNSEY: Now I would like to ask counsel for the City whether they want to have those details checked or not. The totals have been checked and the items have not been checked.

Mr. BRENNAN: If the totals have been checked I suppose 1896 that is all we need at this time.

Mr. GUERNSEY: If you desire to have those other items checked, you let us know?

Mr. BRENNAN: Yes, sir.

Complainant offers Exhibit 34 in evidence. To this offer defendants make the same objection heretofore made to the other exhibits.

Q. Now, Exhibit 35, Mr. Hagenah, is a detailed statement, is it not, of facts with reference to meters that are summarized in one of these other statements which you have identified here?

A. Yes, sir.

The MASTER: The per cent of increase, what is that reckoned on?

A. The preceding year.

Q. This exhibit to which your attention is just called you believe to be correct?

A. Yes, sir.

Compainant offers Exhibit 35 in evidence. To this offer defendants make the same objection heretofore made to the other exhibits.

Q. Referring to the paper marked Exhibit 36, I wish you would state what that is, headed "Percentage Schedule."

A. That table contains an analysis in unit terms of the population, the amount of gas sales, the revenue and the operating expenses per meter per mile of main and per capita.

Q. Beginning when?

A. Covering the years from 1887 up to and including the year 1910. It shows the comparison of increase in the column of gas sales.

Q. Under population it shows two columns, first the population per meter for each year and then the population per mile of 1897 main for each year?

A. Yes, sir.

Q. What does M C. F. mean?

A. Number of thousand cubic feet.

Q. And under this general heading "Gas Sales" it shows in the first column the per cent of increase, in the next column the sales per capita, in the next column the sales per meter, and the next column the sales per mile of main?

A. Yes, sir.

Q. Then under revenue, it shows under the first column the revenue per thousand cubic feet for the year in question, the next column the revenue per meter, the next column the revenue per capita, the next column the revenue per mile of main?

A. Yes, sir.

Q. And under operating expenses it shows under the first column the burner cost per M C. F. What do you mean by burner cost?

A. That is the cost to the customer and is used to distinguish unit cost from the holder cost; I mean the cost to the customer, not the price.

Q. If I may put it in the language of a non-expert, does it mean the cost of the gas delivered at the burner where the customer uses it?

A. It does, but in this table it does not include all the expenses because the depreciation had not been added to the cost up to that time, which should be added.

Q. Well, the next item, headed "Per Meter" is the same cost for each meter?
A. Yes, sir.
Q. The next item is the same cost per capita?
A. Yes, sir.
1898 Q. And the next is the same cost per mile of main?
A. Yes, sir.

Complainant offers in evidence Exhibit 36. To this offer defendants make the same objection heretofore made to the other exhibits.

The MASTER: You included all expenses in this burner cost, I understand, except depreciation?
A. Yes, sir.
The MASTER: And that 1911, the burner cost of the gas is a little less than two-thirds of one dollar?
A. Yes, excluding depreciaation.
The MASTER: In other words, 66.47 *of* .6647.
A. Yes, sir.
The MASTER: That shows an increase over the previous year of nearly four per cent.
A. No, nearly four cents.
The MASTER: And over the year preceding that nearly seven cents?
A. Yes, sir.
The MASTER: And over the year preceding that, 1908, of nearly two cents?
A. Yes, sir.
The MASTER: A little over two cents.
A. Which year are you comparing now?
The MASTER: 1908.
A. Well, it is 2.4 over 1908.
The MASTER: That includes all the material used in the manufacture of gas, the labor and salaries?
A. Yes, sir, manufacturing and salaries.
1899 The MASTER: It does not include any interest?
A. No, sir; nor depreciation.
The MASTER: It includes taxes?
A. Yes, sir.
The MASTER: And includes the special tax of two per cent.
A. Yes, sir.
The MASTER: Everything in included except depreciation?
A. Everything except depreciation and the interest on the investment.

In connection with the examination of this witness we want to offer from the classification of gas accounts by the Public Service Commission, Second District in the State of New York, Section G281 on page 15, Section G282 on page 16, Section G283 on page 16, Section G284 on page 16, Section G285 on page 16, Section G286 on page 17, which sections are as follows:

Mr. GUERNSEY: If there is no objection I will hand the book to the reporter and let him copy the sections into the record instead of reading them at this time.

Mr. BYERS: What is the name of the book?

Mr. GUERNSEY: It is entitled "State of New York, Public Service Commission, Second District. Uniform System of Accounts for Gas Corporations. Adopted October 21, 1908." It purports to be published by authority of that Commission.

Defendants object to the offer as made as being incompetent, irrelevant and immaterial.

Mr. GUERNSEY: Do you object to the identification of the book?

Mr. BRENNAN: No.

The foregoing offer reads as follows:

1900 "G281. Engineering and Superintendence.

"Charge to this account all expenditures for services of engineers, draftsmen, and superintendents employed on preliminary and construction work, and all expenses incident to the work, when such disbursements cannot be assigned to specific construction.

NOTE.—When employees enumerated above are engaged in work not chargeable to construction, their pay and expenses shall be charged to the specific work on which engaged."

"G282. Law Expenditures During Construction.

"Charge to this account general expenditures of the following nature incurred in connection with the construction of a gas plant; namely, the pay and expenses of all counsel, solicitors, and attorneys, their clerks and attendents, and expenses of their offices; printing briefs, legal forms, testimony, reports, etc., payments to arbitrators for the settlement of disputed questions; costs of suit and payments of special fees, notarial fees, and witness fees; and expenses connected with taking depositions; also all legal and court expenses.

"When any of the expenditures above enumerated can be charged directly to the account for which incurred, they shall be so charged and not to this account. Expenditures in connection with the acquisition of the right of way or other land shall be charged to account No. G110, 'Land Devoted to Gas Operations.' Law expenditures in connection with the organization of the corporation shall be charged to account No. 101, 'Organization.'"

"G283. Injuries During Construction.

"Charge to this account all expenditures incident to injuries to persons when caused directly in connection with construction of gas plant and equipment; proportion of salaries and expenses of physicians and surgeons; nursing and hospital attendance, medical and surgical supplies, artificial limbs, railroad and carriage fares for conveying injured persons and attendants; funeral expenses (including payments to undertakers); proportion of pay and expenses of claim

adjusters and their clerks, and pay and expenses of employees and others called in consultation in relation to the adjustment of claims coming under this head; also witness fees and amount of final judgments."

1901 "G284. Taxes During Construction.

"Charge to this account all taxes and assessments levied and paid on property belonging to the corporation while under construction and before the plant is opened for commercial operation, except special taxes assessed for street and other improvements, such as grading, sewering, curbing, guttering, paving, sidewalks, etc., which shall be charged to the account to which the property benefited is charged."

"G285. Miscellaneous Construction Expenditures.

"Charge to this account the salaries and expenses of executive and general officers of a gas plant under construction; clerks in general offices engaged on construction accounts or work; rent and repair of general offices when rented, with the office expenses; insurance during construction; also all construction and equipment items of a special and incidental nature which cannot properly be charged to any other account in this classification.

NOTE A.—This account may include a suitable proportion of store expenses when such expenses are not assignable to specific materials.

NOTE B.—This account shall not include any costs of organization, or any costs or discount connected with the issue and disposal of stocks, funded debt, or other securities, and commercial paper."

"G286. Interest During Construction.

"Charge to this account the interest accrued upon all moneys (and credits available upon demand) acquired for use in connection with the construction and equipment of the property from the time of such acquisition until the construction is ready for use. Interest receivable accrued upon such moneys and credits shall be credited to this account. To this account shall also be credited discounts realized through prompt payment of bills for materials and supplies used in construction unless such discounts are credited to the particular bills."

1902 Complainant also offers in evidence from "Uniform Classification of Accounts for Gas Utilities prescribed by the Railroad Commission of Wisconsin, November, 1908, dated Madison, April, 1909," beginning on page 79 with the paragraph headed, "Miscellaneous Construction and Equipment Expenditures"; also the next paragraph headed "Salaries During Construction;" also the next paragraph on page 80, headed "Office Supplies and Expenses during Construction"; also the next paragraph on page 80, headed "Stationery and Printing During Construction"; also the final paragraph on page 80 and running over on page 81, headed

'Law Expenses During Construction;" also the paragraph on page 81, headed "Injuries and Damages During Construction;" also all the paragraphs on page 82, headed respectively, "Insurance During Construction," "Taxes During Construction," "Interest During Construction"; also the paragraph at the top of page 83, headed "Discount on Bonds During Construction"; also the paragraph on page 83 headed "Miscellaneous Expenditures During Construction."

Mr. GUERNSEY: We ask that the reporter copy this from the book instead of reading it here; it won't take so much time and it will be easier to get it accurate.

The defendants object to the offer as made as incompetent, immaterial, irrelvant to any issues in this case.

Mr. GUERNSEY: There is no objection as to the identification of the book?

Mr. BYERS: I guess the book is all right; I haven't seen it.

The foregoing offer reads as follows:

1903 "Miscellaneous Construction and Equipment Expenditures.

Accounts shall be opened as indicated below to which shall be charged all expenditures incurred during construction and before the operation of the gas utility, of the character indicated by the title of the accounts. If expenditures are incurred for the service of engineers, superintendents and other technical skill of an advisory character during the process of construction and such items are not chargeable to any of the following accounts, there may be opened the account engineering and superintendence.

The following detailed accounts should be kept of the expenditures during construction:

"Salaries During Construction.

Charge this account with the salaries of all general officers and general office assistants during the period of construction of the gas utility plant and up to the production and sale of gas.

"Office Supplies and Expenses During Construction.

Charge this account with the cost of all office supplies and expenses incurred during the process of construction of the plant up to the time of manufacture and sale of gas, such as messenger and janitor service, rent of premises occupied during construction, water, light, heat, telegrams, exchange on remittances, etc.

"Stationery and Printing During Construction.

Charge this account with the cost of all stationery, printing, postage, blanks, record books, etc., used during the construction of the plant and up to the time of manufacture and sale of gas.

"Law Expenses During Construction.

Charge to this account all law expenses incurred during the period of construction of the gas plant. Charge with the salaries and

expenses of counsel, solicitors and general attorneys, their clerks and attendants, etc., Charge also with the cost of law books, printing briefs, legal forms, testimony, reports, fees and retainers of the general counsel and attorneys, court costs and payments of specific notarial and witness fees, expense of taking deposition, and general law and court expenses during construction. Expenses of arbitrators of disputed points will also be charged to this account. When
1904 any of the expenditures above enumerated can be charged directly to the account for whose benefit they were incurred, they shall be so charged and not to this account. Thus, expenditures in connection with the acquisition of land to be occupied by the works shall be charged to the appropriate construction account. Law expenses in connection with the organization of the utility, whenever such can be definitely ascertained, shall be charged to the account organization.

"Injuries and Damages During Construction.

Charge to this account all damages to or destruction of property other than that owned by the utility, caused directly in connection with the construction of the gas works, and all expenses incident to injuries or death of employés and other persons for which injuries or death the utility is held liable or in the settlement of which claims allowances are made. This includes such items of expense as judgments for damages and plaintiff's court costs; proportion of salaries and expenses or fees of physicians and surgeons, expenses of undertaker, nurses and hospital expenses, medical and surgical supplies, contributions to hospitals during the period of construction of the plant, transportation of injured persons and wages and salaries paid to employés while disabled. The salaries and expenses of the utility's claim agents, adjusters and their assistants while engaged upon settling such claims arising during construction will be charged to this account. The compensations of the general solicitors or counsel of the utility while engaged in the defense and settlement of damage suits will also be charged to this account.

"Insurance During Construction.

Charge to this account all premiums paid to insurance companies for fire, casualty, boiler, fidelity and other insurance covering risks during construction of the gas works and its equipment.

"Taxes During Construction.

Charge to this account all taxes and assessments levied and paid on property belonging to the gas utility while under construction and before the plant has begun operations, except special assessments for street and other improvements, such as grading, curbing,
1905 paving, sidewalks, sewer, etc., which shall be charged to the account to which the property benefitted has been charged.

"Interest During Construction.

Charge to this account the interest accrued upon all money and claims payable upon demand acquired for use in connection with the construction and equipment of the gas works from the time of such acquisition until the works are ready for commercial use. Interest receivable accrued upon such moneys and claims shall be credited to this account.

"Discount on Bonds During Construction.

To this account may be charged the discount on bonds sold for construction purposes. The entries to such account shall be made with sufficient detail to permit of their identification and shall show the date when the bonds to which the discount applies were authoriezd, when issued and when sold, to whom sold, the amount realized from the sale, the purpose for which the bonds were sold, and the application of the proceeds; all of which details will be called for by the Railroad Commission.

"Miscellaneous Expenditures During Construction.

Charge to this account all expenditures incurred during construction not includible in any of the preceding accounts."

Mr. GUERNSEY: I think that is all of the re-direct.

Recross-examination by Mr. BRENNAN:

Q. Now, Mr. Hagenah, I want first to take up with you this morning a little more in detail with respect to your table shown at page 43 of Exhibit 23; I want to have a clearer understanding of your method of arriving at the value of this investment as illustrated by that table. Now the first figures in the left hand column 1906 purport to be the value of the plant at the beginning of the year; I presume that refers to the twelve months ending June 30th, 1887?

A. Yes, sir.

Q. Which you show to be $308,983.

A. Yes, sir.

Q. Now, as I understand it, Mr. Hagenah, the amount of $308,983 is the amount which you found on the books of the company which represented the value of the plant at that time?

A. Plus working capital at that time.

Q. That is what I wanted to know, whether in that $308,983. there is included therein anything as working capital and if so, please state how much?

A. The amount $308,983. included an allowance for working capital. The cost of the plant at the close of the period June 30, 1886, was $295,383 as shown in the last column in the table marked Schedule 1, Exhibit B in my report.

Mr. BYERS: That was at the end of the year 1886?

A. 1886. And the amount included in the $308,983 contains therefore the difference between that amount and the total cost of the plant at the end of 1886, showing an allowance for working capital to the amount of $13,600.

Q. That is $295,387.

A. $295,383.

Q. So then with respect to that item $308,983 includes $13,600 as working capital?

A. Yes, sir.

Q. And the $295,383 represents the actual value of the plant at the close of the year as shown by the books of the Company?

A. No, sir; it represents the cost of the plant at that time.

Q. The cost of the plant at that time and nothing else?

1907 A. No.

Q. Now, I wish you would explain to us just how you arrived at the $13,600 as working capital during that year.

A. That was obtained from the balance sheet of the company on June 30, 1886, and was determined from the analysis of the current assets and current liability items as of that date.

Q. Do you have that balance sheet set forth in your report Exhibit 23?

A. No, sir.

Q. Or in any schedules identified by you and offered as exhibits in this case?

A. I have not.

Q. Have you a copy of the balance sheet among any papers or memoranda?

A. No, sir.

Q. What book or ledger is that in, do you know?

A. For 1886.

Q. The ledger of the company for the year 1886?

A. Yes, sir; the ledger and the journal and cash books; the regular set of books of the company at that time.

Q. Could you have a copy of this balance sheet to which you have referred, at the opening of court this afternoon, Mr. Hagenah?

A. I don't know whether I can or not.

Q. If the company will furnish that for you, you will bring it in?

A. Yes.

Mr. READ: If the court please, the experts of the city have those books now and they can make copies if they desire to.

Mr. BYERS: The city is not furnishing proof in this case.

Mr. BRENNAN: We want the balance sheet, if your honor please, to check up on this question here of working capital, to ar-

1908 rive at his analysis of this item.

Mr. READ: It is contained in the books and you have the books in your possession. What do you want us to do, make a copy for you?

Mr. BYERS: Yes.

The MASTER: Of course, if they insist on it, they are entitled to have that balance sheet.

Mr. READ: The books can be brought in.

Mr. BYERS: We simply want a copy of the material he used in arriving at this working capital.

The MASTER: How large a thing is it?

A. Well it would take some time to prepare the balance sheet and go over the records.

The MASTER: I am talking about the one you have got this from.

A. It would take quite a little while.

The MASTER: Did you compile it?

A. I got the balance sheet as of that date from the Company's books.

The MASTER: The balance sheet you got from the Company's books, is that lengthy?

A. Yes, it would necessitate going over a good many accounts.

The MASTER: Either I don't understand the witness or he don't understand me. I understood him to say that he got a balance sheet; you made a balance sheet from the books?

A. I did not make the balance sheet myself; the records were shown to me and the trial balance and the balance sheet was verified to be correct with the books and from the trial balance and the books at that time I computed that the working capital was reasonably $13,600.

The MASTER: How large was the balance sheet?

A. As to the number of items it contained?

1909 The MASTER: Yes.

A. I don't suppose it contains over 12 or 14 items; though the details of those items before they are put into the balance sheet——

Mr. BRENNAN: We want this balance sheet.

Q. Turn to page three of your report and tell the Master whether this balance sheet you refer to is any more complicated than the copy which is used there?

A. No, it is not; but it is a good deal of work to prepare one.

Q. Didn't you have it?

A. Yes, I had it; but I haven't got it now.

Q. Where is it?

A. They have it.

Q. When did you turn it back to the Company?

A. When I completed my work.

Q. So that you returned this balance sheet to the Company as they had given it to you?

A. Certainly; all their records I turned back to them; they did not belong to me.

The MASTER: If you can make a copy of it readily, you may do so. If you can not, you might bring the books. The books as I understand it are in your possession, in the possession of your experts now.

Mr. BYERS: The books are in the office of the company and our experts are working on them there.

Mr. READ: Any book or record the Company has in its possession can be brought down here.

Mr. BRENNAN: Here is a witness in connection with the report made here. The company supplied him with a balance sheet for this year and he says he returned that to the Company.

1910 We are entitled to a copy of that balance sheet which was furnished to this witness.

The MASTER: Here is the idea: Under his calculation they want from this witness that balance sheet, if that can be readily gotten.

Mr. READ: They have been told that these records from which this witness got this information was in the books.

The MASTER: That may take a long while. Of course this table is made up figuring the value of this plant. It is not a reproduction method at all and does not approximate it. As I understand it, it is figuring eight per cent interest including depreciation from the time it starts until *the* it closes at eight per cent.

Mr. BRENNAN: And including losses at eight per cent.

The MASTER: Yes, sir. In other words, it gives them a new capital every year and they get eight per cent on that original investment exclusive of depreciation; that is what it amounts to. It amounts to giving them eight per cent compound interest upon the original capital and keeping that capital whole from start to finish.

The WITNESS: You are right, with the addition that the capital so increased is reduced by the surplus profits over and above eight per cent.

The MASTER: I am talking about the net.

Mr. BYERS: You can see how important it is to have every memoranda the witness used.

Mr. BRENNAN: We want to serve notice that we shall not excuse this witness until we are furnished a copy of that balance sheet.

The MASTER: Yes, under his theory that is pretty important.

1911 Mr. READ: I thought the matter was closed some time ago; if it can be found, we will produce it.

Q. Now, Mr. Hagenah, then the item to which I have called your attention $308,983 you say is the cost of the plant at that date plus the working capital?

A. Yes, sir.

Q. Why were you so careful to correct me when I was using the word value of the plant and say it represented cost?

A. Value and cost are two entirely different things.

Q. Then why in this table do you use the word value in lieu of cost; you say, value of plant at the beginning of the year?

A. That may probably not be the very best word for the beginning of the account; I never thought of it in that particular sense.

The MASTER: You mean book value?

A. Yes, the proper figure there is really cost. The word value is used as determined from the ledger entry.

Q. Was there anything out of the way with my designation of the value of the property at that date plus working capital?

A. Using the word value alone is not exactly right; if you had said book value, it would have been correct.

Q. Did you use book value in this report?

A. I did not put that head in; it would have been correct to put it in.

Q. Let me ask you this: Is the amount, namely, $295,383 is that the book value of this plant at that time as shown by the books of the company?

A. It is not.

Q. Then what is it?

A. That is the cost of the plant at that time.

Q. I said book value of this property at that time?

1912 A. It is not; it is the cost of the property at that time. I have eliminated the elements——

The MASTER: He says book value all the time.

A. He is asking if it is book value; it is not. It is the cost; the book value was more than I have here.

Q. Let us see; It is not the book value of the property then plus working capital, or $308,983.

A. No, sir, it is the cost of the plant, plus working capital.

Q. The actual construction cost of the property, plus working capital as shown by the company's books?

A. Yes, sir.

Q. Then you must substitute in that column there, instead of heading it value of the plant beginning of the year, you should say the cost of the plant at the beginning of the year.

A. Yes, that would be more nearly correct. The heading for the table is not technically correct. It is book cost plus working capital.

Q. Now, let us go to the next item, eight per cent on value of plant to-wit, $24,719, just how do you figure eight per cent interest; upon the $308,983?

A. Yes, sir.

Q. So that you are charging eight per cent interest on the book cost of the property and eight per cent interest on the working capital?

A. Yes, sir.

Q. That is your theory?

A. Yes, sir.

Q. There is no question about that now?

A. Yes, sir; using the word value in the sense I have just explained.

Q. You carry that same theory all the way through, do you?

1913 A. Yes, sir.

Q. Down to and including the year 1910?

A. Yes, sir.

Q. Now, in the next column, additions to plant including working capital, now does that mean the book cost of the additions to the plant?

A. It does.

Q. Plus working capital?

A. Yes, sir.

Q. Now, how do you arrive at the amount of working capital which is contained in that item?

A. I explain that in this manner: I analyzed and had assistants in the analysis of the current assets and liability items for all the years from 1887 to 1910. To take the working capital entirely from the balance sheet is open to criticism, as I explained yesterday, because the balance sheet at a particular date may not be typical of the company's condition through the year. The stock account may be abnormally low at that time; the cash account or balance may be very low or high. The amount of bills and accounts receivable and payable may be entirely abnormal, either too high or too low, and for that reason the balance sheet taken at any one particular date only shows the condition of the plant on that one date and is not necessarily typical of the company's condition throughout the year. In making this analysis for this series of years I found that the working capital some years increased substantially and some years very little; there were instances when there were actual decreases; whenever there was a decrease, the year or two following showed a very large increase.

Because of these elements being variable and fluctuating with
1914 the condition of the company in its operation. In order to take the individual items of increase and decrease of the working capital for each year, which would only complicate the table and not change the result materially, I took the average increase in working capital from year to year, which would bring me at the end of my table in 1910 to the amount of working capital as shown by their balance sheet and my analysis at the close of 1910. I then added this average increase of working capital to the actual increase in the cost of the property, that is additions to the plant during the year, and that average increase in the working capital added each year to the additions to the physical property amounted, as I recall it, to $5,000.

Q. Now, Mr. Hagenah, I want to take up, at the beginning of this first row of figures additions to the plant including working capital which you say is the book cost and you had the record to show what these additions were. You say you examined them and you were able then, were you not, to tell from the balance sheet of that year about how much was necessary as working capital from year to year, you had everything there?

A. I could determine that.

Q. That is what I want you to tell us. How much of that $1,894. represents the book cost of additions to the plant and how much represents working capital?

A. I will explain the statement that in one table of working capital the depreciation is at the rate of two and three-fourths per cent at which the working capital is computed at an average increase of $5,500. In another table where the depreciation is computed at two and a half per cent it is $5,000; which table do you have there?

1915 Mr. BYERS: I have the table here which provides for depreciation at two and a half per cent.

Q. It is $18,394. on two and a half per cent?

A. Now if you will refer to schedule 1, Exhibit B, of my report you will find the cost of the additions to physical property in 1887 is shown in the last column on that page and is $13,393.52. Now if you will add to that which represents the cost of the additions to the physical plant the average increase in working capital over this period of years it will give you $18,393.52 throughout this table.

Q. I am speaking now of the working capital that was actually used that year?

A. I have not used an actual working capital that year. I explained that by saying that I used an average increase over 23 years.

Q. So you took the working capital, that is you averaged it up and spread it over the 23 years?

A. Yes, sir.

Q. And then you added to the book cost of construction—and then it is your theory that on that increase, that the stockholder in addition to earning eight per cent on the actual book cost of the property, he is entitled to earn eight per cent on this working capital as well?

A. I think he is entitled to his return on the working capital investment as well as the physical property.

Q. Notwithstanding that, in order to evolve this method, you are required now to go back and strike an average over a series of years?

A. Yes, sir.

Q. And that is true with respect to your depreciation account. In other words you found no record that the company had

1916 charged off anything for depreciation?

A. I did find they had.

Q. Except the year 1910, is that true?

A. No, sir.

Q. When did they first open an account for depreciation?

A. They had no permanent account on their books for depreciation. They made a charge to profit and loss and credited the construction account amounting to, as I recall, $264,000.

Q. I have that in mind: I want to know how if prior to that item you found any record or account kept by this company to represent depreciation?

A. I don't recall any.

Q. Would you have thought there was one?

A. I would always look for one; I didn't find any in this case.

Q. You didn't find one, and none had been kept and you took it upon yourself to substitute something which the company did not carry in connection with their business?

A. In order to arrive at this fair value I had to compute in so far as I could with the material at my disposal, what I felt was a fair rate for depreciation, there having been no charge for it, so I added that amount.

Q. I say you went back to 1887 and averaged it up and fixed up their depreciation account that would coincide with this theory?

A. Not necessarily coincide with the theory.
Q. The company had nothing as far as you could see?
A. No, sir.
Q. Do you know what the company may have done in that respect prior to 1887?
A. No, sir.
Q. Would that be important to know?
1917 A. It would be interesting and would have some element of importance. But not of material important-; I can see where it might have some bearing, but not very materially.
Q. Why not?
A. Because the plant at that time was very small.
Q. How long had it been in operation?
A. I don't know.
Q. Did you take the trouble to find out?
A. I don't know how many years the company was operating prior to 1886.
Q. I notice in your report to the sub-committee of the council of the city of Chicago you were very solicitous to set forth an historical page in your report?
A. I did.
Q. You regarded it as important in that inquiry, did you not?
A. Yes, sir.
Q. But in this case you think it is not important?
A. I treated the historical question in Chicago in an entirely different way; the situation is not analagous at all.
Q. If this company had been in existence, say 20 years prior to the time you start in this report, and you had no records as to how the depreciation had been taken care of, would you assume that none had been carried?
A. I wouldn't assume anything if I had no records. I began my analysis with the earliest records of the company, furnished me in response to my request, and that shows the plant value as shown by my analysis, the plant cost of the books $295,283.
Q. In order to get at this plant value and in order to average a reasonable amount for depreciation suppose you wanted to find what that would be, say in 1910, what it should have been, or in
1918 1909, how many years would you have to go back in order to verify your theory and to find out what the rate should be?
A. I wouldn't have to go back very far to find what the rate for depreciation should be; that has very little to do with the present age of the plant.
Q. The amount you allowed for that purpose, that is, independent of the present age?
A. The rate is calculated to reproduce the plant as today and the rate is applied on the cost new of the property.
Q. You were not concerned in the years 1887 up to 1906, were you?
A. For the purpose of this table I was very much.
Q. Why?
A. It was necessary to compile this table.

Q. Why was it necessary in order to compile this table you should go back to 1887, for instance?

A. I don't see how I could find out the earnings and operating expenses and costs for the early years without going back to those years.

Q. That forms an important part in the making of this table then?

A. Certainly.

Q. If you had valuable information prior to 1887, it would be equally as important that you had that information?

A. Certainly; if I had information for the earlier years I would have used it. I asked for it and I found the books were not available. But it diminishes as you go back, because the plant is always growing smaller each year.

Q. You start out with an arbitrary figure showing the plant value at $308,983.

A. No, sir; that is a book figure; there is nothing arbitrary about that.

1919 Q. Now, we get up to eight per cent, additions to the plant, including working capital for six months, and that amounts to $736 I believe?

A. I have not the same table you have. I haven't a copy of that exhibit here. (Witness refers to table.) Yes, $736.

Q. Now that would be four per cent on the $18,394, representing the book value of the additions to the plant including working capital.

A. Yes, for the period of six months as opposed to a year.

Q. The interest on additions to the working capital, that is still carried into the other account on which the stockholder is entitled to a return on the investment?

A. Yes, sir; he is entitled to a return on the investment at the moment it is made.

Q. The next item, operating expenses, $51,753. Now can you analyze that item and tell us how you arrived at that amount?

A. That is taken from the company's ledger for that year.

Q. Can you tell the Master just what items are included as operating expenses for that year?

A. It includes charges under the general division of manufacture and distribution, commercial and general expenses; the manufacturing expenses include the cost of the boiler and generator fuel, oil, purifying material, labor at the works, and the maintenance, both labor and material items at the works. The distribution accounts include labor and the expense of superintending and operating the distribution system and the expense of material incurred and consumed in such operation and both the labor and material expense in maintaining the distribution system, constituting the mains, services and meters, and the commercial expense such as salaries,

1920 demonstrators, solicitors, advertisements and would generally include meter readers, the delivery of bills and would verge closely in with the general expenses of the operating salaries in the office, except that the company then was small and I doubt whether they had a general office. That would also include salaries of general officers and expenses of rent, insurance and taxes.

Q. Did you endeavor to check each of those items of the detailed information which went to make up the operating expenses?

A. Those items appear in the closing entries of a journal and the ledger for the different accounts.

Q. Upon that you say the stockholder is also entitled to earn eight per cent and that is added to these other figures?

A. It is, in the theory of the preparation of this table; as an abstract proposition that would not be so.

Q. But you did for the purpose of this table, in arriving — what you term the value of the investment, you do have the stockholder earning eight per cent per annum upon $51,753. representing operating expenses?

A. There is no column in this table to show eight per cent on the operating expenses; I just added the operating expenses; not eight per cent on the operating expenses.

Q. Now, then depreciation at two per cent on depreciable property $5,997. that is arrived at in what way?

A. By taking a rate of two per cent on the depreciable property included in the cost of the plant; that is, the items embraced in the first column.

Q. This $5,997. what did you do with that?

A. I considered that operating expenses.

Q. Is that carried into the same total?

A. It is carried into the table that appears in the next column.

1921 Q. This total of $410,582.

A. Yes, sir.

Q. Now then that $410,582, represents the book value?

A. Book cost.

Q. All right, book cost. At the end of the year of June 30, 1887, plus working capital, $24,719, eight per cent on the value of the plant including working capital, is that right?

A. Using value as I have explained it in connection with this table.

Q. You used value in Exhibit 26?

A. The word value is there but the title is not technically correct.

Q. And plus $18,394, representing the book cost or additions to working capital, and plus eight per cent interest on the book cost additions to plant including working capital for six months, and plus operating expenses, plus $5,997 for depreciation, you have a total of $410,582.

A. Yes, sir.

Q. From which now you deduct the gross earnings and then you say that the book cost of the plant at the close of the year was $331,789.

A. No, it was not the book cost now. It now becomes the investment value of the plant at the end of that year.

Q. What is the distinction or difference, if any, between the book value of the plant at that time and the value of the investment; I wish you would make that clear.

A. The book value contained elements which I did not think were proper amounts to be included in arriving at the book cost of

the property. The book cost was considerably lower than the book value. I had used book cost. That amount represents actual cash expenditure by the company for the property devoted to the public use in the gas utility. The value of the investment now
1922 under the theory of this table means that the amount $331,789, which is larger than $308,983, at the beginning of the year, includes the book cost of the physical property the working capital and the element representing the losses which the company has sustained on the operations of that year by reason of its failure to earn eight per cent in the operation of its business.

Q. So that you would add to the items which I have included in the general question, where we get the total of $410,582, the losses?

A. The loss is not determined until you consider the earnings of the business.

Q. You deduct the gross earnings?

A. Yes, sir.

Q. And then if the company has fallen below eight per cent that you capitalize and add that in and that is the value of your investment?

A. Yes, sir.

Q. Then you take that along the same way year after year and follow it out along the same way?

A. Yes, sir; wherever the company fails to earn eight per cent, the amount by which it fails I consider an addition to the cost; the amount by which it earns over eight per cent I use to wipe out earlier losses the investment has sustained.

Q. Did you prepare a table on a six per cent basis?

A. I did not.

Q. If you had made one and used six per cent instead of eight it would have made considerable difference in the computation?

A. Yes, sir.

Q. If you had used ten per cent you would have gotten considerable of an increase?

1923 A. A very much larger figure.

The MASTER: The total gain in what you term the value of the plant or investment value of the plant as I figure it during the 24 years is $1,080,125?

A. That depends upon the table you are using.

The MASTER: I was wondering whether one-fourth of that gain would represent the difference between that and six per cent.

A. I don't know that.

The MASTER: I don't either.

Mr. BYERS: What exhibit did your honor read the figures from?

The MASTER: I used the figures, his book value without any interest is $1,928,000, added to it $108,000 gives you $2,056,016. That subtracted from the total gives you the gain. I just wondered if one-fourth represented the difference between that and six per cent compound interest to date.

Q. Will you refer to exhibit 36 that you have had there?

A. Yes, sir.

Q. Now we take up the operating expenses without depreciation; I see for 12 month- ended December 31, 1910, the cost of producing gas at the burner is .6647; is that right?

A. Yes.

Q. Now, have you gone over these operating expenses pretty thoroughly for that year and the four years preceding?

A. Yes, sir; I went over them for 1910 myself; and for the few years preceding my assistants went over them and I checked their analysis.

Q. You know what it has cost the company in fact for operating expenses, from an analysis of the books?

A. Yes, sir; I have seen all the vouchers charged during that year.

1924 Q. I notice in the year 1909, the next year just preceding, the cost of manufacturing gas and delivering it to the burner was .6256?

A. Yes, sir.

Q. For ten month- which is computed on the unit basis?

A. Yes, which would not make any difference.

Q. If we take the 12 month- ended December 31, 1910, and deduct from the operating expenses the $10,000 that I believe you said was charged to operating expense and was paid to the United Gas Improvement Company——

A. Paid to certain officials of the United Gas Improvement Company who were officials of this company.

Q. Suppose we take that item from the operating expenses, and suppose we deduct also, I think it was $5,600, that was charged to operating expenses, representing litigation, and then we deduct $2,000 from operating expenses for donations to the Greater Des Moines Committee, and we have then $17,600 to be deducted from the operating expenses for that year; and I wish you would tell us, making these deductions, what difference it would make in the cost of manufacture and delivery of gas to the burner and the people?

A. I have not the figures here, but it would make quite a reduction in the unit cost.

Q. Couldn't you approximate it or just figure it out for me?

A. Give me the amounts you want deducted.

Q. The first item is $10,000, Engineers U. G. I. The next item is $5,600 representing litigation; and the next $2,000, representing donations, being a total of $17,600.

A. I got it 63.1 cents per annum; I haven't checked it back.

The MASTER: Is that the year 1910?

1925 A. Yes.

The MASTER: That reduces it from 66.4.

A. Yes, to 63.1.

Q. Now, Mr. Hagenah, I want you to take up with me Exhibit 27. I want to understand that a little more fully. It is the schedule comparing capital expenditures as per the books with the average of engineer's present value. Now expenditures as per books the first

item under the title of real estate I see that is left in blank, and the next column expenditure as per books, redistributed $54,815.26; now how is that redistributed?

A. I will have to go back and refer again to my report to the company. In that case I combined land and buildings under the general head of extensions and improvements. I did that for simplicity and merely for convenience so that I could get all the detailed items on one page of paper. For the purpose of comparing this analysis with the engineer's figures who had a similar detailed classification I had to separate land and buildings from extensions and improvements. I also found this one item $285,000 charged as a single item and covering several classes of property including some land and a holder and some mains and an oil storage tank. No value was placed upon these different items other than the inference that they were all covered by the single charge of $285,000. In order to make my figures so that I could compare them with the engineer's I had to distribute that $285,000 over the different classes so that what I thought was a fair amount for the holder would go into the extension improvements alone and would appear separate and I would charge a certain amount to the distribution system and dispose of the oil tanks. That is a matter of my own judgment. I did not change the total.

1926 Q. The $285,000 you undertook to distribute, you had some detailed information with respect to it?

A. Only from general information, no written information, because there is no analysis of the company's books as to the value of those different items.

Q. Is it possible for you to produce an itemized statement of the items or a statement of the items showing this $825,000?

A. I could not produce a statement. I do not recall that it includes any other items than those I mention—some land and some distribution of the mains in the village of Valley Junction, a one million cubic foot holder and one hundred thousand gallon oil storage tank.

Q. Did you look up to see when that holder was constructed?

A. No, sir.

Q. Have you received any information on that?

A. I have talked about that; my recollection is it was constructed shortly preceding the consolidation of the Capital City Gas Company with the Valley Junction property, making the Des Moines Gas Company on March 1, 1906. I don't remember even whether it was in the course of construction at that time.

Q. As I understand it, it was one of the principal items entering into this $285,000.

A. Yes, sir.

Q. I believe you attempted to explain it on the theory that it may have been constructed without having been duly authorized under requisition?

A. I am not trying to explain it; I can't see how that condition might have existed.

Q. Did you have any explicit information which suggested that thought to you in this case or was that your mere conclusion?

1927 A. A little more than a mere conclusion. In the journal entry covering the consolidation of this property March 1, 1906, there is a reference to this transaction and in my inquiry as to what the $285,000 included, the information was given to me that it included this holder which was being constructed and did not appear on the books of the Capital City Gas Company, but since the consolidation was made at this time it was embraced in this one lump charge that included the several other items.

The MASTER: In other words, this $285,000 represents work that was begun by the companies before the transfer to the Des Moines Gas Campany but had not been entered upon their books yet because not completed?

A. It had not been completed; whether it was actually being constructed by the Capital City Gas Company I am not sure, but it certainly was constructed for their use; any way it had not appeared on their books but was a construction for their use.

The MASTER: That was your information?

A. Yes, sir.

The MASTER: You had no personal knowledge of it?

A. No, sir.

The MASTER: The books do not show it?

A. No, sir.

Q. That is merely your conjecture and your analysis of the situation?

A. Based entirely upon the information I got.

Q. Do you know what real estate was included in the $285,000?

A. I was told, but I do not remember. I was given a description of it in the terms of lot numbers in Scott and Dean's Addition, Fort Des Moines.

1928 Q. Real estate situated within the corporate limits of the city of Des Moines, or was it situated in Valley Junction?

A. I am not familiar with the city, whether Scott & Dean's Addition is in Des Moines or not.

Q. If it was in Scott & Dean's Addition it is in the city of Des Moines.

A. Then it was in the city of Des Moines.

Q. Do you know how much was included in that amount for property in Valley Junction?

A. No, sir; there was no expression to show the cost or any of the value of those items. It was just one charge covering the several items and class of property.

Q. Well, going now to the item of $54,815.86, that is the amount of real estate as distributed?

A. By me solely as a matter of my own judgment.

Q. I want to ask you, how much did the books show had been paid for real estate?

A. I don't recall the figures. I did examine them; there were purchases back as far as 15 or 18 years ago, for which the company did not pay a very large amount; I recall I considered it a very small amount at that time. There was one charge for real estate to the amount of $25,000.

Q. It was important, was it not, in distributing it?

A. Yes, it was important.

Q. To know what the company had actually paid for real estate?

A. Yes, and in arriving at this $54,000 I went back and recalled those specific items and inquired about them. This table you understand was completed after I came to Des Moines and from that information shown on the books placed a general value for a particular part of this $285,000 and I placed it at $54,815. I had no
1929 record information on that point. It is merely my own judgment.

Q. Do you have much confidence in this Exhibit 27 as to the results?

A. Yes, I have every confidence in it, because if I had been wrong in placing the amount here of real estate by several thousand dollars, placed it too high or too low, the correction appears in one or the other; it cannot be very material; I have not changed the total; it is merely a question of distribution of certain classes of property. It would affect the last column in this table in this way: if I had entered $50,000 as the value of real estate instead of $54,000 there would be a difference in the item of $188,000 by $4,000; then if I had stated it lower by $4,000 I would not have had to charge it to the other; the total is not in any way affected.

Q. Have you any memorandum or data from which you made up this distribution?

A. No, sir; I have not. The first column is based upon my report and the second is based upon the first with my distribution of the $285,000.

Q. You have no memoranda of that detailed information?

A. I simply make the deduction for you now if you wish, just deducting the first column from the second.

Q. In making up this table, Exhibit 27, did you make it up without having a memoranda?

A. No, it was based upon the three engineers' reports and the books——

Q. I understand you; the expenditures as per books redistributed, that is the item I inquire about?

A. I have no data on that that.

Q. Where did you have the data?

1930 A. I can work that out in about ten minutes.

Q. Very well, do it.

A. (Witness computes.) All I do is just deduct the first column from the second in my report schedule 1, Exhibit B, the item $285,000 which represents the general charge covering several classes of property but not separated by the company, is included in the first column under extensions and improvements for the year 1907. Therefore to make a distribution of that item I would have to deduct from the total extensions and improvements at the close of 1910, which amounts to $806,380.46 and appears as such in the first column of Exhibit 27, and would have to deduct such amount as in my judgment it is not proper to include under extensions and improvements. I said this general charge to the best of my knowledge cov-

ered land, one million foot holder, one hundred thousand gallon oil storage tank and certain distribution property in Valley Junction, as to the amount I have no knowledge. For the purpose of this table I distributed by deducting from the $806,380.46 the amount of $155,000.

Q. Where did you get that?

A. That represents my judgment as to the value of the property not to be charged to extensions and improvements.

Q. How did you get at that $155,000—what is your detailed information on that?

A. I am not through with my answer.

Q. I beg your pardon.

A. That $155,000 must then represent the investment or cost of the property transferred representing mains, meters and services. I distributed that amount also according to my own judgment and put $105,000 as addition to street mains; $25,000 as an addi-
1931 tion to the meters account; and $25,000 as an addition to the services account. After deducting this $155,000 from $806,380.46 I had a remainder representing in my judgment the extensions and improvements to the amount of $651,380.46 which includes a certain amount of real estate, and I have separated that as shown in the second column into the two items of real estate $54,815.26 and $596,565.20 the totals balance.

Q. So that it all gets back to the question of judgment?

A. It is judgment as to the distribution of the $285,000.

Q. And the reliability of your information?

A. Yes, the amount which I left in the extension and improvement account, amounts to $130,000 and would cover the value of the million foot holder and the real estate. I have no engineering experience and knowledge and do not know what the million foot holder is worth other than what the engineer's reports contain and I did not consult those.

Q. Did they help to make this table?

A. No, I talked with Mr. Randolph as to what he thought was the fair value of such a holder. He did not tell me as I recall it what he put that item in his report at. I did not know from him what his appraisal was; as I recall he said it would range from about a hundred thousand to $110,000.

Q. What I wanted to ask you is this, Mr. Hagenah, that the figures which you have used and the information upon which you relied in assuming those figures, forms the foundation for your whole structure?

A. Not at all; it is merely a question of the correctness from and engineer's standpoint of the distribution of $285,000 of which
1932 I know several items, but had no accurate knowledge as to the value.

Q. But the $285,000 is assumed by you to be correct?

A. I have no assumption; it is figured on the books.

Q. It is assumed by you to be the amount actually expended and properly charged?

A. Yes, sir.

Q. Did you see any vouchers for it?

A. No.

Q. Then you must have assumed it was correct?

A. Yes, it is property taken up in the consolidation.

Q. If it should turn out that your assumption was erroneous, would that make any difference?

A. If my assumption is erroneous as to that, it would make a difference in the amount in which my assumption was erroneous.

Q. And it would also make a difference in making up your judgment as to the amount to distribute from these other items, if the information turned out to have been a mistake?

A. To the extent of your assumption it would affect it, yes.

Q. In other words, the judgment which you express in these figures is predicated upon the information which you received either from the books or the verbal statements made to you by others?

A. The verbal statements and information as to the manner of the transfer and the existence of the property, as to the physical existence of the property; there is a million foot holder there and a 100,000 gallon oil tank.

The MASTER: Mr. Randolph puts it at $135,600 without any deduction?

A. I have not seen Mr. Randolph's figures.

Q. What figure did you use representing that item of holder?

A. $130,000.

1933 Q. This $130,000 which you assume was the price for the holder, did that include the storage tank as well?

A. Yes, it would in my assumption.

Q. Now, the next item is extensions and improvements. I understand you take $806,380.46 that is taken from this same column in schedule 1 Exhibit B?

A. Yes, sir.

Q. Now you decrease in the next column that amount to $596,-565.20 and by what method do you arrive at that amount in your distribution?

A. That amount is reduced because I have taken out of it the allowance for real estate, and what I thought was a fair proportion for mains, services and meters.

Q. Do you know how much you took out for real estate?

A. No, I do not recall.

Q. Have you any detailed information?

A. Not with me, no sir.

Q. Have you at the hotel?

A. No, this material here of the real estate item is made up of my recollection of the charges on the ledger for the different items, that is land, not real estate, of which one charge was $25,000 and others of a very much smaller amount, $500 amounts of that general size; I don't remember all of them, and I added to that a certain value for a certain part of this $285,000 which I was told included some real estate, in what I described as land in Scott & Dean's Addition.

Q. Then again, you relied upon the verbal statements of others as to the real estate?

A. Yes, sir.

Q. And as to the other items, as to the existence of those items?

1934 A. Yes, sir; I have not visited the plant with the particular idea of visiting those one *are* two parcels of land and I could not identify them without a survey and record.

Q. This table, Exhibit 27, represents your individual efforts based upon the books company and information furnished you by officers or employés of the company, or the engineers who have testified on behalf of the complainant company in this case?

A. In part, and only to the extent that I consulted them as to the proper distribution as to this general charge of $285,000. The other parts are matters in this case and I did not change any figures on that.

Q. Take for instance your judgment as to how much you would eliminate from the $806,380.46 representing the expenditures on the books for extensions and improvements, you deducted therefrom the amount of $203,815.26 and then you proceeded to take that amount and distribute it over the other items?

A. I did not deduct as much as you say. The deduction which I did make is not the figure you gave, but $155,000.

Q. You gave $806,380.46 that is the expenditure for extensions and improvements as shown by the books?

A. Yes, sir.

Q. The expenditures by the books redistributed, $596,565.20 so that you had $203,815.26 to place somewhere else, did you not?

A. Yes, part of that branches into real estate which is the new account appearing in the second column; the amount which I had really taken out of the $806,380.46 is $155,000.

Q. My question was that you had that amount which you distributed?

A. Yes.

Q. Now, as to meters, in the first column I find the amount

1935 to be $187,755.93.

A. Yes, sir.

Q. And you have increased in the next column the amount to $212,755.93 increasing it about $25,000; is that $25,000 a part of this $203,815.26?

A. Yes, sir.

Q. What was the basis of your judgment in arriving at that conclusion?

A. Just conversations with officials and people acquainted better with the property than I was.

Q. That is true of your entire exhibit here, number 27, as far as distributing this $285,000 is concerned.

A. Just only to that item; where there is no record information; I know the general property which was transferred and I used my judgment as to the amounts. You see I used round numbers; it does not affect the final result.

Q. You did not have to rely upon the information furnished by others in respect to the cost of the real estate?

A. No, sir; that price is on the books.

Q. Except the last that was purchased in Scott & Dean's Addition?

A. Yes, sir; there being one item in that $285,000.

Q. Now, Mr. Hagenah, taking these several exhibits which you have produced here to illustrate your theory of the value of the investment, I wish you would tell us, if you will, just what the actual structural cost of this plant is as shown by the books without any reference to your analysis for figures?

A. According to schedule 1, Exhibit B, of my report $1,928,016.65.

Q. Did you take from that the $264,000 which they charged off?

A. Yes, sir.

Q. Where does that appear?

A. That does not appear here, because it is not a charge; that was a credit.

1936

Q. Where is it shown in your report that you have given any credit for that?

A. If you will return to schedule 1, Exhibit A, you will find the amount in the upper half of that schedule.

Q. Is your report paged?

A. I think it is on page four.

Q. That is taken out on your total here of the value of the investment. What I want to know is, did you take it out and deduct it from this $1,928,000 in round numbers?

A. No, I have not.

Q. If you did that, would it make any difference?

A. Of course, if you subtract an amount from a given figure it will reduce the figure by that amount.

Q. I mean it would affect the general results, would it not?

A. It will disturb the entire table if you do it that way; that is not the correct way.

Q. Is there any reason why that amount should not be deducted from the physical cost of this property where you find there has been a charge of depreciation to this amount?

A. That gives you the present condition, which is not what my table shows; my table shows the cost of the property. I have not made any change for appreciation or depreciation.

Q. I was asking you to tell the Master just what the actual book cost of this physical property was?

A. Which I did.

Q. That is, $1,928,000; in that sum can you find the company charged off the $264,000 in round numbers?

A. From the book value?

Q. Whether it is book value or book cost, that is the amount in actual figures.

1937

A. Yes.

Q. And that represents the company's theory of depreciation, does it not?

A. Yes, to the best of their financial condition.

Q. And you have substituted your notion of it?

A. Yes, sir; that is, substituted my notion in arriving at what I consider the present basis for rates; I have not altered the books in any way.

Q. I understand that you have not gone and made erasures and entries in the books. But you have worked out a plan here that is distinctly different from the method employed by the company?

A. Yes, sir; I have taken a radically different method.

Q. Do you know when the public utilities first commenced to show a depreciation account in connection with their business?

A. As a general historical proposition?

Q. As a general rule?

A. Yes, very little has been done with the scientific analysis of depreciation until the public service commissions came into use, notably the New York Commissions and Wisconsin Commission.

Q. Was that the genesis of it, or was it at the time the famous case of the Knoxville Water Company against the City of Knoxville?

A. As I recall it, I was working on our classification of accounts before the Knoxville decision was rendered. I attended several conferences and was a member — classification and uniform accounting committees where we were struggling with that classification before the Knoxville case.

1938 Q. You were proceeding no doubt upon the theory as you proceeded in this case, that it was proper, inasmuch as the companies had overlooked something to their advantage, and which was right to have carried along, that you would have the right to distribute that over the series of years in which the plant had been in operation?

A. No, not at all as you put your question.

Q. Suffice it to say, prior to 1909 this company had never charged anything off for depreciation as far as the books are concerned?

A. They handled it different before the companies understood the uniform handling of these accounts.

Q. I am not going to dispute your right to claim the honor of this method over the Supreme Court of the United States. It is sufficient to say, since that decision there has been some effort on the part of accountants and public utilities to take care of this depreciation account; that is true?

A. No; accountants have been struggling with this problem ever since the science of accounts sprang into use. It was not until the time of the Knoxville case you refer to until the companies actually awakened to the fact.

Q. Some very astute accountants in that case had endeavored to *to* spread the depreciation over the life of the plant and the Supreme Court held that was improper, that the consumer was not to be required to pay for their mismanagement?

A. I haven't a copy of that 212 U. S. page 1 with me. I presume it is so stated there.

Q. The effect of your theory and the result of it is to do that very thing; isn't that the sum total of what you want to do?

A. I cannot answer your question yes or no, other than to say

that in the absence of providing for depreciation in the man-
1939 ner it is now cared for and as it has been discussed in the recent court decision, it has not the slightest——

Q. Let me ask you this question, Mr. Hagenah: Assuming for the purpose of the question that you must eliminate all question as to the depreciation prior to the year 1909, when this company undertook to carry a depreciation account; that you must eliminate that from your theory and start out on the basis of depreciation from 1909, would that make any considerable difference in your computation and the value of your investment?

A. Yes; the answer would be wrong because it would be founded upon the wrong assumption which you include in your question.

Q. Then if the assumption is wrong, included in my question, in order for you to demonstrate your theory, you must charge depreciation over these years, going back to 1887 and as far back as you have any history of the plant?

A. Yes. Don't you see when you do that and use present value of the plant that you are penalizing the investor by using the present value of the plant instead of the cost new; referring to the court decisions we use the present value of the property.

Q. I am not going to discuss the law with you on that point, I just simply wanted to know if you abandoned the depreciation account and eliminated it prior to 1909, it would make considerable difference with your figures?

A. Of course if you eliminate it altogether it makes that much difference.

The MASTER: Mr. Brennan, it strikes me if that depreciation account is kept up to its present value altogether, there is no necessity of figuring it at all.

Mr. BRENNAN: In order to demonstrate this theory, he must come in and show us in what manner the company kept its books.
1940 When I ask him the question what he finds upon the books and if that represents so and so, he says yes, together with my analysis of the figures.

The MASTER: So far as his theory is concerned that is another proposition. There is no necessity of figuring depreciation at all, because there is no depreciation where it is kept up; there can't be any. But to my mind the only thing I *I* think to consider is to know what the depreciated value of the plant was at the time he begins to figure in 1887, because he figures depreciation.

The WITNESS: I can only say if any confusion exists in re- to that, it is due entirely to the manner in which the questions have been put to me. If it is desired, I would be very glad to explain it at length.

At this time an adjournment was taken until 1:30 p. m.

1941 1:30 P. M., WEDNESDAY, *August* 9, 1911.

Mr. GUERNSEY: If there is no objection we would like to interrupt the cross-examination of Mr. Hagenah by putting on two witnesses who live out of the city and want to get away tonight.

Mr. BYERS: No objection.

ANDREW COOKE, being called on the part of the complainants and sworn and examined in chief by N. T. Guernsey, Esq., testified as follows:

Q. Your name is Andrew Cooke?

A. Yes, sir.

Q. Where do you reside?

A. Chicago.

Q. What is your business?

A. Vice President of the Harris Trust & Savings Bank.

Q. How long has that bank been in existence, who did it succeed?

A. It was formerly the Chicago office of N. W. Harris & Co., which was organized in 1882 and the bank was incorporated in 1907. Affiliated concerns are still in New York and Boston.

Q. What department of the business are you in?

A. I give my attention primarily to what we call the corporation business.

Q. And what is that business?

A. That is the business—it is the purchase and investigation of public service properties and public service bonds and properties, gas, electric light, water works, street railway and railroad.

1942 Q. In a general way can you give us the volume of the bond business transacted by the Harris Trust & Savings Bank and the affiliated firms in Boston and New York.

A. The last full year I think it ran about 150 millions of bonds that were purchased and sold direct to investors and running beyond that now considerably, I don't remember now just what the figures are.

COURT: You mean 150 million a year?

A. Yes, sir; 150 million a year of all kinds of bonds. We have handled more than a billion, I don't know how many. I think we are the largest distributors of bonds direct to investors in the United States.

Q. How broad is the territory in which the Harris Trust & Savings Bank and firm of N. W. Harris & Co., preceding it has bought and sold these bonds of public service corporation-?

A. We cover the entire United States and Canada, buy issues in all—practically all of the states and in Canada.

Q. How long have you personally been connected with this business?

A. 12 years. I first traveled for a couple of years practically over the entire country buying municipal bonds and the last ten years I have been engaged on the corporation end of it, examining

the properties and accounts passing on the securities, reorganization and that sort of thing.

Q. What is the fact as to whether you are the head of this department of the Harris Trust & Savings Bank?

A. Subject to Mr. Harris and the directors of course, that sort of thing is in my charge.

Q. Now to what extent does the purchase and sale of these securities bring you in touch with the operation and with the extensions and general affairs of these corporations which issue these bonds?

1943 A. Well to a very large extent. I presume that in an advisory way I consult with these various companies on practically every phase of their business as the purchase by us of corporation bonds does not cease from the time they are taken up until the bond is sold, we follow the securities clear through until the time they are paid off and if not paid off have to go in and reorganize the property.

Q. Then the fact you buy an issue of bonds and then sell them you do not drop the matter?

A. No, we would like to oftentimes but we cannot as a rule. We follow them through to see that the management of the property is all it ought to be and our trust deeds are drawn in such a way that the property has to be handled properly and we find that our mortgages are usually drawn in such a way that bonds may be issued for extensions and additions and all that sort of thing so we have various funds we have to check vouchers and all that sort of thing and have construction work to pass upon by our engineers and accountants and in a general way we are in touch with practically every phase of the business.

Q. You have to do this on account of your obligations to the persons who purchase from you?

A. On account of that and on account of the fact we are continuing to buy additional securities from time to time so that we keep in touch with them.

Q. What is the fact as to whether these corporations while you are handling their bonds make periodical reports to you of their business and things like that?

A. They report in detail every month and we have accounts examination and engineers' reports from time to time in addi-

1944 tion to sending our own men out.

Q. Do you send your own men to inspect the properties and look over the extension?

A. Yes; we have people traveling all the time doing examining and that sort of thing, pass upon the advisability of expenditures and make up our mind as to what the proper return would be.

Q. We have read a good deal in the papers about the reorganization of the street railway properties in Chicago. Did you have anything to do with that?

A. Why our office were the financial people back of the union traction reorganization. I had more or less to do with that and the recent reorganization taking in the consolidated I was chairman of the re-

organization committee. That involved getting a new franchise as it does in a good many places and dealing with the city.

Q. Now Mr. Cooke, I wish you would explain to the Master where the money comes from to these public utilities and how it is obtained.

A. I don't know—if I don't make it clear as I want to do I wish you would question further. We keep in touch with the entire territory and try to keep familiar with the laws of the different states and in some of the states we do not care to invest our money whatever, owing to unfavorable laws, we simply check those off and then through the balance of the territory we are pretty well in touch with the larger cities, we do not feel that the smaller places—they are usually unsatisfactory from the standpoint of investment, the business is not there to warrant the investment and they do not earn enough so they can afford to have proper management so we
1945 usually confine ourselves *ourselves* to the larger places and we know what the gas plant in this place and the electric light and water power here and there are, and very frequently before a property is constructed it is brought into us by local people and they have an idea it is very easy to get money, that the bonds are selling at a certain rate, and they think they have a mighty fine investment, people will make money in their manufactury or something of that kind. They don't want to put up very much money, just have an idea if they get a franchise or right of way or something of that kind, that is about all they have to do. We usually tell them it is absolutely necessary for them to get in touch with some of the people who are owners and manage- of properties that public service business is their specialty and that no local people with no experience and with but a limited amount of money can successfully go into public service business in any good sized city. The result is that while we hear of these properties we do not have much if anything to do with them until they eventually find their way into the office of some concern like the United Gas Improvement Co., or Stone & Webster, the H. M. Byllesby & Co., people that are experts in that particular line not only in the management and construction of properties, but raising the money so that as a rule we buy the bulk of our securities from concerns who are what we call large producers of securities, people who understand their business and who carry properties along until such time as they are an assured success. They have to raise their money in various ways. They have primarily to put their own credit back of it and if we have property that is owned or controlled by one of the larger operating companies we feel reasonably sure that the management will be what it
1946 ought to be and that they would not have their money in there if it was not a good proposition consequently properties handled that way usually the bonds for part of the costs, they take that additional risk of placing the money ahead of them. Then we buy those bonds outright and they eventually go to the investor, the investor has the bonds bought a long time before the small investor or bank or trust company put- the money in the securities and finally they have a going concern but they have put their money in a long while after the original investment has gone in.

Q. Do you know what rate of return upon the money invested in

these public utilities in this part of the country it is necessary to promise in order to attract capital to these investments?

A. I think I do, yes.

Q. Now I wish you would state to the Master whether this is a fixed factor or a variable factor and if it varies state what the considerations are which affect the amount of this return or affect what amount this return must be in order to make it attractive.

A. Of course it must vary according to—each proposition stands by itself and I have always worked the thing out about this way that factors in determining what would be a return which people would want before putting their money into a proposition of this kind would consist of say six per cent first as a mere return on the money.

Mr. Byers: I did not make any obuection to the question because that does not call for any amount, but as the witness is stating amounts we object to it.

A. I will leave amounts out. The first factor to be considered would be return by way of interest for the money, for the use of the money. The next would be perhaps the risk or hazard
1947 which would have to be assumed and which would exists for various causes and over and above that there would be the profit or return which people would feel they ought to have to compensate them for their brains and experience and for time put in and for the credit which they would have to enable them to carry properties through successfully.

Q. What is the fact as to whether or not the expense incident to looking into the property, examining the property and caring for it and watching the investment is another factor that must be taken into account here.

A. It certainly has to be. You are there with the property from the time you invest in it and in addition to what I have mentioned there is the factor which is a very important one that you never can get away from and that is the liability it calls for to continue to invest more money in the property to take care of extensions and additions whether there happens to be a panic or whether money happens to be easy they have got that unlimited liability to pour in more money year after year, and have got to figure for every dollar increase in their gross earnings they have got to put in three or four or perhaps five dollars in additional investment.

Q. Why is this that additional investment is a requisite at any time especially in this part of the country?

A. The growth of the cities and no- of these properties stands still and that is one of the greatest problems which any of these public service companies have is the problem of raising money to take care of growth of the business which is due to the usual more or less rapid increase in population.

Q. Now take, Mr. Cooke, a situation such as we have here in Des Moines, you are more or less familiar with Des Moines per-
1948 sonally?

A. Yes, sir.

Q. You have been coming here more or less frequently for how long?

A. Oh practically ever since I have been with the house I have been here off and on.

Q. And at one time the N. W. Harris Company bought a small issue of the bonds of the gas company in Des Moines?

A. Prior to my connection with the house, yes. That issue was paid off, a very nominal amount on the plant and was paid off in 1906, some such time as that.

Q. Now take the situation in Des Moines here with a population of about 86,000, a growing city, a gas plant here, involving an investment which it would cost to reproduce it after you took the depreciation, reproduce the physical property with the business attached to it of say, $3,100,000 to $3,150,000 and assume there were no abnormal conditions in the laws or no unusual conditions in the laws of the state, what in your judgment would be such a return as to induce capital to invest in such an enterprise?

Objected to as incompetent, immaterial, no proper foundation having been laid for the inquiry, the witness is incompetent and the question is based upon an assumption that is not in the record.

A. I think that if I could answer it by saying assuming that the laws and the franchises situation was favorable furnishing adequate protection to the investor that at least ten per cent would be required to attract capital. That is ten per cent after allowing for all operating expenses the taxes, and full charges for maintenance and depreciation sufficient to keep the original property of the investment unimpaired.

Move to strike out the answer as voluntary and incompetent and immaterial.

1949 Q. In some of the states take Wisconsin as an illustration there have been some laws enacted making the matter of the regulation of rates and regulation of service and capitalization by the control of a central body being the board of railroad commissioners there and providing for franchises which continue so long as the public service corporation continues to perform its duty to the public and also providing for the exclusion of competing public utilities so long as the existing utility furnishes adequate service. What effect if any have these laws had on the return which would attract capital to the business or to put it in another way upon the attractiveness of the investment.

Objected to as incompetent and immaterial.

A. You mention Wisconsin, I think that is as good an example of the condition that you refer to as any. The control of public utilities by commission is still—the results of that are still more or less uncertain. I think that investors and people who purchase and operate public service companies are waiting to see what the attitude of the Wisconsin commission is going to be in reference to valuation and return upon investment which the commission will allow. I was asked that same question at a hearing before the Wisconsin com-

mission, the chairman of the commission, Mr. Myer now interstate commerce Commissioner, asked me the same question practically and I told him then I thought the people were going to wait awhile to see about what Wisconsin was going to do. I know certain interests where that is true where the people are waiting to see what the attitude of the commission is and I replied to Mr. Myer it depended somewhat upon whether the commission continued to stay out of politics or whether there was political influence brought upon it which would result in the corporations being harrassed
1950 through the commission the same as they had been through the local city councils and said whether or not the investors were going to consider that the protection of such a law as a good thing and result in their being willing to invest money in Wisconsin at a lower rate than elsewhere where conditions were less favorable would depend upon what sort of a protection it was. If it was the sort of a protection that the fellow in the penitentiary gets, allowed to live on bread and water, he is there now and nobody can get in, nobody wants to and he can live along on bread and water if they are going to hold them down to that people who have got their money in the properties will have to keep it there, but you won't get any additional money to come in. These companies will hold back the investment of additional money assuming that the commission takes a fair view as it apparently wants to do, it seems to be reasonable and want to find out what is fair and reasonable as to the matter of investment in public service corporation- and to make them attractive that is a very much better situation than existed in Wisconsin prior to the passage of the law giving the Commission jurisdiction over these companies.

Q. Now in Iowa the law is now as I understand it that no city can grant a franchise to a gas company for more than twenty five years or can by any contract afford to the investor any assurance that at the end of the twenty five year period he will not be required to remove his plant from the streets. I wish you would state whether or not that would be a factor affecting the attractiveness of such an investment and how it would affect it in any sense and whether it would render it more or less attractive.

Objected to as incompetent and immaterial.

A. When I mentioned 10 per cent as the return which I
1951 thought would surely be demanded it was investment under favorable conditions. I regard what you mention as distinctly unfavorable and it would give an investment in Iowa a very speculative feature. I don't believe you could say you would want 15 or 29 per cent or any speculative return if you were going to invest in Iowa for the reason you probably would not be able to earn it. The result would be these conditions named the investor would do what we have done, keep out of the state of Iowa until the laws become more favorable.

Q. Now there is another thing that I understand is provided for by our statutes and that is that cities through their councils are vested with the power to regulate the rates which are to be charged by gas companies the law expressly prohibiting their making any

arrangement for a rate which covers any specific time. I wish you would state whether from the investment standpoint that would be regarded as something that was favorable or unfavorable.

Objected to as incompetent and immaterial.

A. I would consider it very unfavorable if the regulation particularly in view of the fact the regulation of rates is left with the local body.

Q. The law here as I understand it authorizes cities to themselves institutes gas plants and yo- operate them and also expressly provides that no exclusive franchise to op-rate a gas plant shall be granted to any one or for any term. I wish you would state whether in your judgment that is a factor which would effect the desirability of the investment and if so in what direction?

A. I think it would very seriously interfere with the ability to secure capital for Iowa properties.

1952 Q. There is another provision in the laws here to the effect that cities may condemn and so acquire gas plants which are located in the cities. I wish you would state whether that would be a factor affecting the desirability of investment in gas properties in Iowa.

Same objection.

A. I would make the same answer, yes I think it would seriously affect it. The right to purchase in itself is not particularly objectionable if the right can be exercised at reasonable periods and a full allowance is made for going value and all that sort of thing so that the investor would know that under no circumstances could the plant be purchased at a price which would not see him out on the principal of the investment. I know that people want to keep their investment permanent but will sell it out for a good fair price for it but ordinarily condemnation proceedings instituted by a city do not usually result in that.

Q. Take the case of the gas plant in the city of Des Moines with the conditions here as you know them, with the laws providing that a franchise may not be granted for more than twenty five years, that no exclusive franchise can be granted, that the city may at any time establish a competing plant, that the city may at any time authorize a competing private company to engage in the business, that the city may at any time divest the company of its property by condemnation proceedings, that the city may at any time regulate the rates and is prohibited from making any agreement for a rate for any period and taking into account also the further fact that under the laws of the state of Iowa any corporation if a local corporation, that is an Iowa corporation owning this property can issue

1953 no stock which is not fully paid up when issued and cannot incur a debt that exceeds two thirds of its capital stock and I wish you would state what return in your judgment would attract capital to such an enterprise?

Objected to as incompetent, irrelevant, based upon assumptions

that are neither in the record and some of them that are not in fact in existence at all.

A. Answering on the basis of the situation as you state it to be, and from my own general knowledge of the conditions here in Iowa as a result of investigations which we have made I don't know that you could pay any rate that would attract capital, I think it would drive capital away, that is the situation. They might possibly if they could get property for half what was its structural value or something of that kind and take the speculative chances of the conditions changing, it might be possible capital would go into a speculative business but certainly not for an investment or operating business.

Cross-examination by H. W. Byers:

Q. I judge from your answers you regard Iowa as a very undersi-able state for investment?

A. I do, yes.

Q. Your house is called what?

A. Harris Trust & Savings Bank.

Q. What is their particular business?

A. Handling of investment bonds.

Q. Speculating in bonds?

A. No, purchasing and selling them.

Q. Well isn't that speculating in them?

A. I don't regard it so no, sir.

Q. How long have they been doing that?

1954 A. Since 1882.

Q. Was the company organized in 1882?

A. As N. W. Harris & Co.

Q. What is its capital?

A. The Chicago Harris Trust & Savings Bank has three million capital and surplus, upwards of that, and the New York and Boston offices as much more. I think it is about seven and one half millioj all told.

Q. Does that represent its assets now?

A. No, we have got a lot of bonds on hand.

Q. What is the company worth?

A. Why I don't know. Five hundred doll-rs a share bid for the stock and none offered.

Q. $500 a share?

A. Yes, sir.

Q. How many shares have they outstanding?

A. 12,500. I mean, I am now simply referring to the Chicago office, the New York and Boston offices are close corporations.

Q. Take them all that are represented by the various concerns, if that is the parent concern in Chicago?

A. What is the question again.

Q. What is the company worth?

A. That is a matter of opinion between the people owning it. It is not for sale as a matter of fact.

Q. Give us your opinion, Mr. Cooke?

A. Well what bearing has that?

Q. We will see when we get through with this cross examination.

A. I don't know that I care to answer it unless the Master rules I must. I don't know how what it was worth would have to do with the gas business in Des Moines.

1955 Q. It might have a whole lot before we get through with it. Let's have your judgment.

A. I have not any opinion on it only according to experience.

Q. There are how many shares outstanding?

A. 12,500—I would say 15,000. A million and a half capital, a million and a half surplus, some undivided profits and the New York and Boston offices have a capital of three or four million.

Q. Been in business how long?

A. Since 1882.

Q. Made your money investing in bonds for the company and for your clients?

A. Yes, sir.

Q. Bonds and stocks and other securities?

A. We don't handle stocks. The loss to our investors has been less than one day's interest on the amount of bonds we have handled.

Q. You have handled bonds from nearly every state in the union?

A. Yes, sir. Some from Iowa.

Q. Not only for the company itself, but for clients of the company?

A. I don't know what you mean by that.

Q. Well you buy bonds for people who deal with your concern don't you?

A. We buy them outright and sell them at retail. Buy them wholesale and sell them at retail.

Q. So that the business of the company then is buying and selling bonds for a profit?

A. Yes, sir.

Q. And it has been quite successful hasn't it?

A. Fairly so I judge.

1956 Q. Now what is there about the laws of Iowa that you think are unfavorable, what particular law do you think is unfavorable to investors aside from this power of the council to fix rates.

A. Well the power of the council to regulate rates at any time is a very undesirable factor.

Q. You have that same situation in your state don't you?

A. No, we can get a franchise there where the rates are fixed for the term of the franchise.

Q. The power to fix rates in your state especially Chicago is given the city council isn't *is*?

A. That is somewhat of a question. It is being tested I believe in the gas case. The gas company has a perpetual franchise as I understand it, and probably carries with it the right to regulate rates and the other companies have fixed franchises. They have no such law as you refer to here in Iowa.

Q. I am not asking about any law in Iowa, simply asking you if it is not true city councils in your state have the power to fix rates.

A. I don't know it is so.

Q. What state in the unio*j* do you know that they don't have?

A. Wisconsin for one.

Q. That is because the whole business is turned over to a commission.

A. Yes, sir.

Q. Now what other states?

A. Well I don't recall of there being many states and I could not recall any besides Iowa at the moment where the right to regulate without power of the council of the city to waive the right to fix a rate of return for a certain definite period exists. As I understand it practically all states have franchises in which rates are fixed during the life of the franchise.

1957 Q. Isn't that what you understand they can do here?

A. No I understand here in Iowa you get the right to do business for 25 years, after that you have got to take up your plant if the city don't want to give you a new franchise and scrap it, junk it, and in the meanwhile any city administration or lawyer who wants to make a reputation for himself can stir up agitation to regulate rates the result being you are in hot water all the time or liable to be.

Q. The ideal conditions from your standpoint would be to let the company make its own rates wouldn't it?

A. No, by no means, I don't think anything I have said would indicate that.

Q. What state do you know of in the union at this time that does not have power to condemn a gas plant, taking it over?

A. I am not a lawyer, I don't know that, I presume there are statute- possibly in all the states, it might be that the inherent power in the state itself to condemn under the exercise of the right eminent domain that might be extended to the cities, I have no knowledge on it.

Q. Why do you say in a state where they have that power it would be an unfavorable condition.

A. Because my impression is that this law in Iowa is peculiar and that I don't consider it a good public policy and I don't believe such conditions—I don't believe the attitude of other states is the same as that of the state of Iowa on that particular subject.

Q. It is not conducive to speculative rates and unreasonable charges.

A. I would say it was conducive to speculative rates, I should think any rate made would be speculative under these conditions. I think it would be anything but fixed.

1958 Q. You would think that would be speculative?

A. Yes; I would regard it as such. Anybody who bought taking his own chances.

Q. What effect does it have on an investment to have the law require corporations to have a paid up capital, does that make it unfavorable for an investment in bonds?

A. Not necessarily for investment in bonds, but it does make it difficult to raise money for the construction and financing of companies.

Q. That is to say you can't sell watered stock in a state where they have that kind of a law?

A. Yes, I think that is a fair statement of it, but I know I have never seen it demonstrated that a l-w prohibiting the sale of watered stock was going to be conducive to the best interests of the public.

Q. I didn't quite inquire for that suggestion, I think but we will let that stand?

A. Oh you can strike it out, it is immaterial to me.

Q. Now Mr. Cooke, another thing, you say that the fact that city councils have the right to fix rates and that a franchise can only be granted for 25 years, is an unfavorable condition so far as investors in public corporations is concerned and reduces the value of the investment, that is right isn't it?

A. Yes, sir.

Q. That is a fair inference from your testimony?

A. Not necessarily the 25 year franchise feature, that depends a great deal o/ the attitude of the city.

Q. Would it make any difference to you if there was a provision in that same statute for the renewal of the franchise in the same way you got it in the first place?

1959 A. That is upon the terms you got it, it could be renewed exactly? A twenty five year franchise you have got to take chances where you get off at the end of the term.

Q. You stated you understood the law in Iowa was at the end of 25 years you had to scrap your property unles- you made some deal to dispose of it?

A. I understand it to be so. Our experience has been such.

Q. It is not true however that is not the law?

A. I am glad to know it.

Q. Now another thing Mr. Cooke, if the fact that a franchise—let me put it another way—assume there is a public service corporation doing business in a city of say 86,000 people in a city where the term of the franchise is limited to twenty five years and subject to renewal in substantially the same manner required in the first place and the council have the right to fix rates and this public service corporation is without any franchise at all. How would that affect the value of its securities and value of its property.

Q. I want to get your question exactly, I thought you said starting out with a twenty five year franchise?

Q. (Question read.)

A. I don't think they would be saleable at all without getting a new franchise.

Q. Would it have any effect upon the value of the corporation's property?

A. I don't think the property could be sold at anything like a satisfactory rate, value of property is what you can get for it. If you have got something you can dispose of.

Q. It would reduce the value of the property would it not?

A. Yes, and no. There are a great many companies who
1960 find themselves in that condition but they have chosen to take the ground that they are not going to run and let the state acquire the property except at a price which is a fair return. They are going to trust to the good faith of the people of the state and work it out in that way and in a great many cases that has been done. But until it is worked out, until the people are satisfied to take the property at less than it is worth or revise or extend the grant on reasonable terms, but as confiscation of the property of course it is not saleable.

Q. Now the argument in this case will be made by the lawyers. You would not take securities of that kind of a company at all would you?

A. Of that sort of a company?

Q. Yes.

A. Not until the franchise had been worked out.

Q. Now in answer to a question in chief you stated that you at some former time and before some commission in Wisconsin told the chairman of the commission that the people were waiting to see what the commission would do. Who did you have in mind by the people?

A. Investors and owners or operators of property with whom I had talked.

Q. You meant people like your own firm that was buying and selling bonds?

A. Yes. And people who were buying and operating properties.

Q. Do the stockholders as a rule operate the properties themselves?

A. Ordinarily yes. They elect a board of directors and they elect a manager and they operate it.

Q. What is the difference between the owner of stocks, in-
1961 vestment in stocks and the owner of bonds, investment in bonds so far as personal attention is concerned to the property in which his investment is made other than the election of officers.

A. The stockholders are looking out for their dividends and the bond holders looking out for the engineers and stockholders.

Q. Their interests I presume?

A. Yes, they are watching them.

Q. It substantially requires about the same amount of brains to take care of money if invested in bonds or stock as it does invested in any other kind of property?

A. Not at all.

Q. What is the present rate in the city of Des Moines for the use of money?

A. I haven't any idea.

Q. What are bonds and stocks selling for what rate are public service bonds and stocks selling for in the city of Des Moines?

A. Bonds of the street railway and Interurban in which we are interested are not selling at all. I don't know about the bonds of the other companies.

Q. You don't know anything about the——

A. We are not interested in the gas company or electric light

company. I don't know but what we did handle electric company bonds at one time.

Q. Since you have volunteered the suggestion about bonds of the street railway company how long has it been since your company offered to carry bonds the security to be upon the present street railway system in Des Moines? Are you familiar with the situation of the Des Moines City Railway and its bonds and stocks?

A. Yes, sir.

Q. Your company hold- or did at one time hold substantially all the bonds of the Des Moines street railway?

1962 A. We have placed them with investors, yes.

Q. When you say you follow them through that is because when you sell them you guarantee bonds?

A. No. Our reputation is back of it, we don't like to suffer default on the principal or interest.

Q. So you follow them up for that reason?

A. Yes, sir.

Q. How long has it been since your company made a proposition to the city of Des Moines to loan money on the bonds or on the security of the Des Moines street railway?

A. Since we made a proposition to who?

Q. To loan money to the city of Des Moines and take as security the bonds of Des Moines secured by the Des Moines City Railway.

A. I am not personally familiar with all the negotiations which we had during the franchise matter with the city. The fact that the N. W. Harris Company, Harris Trust & Savings Bank never made any such proposition. The Des Moines City Railway Company may have, as a basis upon which to dispose of their property. I never followed that out. It dragged along for so long, I lost interest in it.

Q. At what rate of interest were the bonds that your company bought taken?

A. Do you mean the bonds of the city railway?

Q. Yes, sir.

A. We purchased five per cent bonds at a substantial discount, I don't recollect just the price a number of years ago. It was a substantial discount for five per cent bonds.

Q. And — what rate was the gas company bonds taken?

A. I don't know, that was twenty or twenty-five years ago.

1963 The bonds were about twenty year bonds maturing in 1903, that was before my time. I think they were sixes.

Q. Were they sold at a discount?

A. I presume they were, yes.

Q. And the discount represented the profits that your company got?

A. Well we don't—we would buy them at a discount and sell them at a higher price, we might not have realized par for them. The difference between what we paid for them and what we sold them for would be our profit, yes.

Q. In other words if you bought them at a discount and sold them at par, then the difference would be your profit.

A. Yes, sir.

Q. Now do you know Mr. Cooke what the securities, bonds and improvement certificates and that class of securities of Iowa cities are selling for today?

A. No. They are selling about as other municipal bonds of the same character.

Q. Well about what rate of interest do they bear?

A. I suppose straight city obligations are selling around about fou- and a half per cent basis probably now.

Q. Do you know what commercial paper, what rate of interest or for what rate of interest commercial paper is being floated for here in Des Moines at this time?

A. I don't, no sir.

Q. You don't claim to know anything about that?

A. No, I don't know. I suppose about six per cent, I don't know, it might be lower. Might have so much money you are glad to put it out at four for all I know.

Q. It would surprise you wouldn't it, a man in your business to hear that they were carrying as low a rate as three and a half

1964 per cent?

A. No, not at all.

Q. That would not be strange at all you think?

A. No.

Q. It would not be strange to you if I would tell you a large amount of the paper of the business and commercial institutions of your own city was being carried here in Des Moines at a low rate of interest?

A. No. It would be funds that would not be invested in public service securities.

Q. Did I ask you that?

A. No, I volunteered that.

Q. Why did you do that?

A. For your information.

Q. Don't you understand it is your business simply to answer questions?

Mr. GUERNSEY: I object to this, if there is any objection to the answer there is a legitimate way to reach it, that is a motion to strike. It is undignified and improper for counsel to invite the witness to go into an alteraction.

Mr. BYERS: I submit the witness ought to be cautioned.

Q. When you stated awhile ago that the money that was invested in public corporations came as I understood your answer largely through concerns such as yours, and then later you said that the small investors or persons who invested their money in the stocks did not get their money in until later until possible through the hands of concerns like yours, you did not mean to convey the impression that that money came from any particular source did you other than the general investing public?

A. If I may answer that freely I will tell you exactly what
1965 I did mean. I mean people buy bonds from us on the reputation of the house without any particular knowledge of the security that we are offering them. They buy it on the reputation of the house, that is an additional security to them the investigation which we make and our reputation.

Q. Do you sell bonds on the open market?

A. Yes, sir.

Q. And I suppose they are bought by people from all parts of the country?

A. Yes, sir.

Q. So that the money does not come from any particular part of the country?

A. They are all clients of the house.

Q. They are scattered all over the country?

A. Certainly.

Q. So that *that* the actual money that finally goes into the stocks and bonds of the industries of the country is furnished by the investing public generally?

A. It is furnished by them through us. The money that comes in is furnished by us and we turn around and retail that out to other people. The money would not come directly from these investors, the United Gas Company of Des Moines could not reach these people we reach.

Q. There are very few public service corporations either in Iowa or anywhere else that you know of where the money for the promotion of the enterprise is furnished locally at the time of the organization and development of the property?

A. Yes, that is true.

Q. That money as a rule always, everywhere, in Iowa and everywhere else is secured in the first instance through just —
1966 concerns as your people are operating at Chicago?

A. We only furnish a part of the money on first mortgage security. Other concerns furnish and finance it all.

Q. You furnished part of the security and there are other houses dealing in stocks and they furnish another part of it, that is true isn't it?

A. They usually furnish it all to begin with and then come around and reimburse themselves by borrowing part of it from us.

Q. As a matter of fact, promoters and people organizing these affair- do it on somebody else's capital.

A. They have to put their own credit back of it. Oftentimes they do it on their own capital?

Q. The money comes as a rule just through such concerns as your house and then the other houses that deal in stocks and speculate in securities of that kind?

A. To a considerable extent the stocks are put in the hands of investors, yes.

Q. You said something about the return, you thought first there ought to be a return of six per cent anyway on the money invested?

A. Yes, that is about—we buy first mortgage bonds on the prop-

erty where the element of risk is largely eliminated on about a six per cent basis. If five per cent bonds we discount so it results in about a six per cent basis. I did say six per cent if that is what you want to know.

Q. Were you then referring to Iowa or generally, was that your opinion generally no matter where it was, Iowa Illinois, or anywhere else?

A. All throughout the west generally. Perhaps down in New England and Massachusetts might get a little less, I don't know.

1967 Q. You said in addition to the six per cent there were some other things that earned a return besides money. What were the other things?

A. There ought to be an allowance for the risk due to the character of the investment.

Q. Yes I will agree to that. Now what other i-ems?

A. Ought to be an allowance for profit or management or something of that s-rt.

Q. In addition to the six per cent?

A. In addition to the six per cent, yes.

Q. Who manages public service corporations?

A. I stated on direct examination that the properties throughout the *company* were necessarily drifting into the hands of people — experience and large financial means.

Q. They get their pay *b*out of operating expenses of these concerns?

A. No, not at all. They have got to furnish money and they have got to stand sponsor for it originally.

Q. Then your idea is an investor in the stock of one of these public sorporations in addition to the salary that is paid to the managing officer is entitled to some additiona- sum.

A. The stockolders are really in control of the property but in nearly all companies except in the very small companies the stockholders consist of men who are experienced and who are able to make money out of the property by reason of their experience and financial strength, would not care to put their money in or have anything to do with the property if they could not make that profit.

Q. The stockholders in this concern about which this controversy is being had all live in Philadelphia, they don't any of them live in Iowa.

1968 A. That is an illustration of what I have been trying to say. The fact it takes concerns like the United Gas Improvement Company to furnish money to carry on these properties.

Q. What are they entitled to in addition to reasonable interest on their money?

A. They certainly would not be interested I presume—in every case the United Gas Improvement Company and people of that character who spend all their lives working up a business of this sort would not be interested in just getting six per cent return on it because they can invest their money at that rate and not take any

risk and have no work to do nothing but clip coupons every six months.

Q. Suppose the United Gas Improvement Co. should own this property and are getting a constant steady regular return of six per cent upon every dollar that goes into the property, wouldn't you consider that a profitable property, security that was paying satisfactorily?

A. I would not buy it on that basis if I had money to invest, no sir.

Q. What does your house charge for commission on these bonds and stocks that you handle?

A. Well we figure that we ought to have on handling first mortgage bonds on a property for nothing more than first mortgage bonds and placed directly to the investor on a million dollars feel we ought to have $100,000. Ten points profit for buying bonds and selling them.

Q. Suppose you were to take over an issue of the bonds of Des Moines drawing say, four and a half per cent interest?

A. You mean city of Des Moines?

Q. Yes, city of Des Moines. A $100,000 issue, what would
1969 you charge or expect to get?

A. Municipal obligations of the city of Des Moines about one or two per cent we figure.

Q. So one or two per cent in a case of that kind you think would be plenty for what your house did in the way of handling the securities.

A. Yes, no risk or liability, no trouble about it. One and one half per cent on a municipal bond, that would figure ten per cent on a corporation bond.

Q. All kinds of corporation bonds?

A. I mean bond- of a corporation like the Des Moines Gas Company, bonds of that character. We sometimes make considerably more than that.

Q. So it is quite a profitable business if you have a large volume of business.

A. Yes, but a good many houses have gone broke however. If you -re successful in keeping out of failures, if it is all profit and no loss it is a pretty fair business. Unfortunately it does not happen to be that.

Q. Your house I understand is getting along very nicely in that respect?

A. We have made some profit and we have sustained some losses, but we are still in business.

Q. Without going any farther into that, just another question or two. You stated here a moment ago that you thought that a rate of ten per cent would be necessary in order to attract, that is a net per cent of ten per cent would be necessary in order to attract capital to an enterprise to the city of Des Moines. Now did you mean that?

A. I meant that a company ought to be earning over and
1970 above its operating expenses and fixed charges ten per cent on the value of the property adding going value and all that sort

of thing, fair valuation of the property it ought to be earning ten per cent over depreciation in order to make its securities attractive, yes.

Q. What do you mean by fixed charges, interest on bonds?

A. No, I mean ten per cent over operating expenses taxes and depreciation sufficient to keep the principal of the investment unimpaired. Ought to be ten per cent applicable to be distributed to the owners of the property whether they are bondholders or stockholders or what?

Q. Your notion is to make it attractive there ought to be at least ten per cent to distribute to the stockholders in the form of dividends to make it attractive to capital.

A. If it were all stock it would all be in the form of dividends. If you make that the Des Moines Gas Company I would say that even at that basis under existing conditions it would not be attractive if the conditions as to the laws of the state and franchises and the situation is favorable I should say that.

Q. What difference would it make what the laws are if the net earnings are ten per cent right along, make no difference what the laws are?

A. If you could guarantee net earnings of ten per cent.

Q. Well if it had been that right along?

A. It has been that in Des Moines?

Q. I am not asking about any particular company. But if the earnings have been that over a long period of years——

A. Well what they have been does not interest an investor so much as what they are going to be.

Q. Do you have any idea what the stock of a concern
1971 would be worth in Des Moines that was netting 10 per cent over and above all those items?

A. If it were all stock and net earnings of ten per cent they probably would not pay that all out, leave something against a rainy day, something for some surplus and I should say stock in that company ought to be worth par.

Q. Ought to be worth a good deal more than par wouldn't it?

A. I don't see why it should be. If you are limited to ten per cent a great many companies earning ten per cent only sell at a premium because of the probability that they will earn a great deal more than ten.

Q. So they would have to be earning a great deal more than ten in your judgment to be worth more than par.

—. I don't know as I would say a great deal more; have to be earning more or a likelihood of it.

Redirect exaination by N. T. GUERNSEY, Esq.:

Q. You were asked about a hypothetical proposition made by your concern to the city of Des Moines to loan money on the securities of the Des Moines City Railway Company. Now as a matter of fact the proposition made was to sell to the city of Des Moines the stock of the Des Moines City Railway Company and the stock of the inter-

urban railway company for bonds of the city of Des Moines which were direct obligations of the city, but without going into that I want to ask you whether you are familiar enough to know whether this proposition was made without getting out of an unsatisfactory investment or for the purpose of making a new investment in Des Moines?

A. It was made for the purpose of getting out of an unsat-
1972 isfactory investment and our experience in the street railway is one of the things that leads us to keep out of the state of Iowa.

Recross-examination by H. W. Byers, Esq.:

Q. I thought you told me you had not followed the city street railway proposition and didn't know about it?

A. I said it dragged so long, first the city was going to condemn then going to buy and then going to grant a new franchise and the last it was going to have a proposition to buy the stock for bonds of the city. You asked me I think what the rate of interest was on that sort of thing and I told you I didn't recollect.

Q. You say that the offer to take the Des Moines city bonds was for the purpose of getting out of Des Moines. Now after that opportunity your company did buy the stock in this company didn't it so they could stay in?

A. Our company didn't do it. Mr. N. W. Harris took over a large investment in it.

Q. Isn't Mr. N. W. Harris a large owner of your company?

A. Mr. N. W. Harris is the principal stockholder in it and did buy out the local people closer to the situation than Mr. Harris and a little more sick of it than he was because they had it every day and he only got it every six months or so.

Q. Instead of fixing it up to get out of Des Moines then Mr. Harris fixed it up so as to get in further.

A. No, he simply, I think he was going to take a chance on the thing working out fairly and I think it is going to. Attorneys advise him he has a perpetual franchise and got the five cent fare, I think he could stand it for a long pull probably.

1973 Q. I think he could too if he has that. About how much stock was included in that purchase of Mr. Harris after you say they wanted to get out of Des Moines?

A. I don't know how much.

Q. About how much?

A. I don't know sir.

Q. A million?

A. I don't know.

Q. Have no idea?

A. No. I have forgotten what the amount of the holding was. I know Mr. Harris has nought some stock at different times. Just what he bought, or what he paid for it, I don't really know.

Mr. Guernsey: I don't think what he paid for it is material here.

Mr. Byers: I am not asking that.

Mr. GUERNSEY: I can tell approximately what per cent he bought.

A. My recollection is he had about sixty and bought about forty. Mr. Guernsey is familiar with it, I am not.

Redirect examination by N. T. GUERNSEY, Esq.:

Q. Is that one of the illustrations of what you have referred to as conditions which require a man to keep putting in in these propositions instead of permitting him when he wants to to withdraw from them?

Objected to as leading, suggestive and not re-examination.

A. Yes, sir.

Witness excused.

1974 HAROLD ALMERT, being called on the part of the complainant and sworn and examined in chief by N. T. Guernsey, Esq., testified as follows:

Q. Where do you reside?
A. Chicago, Ill.
Q. And what is your business?
A. Engaged in the examination and reporting on public utilities and purchase and management of public utilities.
Q. With what institution are you connected?
A. H. M. Byllesby & Co., Chicago.
Q. I wish you would state so we get it in a concrete instead of an abstract way and that the Master will understand it clearly what business H. M. Byllesby & Co. are engaged?
A. H. M. Byllesby & Co. own and operate public utilities such as gas electric light, street railway, telephone and water companies in something over ninety cities and towns in the United States. They also have a department which designs and supervises the construction of this same class of properties for others and my particular department is the work for examining and reporting upon this same class of property which are in trouble physically and financially or both and also in the examination and purchase of this class of properties for H. M. Byllesby & Company.
Q. How long have you been engaged in this business?
A. Directly in what I have just stated or beginning in the public utility business.
Q. Well beginning in the public utility business?
A. Nineteen years in September.

1975 Q. How long have you been engaged in this business of buying and selling or connected with the business of H. M. Byllesby & Co., you have referred to?
A. I was engaged in the same class of business before going with H. M. Byllesby & Company and been engaged in it with H. M. Byllesby & Co., for three years and for six years previous to that.
Q. In what portions of the United States have you had experience in these matters?

A. In every section of the United States, but principally west of Chicago.

Q. Does H. M. Byllesby & Co. in connection with this business have anything to do with either acquiring or selling the securities of public service corporations?

A. They handle securities on their own properties, such property as they own and operate themselves but do not deal in securities or properties that are not owned by themselves or operated by themselves.

Q. I wish you would state how the money for investment in these public utilities is secured.

Objected to as incompetent, irrelevant and immaterial.

A. We have projects brought us from almost every conceivable source, local people in various states who have new projects they want to build and going to their local bankers and advised by them to come to us. Others find their way directly to us without going through any banks or through their lawyers and if after a statement of what the possibility of their project is it looks sufficiently interesting we send out our engineers to make an examination of the conditions as they exist to see whether or not the project looks
1976 feasible and if it is going to look profitable and if so we undertake the financing of it and the designing and construction and operation of the property. That is we put up our own money for the preliminary work that is necessary of engineering and making surveys and plans and specifications, preliminary reports and undertake the underwriting of the project and put in our own money either all or in part depending on the size of the project. If it is not too large we put in all our money until the proposition is a going concern with sufficient earnings to interest bond houses. If the project is too large for us to finance in that way we secure a loan from banks or trust companies who give us sufficient money to take care of the proposition until it is a going and earning concern and dispose of blocks of this underwriting to banks, bond houses and a small portion of it to individual clients of ours who are in the habit of investing in that class of investments.

Q. Before I forget it do you go into these enterprises if they do not promise any profit, but simply promise you a chance to get your money back?

A. Certainly not.

Q. Now what is it that induces you to go into these enterprises and put your money in and to incur the risk that your money won't come back?

A. The opportunity to make a sum of money in addition to what we might earn by investing that money in a class of securities or in a class of investment which would be absolutely safe and require none of our time and attention or ability.

Q. Now Mr. Almert, will you tell us whether you know what return is necessary under favorable conditions to attract capital in this general locality into these public service enterprises, I don't ask you how much, but whether you know how much?

1977 Objected to as incompetent, irrelevant and the witness not shown competent to testify with respect to conditions in Des Moines.

A. I do.

Q. I wish you would state in your judgment what is the minimum return which is anticipated, which is necessary in order to attract capital into such enterprises.

Same objection.

A. Before stating that I would have to know the conditions under which——

Q. Under favorable conditions? I intended to insert that into the question.

Same objection.

A. Ten per cent or over.

Q. Now what is the fact as to whether this return, that is the return which would be necessary to attract capital is a variable factor and if it does vary I wish you would explain some of the things you take into consideration in the actual practical determination of some of these questions of investment in solving this question.

Objected to as immaterial and incompetent.

A. It varies with our estimate of the hazards surrounding such an investment. Do you want me to name the hazards?

Q. In a general way, yes, explain what the things are you take into account?

Same objection.

A. We would first expect a return such as we could get without any attention and which was the general revailing rate. In addition to that we would determine the hazard there would be as to the length of franchise, possibility of renewing the franchise on
1978 its expiration without election and without serious concessions upon the provision of favorable rates during the length of that franchise and upon the conditions of the earning capacity of the people living in that territory to pay such rates, in other words what the traffic will bear and its competition with other commodities supplying the same field, if it was a gas business whether or not the electric light and other classes of light were in strong hands making low rates with vicious competition and w-ether or not the laws of the state as a whole were favorable to encourage investment of capital in that class, all these are hazards we would consider an aid to determining what the total return ought to be to be safe.

Q. You also take into account the community and the history or prospects for the future.

A. That is one of the principal things we consider and its growth and its history back as far as possible to determine what the probable growth in the future would be, that would be considered as one of the conditions and what the possible development per capita would be, etc.

Q. To put this a little more in the concrete, suppose you were to look over the city of Des Moines and you found it had a population here of something over 86,000 people, that it was growing steadily and seemed to be desirable so far as the historical features went and the prospects for the future as you could incur them from the past and then you found that under the laws of the state of Iowa a franchise could be granted for no period longer than twenty five years, and that there could not be in the franchise an agreement to extend it and that that would have to come up as an entirely new proposition at the end of the 25 year period, would that be a factor
1979 which you would take into account as affecting the desirability of the investment.

Objected to as incompetent and it is certainly irrelevant to any issue that is involved here, as the Master suggested the other day it might be relevant if the question involved was the reasonable rate, but no such question — involved here and — is irrelevant to the issues before the Master.

A. I would take that into consideration, yes.

Q. Now if you found that under the laws of the state of Iowa that a city granting a franchise could not agree with the grantee in the franchise upon what the rate should be there during the term of the franchise or for any term but that the city had the right to regulate rates at any time and such an agreement as I have referred to was expressly prohibited, please state whether or not that in your judgment would be a material factor affecting the desirability or attractiveness of the investment?

Same objection.

A. That would be a most serious factor.

Q. And would it add to or detract from the desirability of the investment?

Same objection.

A. Decidedly detract from.

Q. Suppose further in examining a matter you found that the laws of the state expressly prohibited the granting of an exclusive franchise for any term and that under the laws of the state the city had the power at any time either to start a competing plant or to grant to some individual or private corporation the right to start
1980 such a plant, please state whether those items would be factors in your judgment affecting the desirability of the investment?

Same objection.

A. They would.

Q. Suppose that further you find that under the laws of the state the city had the right at any time whether the operator resisted or not to acquire by condemnation proceedings the property of the company if one should be organized to go into the business here, would that in your judgment affect the attractiveness or desirability of the investment?

A. It would depend upon the safeguards that would be thrown around it and the basis on which the property would be acquired.

Q. Assume that the price is not fixed, the price is to be determined by condemnation proceedings?

A. It would certainly affect it.

Q. Assume that a gas plant were constructed here and its earning capacity develop- at a cost of 31 or 32 hundred thousand dollars and that under the laws as they existed, a franchise could not be granted for a period longer than 25 years, that no exclusive franchise could be granted, that no agreement could be made as to rates to be charged by the company, that the city had power to regulate rates, that the city had the power to establish a competing plant, that the city had the power to authorize either individuals or private corporations to establish competing plants, that the city had the power to divest the company of its property and cause it to make an involuntary sale of it by condemnation proceedings and assume further that under the laws of the state a corporation if a corporation was necessary to operate this property could not issue any stock that was not
1981 fully paid and could not incur any indebtedness in excess of two thirds of the amount of its outstanding capital stock, what would you say as to the amount of the return in excess of operating expenses including taxes and a sufficient amount to provide for depreciation that would be necessary in order to attract capital to such investments?

Same objection as to former questions.

A. I could not nor do I believe anyone else could estimate what would be a proper return under such conditions.

Q. Please state whether or not you think a prospective or estimated return of ten per cent would do it?

Same objection.

A. Certainly not.

Q. You have had some experience have you in estimating cost of building these properties, reproducing these properties?

A. Yes, sir.

Q. For how long?

A. Nine years.

Q. What do you say as to whether or not it is necessary in making such estimates to make an allowance for omissions and contingencies and things of that kind and if so how much?

Objected to as incompetent, immaterial, and not the subject of expert testimony.

A. It would depend entirely upon my knowledge of the engineer who made the original estimate. And would vary all the way from ten to 100 per cent, depending on the man who made the estimate.

Q. That is a broad field. I wish you would state what your experience has been in the matter and what your experience has demonstrated as to whether an estimate which does not allow for these matters is insufficient to cover actual cost of construction.

1982 Objected to as incompetent, immaterial and not the subject of expert testimony.

A. No estimate of the reproduction value of a property should be made without allowing a certain percentage for that item.

Q. And why? What has your experience shown about it?

Same objection.

A. My experience has shown that no matter how carefully an inventory is made and how careful an estimate is made of the reproduction value of the property there are many conditions which cannot be seen or foreseen and omissions are always made in making an estimate of that nature so that a minimum of ten per cent should be made at least in the cost of reproduction and in addition to that a liberal allowance should be made for the cost of piecemeal construction where property has been developed and built up over a long period of years.

Q. I wish you would state whether in your actual experience in building these plants you find it necessary to incur any expense on account of engineering and supervision and things of that kind?

Mr. BYERS: Oh that is so apparent I would not think counsel would want to take the time with it.

Mr. GUERNSEY: All right I will withdraw.

Cross-examination by H. M. BYERS, Esq.

Q. The mistakes in these inventories are always I suppose on the same side.

A. There are rare exceptions where an engineer over estimates.

Q. I am not talking about an engineer, I am talking about an invoice of property where you have counted the pieces, measured the buildings and all that sort of thing and where it is all carried
1983 out into figures your idea is the mistakes are always one way.

A. Yes, sir.

Q. And that is the reason that you would allow ten per cent.

A. At least.

Q. To cover mistakes. Now if you had a case where several engineers had followed each other on the witness stand and all testified that they checked up every item and every article and they chanced to find mistake of one brick—and we throw that early in this case, would you still say there ought to be ten per cent for omissions?

A. If they had not already included it in their estimates I would say so.

Q. They all swore they checked it up thoroughly and one man who was brought in as a witness with respect to the distribution system was so accurate and so certain of himself that he sat upon the witness stand and gave the number of miles of mains, the size of the mains, the streets upon which they were laid, the years in which they were laid and then boasted about not having made a mistake. You still ought to add ten per cent to the distribution system had you?

A. Yes, sir.

Q. Notwithstanding what he said about it?

A. Yes sir.
Q. That he hadn't missed a thing?
A. I would not say definitely ten, but ten or more.
Q. Ten or more is what you said about returns. What you meant on returns was ten per cent or as much more as you could get wasn't it?
A. You are shifting now to returns?
Q. To returns.
1984 A. Ten or more should have in a case where the hazards——
Q. When you say or more that means as much more as you could get ?
A. Not necessarily.
Q. Well how much more?
A. Depend on what these hazords were and what figure it would be necessary to have for taking that chance on?
Q. What difference would the hazards make if you are getting ten per cent. How much more ought you to have over and above that?
A. There are lots of conditions surrounding investments in this class of property which are such hazards that no sane man would invest his money for a prospect of ten per cent return only.
Q. I am just trying to get an idea of how much more you think would suit the ordinary individual that was dealing in that kind of property?
A. I would have to know the other conditions,.
Q. Suppose conditions were just as bad as they could be but still the property earned ten per cent on the investment now how much more ought you to have because the conditions are as bad as they can be.
A. That would put the investment in the speculative class out of our line and our company would not put money in under those circumstances.
Q. An investment earning ten per cent would be speculative in your opinion?
A. If you walify that by stating what the prospects of the future earnings would be and what safeguards would be furnished I can answer that question.
Q. Well just imagine the worst possible conditions you could, how much more ought you to have than ten per cent.
A. I should say there would not be anything sufficient to
1985 warrant a man to put his money into conditions the worst imaginable?
Q. Well Mr. Guernsey stated a whole lot of things here you said were very unfavorable. Now how much more ought you to have for these unfavorable things he referred to, how much more than ten per cent?
A. I would say I would not and our firm would not put their money into property of that kind under conditions stated.
Q. I say if you were going to put it in how much more should you have?
A. I can only answer that by saying he should not put his money in.

Q. Of course that is not an answer. You said a man ought to have ten per cent or more depending on the hazards and conditions. Now take the conditions he refers to how much more than ten per cent do you think a man ought to have?

A. I would say these hazards are too great so that I could not estimate how much in addition to ten per cent he should have.

Q. Now let me put this question to you. You of course have no interest in this law suit?

A. None whatever.

Q. You don't have any stock in gas properties?

A. Not in this one.

Q. Not in any gas properties generally?

A. I have in one.

Q. What one is it?

A. Up in Minnesota.

Q. What town?

A. Stillwater, Minn.

Q. The only gas company there?

A. Yes, sir.

1986 Q. How long have you had the stock?

A. Three years.

Q. What is the rate up there, what are you getting for gas up there?

A. $1.50 less discount scaling the rate down as low as $1.05.

Q. How big a town is Stillwater?

A. Stillwater itself only 12000 population. But we serve a number of surrounding towns at higher rates than that.

Q. When you -erve town- farther away you get more for it?

A. Yes, sir.

Q. Stillwater is about 12000?

A. Yes, sir.

Q. Are you just a stockholder or are you one of the managing officers?

A. Just a stockholder.

Q. You have no interest in any other gas properties?

A. No, sir.

Q. Does your firm?

A. Yes, sir.

Q. In a general way how large an interest, I don't want to inquire into private business, but in a general way?

A. They own the controlling interest in some thirty or forty of them.

Q. Then of course they are very deeply interested in maintaining rates, what you would call fair rates.

A. Fair rates, our commodity will not pay prices too high, you can't sell it.

Q. With that understanding of your relation to the gas business I want to put this question to you. I suppose you would be fair enough to say to the Master that conditions that reduced the value of the investment would also reduce the value of the prop-

1987 erty behind the investment wouldn't you?

A. As a going concern, yes.

Q. Mr. Guernsey called your attention to certain laws in Iowa from which you indicated there were hazards and the condition which you indicated would reduce the desirability or value of the investment. Now among other things you stated the statute which provides for the condemnation of gas plants in this state and now how far do you count that, to what extent do you count that a hazard to the investor?

A. Unless the condit-o*j*s of the contract between the public utility in question and the city or state as the case may be specifically provides the basis on which the property is to be condemned and taken away.

Q. Well that could not be done could it in a statute, the price or value of property could not be fixed in advance could it?

A. The basis of it could be fixed.

Q. And an investor would not want any more for his property than its real worth or value on the market where it was to be taken would he?

A. He is not any different from the average citizen in that respect but at the same time the experience has shown that the interpretation of a majority of -he statutes of that nature which are not sufficiently specific and the inadequate knowledge on the part of the public and city councils are such that in their estimation——

Q. Well there is no city council involved.

Mr. GUERNSEY: Let the witness finish his answer.

Q. So the fair price of condemnation would be the present value of the physical plant?

A. Well that might be your opinion about it. That is not
1988 my opinion but unfortunately this is general all over the country and where such things exist I would hesitate seriously to recommend the investment of our firm's funds where such general conditions exist and where they were not more specific.

Q. Don't the investor have exactly the same opportunity and same show with respect to the value of his property in the courts of the state as the people or city that is going to take it away? He is not entitled to any advantage in that respect is he?

A. In the testimony the burden of proof is put upon him and very expensive litigation necessary to prove it, he may be broke before he gets a chance to prove it.

Q. Isn't this what you mean and all you mean that a statute that provides for condemnation affects the security simply because it disturbs the permanency of the investment, that is that it may be taken away at any time, to that extent isn't that all the hazard there is in that kind of statute?

A. Not to my interpretation, my interpretation not only disturbs the permanency of the investment and as they generally operate you may not get a good fair price for the property when it is taken away.

Q. That assumes that the courts of the state are not going to do the right thing. In this state the law provides that in case of condemnation of property of this kind the value of the property shall be determined by three district judges and provides for their appointment by the chief justice of the supreme court as I remember it, or

the supreme court itself. In such a tribunal as that you would not ask that the investor had any advantage over the community would you?

A. Would not ask any advantage.

Q. No. Now another thing he included in his question the
1989 fact that the franchise could only be granted for twenty five years and that the city council had the right to fix rates and could not fix them to cover any particular period. You said that that would be a very serious objection and to some extent I am inclined to agree with you as far as speculative investment is concerned or so far as more than what we regard as a reasonable return upon money in this state is concerned. Now suppose that the situation was not only that a franchise could not be granted for more than twenty five years but here is a gas company that has not any franchi-e at all, not even for twenty five years and has no legal right so far as—I won't put it legal right, but has no contract right or franchise right to use the streets at all, would you say that would not only affect the value and desirability of its securities, but it would affect the value of its physical property wouldn't it?

A. Yes, sir.

Q. If your house was to send you to Des Moines as it undoubtedly from your testimony has sent you all over the country to look at gas properties both for the purpose of investing in them themselves and recommending other investors to invest, and you found a condition like that and you were going to advise with respect to the value of the property as a commercial transaction would you make a very great reduction on account of that condition, wouldn't you if you were going to advise the purchase of it at all?

A. You mean the condition that they had no franchise at all?

A. Yes, sir.

—. ——.

Q. Now Mr. Almert would it make any difference in the desirability or the value of the securities of a public service corporation if the securities did not exceed in amount the actual physical value of the property?

1990 A. Referring to bonds only and bonds and stocks.

Q. Bonds and stocks, take the securities generally?

A. The greater the value of the physical property back of the securities, the more valuable the securities.

Q. The security is much more desirable and will sell on the market with less difficulty and at a better discount rate if the securities do not exceed the actual investments in the property.

A. Not on that condition alone.

Q. All other conditions being equal of course?

A. All other conditions being equal?

Q. Yes.

A. You may have an immense plant several times too big in the territory.

Q. I am assuming you do not have any abnormal condition in that respect?

A. Yes, sir.

Q. Did I understand you to say that in your employment that you passed on securities?

A. I pass upon the properties themselves and estimate the amount of securities that are reasonable and safe.

Q. To carry?

A. Yes, sir.

Q. I don't suppose you claim to know anything about local conditions in Des Moines?

A. None whatever.

Q. Nor for what money is loaned for over the bank counter.

A. None whatever.

Q. Nor what securities sell for in Des Moines?

A. I do not.

1991 Q. Nor the value of gas stock in Des Moines or anything of that kind?

A. No, sir.

Redirect examination by N. T. GUERNSEY, Esq.

Q. Will you please state whether your company has ceased investing in these utilities in Iowa on account of these local conditions.

A. Yes, sir.

Witness excused.

1992 ANDREW COOKE being recalled for further cross examination by Hon. H. W. Byers, testified as follows:

Q. Do you have any interest in any gas property anywhere?

A. I have no interest, I hold no stock in any public service company.

Q. Do you have any financial interest of any kind in gas properties?

A. No, as a matter of policy I confine myself to the business I am in, believing I am better qualified to pass upon securities if I keep out of personal investments in the property themselves.

Q. Does your house—I am not sure whether you were a member——

A. I have an interest in the business if that is what you mean.

Q. Does your firm carry any gas bonds?

A. Carry gas bonds?

Q. Yes, for sale?

A. Yes, sir; a very large amount.

Q. So to the extent at least of the securities that they own and have sold they are to that extent interested in what you term a fair rate upon the sale of gas.

A. Yes, sir.

Q. Maintaining what you call fair rates?

A. Yes, sir.

Witness excused.

1993 W. J. HAGENAH being continued on cross examination by R. O. Brennan, Esq., testified as follows:

Q. We went over this table at page 43 of your report this morning to some extent on the annual investment on the 8 per cent earning basis, also in connection with Exhibit 26. I just want to call your attention to the first column of figures there for the twelve months ending June 30, 1887, and I want you to tell me what the book cost of the property was at the close of that year?

A. $308,776.60. That represents the cost of the property, the cost of the physical property at the close of the fiscal year ending June 30, 1887.

Q. That does not include working capital.

A. No, sir.

Q. Does that include the 8 per cent of depreciation?

A. No, sir; that is taken directly from the company's books.

Q. Well does that include the additions?

A. It includes the additions from year to year up to the end of the period, at which you are asking the value of the property.

Q. You start in here with the value of the plant twelve months ending June 30, 1887, $308,983.00. Of course that includes working capital.

A. Which figures are you referring to now?

Q. The first figure $308,983.

A. Yes, sir.

Q. Could you tell me what the structural cost or book cost of the property was at that time, the book cost of the property in 1887?

1994 A. The book cost of the property at the close of the fiscal year ending June 30, 1887, was $308,776.10. The figure which you referred to a moment ago of the fiscal year ending June 30, 1887, and then including working capital it is $308,983.

Q. At the close of the year then with the additions the actual book cost of the property with additions is $308,776.10.

A. This is the close of the fiscal year 1887.

COURT: That is the fiscal year, he asked about the year?

A. I have not the figures for the calendar year.

Q. It is for the twelve months?

A. Yes, but it is the fiscal year, not the calendar year.

Q. When does the fiscal year begin?

A. July 1st.

Q. This shows the book cost for the fiscal year ending June 30, 1887?

A. Yes, sir.

Q. Now if you had carried your table say to December 31, 1915, using about the same averages that you have used and keeping in mind the normal increase in business so as to ascertain the gross earnings have you computed what the value of the investment would be at the end of that period?

A. 1915, no I have not gone any farther than the actual time ending in 1910. I have not gone into any furture times. No estimation or speculation as to what would be the earnings or expenses for the future.

Q. You have not gone into that at all?

A. No, sir.

Q. Since 1906 according to your method of computation about what has been the increase in the value of the investment in round numbers?

1995 A. I worked that out yesterday I believe, but I have not the figures here now. I will add it again and subtract it again. I find here two figures which refer to our discussion yesterday and from that I compute that the increase in the cost of the plant since the Des Moines Gas Company assumed control up to the end of the calendar year 1910, was $810,360.

COURT: I find there was to the Des Moines Gas company under this table schedule 1, Exhibit "B" $1,117,655.89. Is that correct?

A. Yes, that is the figure I have here in the margin of my table.

Q. Then the difference between that and $1,928,016.65 is what?

A. It makes that. Makes $810,360.76.

COURT: I notice the figure $139.42 in red?

A. That is a year instead of being an actual addition to the property there was a net reduction in the cost of the property due to taking out of service certain property which had previously been charged to construction.

COURT: That you do not add in?

A. No, that is deducted.

Mr. BRENNAN: This 810,360 representing increase in value of the property since the Des Moines Gas Co. took it over would be shown on the books to be verified by the vouchers and records of the company would it not?

A. Yes, sir.

Q. And you did verify that much?

A. Yes, sir.

Q. You said this that there had been put into the plant through dividends or otherwise $810,360.65, do you?

A. Not as to what you state. I didn't verify any additions to property due to dividends. There were additions to property fue to actual expenditures for construction of properties amount-

1996 ing to $810,360.76?

COURT: Does that include money expended for replacement that you showed on page 36?

A. No, sir; this was eliminated.

COURT: None of that is in?

A. No, sir.

Mr. BRENNAN: This represents the amount shown by the books of the company that was actually expended in the plant. The books show that this amount was actually expended for construction of properties and you went over that to verify it and know that it was actually expended for that purpose.

A. I analyzed the construction account and found that money had been expended for specific construction purposes. There were vouchers and receipts showing expenditures and such charges were carried into the general ledger. I didn't go over to the premises to see whether there was in existence the specific piece of property

which the books showed had been charged to construction. I made merely the audit.

Q. You did satisfy yourself did you not from the vouchers and data in the office of the company that that amount had been expended?

A. Yes, sir.

Q. Covering four years.

A. Yes, sir.

Q. Except the $285,000, of course you didn't see a voucher for that?

A. There is no voucher for that.

Q. That is made up as you stated from verbal statements?

A. No, there is a charge on the books for $280,000 but it appears in the organization of the Des Moines Gas Co.?

1997 Q. And that you attempted to explain how it might have occurred and how it got on the books at that time?

A. Yes, and to the best of my knowledge how it did occur.

Q. Well you don't know anything about it personally?

A. I know there is a transaction on the books showing that property was turned over to the value of $280,000 represented by this charge, I know that the property turned over consisted of several specific classes, one million foot holder, one hundred thousand gallon oil storage tank, certain real estate and specific distribution property in Valley Junction.

Q. You know that from what has been told you?

A. Yes, in answer to my inquiry what this specific charge covered.

Q. As far as you are concerned it is absolute hearsay outside of the record on the books?

A. Yes, as to what the specific property it was, it is hearsay.

Q. You took pains to find out just what that item was, it attracted your attenion?

A. I just described how I went about it.

Q. You made a memorandum of the items which it was claimed had gone into the plant?

A. In that specific item?

Q. Yes.

A. Not any memorandum, I just gave you the four items, I didn't have to make a memorandum for that.

Q. You stated on yesterday in answer to one of my questions that there was no working capital or discount on bonds or accrued taxes, anything of that sort included in this——

A. I stated that there was no working capital in there, that as far as I knew there was no accrued taxation charged and while thinking of discounts in another sense I believe I stated that

1998 there was no discounts on securities charged to construction. Later on I corrected that and said there was a charge covering discounts in scattering amounts which I thought approximated about $75,000, might be a few thousand more or less.

COURT: A discount of $75,000 or on 75,000?

A. No the discount amounted to something in the neighborhood of $75,000 a little more or less. That is included in my table.

Q. You understood the question that was put to you did you not and you were asked this question you know there is no working capital or discount on bonds or accrued taxes or anything of that sort included. Ans. No, sir; only physical property?

A. I must have misunderstood your question because there would have been no object in my saying there were no discounts in there, that is why later on corrected it. I want to correct it now by saying there are these small discount items carried in the total about $75,000 more or less. That is my present statement in full understanding of what I thought you meant in your question.

Q. You didn't correct it until Mr. Guernsey asked you on redirect examination?

A. I spoke to Mr. Guernsey about it.

Q. I see from your cross examination on yesterday you were asked this question, did you include anything for discount on bonds. Ans. No, sir; not to my recollection. There was not any way by which you could have misunderstood that question was there?

A. That was correct as to my recollection at that time. That is why I am trying to correct it now.

Q. And after that you were asked this direct question, did not depend upon your recollection, there is no working capital or
1999 discount on bonds, accrued taxes or anything of that sort included. Ans. No, sir; only physical property.

A. I have explained my answer to that question.

Q. That is all the explanation you want to give?

A. That is all. I say it simply shows from that testimony that I find out that I did not understand that question at that time.

Q. Didn't understand the question put to you direct as to whether or not this item included discount on bonds?

A. I said I didn't know there was to the best of my recollection.

Q. When the direct question was put to you do you mean to say you didn't understand what was asked?

A. I understood what you asked but I didn't remember what you were trying to get.

Q. You said there only physical property didn't you?

A. I am telling you now there is a charge in there for discount.

Q. You said you carefully audited these books going over the period of five years, is that right?

A. I think so.

Q. Did you look up the securities that had been issued by the company?

A. I have a table in my report here of securities, schedule 1, Exhibit "G", Schedule 1, Exhibit "H".

Q. Do these show any discount on bonds Mr. Henegah, take for instance Exhedule 1, Exhibit "H"?

A. Yes, there was a discount on those bonds issued, that was the discount I referred to.

Q. Is it shown on this schedule 1, Exhibit "G" in Exhibit 23.

A. I think so. I don't see it now, it may be in there I would have to read it over carefully to find it.

Q. Can't you read it over carefully and tell us?

A. I have read it over and I don't find any reference to discounts in there.

Here the further hearing was adjourned until 9:30 A. M. Tomorrow.

2000 Thursday Forenoon Session.

AUGUST 10, 1911, at 9:30 a. m.

Counsel for the respective parties all present, except Mr. N. T. Guernsey.

Testimony on part of complanant resumed as follows:

WILLIAM J. HAGENAH, re-called for further cross-examination, examined by R. O. Brennan, Esq., testified:

Q. I believe, Mr. Hagenah, last evening we were discussing discounts on securities—that is as you remember it, is it Mr. Hagenah?

A. Yes, sir; I just finished reading a part of my report and come to the conclusion I had not shown in my analysis of the bond accounts any discounts.

Q. The bonds which you set out in Exhibit 23 and the history of the bond issues shown therein do not show any discounts?

A. They do not show the market price at which the bonds were sold.

Q. But I understand you now say in answer to a question put to you by Mr. Guernsey that in this report you have incuded discounts on securities?

A. Yes, sir.

Q. And that represents a part of the value of the investment as determined by you by this method?

A. No, sir, it represents a part of the cost as shown by the books.

Q. That is, part of the $1,928,000?

A. Yes, sir.

Q. Well, now, you take some of these items, I would like to have you separate the discounts, taking these twelve months ending February 28, 1907, if there were any bonds sold during that year, and tell us just how much is included for discounts on securities??

2001 A. You are referring now to schedule 1, Exhibit B, of my report?

Q. Yes, schedule 1, Exhibit B, and Exhibit 23.

A. I can't separate that, Mr. Brennan, for any particular year, but I can tell you the total amount of discounts charged to construction since 1907, up to and including 1910.

Q. Beginning the first day of March, 1908?

A. 1906—during the life of the Des Moines Gas Company?

Q. All right; well commencing then with February 28, 1906 and up to and including the year 1910, tell us how much of that amount represents discounts on securities.

A. The total discounts on bonds charged to the construction cost of the physical property during the history of the Des Moines Gas Company until the close of the calendar year 1910, was $33,950.

The MASTER: Can you point out the bonds and the rate of discount?

A. Between the years, or rather between the months of October 1906, and December 31, 1910, the company sold $412,000 of par value, first mortgage, five per cent, twenty year gold bonds to reimburse the company, or the treasury for expenditures on account of construction. Of these bonds $267,000 was sold at the price of ninety; that is a discount of ten per cent, making the discount on that sale $26,700——

The MASTER: Is that the discount?

A. That is the amount of the discount, ten per cent, which is $26,700. $145,000 worth of bonds out of the total of $412,000 was sold at ninety-five, or a discount of five per cent, the discount in that case being $7,250. The sum of these two discount items equals $33,950. The reason I can't give the discount for any particular year is because the company does not sell bonds in small
2002 amounts to reimburse small construction items. The practice is to wait until there is an accumulation of indebtedness and then to issue bonds for the larger amount—it affords a better market.

Q. Now, Mr. Hagenah, do you remember, or have you any information as to when the Des Moines Gas Company sold bonds, during what year?

A. I don't know the last particular issue other than that the total bond issue during the dates which I gave amounted to $412,000. I don't know the date of the last issue.

Q. Well, do the books show that or is there anything in your report to indicate in this analysis of the bond account which you set out in Exhibit 23?

A. My report shows that the last sale of bonds in 1910 was under date of August 31, to the amount of $49,000.

Q. Do you know at what price the bonds were sold under that issue?

A. No, except that they went either at a discount of ten per cent or five per cent. I don't know in which group of classified sales that particular item occurred. No bonds during the life of the company were sold for less than ninety and the smallest discount was five per cent.

Q. Well, it would be important to know, would it not, in getting your book cost of the property inasmuch as you have considered discounts, to know the exact amount at which the bonds were sold?

A. Well, they went for either ninety or ninety-five. The total discount charged to construction during that period was $33,950.

Q. Is that the actual discount or average?

A. Actual discount.

Q. You can't separate and tell us, for instance, this bond issue under date of August 31, you can't tell us whether this sold for ninety or ninety-five?

2003 A. No sir, I can't.

Q. Would the company's books show that?

A. Yes, sir.

Q. You can furnish us that information, Mr. Hagenah, in connection with this report, Exhibit 23?

A. I don't know whether I can or not; the books show it.

Q. And the issue of date April 30, 1910, $32,000, at page 10 of your report, do you know at what price these bonds were sold?

A. I have to make *make* the same answer to each one of the individual items that is given in the report. The item I have given you represents the total discounts during that period.

Q. Were you furnished by the company at the time of making this part of your report a memoranda of the amount of bonds sold and the price at which they were sold?

A. No, sir.

Q. And when you were here going over the company's books, auditing the same, did you take a memoranda?

A. I took a memorandum of the total discounts, but not of the individual bonds issued. I did not make any classified analysis of each particular sale. I took the total of the sales; some sold at ninety and some at ninety-five, making the total discount that I have stated.

Q. Now, from your audit of the books of the company, did you find that any bonds had been sold prior to February 28, 1906?

A. Yes, sir.

Q. And can you tell us the amount of the issue or issues of the bonds for the period preceding the 28th day of February, 1906?

A. Those years cover the corporate history of the Capital City Gas Company. That company at the time it was ab*srob*ed in the re-organization resulting in the Des Moines Gas Company had
2004 a total outstanding bond issue of $400,000. These bonds were issued in the following manner: On December 31, 1888, the company issued $200,000 par value bonds to cover the construction of a water gas plant and patent rights incident to the use of such equipment. Under date of February 1897 $225,000 par value bonds were issued, dated January 1, 1897, and running for a period of ten years, of which $200,000 was issued to retire the $200,000 of bonds issued to cover the cost of installing the water gas apparatus and the costs incident thereto; and the remaining $25,000 to cover real estate expenditures. In October 1899 the company issued bonds to the par value of $73,000, which were dated January 1, 1897. These bonds were issued for cash to reimburse the company for construction and betterment expenditures. In April, 1901, the company sold bonds for cash to the par value of $58,000, the bonds bearing date of January 1, 1897, and were sold, like the preceding issue, to reimburse the treasury for construction and betterment expenditures——

Q. 1897?

A. They bore date of 1897 and issued in 1901. In January 1902, the company sold an additional block of bonds to the par value of $44,000, also to reimburse the treasury for construction expenditures; these bonds also bear date of January 1, 1897. The total authorized issue therefore of $400,000 is explained by these sales, of which $200,000 was issued to retire the preior and previous

issue of $200,000, $25,000 for real estate, and $175,000 was issued to reimburse the treasury for betterments. These bonds were all disposed of at par.

Q. No discounts?

A. No, sir; so I will have to correct the statement I made I think on two occasions yesterday, that I thought the discount charge
2005 in the construction account was about $75,000 a little more or less; I am wrong in that; it is only $33,950.

Q. These bonds dated in 1897 and sold in April, 1901, were sold at par, with accrued interest, at date of sale, is that your understanding?

A. That is the practice, yes sir.

Q. Is that what the books show?

A. I don't remember about that.

Q. That would be important to know.

A. It is on the books.

Q. Well, it may be. Your analysis of the bond record of the company, you would be interested in knowing whether bonds were sold almost four years after they were dated, you wouldn't expect the company if they were sold at par to get accrued interest as well?

A. You do not distinguish in your question between the date the bonds were authorized and issued.

Q. I understood you to say the bonds were dated in the year 1897 and were in fact issued or sold in 1901, four years thereafter?

A. That is the authority under which the bonds are issued; they bear the date of the general mortgage.

Q. Do the bonds on their face bear the date of the year 1897 and they were sold in 1901, four years thereafter?

A. My recollection is that if the bond does not carry interest during the time from its authorization to the date of issue, interest began after the date of issue.

Q. What I want to know, in your examination of the books and bond records of the company, what the fact is as to the date which these bonds bore?

A. I don't remember that, the actual fact, in this particular case.

2006 Q. So that you would now say in this table shown at page 5 of Exhibit 23 in all the items preceding February 28, 1907, that nothing is included therein to represent discounts on securities?

A. To the best of my knowledge nothing is included.

Q. To the best of your knowledge, now, that knowledge is based upon careful and painstaking audit of the books of the company?

A. Yes, sir.

Q. You satisfied yourself after a careful, painstaking investigation and audit there were in fact no discounts upon bonds and securities covering the period from 1896 to February 20, 1906?

A. I found none.

Q. Did you consider in connection with your report Exhibit 23 the amount of cash received by the company from the sale of stock?

A. No, sir.

Q. Did you consider it at all in connection with your report Exhibit 23?

A. No, sir.

Q. And in your audit of the books of the company, did you inform yourself with respect thereto in any manner?

A. Only as the amount of capital stock appears on the balance sheet.

Q. You accepted that as being the amount the company had received from the sale of stock?

A. That does not necessarily follow; I paid no attention to that.

Q. I want to know what you did?

A. I paid no attention to the amount of cash which the company received from the sale of its stock. The existence of the fact that a large amount of stock appears on the balance sheet does not indicate that a corresponding amount of cash was received.
2007 My audit was more particular to determine the cost of the property over a period of years, the cost of operating that property and the income from the company's operations, and a statement of its assets and liabilities at the close of the calendar year 1910. I did not analyze the cash items to show the amount received from the sale of stock.

Q. Now, Mr. Hagenah, in your report Exhibit 23, if I get your theory correctly, you have charged the consumers in arriving at the value of the investment eight per cent on practically all of these items that you include as representing the book cost of the property.

A. I do not do that.

Q. You didn't?

A. No, sir.

Q. In the one item $1,928,016.65 there is included the sum of $33,950 representing discounts on securities?

A. Let me understand you now. You say in referring to my table the table you have in mind is this exhibit of the construction cost?

Q. Yes.

A. I thought you referred to the investment value. I do allow eight per cent on my total shown in the table of my cost analysis.

Q. So that it is your notion that notwithstanding now that you have said the property according to your theory is one hundred per cent in all respects, that its stock is paying eight per cent dividend, that all extensions that are made and additional capital necessary therefor is earning eight per cent, that yet *yet* it would be necessary in financing the extensions, etc., and the issuing of bonds, to sell them at a discount, do you?

A. I cannot answer your question yes or no. You in-
2008 cluded in it several elements more or less inconsistent.

Q. Let me ask you this: The stock in the company which is paying eight per cent dividends annually and where it issues a five per cent bond, would you think that bond would have to go at a discount in order to find a market?

A. The rate of dividend paid by a company in itself means nothing. You must take into consideration the amount of capital stock.

Q. I know, but what you have done in this case, you have property representing the full value of the stock and the property which you have bonded or mortgaged is as good as new, worth one hundred per cent on the market, now you issue bonds to the amount of $400,000 on property of that character, that is worth $3,000,000 according to your statement, do you think it would be necessary in order to find a purchaser for those bonds to discount when they were earning five per cent?

A. I do not know what elements would be taken into consideration. I know the purchaser would analyze very carefully the financial market, and all the elements affecting value, the bond market, which market is almost as sensitive as a barometer——

Q. You have assumed that they would have to be discounted in making up your valuation on the investment?

A. I made no assumption; I took the facts from the books.

Q. Suppose that instead of paying five they were paying six, would that make any difference?

A. Yes, sir.

Q. What difference would it make?

A. You would get into one of two difficulties. The first one is that you have a higher interest obligation to pay; you- rate of return allowed in a rate case upon your investment, must be so much larger to take into consideration the higher interest rate;
2009 and the second difficulty which you would encounter would be, if I may refer to the ruling of the court in the case of Steinerson vs. The Great Northern Railroad Company where they eliminated the excess interest on the bond issue where the rate was precisely six per cent, as allowed by the court, you are confronted by an actual condition.

Q. You have assumed eight per cent as a reasonable return and you have guaranteed that for the purpose of this report?

A. I have not guaranteed it. I have assumed an eight per cent rate of return the capital under these particular conditions was entitled to.

Q. Haven't you charged the consumers of this community with this eight per cent return upon this property by capitalizing the losses?

A. Upon the entire investment computed in this way.

Q. Computed in this way, by that you mean you have capitalized all the earlier losses of the company?

A. I have capitalized the losses and credited with profits.

Q. You have included the working capital and that is earning interest?

A. Yes, sir—pardon me, in what sense?

Q. It is included in one of those columns, is it not, where you speak of extensions and improvements?

A. I mean it is entitled to the allowance of the same eight per cent the capital invested in physical property is—physical property plus capital represented my table.

Q. If there has been any mismanagement in the history of this

concern going back to 1886, you have capitalized that along with the other matters?

A. If there has been any. I don't know of any; if there
2010 been any I would have made an adjustment accordingly.

Q. You are assuming for the purpose of this report that there was no mismanagement?

A. I am dealing with the fact as shown by the books.

Q. Of course the books don't reveal any mismanagement, and yet you tell this court they were entitled to depreciation and did not charge it off and you have gone over the books and have charged a reasonable amount for depreciation?

A. Exactly, and because they do not charge off any depreciation. They are being penalizes by——

Q. I think you said that yesterday; I am calling your attention to that now; if there was any mismanagement, Mr. Hagenah, it is capitalized along with the losses?

A. If there was any mismanagement which I didn't get it would be included in the figures I used, but I found no evidence of it.

Q. You have assumed eight per cent as a reasonable return for the purpose of this report; I wish you would tell the court that being true, and the property being in the state of efficiency you claim for it by reason of your theory, why it is that in selling bonds earning five per cent it would be necessary to figure that you would have to pay at least $33,950 as discount on a $400,000 bond issue?

A. The discount on these securities is not of my making. It is a cost the company incurred which it could not avoid at the time it sold those bonds. It was a condition imposed upon the sale of the bonds by the money market and the condition of this property at this particular time and it was a necessary expenditure made in good faith.

Q. Now, that is an assumption on your part that it was all in good faith?

2011 A. I say the transaction was in good faith unless I found evidence to the contrary.

Q. I cannot reconcile your figures, that $412,000. I understood it that the first issue under date of December 31, 1888, was $200,000; and on January 1, 1897, $225,000 were issued to retire $200,000, and that left $25,000 and the company in October, 1899, issued $93,000 and *on* April 1901, $58,000 and then in 1902 $44,000.

A. You are speaking now of the Capital City Gas Company?

Q. Yes; was the issue of 1902 the amount of $44,000?

A. It was.

Q. Then we have $225,000; $73,000; $58,000; and $44,000 and that is $400,000 is it not?

A. Yes, sir; isn't that what I said?

Q. I understood Mr. Douthert to say it was $412,000.

A. $412,000 was the issue of the Des Moines Gas Company. You are referring to the Capital City Gas Company.

Q. Can you separate from the table in schedule 1, Exhibit B, the Valley Junction business and property?

A. I cannot.
Q. Do you know how much is included therein?
A. No, sir.
Q. Which represents the property and business in Valley Junction?
A. No, sir; I know it is a very small amount.
Q. The $1,928,000 includes this high pressure pipe line, does it not to Valley Junction?
A. I don't know of the existence of a high pressure pipe line. I am dealing with the figures on the books.
Q. It includes the real estate owned by the company in Valley Junction?
2012 A. That appears in the ledger.
Q. And it represents the cost of the company as shown by the books in laying mains and establishing their distribution system in Valley Junction?
A. Everything on the company's books which is a legitimate construction cost is in this table.
Q. There is no way by which you can separate those items or tell the Master the percentage of the amount included in Valley Junction?
A. No, sir.
Q. The books, of course, show, do they not, what was paid for the Valley Junction business?
A. An analysis could be made which would show all that.
Q. Do they keep a separate set of books of the Valley Junction business or is it all kept in the books of the Des Moines Gas Company?
A. It is kept in one general set of books.
Q. Isn't the Valley Junction account, construction account, separate from the Des Moines Gas Company?
A. No, sir.
Q. So you could not tell which was Valley Junction and which was property in the city of Des Moines by reference to the books?
A. Not from the analysis of the books; I would have to go into a detailed analysis of the individual authorizations and work orders and trace the disposition of the money and minor items. The total is very small which belongs to Valley Junction.
Q. Now, let us take up Exhibit 26, Mr. Hagenah, and referring to the depreciation, beginning with February 1906 of the Des Moines Gas Company, and I wish you would add the figures there commencing with the item $3,611. and using the figures to the bottom
2013 of the column so that you will get the total figures?
A. The total of the list of six figures, the last six figures showing depreciation at the rate of two per cent on depreciable property is $166,472.
Q. So that represents the depreciation for the five years?
A. Yes, that represents the estimated depreciation for the five years.
Q. Your estimate of the depreciation for the five years?
A. Yes, sir.

Q. Have you Exhibit 29 before you, Mr. Hagenah?

A. I don't know what exhibit that is.

Q. That is the exhibit of gross revenue and net return applicable to interest and profit for the five years ending December 31, 1910.

A. Yes, sir.

Q. Now, what do you estimate, or what did the books show that was written off for depreciation covering five years?

A. During the ten months ending December 31, 1909, as shown in the fifth column in that table there is a charge and the corresponding credit to property on account of depreciation to the amount of $264,108.78.

Q. $264,108.78?

A. $264,108.78 according to my copy.

Q. So that it exceeds this table, exceeds the amount written off for depreciation as compared with the amount which you estimate in Exhibit 26, by $97,636.78.

A. That is substantially the difference between $264,108. and $166,477.

Q. Well it exceeds the estimate for depreciation as made by you in Exhibit 26 by that amount; isn't that the fact?

2014 A. This particular charge exceeds the amount I estimated for depreciation over those years by substantially the amount which you have given.

Q. Now, you lose in Exhibit 26 as your estimate for the five years this $166,417 do you not?

A. Yes, sir.

Q. Now, then, in Exhibit 29, covering five years there is a charge off for $264,108.74?

A. Yes, sir.

Q. And in Exhibit 29, when you come to your final average or the average of profits you use the figures $117,291.68 and in order to reach that amount it was necessary for you to use the $264,108.74 in lieu of the figures $166,472. isn't that correct?

A. With this explanation——

Q. Just answer the question and then you can explain.

A. Yes, but Exhibit 29 is based upon an analysis of five years of the company's books; Exhibit 26 is based upon an analysis of the company's records for 29 years in which I estimate, and my estimate is set off against the actual conditions found on the books.

Q. That is, in 1909, was the first year in which you found any charge had been made for depreciation?

A. Yes, sir.

Q. So that Mr. Hagenah, if you had kept to the text and within the books, you would have had no depreciation at all except this item in 1909?

A. Yes; if I had not used my own estimate and had used the figure on the book, naturally I would not have put that item in there.

Q. What I mean is this: You say when I called your attention to the discrepancy between Exhibit 26 and Exhibit 29, first re-

2015 specting this depreciation account, your explanation of that now is that one is the actual records taken from the books,

as against one which is an estimate covering a five year period. Now my question to you is, had you in every case kept to the books and not gone outside of the books, and not attempted to substitute some notion you might have with respect to what the books should have shown, you would have no occasion to use depreciation at all in your report prior to the year 1909?

A. That is true, if I had been guided solely by what the company did in that respect, I would have had no other depreciation figure to use except $264,108.

Q. Now you would justify the manner of arriving at the general average profit shown in Exhibit 29 by the fact that you came to this charge in 1909 of this $264,000 and that you were bound by that, whether it was reasonable or unreasonable?

A. That is the statement of the company's books, that is all.

Q. Suppose it had been $500,000?

A. I would have shown it.

Q. You would have used it just the same?

A. As an auditor I would only show figures on the company's books.

Q. If you were going to tell the Master what the average profits were in the company during the five years, you would be willing to do that, notwithstanding the charge amounted to $500,000?

A. I would say to the court, as I would say now, this is a true record of what the company's books show to have been the different profits during the period in question.

Q. You have also undertaken by this report, Exhibit 29, to show to the Master that the average profits of the company for the five years referred to in this report were $117,291.68?

A. Yes, sir; I show that, and I hope I can convey to the
2016 court the impression that the condition in which the company's books now are and the manner in which it has been handling depreciation is an incorrect method; and in table 26 I want to show to the court what the actual condition of this property is and not what they thought it was.

Q. Mr. Hagenah, if you wanted to do that and wanted to be eminently fair with the court, why didn't you make another table showing what the average profit would be for those five years based upon your estimate of depreciation for the five years?

A. Because I could not figure profit without considering the element of depreciation and the cost of the plant. If this is the only item charged off for depreciation, it does not indicate in the slightest degree that depreciation has not taken place during the company's life to a greater extent than this one charge; it reflects merely that the amount charged off represents the best effort on the part of the company under its financial condition to recognize depreciation.

Q. I think you haven't understood the question. (Question repeated.)

A. Again I will say, if I wanted to show to the court that the actual profits as determined by me were as opposed to the charge on the books I would have to go back further and recognize the fact that nothing had been charged off for depreciation during the earlier

years and there was an accrued loss of a large proportion due to the fact that the plant had not been properly carried on with respect to the element of depreciation.

Q. That accrued loss you speak of would go into the capital account?

A. Yes, I think it should; I believe that is the proper way to do it.

Q. That is the way you figured it in this report all along?

A. Yes, sir; I think that is the proper way of handling it.

Q. What I want to know, Mr. Hagenah,—you wanted to
2017 illustrate did you not, by Exhibit 28, that the average annual profits of the Des Moines Gas Company for the five years preceding December 31, 1910, were the sum of $117,291.68. is that right?

A. Yes, sir; that is what the books show.

Q. That is what you wanted to illustrate by the books and your analysis?

A. I wanted to show to the court what the books show.

Q. And in doing that, instead of adopting the estimate which you had made in Exhibit 26, covering the five year period, you took this charge of $264,000 to represent depreciation, rather than the estimate which you had made in the table of Exhibit 26, isn't that true?

A. In making my analysis of the company's books I used the book figure. I wanted to show to the court that the books did not properly reveal the proper financial condition of the company for the purpose of this suit; therefore I made Exhibit 26.

Q. Then, Mr. Hagenah, the $117,291.68 was not in your judgment and according to the table in Exhibit 26 the correct average profits of the company for the five years preceding December 31, 1910?

A. I make no explanation in this table as to what my judgment is; this shows the condition of the company's books.

Last question repeated.

A. I cannot answer that by yes or no.

Q. Now, for the benefit of the Master and counsel I wish you would take this Exhibit 29 and instead of using this $264,000 representing depreciation, use the amount which you estimated for the five year period in Exhibit 26, and tell the Master upon that theory, what the average profits of the company would be covering those five years?

2018 A. May I ask a question in regard to that to see if I understand your question properly?

Q. Yes, sir.

A. Do you want me also to take into consideration the accrued loss up to this time?

Q. I want you to do this: I want you to take the depreciation which you have estimated in Exhibit 26 for the five years preceding December 31, 1910, using that as your basis in Exhibit 29 for the purpose of telling the Master what the average annual profits of the company was for the five years referred to?

A. You want a simple mathematical demonstration deducting a smaller figure from a larger for the five years. I can do that.

Q. I simply want it on the record.

A. (Witness calculates.) I have gone over that although I have not rechecked my work, I get an average according to that method of computation of $134,465.

Q. How did you get at that, Mr. Hagenah?

A. By taking the net return applicable to interest and profits for the year in question, without any allowance for the $264,108. which the company show- as its depreciation in 1909, and then deducting each year the amount shown in my Exhibit 26 averaging the total of those five numbers I get $134,465.

Q. So that by adopting your estimate of depreciation for the five years, we have a difference of something like $17,000 annually?

A. A difference of $17,000 but you have not recognized the accrued depreciation.

Q. You have recognized that in your estimate in Exhibit 26?

A. My estimate is based over a period of 23 years.

Q. But that would include a depreciation of five years?

A. Yes, computed over a period of 23 years.

2019 Q. That is the accrued depreciation for those five years?

A. When computed over a period of 23.

Q. For the five years?

A. As a part of the 23 years.

Q. That is the way you want to explain that?

A. Exactly.

Q. But it is a fact in order to arrive at your $117,291.68 representing profits, you had to weigh it down with $241,000 item which appeared on the books of the company?

A. No, sir.

Q. Instead of the estimate used by you in table 26?

A. I answer your question in the negative.

Q. You did arrive at $117,291.68 representing profits, by using the amount which the company had charged off on its books for depreciation, instead of using your estimate for the five years as shown in table 26?

A. Exhibit 29 is based upon the actual conditions.

Q. Can't you answer that question by yes or no?

(Question repeated.)

A. Yes.

Q. I wish you would refer to Exhibit 31, if you will?

A. I don't think I have a copy here.

(Is presented with copy.)

Q. Which is the table showing the working capital of the Des Moines Gas Company December 31, 1910? Now if you will go to Exhibit 23, and refer to schedule 1 in the statement of assets and liabilities, shown at page 3 of the report, in schedule 1, Exhibit 23, there is shown in the liabilities bills payable to the amount of $14,000; in Exhibit 31 in arriving at the total amount of working capital, $141,769.98. You only deduct accounts payable and make

no reference to the bills payable account, to which I called
2020 your attention; what explanation have you to offer for that?

A. Whether bills payable should be deducted is more or less of an open question; I have not deducted it in this exhibit.

Q. Why do you distinguish between accounts payable and bills payable?

A. Accounts are current obligations in the course of operating the company's business; bills payable represent money borrowed upon notes for a specified time.

Q. Mr. Hagenah, didn't I call your attention a day or two ago to one of these balance sheets of the company for the purpose of having you illustrate to the Master the method by which you arrive at working capital and the computations which you made in that time, did you not include bills payable?

A. I remember we discussed that; I think in that analysis you wanted me to make, I deducted $14,000, that is my present recollection.

Q. So that in order to have the working capital of the Des Moines Gas Company amount to $141,769.98 as of December 31, 1910, you were obliged to omit the liability account or bills payable?

A. The working capital I analyzed in two ways. In one case I deducted it and in another case I left it in. It is open to question whether it should be put in or not. In my table computing the investment value I tried to be very conservative; it may be I have gone too far; I have tried to be what you call eminently fair, in arriving at that valuation I deducted $14,000 making the net working capital $128,000.

Q. What is your understanding of the term current liability?

A. It includes account- payable and may include bills payable, but you would have to see the bills before you knew. You
2021 can borrow money for a very long time in the form of notes which would in time assume some of the characteristics of bonds.

Q. Oh, yes, if it ran long enough; but ordinary bills payable now——

A. If you will tell me now what you mean by bills payable?

Q. You have said that you audited the books of the company and told the Master, strictly in accordance with the rules adopted by the American Gas Association, or some other association, and that you find on these books as you have set out here, accounts payable and bills payable; I want you to tell the Master just what bills payable are; I don't want you to answer the question by asking me one.

A. I didn't ask you any. In this case the $14,000 represents money borrowed to tide the company over a period when they needed ready cash; just what that $14,000 was devoted to I don't know.

Q. You don't know whether it was notes running five years or two years?

A. It represented notes; I don't know the length of time.

Q. Borrowed at a local bank?

A. I don't know that.
Q. Or what rate of interest the notes bore?
A. I don't know.
Q. You don't know where the money was borrowed?
A. No, sir.
Q. It was an obligation of the Des Moines Gas Company?
A. Yes, sir.
Q. You didn't know the payee of the note?
A. No, sir.
Q. You don't know when the notes matured?
A. No.
2022 Q. Do you know whether the notes had been extended, the time of payment had been extended?
A. No, sir; I didn't inquire about that.
Q. And yet, when you came to estimate the working capital you assumed that these $14,000 are carried under bills payable should not be deducted?
A. I have not deducted them in this table.
Q. You call that current liability, wouldn't you?
A. I can imagine conditions under which the bill would be a *a* current liability. I have seen a good many bills, notes I would without hesitancy call current liabilities.
Q. Is it not fair to assume, Mr. Hagenah, if it was money which the company borrowed temporarily for tiding it over some financial condition, that they had gone to one of the banks of the city, a national bank of state bank, or savings bank, and executed its note and that the banks as a rule, according to the witnesses, some of them that testified here, short loans running sixty to ninety days, not exceeding six months, isn't it fair to assume that the note, considering your explanation of it, the notes were of such character and properly chargeable to the bills payable account and should be deducted from the amount here as shown in working capital?
A. I make no such assumption.
Q. Have you not the right to assume that in the absence of anything to the contrary, and in the absence of any analysis by you of the notes, when executed, when they matured, and all the other facts and circumstances, any prudent business man would inquire and the way you did it in your testimony in this case?
A. I did not make any assumptions; I did not want to assume any condition——
Q. You never assumed anything when it seems to be
2023 against the company in this case, isn't that true?
A. It is not.
Q. You have assumed here, for instance, Mr. Hagenah, that this $285,000 that we have been speaking about so many times, you relied upon information furnished you without a stroke of the pen on the books, and you have assumed it was a fair purchase price for the holder and things of that sort, and you assumed for the purpose of having your average profits for the company, that this $264,000 was a proper charge to depreciation and all those things, and now when it comes to the question of $14,000 represented by

notes of the company which you say were given to tide the company over some temporary financial embarrassment, that you cannot assume that should be properly charged into the bills payable account?

A. You have got three distinct elements in that question which I can answer better one at a time.

Q. I am simply calling your attention to the matter and the condition of your testimony so that if you want to explain to the Master why it is under the circumstances that you were not willing to assume that these notes were not properly in the bills payable account, you may tell him?

A. I am not willing to make any assumption in the absence of fact to give me a basis.

Q. Do you want to say now that you have made any assumptions in your entire report or these tables which you have introduced here in respect thereto?

A. Not at all; that is an entirely different matter.

Q. So that you do make assumptions once in a while?

A. Indeed, I do make assumptions; but here is one I don't make.

Q. And that is the case when it affects the company to the
2024 extent of $14,000?

A. If you will refer to Exhibit 26 I can again show you the working capital I used where it was material to arrive at the present value of the investment for rate making purpose, including the allowance for rate making, in which I gave the public the benefit of every doubt and using $128,000.

Q. Don't you honestly believe that $14,000 since your attention has been called to it, as an expert statistician, and a man who wants to be fair to the public, don't you really believe that belongs in bills payable?

A. I have no information upon which I want to base the belief and I want to be fair and do not express any opinion.

Mr. BRENNAN: I think that is all. I want, however, if your honor please, I want Mr. Hagenah to produce for us before he is finally excused the following matters in connection with his report, Exhibit 23, and the various tables which have been introduced in connection therewith, first, I want him to produce the vouchers or statements showing the exact cost of all items entering into the $285,000 to which we have called his attention; second, a list of all discount on bonds charged into the cost of investment—I guess that has been given us and we will not bother further with that; third, the cost of all land as it appears on the books of the company; fourth, his analysis of all the construction costs of the past five years to show how much overhead was charged in the operating expenses and how much into construction. Copies of all balance sheets since 1900 and the deduction of working capital in each balance sheet. We also want the balance sheet of June 30, 1886, and we want the witness to produce a statement of the discount and sales of
2025 bonds in the year 1910 showing the discount in each sale.

Mr. GUERNSEY: With reference to these matters, we have no objection to the witness doing whatever work the city wants him

to do. We want it distinctly understood so far as we are concerned that it is not done for us, and not something we pay for. These books are now being examined by the city and everything they have asked for here they have had ample facilities for obtaining for themselves. So that we have no objection to their employing Mr. Hagenah to do it, but we distinctly decline ourselves to employ him to do it.

The MASTER: His time as a witness is going on anyhow.

Mr. GUERNSEY: We want distinctly to make the proposition that we are not bound to do this work for the city where we furnish the things with which they can do it themselves.

Mr. BYERS: It is immaterial to us.

The MASTER: If there is going to be any question about it we will have the books brought in.

Mr. GUERNSEY: They have the books.

Mr. BRENNAN: In the nature of things, in view of this witness' testimony in this case—the witness will say the books show this together with his analysis; many things include his analysis and we could not take these books in view of his testimony in this case and analyze his theory for instance of overhead charges. He has introduced this Exhibit 23 and he has supplemented the books by this analysis; if this exhibit is going to be considered in this case, we want it to be considered in the light of the analysis he makes.

The MASTER: I do not understand that he has any over-
2026 head charges in this case.

Mr. GUERNSEY: I would like to have the record show with reference to these vouchers; these are vouchers which have already been offered to the accountants of the city and are now subject to their examination at any time.

Mr. BRENNAN: We want it to appear of record that our accountants have not been furnished the vouchers to which reference has been made.

Mr. GUERNSEY: Mr. Douthirt tells me these are not the vouchers: that there are no vouchers and that Mr. Bemis, when he prepared this memorandum was advised of that fact.

Mr. BEMIS: I supposed they were in Philadelphia.

Mr. BYERS: We will stand on this record; if they are satisfied with it, we are; our request is there.

The MASTER: I do not care to have them produce something they have not got.

Mr. BYERS: They can make their showing if they haven't got it.

The MASTER: You testified there wasn't any vouchers.

The WITNESS: I testified a number of times there were no vouchers covering the disposition of the $285,000.

The MASTER: You simply found the charge on the books?

The WITNESS: Yes, sir; at the time of the consolidation.

The MASTER: That eliminates that so far as this witness is concerned.

Mr. BRENNAN: We are making this request in the utmost good faith. This testimony shows all this work was first done on requisition on Philadelphia and authorizations were issued and the work

was done under the authorization, and the vouchers are presumably, in some instances at least, sent to the U. G. I. office. Be-
2027 cause they were not handed to this witness or did not appear on the books does not support the fact that they are not in existence.

The MASTER: This witness will not be required because he never had them and consequently you cannot require him to produce them.

Mr. BRENNAN: We ask him to produce the cost of all lands as appears on the books of the company.

The MASTER: That means produce the books.

Mr. GUERNSEY: We will produce the books if they wish to have them.

The MASTER: Now, what else?

Mr. BRENNAN: And the analysis of the construction cost of the last five years to show how much overhead was charged into operating expenses.

Mr. GUERNSEY: That is something he has not done. It does not appear on the books. It is a matter of independent work. We are perfectly willing to have the witness do it, but it should be done at their expense and not ours.

The MASTER: I understood all the time there were no overhead charges included. Were there any overhead charges in the books?

The WITNESS: No, sir, I found none.

The MASTER: What next do you want?

Mr. BRENNAN: Copies of the balance sheets since 1900.

Mr. GUERNSEY: Those are all in the books these gentlemen are now examining.

The MASTER: What next?

Mr. BRENNAN: The balance sheet of June 30 of 1886.

The MASTER: That was taken from the ledger I under-
2028 stand, and the witness can be examined as to that. I think it very proper that the ledger should be here.

Mr. BRENNAN: Defendants interpose the further objection to the introduction of Exhibits 23 to 31, both inclusive for the reason that it appears that said exhibits are based upon an analysis made by this witness from memoranda and other matters furnished to him and investigated by him and that the same has not been produced in connection with the request of the defendants.

Mr. GUERNSEY: Do you refer to the requests you made on the record here?

Mr. BRENNAN: Those requests are on the record and a full discussion has been had.

Witness excused.

ARTHUR REYNOLDS, being first duly sworn on part of Complainant, examined in chief by W. L. Read, Esq., testified as follows:

Q. Where do you reside?
A. In this city.
Q. How long have you lived here?
A. Sixteen years.

Q. In what business or occupation are you engaged?

A. Banking.

2029 Q. How long have you been engaged in the banking business?

A. Twenty-five years.

Q. For the past sixteen years in Des Moines?

A. Yes, sir.

Q. And prior to that where?

A. At Panora.

Q. With what bank are you connected?

A. The Des Moines National Bank.

Q. What is the capitalization of that bank?

A. Five hundred thousand dollars.

Q. It is a national bank?

A. Yes, sir.

Q. Doing a general banking business?

A. Yes, sir.

Q. What official relations do you have with the Des Moines National Bank?

A. I am President of the Des Moines National Bank.

Q. Are you in active charge of its affairs?

A. Yes, sir.

Q. And have been during the years you were connected with it?

A. Yes, sir.

Q. Have you acquainted and familiarized yourself with the current rates of interest that are being paid in this vicinity?

A. Yes, sir.

Q. What are the prevailing current rates of interest paid upon first class real estate securities, such as first mortgages on agricultural lands, where the amount of the mortgage does not exceed, say fifty per cent of the value of the land, in this vicinity and locality?

A. I would say six per cent.

2030 Q. What were the rates about the first of January this year?

A. Six per cent approximately.

Q. What do you say as to how long such rates have prevailed?

A. Rates generally on farm mortgages have been six per cent for something over a year; probably a year and a half.

Q. What is and has been the prevailing rate of interest usually required and received upon money invested in the banking business?

A. You mean by that how much has been received as dividends or how much total profit?

Q. Total profit without regard to whether it has been distributed into dividends or not.

Objected to on part of the defendants as wholly incompetent, immaterial and irrelevant.

Q. Available for dividends or surplus?

Same objection as last above made.

A. Of course that profit varies very materially in different institu-

tions and with different investors; but the rate of income on an investment of that kind would probably net somewhere between eight, twelve and fifteen per cent.

Q. Is the banking business regarded as a conservative and safe one in this community by the industrial public?

A. I think so, yes sir.

Q. Where does it rank in that respect?

A. Well, I would say it is one of the foremost business- of the town, a conservative class of business.

Q. I assume that it would require to induce the investment of capital in the banking business something more than the rate that would be paid on first class real estate securities?

A. Yes, sir; I think it would.

Q. And in order to induce investment of capital in the banking business rather than its loaning upon real estate securities,
2031 how much of a net earning available for dividends or surplus would be required?

Objected to on part of defendants as incompetent and irrelevant.

Q. State the minimum, if you please.

Same objection last above made.

A. I would say anywhere from two to four per cent, a minimum probably of four per cent.

Q. Above farm mortgages?

A. Yes, above the rate that would be received upon farm mortgages.

Cross-examination by Mr. BYERS:

Q. What is the prevailing interest rate for money over the counter for short time loans?

A. In Des Moines on lines of credit on considerable amounts of money and on small amounts of money seven and eight per cent.

Q. There are none being made at eight in Des Moines now?

A. O, yes; lots of them; small loans, from $100 to $300.

Q. For a few days?

A. No, even for a period of time.

Q. What is the lowest rate that you know of at this time, that you know of loans that have been made over the counter in Des Moines, say beginning with the period of the first of last January down to this time, large or small?

A. The lowest rate we made ourselves is six per cent.

Q. Nothing under that?

A. Nothing under six per cent.

Q. You are advised, however, from information that loans have been made here during that time for much less than six per cent.

2032 A. Well, I know that commercial paper——

Q. I mean over the counter.

A. No, I don't know about that, Mr. Byers.

Q. What is the prevailing rate carried by loans that are based on

income buildings in Des Moines, the income buildings located anywhere within the business district?

A. I don't believe I would be—I don't know that I could tell you the lowest rates. I know of some rates. I don't know whether those are the lowest rates or not. Some of the large buildings here, five per cent, and others a little higher than that.

Q. Some lower?

A. Possibly some lower. I know a few years ago they were made lower; I don't know of any since the first of January.

Q. It is true that farm loans are being made now in Des Moines at five and a half?

A. The companies I am connected with are making at six.

Q. The Bankers Life, for instance, is making loans at five and a half?

A. I am not posted as to their rates.

Q. What is the lowest rate that you know of that commercial paper has been carried in Des Moines say from the first of January?

A. Now, that is really a question—we ourselves do not buy any strictly commercial paper. I don't really know what other banks are doing. I know what rates are quoted in the market.

Q. What are they quoted?

A. There has been a rate quoted, mid-summer, as low as three and a half or four per cent.

Q. The money that you understand was willing to carry those loans, was money from the east or local money?

2033 A. Money from the east very largely, this year.

Q. Money seeking investment here and owned by persons who live in the east?

A. Well, commercial paper at that rate, is largely carried by large banks in eastern cities. Des Moines banks do sometimes buy for temporary use.

Q. What is the usual rate of interest on residence loans in the city do you do any of that kind of business?

A. We do not do *of* that class of business.

Q. Do you have any information about it?

A. Yes, I have some information.

Q. What is the rate?

A. I would say, the average residence loans, seven per cent.

Q. Do you know what the bonds of local concerns in local concerns sell for on the market, do you have any information about that?

A. Very little information about that; very few bonds are sold here.

Q. Well, the bonds of a commercial institution, a manufacturing institution, that would sell on the market, at say ninety-five, you would consider above the average, wouldn't you?

A. I would think, Mr. Byers, the most of the commercial enterprises here that float money do it on preferred stock rather than bonds; that commands a little higher rate.

Q. Let us take that, what is the rate usually carried by these preferred stock loans?

A. Preferred stocks usually sell in Des Moines at six per cent.

Q. It is your understanding that that is the method adopted by some of the institutions for raising money, rather than through the bond issue or the sale of bonds?

A. Some of them, yes.

Q. You do not happen to have any stock in the Gas Company?

2034 A. No.

Q. I suppose the Des Moines Gas Company is not your customer?

A. Not our customer.

Q. So that you haven't loaned it any money?

A. No, sir.

Q. You don't know what rate it has paid for loans?

A. I never did business with the Des Moines Gas Company.

Redirect examination by Mr. READ:

Q. Referring to the practice of local institutions raising money upon preferred stock, I suppose the instances you refer to, a limited amount of money is thus raised?

A. A very small amount.

Q. If the proposition was to produce the entire capital, would that affects the question of the rate?

A. Very materially, no doubt.

Q. The line of credit such as improvement bonds, drainage bonds, do you know what the rate is?

A. Seven per cent on those bonds; they bear six and are sold at a discount of one.

Recross-examination by Mr. BYERS:

Q. The rate is limited on this?

A. They bear six per cent when they are sold in this market they are usually sold at a one per cent discount.

Q. Now, with the exemption the law has recently made?

A. Of course, most of those are sold as drainage warrants, some of them drainage certificates; those are sold at seven per

2035 cent; I had an offer this morning.

Q. Drainage bonds now are being floated in the east at par and at six per cent interest?

A. At a much lower rate than here.

Q. These bonds are exempt from taxation?

A. Yes, sir; they are sold in the east at a less rate than here.

Q. Within the last two months, especially since the change in the law, drainage bonds are floated in the east at quite a premium?

A. I think they are sold at something of a premium.

Excused.

Judge CARR: I think we will have to ask the indulgence of the court. We were uncertain as to the length of time the cross exam-

ination would require, and we have a number of witnesses who will be here at half past one this afternoon.

At this time, 11:40 A. M. an adjournment was taken until 1:30 P. M.

2036 1:30 P. M., THURSDAY, *August* 10, 1911.

WILLIAM C. HARBACH, being called on the part of the complainants and sworn and examined in chief by Hon. George H. Carr, testified as follows:

Q. Where do you live?

A. Here in Des Moines.

Q. How long have you resided in Des Moines?

A. All my life, 43 years.

Q. What is your age?

A. 43.

Q. What is your business?

A. Furniture business.

Q. And does that include the manufacturing of furniture?

A. It does.

Q. How long have you been engaged in that business here in Des Moines?

A. I myself have been in it 24 years.

Q. How long has been the business *been* established?

A. 55 years.

Q. By whom was it conducted prior to the time you became connected with the business.

A. My father and my uncle.

Q. What official position do you hold in the company?

A. I am secretary and treasurer of the company.

Q. Aside from your business as manufacturer, have you other business connections, are you connected with any of the banks?

A. Yes, sir.

Q. What banks?

2037 A. I am director of the Valley National Bank in this city and director of the Atlas Insurance Company.

Q. Do you know what the expected net rate of return is sufficient to induce men to invest their money in manufacturing business here in Des Moines? You may answer that yes or no?

A. Yes, sir.

Q. What is the net rate of return expected and usually realized upon money invested in the manufacturing business here in Des Moines?

Objected to an *inconpetemtn*, immaterial and the matter inquired about is irrelevant to any issue involved in this controversy.

A. I should say about 15 per cent.

Q. Has that condition continued for a considerable length of time at least as far back as the 1st of January of this year?

Same objection.

A. I think so.

Q. In your business in connection with banks you are familiar are you not with the rates of interest that are usually received here in Des Moines upon high class securities like first mortgage loans on real estate?

A. Yes, sir.

Q. I wish you would explain to the Master why it is that it requires a materially higher rate of return to interest capital and procure its investment in business enterprises like manufacturing enterprises over what can be obtained in loaning money on first class securities.

Objected to as incompetent, the question is based upon an assumption that is not in the record and it is irrelevant to any question involved in this controversy.

2038 A. Money invested in mortgages or similar securities is looked upon as absolutely safe, incurring practically no risk and cutting out largely the element of hazard. Money invested in a manufacturing business is recognized as engaging in far more hazard than even that invested in a retail or wholesale business and the reason for that being that the manufacturer must ever be prepared to meet the changing condition of the times that invention and custom will bring about making it necessary for him to make almost a complete change of front as the times may demand and containing as it always does an element that is more uncertain than that of any other line of business in that the science of cost is far removed from being an exact science. It is not today known and I think most manufacturers are beginning to recognize that. It is not today known what real cost is it is not known to the extent that all people recognize it as possible to charge the amount of its cost, if a man buys goods to sell again he knows what the cost is. If he manufactures them in a sense he never knows.

Cross-examination by Hon. H. W. Byers:

—. Is your business an incorporated one?

A. It is.

Q. Stock held by local people?

A. Yes, sir.

Q. Altogether?

A. Altogether.

Q. And is there any such thing as preferred stock in it?

A. No, sir.

Q. All straight common stock?

A. Yes, sir.

2039 Q. You have been in business here a good many years?

A. Yes, sir.

Q. I suppose in that time and often maybe it has been necessary to have money to use in the business?

A. Yes, sir.

Q. What rate do you have to pay for money here in Des Moines interest?

A. We have paid all the way from five to eight per cent.

Q. Take it in the last year, from the 1st of January on?

A. Six per cent.

Q. And what is the usual rate here at which loans are carried on business property?

A. That will depend on where the business property is, what section of the town it is in.

Q. Any of this income property here on the west side?

A. Some four and a half, five and five and a half per cent. There are a few loans I know of four and a half per cent, one any way.

Q. Is that the lowest you *not* know of?

A. I don't know of any *any* lower than four and a half.

Q. Take the Fleming property?

A. The Fleming property I think has a four and a half loan on it as I understand it.

Q. Are there any other concerns in the same business that you are in here in Des Moines?

A. Yes, sir; one other.

Q. I suppose if you had all of the furniture business in the territory that you serve, all competition in the furniture business was eliminated and returns from your sales after taking out all taxes and all depreciation, all interest charges and all other overhead charges should leave you net six per cent, you would

2040 be pretty well satisfied wouldn't you?

A. No, I would not stay in the business if I had a guarantee of that.

Q. You would not even if you had a guarantee of that?

A. No.

Q. So the whole question depends on the individual's disposition and desire for return?

A. Not entirely.

Q. Wh*Qt* is it that people are entirely satisfied with even four and a half per cent on loans on property like the Fleming building?

A. Well no individual is, they are loaning out trust funds which they have taken on a basis of three and a half per cent return and that will make one that is clear profit to them. That comes from insurance companies and associations that are loaning money that does not belong to them. They could not get that loan of an individual or bank that had to make a return on it to stockholders, get it from trust funds?

Q. You can get all the loans from banks right now in Des Moines that you want at six per cent can't you?

A. Yes, short time loans.

Q. If I understand you the whole question is one of hazard as you stated.

A. Yes, there is an element of hazard.

Q. That is what makes the difference in what you think ought to be the return, it is hazard that measures the difference in your judgment between the farm loan and the manufacturing business or some other business. Now isn't that hazard altogether one of management?

A. Well I don't quite catch your point there Mr. Byers.

2041 Mr. BYERS: Well that is all then.

Redirect examination by Hon. GEORGE H. CARR:

Q. The money that is loaned in Des Moines at four and a half per cent you say is trust funds, Do you know whether that is local money or money that comes in from the east seeking investment?

A. Yes, sir.

Q. Which is it?

A. It is money from the east.

Q. You refer to the Fleming loan, how long ago was that placed, do you know? Some years ago was it not?

A. Oh it has been placed four or five years I judge. The Northwestern Mutual Life Of Milwaukee has it

Recross-examination by Hon. H. W. BYERS:

Q. You said a moment ago that this money was loaned by trust companyies and insurance companies and not by individuals. Is it not true that in Des Moines since the 1st day of January commercial paper has been carried at as low as three and a half per cent?

A. Well if it has I have not heard of it. I don't know of anybody that would carry it at that.

Q. Well several bankers have already said so?

A. They may have carried it. If the bankers or any bank has carried paper at that rate I doubt very much if it ever came before the board of directors.

Q. I don't mean banks in Des Moines have made loans at three and a half per cent, that is not what I mean, but that com-

2042 mercial paper of institutions in Des Moines has been taken since the first of last January in considerable blocks at as low as three and a half per cent.

Objected to as being simply a statement of counsel to the witness who has stated that he has no knowledge that any such loans has been made it is therefore manifestly improper.

Q. Don't you know of that having been done?

A. No, at that rate.

Q. What is the lowest rate you do know?

A. Well I have been offered money in our own business three and three quarters and four if I would take certain large blocks 25 to 50 thousand on three to four months' time, I must take a certain amount for a specified time.

Q. How long since such offers have been made to you?

A. Oh within the last—well possibly within the last six months.

Redirect examination by Hon. GEORGE H. CARR:

Q. Was that local funds or outside?

A. No, sir; that is eastern money.

Q. I wish you would tell the court in a general way something of the magnitude of your manufacturing business, I have not asked you about that.

A. Our capital stock is $200,000 and our annual volume of business varies from $300,000 to $400,000 a year.

Witness excused.

2043 C. S. WALKER being called on the part of the complainants and sworn and examined in chief by Hon. George H. Carr, testified as follows:

Q. Where do you live?
A. I live in Des Moines.
Q. How long have you lived in Des Moines?
A. Almost 21 years.
Q. What is your age?
A. I am 42.
Q. What is your business?
A. I am engaged in the manufacture of vehicles.
Q. With what particular company are you associated?
A. The Kratzer Carriage Co.
Q. What is your position in that company?
A. I am the president of the company.
Q. Will you please give the court some idea of the magnitude of your business?
A. We are capitalized for $250,000 employing about 100 people and have a volume of business ranging variously from $350,000 to $450,000 per annum.
Q. How long has that company been in operation here in Des Moines?
A. About twenty and one half years.
Q. How long have you been connected with it?
A. Since its beginning.
Q. Do you know what expected net rate of return is sufficient to induce men to invest their money in manufacturing business here in Des Moines. That question you may answer yes or no as to whether you know?
A. Generally speaking, yes I think I could say.
2044 Q. What is the net rate of return expected and usually realized upon money invested in the manufacturing business here in Des Moines?

Objected to as incompetent and not relevant to any issue that is involved in this case, immaterial.

A. The returns on industrials in Des Moines would range from 15 to 20 per cent.

Defendant moves to strike the answer our as incompetent and not responsive.

Q. And how long has that condition existed?
A. I should say that condition had existed for probably ten years, possibly longer.

Cross-examination by Hon. H. W. BYERS:

Q. You mean net returns 15 to 20 per cent?
A. Yes, sir.
Q. Isn't it a little strange to you if that is the case that we don't have a great many more manufacturing institutions in Des Moines?
A. Not particularly so no sir.
Q. Did the Packing house make 15 or 20 per cent net on its business in Des Moines?
A. I could not answer that question.
Q. Your factory has been in operation 20 years?
A. Yes, sir.
Q. What was it capitalized for when it began?
A. In the beginning capitalized at $30,000.
Q. And would that be the assets of the corporation at that time?
2045 A. That was the assets of the company at that time.
Q. What do you say it is now?
A. $250,000.
Q. That is all paid up?
A. Yes, sir.
Q. It has been all accumulated in these years here in Des Moines?
A. Practically, yes.
Q. A very profitable business?
A. We regard it so.
Q. I suppose in that time you have had occasion to carry loans, that is use money?
A. Yes, sir.
Q. What have you been able to get money over the counter from the banks of Des Moines say during the last year and since the 1st of last January?
A. Well over the counter the ruling rate has been five and a half or six per cent I think.
Q. Did your corporation have occasion at any time to bond the concern?
A. Never have.
Q. Or issue anything like preferred stock?
A. No, sir.
Q. All been common stock?
A. Yes, sir.
Q. I suppose it is all owned by local parties?
A. Yes, I think it is all loaned by local parties.
Q. The stock, has not been sold on the market and is not on the market now?
A. No, sir.
Q. And have you had occasion during that time to carry
2046 any loans on real estate or anything of that kind?
A. Never have no sir.
Q. Are you informed as to the prevailing rates for real estate loans in Des Moines?
A. Only in a general way.

Q. And what rate in a general way do you understand is charged on what you would call first class real estate loans in Des Moines?

A. Well I should say from four and a half to five per cent.

Q. Now one thing further, Mr. Walker, do you mean when you say from 15 to 20 per cent, do you mean the net over and above taxes interest and all overhead charges or operating expenses?

A. Yes, sir.

Q. What you mean is net return?

A. Yes, sir.

Q. On what?

A. On the capitalization.

Q. What do you mean, all the money actually used in the business?

A. Well as I would term capitalization I should mean capital and surplus in the business.

Q. Of course you don't use the surplus in the business, that is your surplus I suppose is divided up among the stockholders?

A. No, sir; surplus as I understand surplus is undivided profits and is kept in the business.

Q. Then you mean whatever money goes into the business in the shape of capital whether taken from surplus or whatever it may be?

A. Yes, sir.

Q. As I understand you your institution after 20 years of operation in Des Moines now represents an actual capitalization of

2047 $250,000.

A. Yes, sir.

Q. And that money is used in the operation of the business?

A. Yes, sir.

Q. And your idea is that you ought to have 15 to 20 per cent of that amount over and above every possible charge?

A. Your question now is an individual one I take it to our own business?

Q. Yes.

A. Your previous questions were general?

Q. That is right.

A. In our case I should think we would be entitled to a new return of 15 per cent.

Q. Make it more general, applying it to industries generally of the city and it is your idea that in order to attract capital—that is the way the question was put to you—it is necessary that there be a return of from 15 to 20 per cent on the money actually used in the business, is that your idea?

A. Yes, to attract capital or to sell stock in industrials it would be necessary I think to show an earning of 15 to 20 per cent to make it attractive.

Q. You think that is about the rate that is being earned in Des Moines by manufacturing institutions here generally?

A. I think that it would average that, yes?

Q. Just another question or two. You covered quite an extensive territory I suppose with your business, that it includes not only the city of Des Moines but quite a considerable territory outside of the city?

A. We have covered a good part of six states.

Q. Now if you had a monopoly on the business in the ter-
2048 ritory you serve, that is if you have the business exclusive so that you furnish that entire territory with the goods that they needed in your line and could have that sort of a situation ahead of you for a good many years would you still think that it would be necessary to show an earning of 15 to 20 per cent in order to attract capital?

A. The question is so utterly impossible from our standpoint that it is hardly answerable.

Q. I know it is from your standpoint, but it is not from all kinds of manufacturing institutions and I just wonderec how far you considered now the question of competition and the hazards, of course that must go with competition, the danger of your business being cut into more next year than it was last and all that sort of thing and I wondered how much consideration you gave this.

A. I presume if we could name the prices we would make more than we do if we could — name the prices.

Q. And it would take more to attract capital, you don't mean that?

A. No, I don't think so. Capital would probably be attracted at a much lower rate than that because of the monopoly.

Q. Of course where there is no regulation or control with respect to returns every business man and every owner of a factory then fixes his own return and makes it suit his peculiar notion about it?

A. Yes, so far as he can.

Q. Now you were on a committee that made some investigation in this packing plant down here were you not?

A. If you refer to the Greater Des Moines Committee, yes.

Q. You found that in that case the trouble with that concern was competition largely didn't you?

2049 A. No, I don't think so.

Q. Wasn't it the final decision of the committee that if it could have had the territory surrounding Des Moines that properly belonged to it and had a monopoly on it that it could have operated here and made considerable money at even a much lower rate than 15 or 20 per cent?

A. There is no question as to that, but I think the finding generally speaking was that they had attempted to cover too much territory, they didn't localize enough.

Q. They I suppose could not control prices there in any respect?

A. Prices on that commodity are probably made for them rather than by them.

Q. Now that is not true of your commodity is it?

A. To a certain extent it is. We have very strong competition and we must make prices that goods can be sold at to meet such competition, but we make our own prices.

Q. I suppose it is true as to a great part of your products and the Kratzer buggy or wagon or whatever you make has its own customers and to some extent you have your own territory?

A. Yes, and they have their own value.

Q. When you see 15 to 20 per cent return to attract capital you

mean in a class of business such as this and other business of that nature in Des Moines where all of these hazards are present like competition and chance of loss of crops in the state and the hundred and one other things that might affect the prosperity of the factory or plant?

A. Yes, sir.

Redirect examination by Hon. GEORGE H. CARR:

2050 Q. You have been asked about the advantages of a monopoly in a product which you were manufacturing. Suppose that the consumer instead of the manufacturer fixed the price at which the product was to be sold, would the monopoly be of much value then.

Objected to as incompetent and irrelevant.

Q. If some one else fixed the price the results would be *the* quite questionable.

Q. Especially if it was the man who was the consumer.

A. Yes, sir.

Recross-examination by Hon. H. W. BYERS:

Q. I don't believe you want to be left in that shape. That would depend altogether wouldn't it on what prices are fixed.

A. It certainly would.

Q. Now if the price *was* fixed was a reasonable price for the service and the business had a reasonable guarantee of permanency that would make a wonderful difference wouldn't it in the way of attracting capital?

A. The proposition would have many sides, many phases. *If* course if there could be arrived at a fair price it would be a very attractive proposition.

Q. And that would be altogether a most attractive kind of business for a man to put his money in wouldn't it?

A. It would be very nice I should think.

Redirect examination by Hon. GEORGE H. CARR:

2051 Q. As to whether the price was reasonable or not, would depend of course a good deal on the point of view of the man who considered it reasonable wouldn't it, Mr. Waler?

A. I presume the maker or manufacturer of the article and the man who is buying that article would always have a difference of opinion as to what was reasonable.

Q. Of course your answer was based on the assumption that it was a reasonable price from the standpoint of the manufacturer?

A. Yes, sir.

Q. And did you also take into consideration the assumption that seemed to be involved in the question that there would be a guarantee of that price for some time in the future? That is that the reasonable price that General Byers assumed in his question would continue on for some time in the future, you assumed that also?

A. Well, as I stated there are so many phases to that that the effect of a certain price would have one bearing and if the price was not continued beyond a certain contract period it would have altogether a different effect.

Q. In other words if the price were subject to change at any time by the consumer it would be an element of hazard wouldn't it?

A. I should think so, yes.

Witness excused.

2052 J. E. McDONNELL, being called on the part of the complainant and sworn and examined in chief by Hon. George H. Carr, testified as follows:

Q. Where do you live?

A. Des Moines.

Q. How long have you lived in Des Moines?

A. 44 years.

Q. Is that your age?

A. That is my age.

Q. In what business are you engaged?

A. In iron manufacturing.

Q. And what particular line of manufacturing?

A. Manufacturing boilers, tanks and apparatus of that class.

Q. What is the name of the institution with which you are connected?

A. It is now the McDonnell Boiler & Iron Works.

Q. How long has that business been in existence?

A. The business has been in existence for fifty years.

Q. Here in Des Moines?

A. Yes, sir.

Q. By whom was it conducted before you became connected with it?

A. My father.

Q. It was started by your father was it?

A. Yes, sir.

Q. What is your connection with the business?

A. Secretary and manager.

Q. Is your father still connected with the business?

A. Yes, sir.

Q. In what position?

2053 —. President.

Q. Can you give the court some idea of the magnitude of the business?

A. In volume?

Q. Yes, capitalization and in volume.

A. Our capitalization is now $100,000 and volume of our business will run from $150,000 to $200,000 a year.

Q. Do you know what expected net rate of return is sufficient to induce men to invest their money in the manufacturing business here in Des Moines, answer that by yes or no.

A. Well there don't seem to be any particular amount.

Q. The question is whether you know what expected net rate of return is sufficient to induce capital to invest in the manufacturing business generally speaking?

A. Not less than 15 per cent.

Q. I first ask you if you know, you answer that in the affirmative that you do know?

Mr. BYERS: Of course I want the regular objection in between the question and answer.

Q. The question now is for the purpose of qualifying you and you are to answer that yes or no?

A. Yes, sir.

Q. Now what is the net rate of return expected and usually realized upon money invested in a manufacturing business here in Des Moines.

Objected to as incompetent, irrelevant to any issue involved in this case and no proper foundation laid for the testimony.

A. It is all the way from 15 to 25 per cent.

Q. How long has that condition continued here in Des Moines?

2054 A. Well ever since I can remember, twenty-five or twenty-six years.

Cross-examination by Hon. H. W. BYERS:

Q. Did you notice the form of the judge's question, he asked you if you knew what rate of return was expected by persons—he didn't say by persons—and usually received in Des Moines in manufacturing industries. Now do you wish the court to understand that you know what investors, people who are about to invest money or expect to invest money, what they want or what they expect to receive?

A. Yes, I would like to divide that answer in this way that they expect all the way from 15 to 25 per cent.

Q. They expect all they can get——

A. But they don't often receive it.

Q. They expect all they can get don't they?

A. Well, it is more than an expectancy, it is almost demanded from a man that puts his money in manufacturing in Des Moines.

Q. Well I say they expect to get all they can. Now if I understand there is a party right now as I understand it in negotiation with the so-called Booster's Committee or Greater Des Moines Committee which ever it may be, about establishing a factory of some kind in Des Moines. You don't pretend to know anything about what they figure they are going to receive if they come here do you?

A. No, I do not. I know the nature of their business.

Q. Well let's take it in your own business for just a minute. Have you ever been fortunate enough in any of your business enterprises to have a monopoly upon the kind of business you were doing?

2055 A. Yes, sir.

Q. So that there was no competition of any kind?

A. Yes, sir.

Q. And so that you knew at the end of each year that your business for the next year was going to be larger even than it was in the past year?

A. For a short time only yes.

Q. Now in a business of that kind would that fact make any difference in the amount that you would expect to receive?

A. Well it would help to compensate us for a lot of things we didn't receive that we expected to receive.

Q. Some men put their money in farm mortgages, some put their money in bonds and stocks and other men put their money in factories.

A. Yes, sir.

Q. Some men put it in factories that produce boilers and pipe and that class of goods and other men invest their money in gas property and others in oil. Now would it make any difference at all in your estimate of the rate of return what particular kind of business it was?

A. Yes, a whole lot.

Q. Make all the difference in the world wouldn't it?

A. Yes, sir.

Q. In other words, if your firm now—I don't want you to get the opinion for a minute I am making any objection to either the amount you say you are getting or ought to get nor the kind of business you are in—but take your own firm for instance if you knew, if you could go out of this room convinced that beginning from this date you could increase your business a fixed per cent every
2056 year, would that make a vast difference with you upon the question of the amount that would satisfy you as a return?

A. If I knew I was going to get a fixed price for the produce for a certain number of years and there was no interference with it would simply mean that I would have to make provision as a manufacturer to install a plant that would produce the product and at a price where I could make a profit that was sufficient to pay for it.

Q. Now let me come back to the other question as I said a moment ago some men put their money in mortgages and some in government bonds.

A. Yes, sir.

Q. As I said, much of this is new and interesting to me because the money end of it is rather a new thing to me, if I understand these things the risks that control largely the different persons as to where they put their money is the difference in the hazards and dangers that surround the investment.

A. Yes, sir.

Q. Now then if a manufacturer was producing a particular product if he had a monopoly upon the business, that is if he was permitted to furnish all that was needed in the territory, and no interference in the way of competition and his sales were going to increase every year instead of diminish as the population grew his sales would grow because he has a monopoly, now in a case of that kind aside from the question of management wouldn't his return be just as certain and just as safe as the loan?

A. No.

Q. Why?

A. Because so many conditions surround it.

2057 Q. Aside from the question of management it would be just as safe?

A. There are other conditions that cause a manufacturer to carry a big loss, a big indebtedness outside of management, other conditions in the growth of its business.

Q. I told you that is just as sure as death and taxes that his business is going to grow?

A. It all costs money to operate it.

Q. I mean over and above, you pay operating expenses of course costs money to operate it, costs some money for the man who invests his money even in mortgages, somebody has got to look after the business?

A. Well that is pretty safe.

Q. Let's take it in another way. You have had to have some money in your business?

A. Yes, sir.

Q. And at what rate have you been getting that?

A. From four and a half per cent on right short thirty to ninety days, six per cent to seven per cent.

Q. Of course these loans were for use in the business, that is the money was to be used in the business?

A. Yes, sir.

Q. And of course the person who loaned the money was putting that money into your business just as you put your own and was satisfied with six per cent interest on it?

A. Well he was not putting it in without something to guarantee he was going to get it back.

Q. That was the success of your business was the guarantee wasn't it?

A. Well it was an individual outside of the business too.

2058 Q. I don't know how that could be, is your concern an incorporated concern?

A. Yes, sir.

Q. Well then it has nothing outside of the business?

A. Got the individuals connected with it.

Q. But they would not be liable, isn't it your opinion, the individuals were not borrowing the money. Well let's not discuss that. You say you get money from six to seven per cent?

A. From four and a half to seven.

Q. Was there last January and up to this time, what was the rate over the counter?

A. I think six per cent.

Q. For large or small loan?

A. Well I think that was the current rate that was published by the banks.

Q. About six per cent?

A. About six per cent.

Q. Do you know what the usual real estate loans are in Des Moines?

A. I have borrowed money as low as four and a half per cent on real estate.

Witness excused.

2059 E. S. Root being called on the part of the complainant and sworn and examined in chief by Hon. George H. Carr, testified as follows:

Q. Where do you live?
A. In Des Moines.
Q. How long have you lived in Des Moines?
A. A little over nine years.
Q. What is your business?
A. Manufacturing caskets, ambulances and hearses.
Q. With what institution are you connected?
A. Des Moines Casket Company.
Q. How long has the Des Moines Casket Company been in existence and in business here in Des Moines?
A. About ten years.
Q. Can you give the Master some idea of the magnitude of your business?
A. We are capitalized for $300,000 and $220,000 and something paid in, a little over $220,000 paid in.
Q. About what in the annual volume of business?
A. For our Des Moines plant alone from $200,000 to $250,000 per year, that is for Des Moines.
Q. What is your connection, that is what is your official position in the company?
A. Treasurer.
Q. How long have you been treasurer of the Des Moines Casket Company?
A. Nine years in November.
Q. Do you know what expected net rate of return is sufficient to induce men to invest their money in the manufacturing busi-
2060 ness here in Des Moines, you may answer that by yes or no.
A. Yes, sir.
Q. What is the net return expected and usually realized upon money invested in the manufacturing business here in Des Moines?
A. From 12 to 15 per cent.
Q. Has that condition continued for a considerable period of time, at least as far back as the first of January of this year?
A. Yes, sir.

Cross-examination by Hon. H. W. Byers:

Q. Your business is about the end of the road?
A. About the limit.
Q. That is about the last place any of us have to go to do business. You say it is capitalized for $300,000?
A. Yes, sir.
Q. Was it organized originally in Des Moines?
A. Yes, sir.
Q. By local people?

A. Yes, sir.
Q. And the stock held by local people?
A. I think all of it.
Q. And that has been true ever since its organization?
A. No. We have associate houses in different places and some of the stock is held by individuals at these different places.
Q. The parent concern is here?
A. Yes, sir.
Q. Has been here all the time?
2061 A. Yes, sir.
Q. Later on as the company prospered you opened up what you term branch houses?
A. Yes, sir.
Q. And in these branch houses the local people in these places have taken some stock?
A. Yes, sir.
Q. And business has been prosperous?
A. Fairly.
Q. Do you have the field to yourselves here?
A. As far as manufacturing is concerned, yes.
Q. And have had it all the time?
A. Yes, sir.
Q. You have interested yourself in the business?
A. Yes, sir.
Q. I suppose you have not concerned yourself about buying and selling stock in any other industry?
A. No, sir.
Q. And are not informed as to either the desirability or the value of the stock in other concerns except your own?
A. Only in a general way.
Q. You used some money in your business.
A. Yes, sir.
Q. What were you capitalized at in the start?
A. I think it was $50,000 I am not sure about that. But I think it was $50,000 originally.
Q. The company started pretty close to the ground if I may use the term?
A. Yes, sir.
Q. And has prospered nicely and is now in good shape, it is growing?
2062 A. The company has grown, yes.
Q. In that business the rate of return you say has been what?
A. I have not said.
Q. I thought you did tell Judge Carr.

Judge CARR: I didn't inquire what the rate of return of his business was because I didn't think it was proper.

Q. Did you undertake to say what was the usual and general rate of return to manufacturers in Des Moines?
A. I did not.
Q. Do you undertake to say that to the Master?

A. Yes, sir.

Q. Do you now want to say to the Master that you know what the return generally has been to manufacturers in Des Moines outside of your own business?

A. Yes, sir.

Q. And in what class of business, what line of business?

A. In any class.

Q. In every class?

A. In any class of business. The question he asked me was, what was expected by men who invested for return?

COURT: Do you know what they are actually earning?

A. I do not.

Q. All you done in telling that was what a man expected? I suppose he would be safe to say that men expect all they can get?

A. Usually.

Judge CARR: You know what you are realizing in your own business?

A. Yes, sir.

Witness excused.

2063 E. P. WALTER being recalled on the part of the complainant and examined in chief by Hon. George H. Carr, testified as follows:

Q. When you were on the stand earlier in the case the Master I think it was asked you to prepare a schedule or a table showing the mains laid each year in the distribution system of the complainant company, showing the size of the pains and the number of feet laid each year. Have you prepared such a schedule or table?

A. I have such a table. I did not prepare it myself.

Q. Is Exhibit No. 37 the table to which you refer?

A. Yes, sir.

Q. You have said you did not prepare this table. I wish you would explain to the Master how you obtained it.

A. When I started to prepare this table from the records in the gas company office I found that they had a table which I understand had been made up in Philadelphia at some previous time showing the sizes of the gas mains and the number of feet laid by size in the various years beginning with 1888.

Q. When did you find that table you speak of?

A. After I had been requested to make up such a table.

Q. In going through the records you dug it up, found it?

A. Yes, I found they had this record in the office.

Q. Had you any knowledge of that until the time you made search for it after you had been requested?

A. No, sir; I did not know that a table had been prepared before that.

Q. Now you may go on with the answer.

2064 A. I had a copy of this table made and from the original records in the gas company I checked up this copy and I found it to be substantially correct. There were a few instances

where I did find a very slight difference, they made prac-ically no difference in the result. For instance in the year 1892 in 16 inch pipe according to this record there were 3015 feet of pipe laid, according to the original record I found it was 3041 feet. I found some slight erro-s in there which made no difference and were not always an error because I could not tell in all cases as these figures on the original record had been copied and the copies were blurred to a small extent.

Q. You mean by that you could not make sure whether the original record was correct or whether this copy was correct.

A. Yes, sir.

Q. Because of the inability to read the original record.

A. Yes, the original record was indistinct and I could not tell in all cases what the original figure was, I took what I thought it was, but I may have been wrong.

Q. You have spoken of one instance, were there others?

A. Yes, sir. In the same year 1892 under six inch pipe on this record it shows 3026 feet as being laid. In the original records I find that to be 4986 feet. In the year 1893 on this record under six inch pipe it shows 1915 feet as being laid and I find no report in 1893 of any six inch pipe being laid; but the sum of 1915 and 3026 is practically the same as what I find as being laid in 1892 or 4986.

Q. Did you find any other differences between the two records?

A. In 1896 this record shows 351 feet of 2½ inch pipe being abandoned. I could not find a record of that. It also shows 1950 feet of three inch pipe being aban-oned. I found a record
2065 of 950, but I could not find the 1,000. It also shows 351 feet of six inch as being abandoned, but I did not find that record.

Q. Now any other discrepancy?

A. Yes, in 1902 I find quite a little difference, but as I said before the original records for that year are very indistinct and I could not make these figures out in all cases accurately. The record in this report shows 24,461 feet of four inch pipe. I found on the records 26,247 feet. Six inch pipe this record shows 7,520 and I found 7,232. Eight inch pipe this record shows 6,514 and I found 5,761. Ten inch pipe this record shows 4,733 feet and I found 4,578. The twelve inch pipe is correct and the 16 inch pipe is correct. In the totals for January 1, 1902, on this record it shows 51,062 feet being laid which I find from my figures there is 51,652 feet making this record practically 600 feet less than what I find on the original records, but as I said the copies of these records in some cases are so indistinct that I am not sure I am actually correct here. I think that is all the difference I found. The rest of the years checked out exactly.

Q. In your total figure on this table of miles of main I notice 185.593, that differs from the figure does it not as to the inventory as to the number of miles of main?

A. Yes, it does.

Q. Now will you explain that difference?

A. This is the number of miles of mains in use by the company

January 1, 1911. In the inventory I think that is 183.83 miles and that is the number of miles of main in use November 1st, 1910.

Q. As of the time when the inventory was taken.

2065 A. As of the time when the inventory was taken.

Q. The difference is the additions up to January 1st.

A. This difference is the amount of mains laid in November and December, 1910.

Cross-examination by R. O. BRENNAN, Esq.:

Q. This Exhibit 37 includes all the mains in the distribution system of the Des Moines Gas Co.?

A. Yes, sir.

Q. Does that include Valley Junction?

A. Excluding Valley Junction.

Q. Including the high pressure pipe lin-?

A. Including the high pressure pipe line within the city of Des Moines.

Q. How many feet of high pressure pipe line is there, do you know?

A. No, sir; I don't remember.

Q. That is not indicated on this exhibit?

A. That is not indicated, no sir.

Q. The company has I presume an inventory of the Valley Junction property?

A. Yes, sir.

Q. Showing services and distribution system out there?

A. Yes, sir.

Q. Now if I understand this exhibit you start out with January 1st, 1889 and this indicates that at that time there was in existence 22.86 miles of mains.

A. January 1, 1888.

Q. You start January 1, 1889 with a total and say there

2067 was laid in the year 1888.

A. Yes, sir. The first line also gives the number of feet in use January 1, 1888, the second is the number of feet laid in 1888 and the last is the number of feet in use January 1, 1889.

Q. Then in miles, you reduce the number of feet to miles?

A. Yes, sir.

Q. That is indicated at the bottom of each year?

A. Yes, sir.

Q. So that there was then on the 1st day of January 1888 120,704 feet of main in the distribution system.

A. Yes, sir.

Q. Reduced to miles 22.86.

A. Yes, sir.

Q. During that year was laid 3,685 feet or .69 of a mile?

A. Yes, sir.

Q. Added to the total the preceding year made 23.55 miles in existence at that time.

A. Yes, sir.

Q. You have shown in this table the number of miles, shown

here the number of feet of mains taken up or which were abandoned?

A. Yes, sir.

Q. And have you deducted those from the grand total shown in the report?

A. These are in all cases deducted. Deducted the year in which -ain was abandoned or taken up.

Q. You say that this copy was furnished you or data from this *h this* was made up from the office of the United Gas Improvement Company?

A. I found the copy in the office of the Des Moines Gas Company.

A. I understand the original copy was made up in Philadelphia.

2068 Q. While you found these discrepancies this is substantially correct so far as the records in the gas company's office is concerned?

A. Yes, sir.

Q. Did the company have or was it called *yo* your attention an inventory such as you have produced here or list showing the distribution system in Valley Junction?

A. I don't think that there is a list in this same shape, I am not sure.

Q. But they have something showing the system out there?

A. The number of miles of main in Valley Junction by size.

Q. And when laid?

A. Yes, sir.

Q. Do you remember the size of the high pressure main?

A. Eight inch across the river and six inch from there out to Valley Junction.

COURT: Where does it cross the river?

A. Opposite the gas works.

COURT: Goes under the river?

A. Yes, sir.

Q. I notice in the year 1906 this list shows there was laid during that year 17,618 feet of six inch pipe. Do you know whether that has reference to this high pressure main in West Des Moines?

A. January 1, 1906, 17,618 feet is the number of feet of six inch pipe laid in the year 1905. I am not sure whether that main was laid in the year 1905 or the year 1906. If it was laid in the year 1905 it would be included in that 17,618 feet. I am not sure whether it was laid in 1905 or 1906.

2069 Q. The pipe laid in 1906 appearing in the table January 1, 1907, shows that there was 40,248 feet of six inch pipe laid.

A. Well I would say from that that the chances are that that was laid in 1906 then and not in 1905.

Q. And 8 inch pipe seems to have been laid in that year 6,240.

A. Yes, sir.

Q. You say this high pressure main is 8 inches until it reaches the west side of the Des Moines river?

A. Yes, sir.

Q. Then it was transformed to a six inch pipe?
A. Yes, sir.

Mr. BYERS: We offer in evidence this Exhibit No. 37 as part of the cross-examination.
Judge CARR: Well it may be considered in evidence.

Witness excused.

2070 JANSEN HAINES being recalled on the part of the complainant and examined in chief by Hon. George H. Carr, testified as follows:

Q. You may tell the Master whether as has been intimated from time to time throughout this case the Des Moines Gas company have a monopoly on the business of furnishing light and fuel material or cooking material in the city of Des Moines or whether the business is competitive?
A. They have not a monopoly as you express in the question and the business is competitive.
Q. You may go on and state with what you come in competition both in lighting and in furnishing of fuel for cooking?
A. Well in the lighting field we come in competition first with a thoroughly equipped and up to date electric light plant which furnishes electric light and power for business commercial and industrial uses and has its solicitors in the field all the time trying to secure the same class of business and the same business which we — after.
Q. Let me ask you before you go farther if I may interrupt, do you know whether the rates are fixed by an ordinance of the city, speaking of the electric light rates?
A. I believe they are, yes.
Q. Now you may go on.
A. But competition in rate is not the only competition we have to meet. Competition that we have to meet is the effect of their solicitors in the field trying to secure business which our solicitors are trying to secure. This applies to electric light in the commercial field for lighting stores and also in the domestic field for
2071 lighting houses, for the use of electricity for power in industrial properties, the use of electricity in small cooking utensils and for use of electricity for brazing, heating, principally in an industrial way. And in addition to the electrical competition which we are compelled to meet we have the competition of gasoline and oil, gasoline for heating and for gasoline engines for producing power, have competition which we meet in gasoline used for domestic equipment such as laundry dryers and in industrial equipment in laundries for drying, for laundry irons, and in the field of lighting gasoline is used and delevops in its use a competition which we have to meet. We also have the competition of kerosene, there are a number of companies in the city furnishing both gasoline and kerosene and delivering it in tank wagons at the consumers' houses. Kerosene is used principally for lighting, but in some cases it is

used for cooking and it is used in industrial work for heating furnaces for power. In addition to that we have to meet the competition developed by very cheap fuel, of soft coal which is produced locally and delivered at the houses of the people in Des Moines at a very low rate and it can be used for cooking and in many instances is used for cooking and is also used for producing power and for various heating appliances which the use of gas would be adopted to and with which we are forced in competition.

Q. Is the sale of gas for domestic cooking an important branch of your business?

A. The sale of gas for domestic cooking first commenced to be an important factor about 12 years ago, there were few gas ranges or cooking stoves used before that, but not to any great extent and that has become a very important factor of our business particularly in the later years. I believe that we have records of some
2072 25,000 or 28,000 gas ranges which have been sold in Des Moines to consumers and in addition to that a large number have been sold by the local dealers. In many cases they have been sold in di-ect competition with gasoline and coal.

Q. Can you give an estimate of what portion of your output is used for cooking purposes, that is what proportion or per centage is of the gas sold that is used for that purpose as compared with the percentage that is used for lighting purposes or other purposes?

A. Any estimate that I give would be an approximation because I have no accurate figures on it and purely based on my own judgment. I should say in the neighborhood of about 50 per cent or 60 per cent of the total sales of gas, between 50 and 60 per cent of the total sales of gas are used for domestic fuel consumption in gas ranges or domestic equipment such as laundry driers, and laundry heating stoves, water heaters and things of that nature.

Q. Now this seems to be a very important item of your business, or branch of your business. Now what are the fuels with which you must compete. I think you have stated in part but you may answer more fully and in that connection I wish you would tell the Master so it may go into the record what the fact is as to the supply of domestic coal here in Des Moines, that is how expensive coal beds we have here in a general way, how many mines we have engaged in taking out coal in this vicinity?

Objected to as incompetent, and immaterial.

A. There is a very extensive coal field surrounding Des Moines and under most of the city of Des Moines and coal is produced and sold in Des Moines at a very low figure for domestic use and
2073 for industrial use and we have to meet the competition of that in ranges in the houses of our consumers and we also have other fuels to compete with such as coke and charcoal and anthracite coal. The competition with coke and charcoal is a very material thing in business because these fuels are largely used in restaurant cooking ranges and used by chefs in restaurants and as a rule these chefs or cooks in restaurants are accustomed to the use of these fuels such as Anthracite coal and coke and charcial and it requires a great deal of

effort to get them to change and use gas although it may be more economical and more satisfactory and cause less dirt and so on in their kitchens and their business is difficult to secure because they have been educated to the use of these other forms of fuel and they do not eant to change.

Q. There were some matters that you were asked on cross examination I believe to produce, I don't know whether you have in mind exactly what they are. Have you those documents and records that you were asked to produce?

A. I collected them together immediately and kept them together after that, after I looked over my records, but they have not beecalled for and they are over at the office. I have sent for them. They will be here I think if the man can find them in a few minutes.

Cross-examination by Hon. H. W. BYERS:

Q. You forgot one of your principal competitors didn't you in the light business?

A. If I did I hope you will remind me, I meant to give them all.

Q. You forgot the sun and wood, you forgot that?

Objected to as immaterial.

2074 A. I will answer General Byers' question, the sun is a competitor of ours, we can show it in this way. Our sent out is very materially increased on dark stormy days due that very fact the sun's light is shut off. If we could have all dark stormy days we could have a very large increase in business.

Q. This terrific competition with the electric light people and these other businesses around here, about how much has that reduced your sales in the last four or five years do you think? I will put that in another way. Nobody else here is manufacturing gas for sale either for lighting purposes or heating purposes or any other purposes that you know of?

A. There are a number of people who have private plants for manufacturing gasoline gas and some who manufacture acetylene gas.

Q. Just notice the way I put the question, I think it eliminates these private plants you are talking about. I mean for sale in this community is there anybody manufacturing gas, the kind of gas you are making, either for illuminating purposes or heating purposes.

A. Under a franchise similar to ours you mean in that respect?

Q. I don't care whether under a franchise or without any or how it is.

A. I don't know of any.

Mr. BYERS: That is all with the exception of course I want those things I asked for at some time when you are ready. One thing I wanted was the minutes of the meeting of the Capital City Gas Light Companye's directors and stockholders at the time of the transfer?

Judge CARR: That is the first I ever heard that you were curious about that.

A. I have the oil contracts and the correspondence attached to them.

2075 Q. There was a contract with the Welsbach Lighting Co.?

A. What for?

Q. For gas.

A. That was not called for?

Q. I asked you for contracts and you said the contracts for oil are made by somebody who was purchasing agent for the United Gas Improvement Company*m* that the contracts were held there at the Philadelphia office. I may have asked for all of your oil contracts I don't know, but I have a memorandum of what I asked for which I will have in the morning.

A. If you will look at the record you will note that I stated the purchasing agent for the United Gas Improvement Company and the purchasing agent for the Des Moines Gas Company are the same person and that these contracts are between the oil company and the Des Moines Gas Company signed by the purchasing agent of the Des Moines Gas Company who as an individual is the same man as the purchasing agent of the United Gas Improvement Company. These contracts are the only contracts which are given between the Des Moines Gas Company and the oil company and they are signed by an official of the Des Moines Gas Co. who is purchasing agent and sends me a copy of the contract which he makes.

Q. I won't quarrel with you about that until I have the record?

A. I don't mean to quarrel.

Judge CARR: When General Byers asked about this as I recall it, you said your recollection was that you did not have the original contracts but the material parts of the contracts were furnished you?

A. Yes, sir.

Judge CARR: Do you wish to say anything more about that?

2076 A. I would say that my general understanding that the purchasing agent of the United Gas Improvement Company is the purchasing agent of this company and others and makes contracts with those oil companies direct for the company and because he is able to make a number of contracts of this kind he is enabled to make a very low price as is shown by the correspondence here.

Judge CARR: What I meant particularly to inquire about was, as I recollect your testimony you said that there was sent to you by the purchasing agent as you had it in mind the material parts of the contract. Now what is the fact with reference to that as you find upon investigation?

A. I said I was not sure whether I got a copy of the original contract or just the material parts of it. In looking it up I find I have a carbon copy of the contract itself. These are the ones I offered General Byers just now.

Mr. BYERS: I don't care to spend any time with it now, I am going to use Mr. Haines further later.

Judge CARR: Do you want to recall h*u*m before we rest our case?

Mr. BYERS: But I want my memorandum so that I know what I called for.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

2076a

DEF'TS' EX. # 12.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Detailed Statement of Gas Sold, in Cubic Feet, December 31, 1904, *to December* 31, 1910.

Years.	Des Moines. General consumers. Regular.	Des Moines. General consumers. Prepayment.	Des Moines. Public street lamps.	Private lamps.	Used by company.	Valley Junction. General consumers. Regular.	Valley Junction. General consumers. Prepayment.	Totals.	% of increase.
Dec. 31, 1904	218,704,100	63,959,100	7,690,702	13,480	2,040,000	.....	.....	292,407,382	19.7
" " 1905	249,450,300	75,655,900	7,301,151	11,789	1,985,700	.....	.....	334,404,840	14.4
" " 1906	258,511,000	102,084,600	8,447,181	7,958	2,065,400	415,000	570,700	372,101,839	11.3
" " 1907	278,037,200	134,919,300	8,883,533	7,929	2,574,700	2,454,400	2,642,100	429,519,162	15.4
" " 1908	281,748,400	162,841,100	8,640,781	10,275	2,205,700	2,517,300	3,214,400	461,177,956	7.3
" " 1909	295,851,500	183,206,000	8,830,992	15,537	3,081,900	2,475,300	3,783,300	497,244,529	7.8
" " 1910	308,594,800	204,330,000	8,546,498	15,056	3,615,600	2,453,700	4,435,400	531,991,054	7.0

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2076*b*

DEFENDANT'S EXHIBIT No. 13.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Record of Mains Laid.

Size of main.	No. ft. in ground 1-1-1888.	No. ft. laid in 1888.	No. ft. taken up or abandoned 1888.	No. ft. in ground 1-1-1889.	No. ft. laid in 1889.	No. ft. taken up or abandoned 1889.
2½" & under	12,368	.....	.....	12,368	472	.....
3"	14,540	.....	.....	44,540	1,810	1,396
4"	41,695	3,685	.....	45,380	25,021	.....
6"	13,699	.....	.....	13,699	3,325	.....
8"	6,020	.....	.....	6,020	.....	.....
10"	1,760	.....	.....	1,760	.....	.....
12"	.....	.....	.....	.....	.....	.....
14"	622	.....	.....	622	.....	.....
16"	.....	.....	.....	.....	.....	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	120,704	3,685	.....	124,389	30,628	1,396
Miles	22.86	.69	.....	23.55	5.80	.26

Size of main.	No. ft. in ground 1-1-1890.	No. ft. laid in 1890.	No. ft. taken up or abandoned 1890.	No. ft. in ground 1-1-1891.	No. ft. laid in 1891.	No. ft. taken up or abandoned 1891.
2½" & under	12,840	642	.....	13,482	1,020	.....
3"	44,954	1,940	2,270	44,624	340	.....
4"	70,401	11,422	.....	81,823	9,989	.....
6"	17,024	4,856	.....	21,880	3,026	.....
8"	6,020	.....	.....	6,020	.....	.....
10"	1,760	.....	.....	1,760	.....	.....
12"	.....	.....	.....	.....	1,790	.....
14"	622	.....	.....	622	.....	.....
16"	.....	.....	.....	.....	3,015	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	153,621	18,860	2,270	170,211	19,180	.....
Miles	29.09	3.57	.43	32.23	3.64	.....

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Size of main.	No. ft. in ground 1-1-1892.	No. ft. laid in 1892.	No. ft. taken up or abandoned 1892.	No. ft. in ground 1-1-1893.	No. ft. laid in 1893.	No. ft. taken up or abandoned 1893.
2½" & under	14,502	.....	230	14,272	.....	346
3"	44,964	.....	.....	44,964	.....	.....
4"	91,812	431	.....	92,243	5,135	1,364
6"	24,906	1,915	.....	26,821	2,076	30
8"	6,020	.....	.....	6,020	.....	.....
10"	1,760	.....	.....	1,760	.....	.....
12"	1,790	.....	.....	1,790	.....	.....
14"	622	.....	.....	622	.....	.....
16"	3,015	.....	.....	3,015	.....	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	189,391	2,346	230	191,507	7,211	1,737
Miles	35.87	.44	.04	36.27	1.37	.33

2076c

Size of main.	No. ft. in ground 1-1-1894.	No. ft. laid in 1894.	No. ft. taken up or abandoned 1894.	No. ft. in ground 1-1-1895.	No. ft. laid in 1895.	No. ft. taken up or abandoned 1895.
2½" & under	13,929	.....	.....	13,929	.....	351
3"	44,964	.....	.....	44,964	392	1,950
4"	96,014	692	.....	96,706	3,078	.....
6"	28,867	.....	.....	28,867	2,810	351
8"	6,020	.....	.....	6,020	516	.....
10"	1,760	.....	.....	1,760	.....	.....
12"	1,790	.....	.....	1,790	712	.....
14"	622	.....	.....	622	.....	.....
16"	3,015	.....	.....	3,015	.....	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	196,981	692	.....	197,673	7,508	2,652
Miles	37.31	.13	.....	37.44	1.42	.50

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Size of main.	No. ft. in ground 1-1-1896.	No. ft. laid in 1896.	No. ft. taken up or abandoned 1896.	No. ft. in ground 1-1-1897.	No. ft. laid in 1897.	No. ft. taken up or abandoned 1897.
2½" & under	13,578	.....	225	13,353	.....	.....
3"	43,406	1,971	3,256	42,121	.....	4,876
4"	99,784	47,119	1,963	144,940	34,853	1,500
6"	31,326	11,188	.....	42,514	13,118	.....
8"	6,536	.....	.....	6,536	1,204	.....
10"	1,760	.....	.....	1,760	2,354	.....
12"	2,502	433	.....	2,936	1,565	.....
14"	622	.....	.....	622	.....	.....
16"	3,015	.....	.....	3,015	.....	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	202,529	60,711	5,444	257,796	53,094	6,376
Miles	38.36	11.50	1.03	48.83	10.05	1.21

Size of main.	No. ft. in ground 1-1-1898.	No. ft. laid in 1898.	No. ft. taken up or abandoned 1898.	No. ft. in ground 1-1-1899.	No. ft. laid in 1899.	No. ft. taken up or abandoned 1899.
2½" & under	13,363	.....	.....	13,353	.....	400
3"	37,245	954	.....	38,199	.....	1,125
4"	178,293	26,136	1,275	203,154	18,016	756
6"	55,632	3,370	.....	59,002	3,324	444
8"	7,740	6,603	.....	14,343	2,382	.....
10"	4,114	314	.....	4,428	4,751	480
12"	4,500	.....	.....	4,500	.....	.....
14"	622	.....	.....	622	.....	.....
16"	3,015	.....	.....	3,015	634	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	304,514	37,377	1,275	340,616	29,107	3,205
Miles	57.67	7.08	.24	64.51	5.51	.60

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Size of main.	No. ft. in ground 1-1-1900.	No. ft. laid in 1900.	No. ft. taken up or abandoned 1900.	No. ft. in ground 1-1-1901.	No. ft. laid in 1901.	No. ft. taken up or abandoned 1901.
2½" & under	12,953	.....	.....	12,953	.....	360
3"	37,074	1,174	.....	38,248	.....	1,655
4"	220,414	10,354	.....	230,768	24,461	260
6"	61,882	2,437	.....	64,319	7,520	.....
8"	16,725	1,500	.....	18,225	6,514	.....
10"	8,699	.....	.....	8,699	4,733	.....
12"	4,500	.....	.....	4,500	2,793	372
14"	622	.....	.....	622	.....	.....
16"	3,649	.....	.....	3,649	5,041	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	366,518	15,465	.....	381,983	51,062	2,647
Miles	69.42	2.93	.....	72.35	9.66	.50

Size of main.	No. ft. in ground 1-1-1902.	No. ft. laid in 1902.	No. ft. taken up or abandoned 1902.	No. ft. in ground 1-1-1903.	No. ft. laid in 1903.	No. ft. taken up or abandoned 1903.
2½" & under	12,593	.....	.....	12,593	.....	.....
3"	36,593	439	.....	37,032	.....	.....
4"	254,969	19,101	.....	274,070	29,423	.....
6"	71,839	5,537	.....	77,376	4,345	.....
8"	24,739	7,787	.....	32,526	5,844	.....
10"	13,432	4,015	.....	17,447	4,880	.....
12"	6,921	1,329	.....	8,250	4,308	.....
14"	622	.....	.....	622	.....	.....
16"	8,690	.....	.....	8,690	4,853	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	430,398	38,208	.....	468,606	53,653	.....
Miles	81.51	7.24	.....	88.75	10.16	.....

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Size of main.	No. ft. in ground 1–1–1904.	No. ft. laid in 1904.	No. ft. taken up or abandoned 1904.	No. ft. in ground 1–1–1905.	No. ft. laid in 1905.	No. ft. taken up or abandoned 1905.
2½" & under	12,593	.....	767	11,826	281	752
3"	37,032	.....	.....	37,032	.....	.....
4"	303,493	18,143	.....	321,636	50,864	974
6"	81,721	3,951	.....	85,672	17,618	.....
8"	38,370	.....	.....	38,370	7,506	.....
10"	22,327	587	.....	22,914	2,661	.....
12"	12,558	5,055	.....	17,613	4,930	.....
14"	622	.....	.....	622	.....	.....
16"	13,543	1,974	.....	15,517	7,107	.....
20"	.....	.....	.....	.....	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	522,259	29,710	767	551,202	90,967	1,726
Miles	98.91	5.63	.15	104.39	17.23	.32

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Size of main.	No. ft. in ground 1–1–1906.	No. ft. laid in 1906.	No. ft. taken up or abandoned 1906.	No. ft. in ground 1–1–1907.	No. ft. laid in 1907.	No. ft. taken up or abandoned 1907.
2½" & under	11,355	11,432	400	22,387	414	1,690
3"	37,032	1,317	1,911	36,438	.....	708
4"	371,526	47,841	226	419,141	26,374	336
6"	103,289	40,248	108	143,429	4,876	.....
8"	45,876	6,240	882	51,234	3,122	.....
10"	25,575	1,256	.....	26,831	1,851	.....
12"	22,543	3,525	.....	26,068	4,750	.....
14"	622	.....	.....	622	.....	.....
16"	22,624	294	.....	22,918	4,456	.....
20"	.....	6,036	.....	6,036	.....	.....
24"	.....	.....	.....	.....	.....	.....
Total	640,442	118,189	3,527	755,104	45,843	2,734
Miles	121.30	22.38	.67	143.01	8.69	.52

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Size of main.	No. ft. in ground 1-1-1908.	No. ft. laid in 1908.	No. ft. taken up or abandoned 1908.	No. ft. in ground 1-1-1909.	No. ft. laid in 1909.	No. ft. taken up or abandoned 1909.
2½" & under	21,111	.....	487	20,624	266	779
3"	35,730	.....	.....	36,730	.....	429
4"	445,179	32,017	.....	477,196	40,209	.....
6"	148,305	158	.....	148,463	2,159	.....
8"	54,356	1,522	.....	55,878	2,875	.....
10"	28,682	.....	.....	28,682	3,377	594
12"	30,818	372	.....	31,190	159	.....
14"	622	.....	.....	622	.....	.....
16"	27,374	.....	.....	27,374	1,132	.....
20"	6,036	.....	.....	6,036	.....	.....
24"	.....	1,819	.....	1,819	.....	.....
Total	798,213	35,888	487	833,614	50,777	1,802
Miles	151.18	6.79	.09	157.88	9.62	.34

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Size of main.	No. ft. in ground 1-1-1910.	No. ft. laid in 1910 (to Nov. 1st).	No. ft. taken up or abandoned 1910 (to Nov. 1st).	No. ft. in ground 1-1-'10.	2½" parallel to curb (add to adjust).	No. ft. in ground 11-1-'10.
2½" & under	20,111	1,640	812	20,939	13,008	33,947
3"	35,301	.....	.....	35,301	.....	35,301
4"	518,005	55,719	.....	573,724	.....	573,724
6"	150,622	11,382	.....	162,004	.....	162,004
8"	58,753	6,854	.....	65,607	.....	65,507
10"	31,465	543	.....	32,008	.....	32,008
12"	31,349	.....	.....	31,349	.....	31,349
14"	622	.....	.....	622	.....	622
16"	28,506	.....	.....	28,506	.....	28,506
20"	6,036	.....	.....	6,036	.....	6,036
24"	1,819	.....	.....	1,819	.....	1,819
Total	882,589	76,138	812	957,915	13,008	970,923
Miles	167.16	14.42	.15	180.43	2.46	183.89

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2076*f* DEFENDANTS' EXHIBIT No. 14.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company, Des Moines, Iowa.

History of Price of Gas.

Prior to January 1, 1896, the price of gas in Des Moines was:

	Gross.	Discount.	Net.
Illuminating Purposes	$1.80	10¢	$1.70
Fuel purposes:			
Less than 10,000 c. f.....	1.80	30¢	1.50
Over 10,000 c. f.....	1.80	55¢	1.25

City Ordinance No. 724, passed April 29, 1895, and again May 16, 1895, as amended by City Ordinance No. 751, passed February 7, 1896, fixed the *date* as follows:

For all purposes:			
1896 to 1897.....	1.40	10¢	1.30
1898 to 1899.....	1.35	10¢	1.25
1900 to 1901.....	1.30	10¢	1.20
1902, 1903 and 1904.....	1.25	10¢	1.15
1905	1.20	10¢	1.10
1906 to 1910 incl.....	1.10	10¢	1.00

This last rate of $1.00 net is the one in force at the present time.

DEFENDANT'S EXHIBIT No. 15.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Statement of Profit & Loss.

Revenue—Gas Sales.

	Year Ended September 30, 1908.					
	Cubic feet.	Am't rec. per M. C. F.	Amount.	Cubic feet.	Am't rec. per M. C. F.	Amount.
Des Moines:						
General Consumers—Regular	279,792,900	1.1000	307,772.19	290,957,300	1.1000	320,053.03
General Consumers—Prepayment	155,674,100	1.0000	155,674.10	177,523,600	1.0000	177,523.60
Street Lamps	8,706,295	1.0000	8,706.29	8,740.525	1.0000	8,740.49
Company	2,221,900	1.0000	1,605.35	2,791,300	1.0000	2,791.30
Total Des Moines	446,395,195	1.0613	473,757.93	480,012,725	1.0606	509,103.42
Valley Junction:						
General Consumers—Regular	2,574,200	1.6000	4,118.72	2,438,700	1.6000	3,901.92
General Consumers—Prepayment,	2,993,100	1.5000	4,489.65	3,718.100	1.5000	5,577.15
Total Valley Junction	5,567,300	1.5462	8,608.37	6,156,800	1.5396	9,479.07
Total—Combined	451,962,495	1.0673	482,366.30	486,169,525	1,0667	518,587.49
Less Discount	.....	.0559	25,260.35	.....	.0548	26,643.00
Total revenue from gas	.....	1.0114	457,105.95	.....	1.0119	491,944.49

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Operating Expenditures.

	Cost per M. C. F. made.	Amount.	Cost per M. C. F. made.	Amount.
Manufacturing:				
Manufacturing	.0053	2,473.12	.0060	3,044.69
Boiler Fuel	.0208	10,019.91	.0213	10,869.97
Expense Works	.0111	5,317.97	.0113	5,765.39
Generator Fuel	.1120	53,951.81	.1108	56,413.18
Manufacturing Labor	.0182	8,772.99	.0187	9,520.39
Oil	.1744	83,967.52	.1283	65,383.55
Purification Labor	.0008	401.49	.0013	654.25
Purification Supplies	.0005	246.39	.0025	1,289.81
Repairs Works	.0140	6,748.07	.0129	6,558.02
Water Tax	.0020	972.49	.0021	1,047.07
Total	.3591	172,871.76	.3152	160,546.32
Residuals	.0076	3,646.16	.0120	6,100.21
Totals	.3515	169,225.60	.3032	154,446.11
Leakage	.0229	.....	.0145	.....
Total manufacturing	.3744	169,225.60	.3177	154,446.11

	Cost per M. C. F. sold.	Amount.	Cost per M. C. F. sold.	Amount.
Distribution:				
Distribution	.0057	2,693.63	.0063	3,044.63
Complaint Expense	.0044	1,995.93	.0046	2,224.74
Distribution Office Expense	.0066	2,977.58	.0097	4,717.00
Gratuitous Work	.0051	2,322.33	.0037	1,801.47
Repair Mains	.0085	3,828.48	.0084	4,101.17
Repairs Services	.0012	529.84	.0023	1,087.65
Repairs Meters	.0124	5,598.40	.0090	4,379.65
Setting & Removing Meters	.0113	5,110.67	.0132	6,420.28
Street Mains Abandoned	.0002	83.60	.0014	693.00
Total Distribution	.0554	25,050.46	.0586	28,469.59
Commercial Expense:				
Commercial Expense	.0031	1,390.17	.0031	1,483.80
Expense Collection	.0096	4,344.95	.0091	4,445.41
Expense Office	.0191	8,645.22	.0226	10,995.17
Office Salaries	.0435	19,671.20	.0428	20,801.52
Total Commercial Expense	.0753	34,051.54	.0776	37,725.90
New Business:				
New Business	.0031	1,389.99	.0049	2,398.51
Advertising	.0093	4,191.99	.0085	4,142.23
Appliance Demonstration	.0029	1,289.44	.0033	1,611.54
Expense Soliciting	.0095	4,293.97	.0141	6,862.90
Gas Appliances	.....	19.96	.0040	1,927.26

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Gas Engine Expense	.0006	181.72	.0004	204.71
House Fitting Expense	.0055	2,527.29	.0007	382.12
Gas Arc Rental & Maintenance	.0032	1,467.38	.0079	3,838.07
Gas Stove Depreciation	.....	.....	.....	.....
Total New Business	.0341	15,370.74	.0344	16,748.58

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Expense:				
Accidents & Damages	.0011	494.24	.0082	3,990.74
Association Meetings	.0013	580.17	.0021	1,031.30
Expense General	.0029	1,324.85	.0032	1,553.75
Expense Extraordinary	.0039	1,749.52	.0055	2,667.19
Insurance	.0043	1,938.84	.0031	1,491.49
Interest	.0004	168.18	.0022	1,054.08
Litigation	.0007	325.00	.0017	824.97
Salaries General	.....	.....	.....	.....
Uncollectible Bills	.0047	2,117.53	.0058	2,824.56
Replacement Values	.....	.....	.....	.....
Rate Regulation Expense	.....	.....	.....	.....
Street Lamp Operating	.0006	276.62	.0004	181.47
Total Expense	.0191	8,638.59	.0278	13,511.39
	.0648	29,276.55	.0667	32,437.49
Taxes	.6231	281,613.48	.5828	283,339.06
Total Operating Expense	.3883	175,492.47	.4291	208,605.43
Net Earnings				

	Cost per M. C. F. sold.	Amount.	Cost per M. C. F. sold.	Amount.
Miscellaneous Sales	.0003	131.99	.0002	95.24
Gross Corporate Income	.3886	175,624.46	.4293	208,700.67
Deductions from Gross Corporate Income:				
Fixed Charges	.1940	87,675.49	.1737	84,439.23
Net Profits	.1946	87,948.97	.2556	124,261.44

Gas Summary.

	9-30-1908	9-30-1909.
Total Gas Accounted for	451,962,495 c .f.	486,159,525 c. f.
Leakage	29,487,133 c. f.	23,185,907 c. f.
Gas Sent Out	481,449,628 c. f.	509,355,432 c. f.
Total Gas Made	481,633,356 c. f.	509,355,294 c. f.

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DEFENDANT'S EXHIBIT No. 16.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Statement of Profit & Loss.

Revenue—Gas Sales.

	Year ended September 30, 1910.					
	Cubic feet.	Am t rec. per M. C. F.	Amount.	Cubic feet.	Am't rec. per M. C. F.	Amount.
Des Moines:						
General Consumers—Regular	303,620,000	1.1000	333,980.85	308,594,800	1.1000	339,454.28
General Consumers—Prepayment	197,300,200	1.0000	197,300.20	204,330,000	1.0000	204,330.00
Street Lamps	8,508,172	1.0000	8,508.18	8,561,554	1.0000	8,561.57
Company	3,605,700	1.0000	3,605.70	3,615,600	1.0000	3,615.60
Total Des Moines	513,034,072	1.0591	543,394.93	525,101,954	1.0587	555,961.45
Valley Junction:						
General Consumers—Regular	2,516,300	1.6000	4,026.08	2,453,700	1.6000	3,925.92
General Consumers—Prepayment	4,212,800	1.5000	6,319.20	4,435,400	1,5000	6,653.10
Total Valley Junction	6,729,100	1.5374	10,345.28	6,889,100	1.5356	10,579.02
Total Combined	519,763,172	1.0554	553,740.21	531,991,054	1.0649	566,540.47
Less Discount	.....	.0528	27,446.71	.....	.0519	27,647.47
Total Revenue from Gas	.....	1.0126	526,293.50	.....	1.0130	538,893.00

Operating Expenditures.

Manufacturing:	Cost per M. C. F. made.	Amount.	Cost per M. C. F. made.	Amount.
Manufacturing	.0072	3,986.27	.0068	3,718.76
Boiler Fuel	.0304	16,657.04	.0288	15,988.99
Expense Works	.0150	8,201.76	.0137	7,611.67
Generator Fuel	.1045	57,198.26	.1030	57,297.79
Manufacturing Labor	.0199	10,858.84	.0192	10,682.68
Oil	.1156	63,260.24	.1150	63,949.96
Purification Labor	.0009	488.99	.0009	511.88
Purification Supplies	.0028	1,511.34	.0013	737.83
Repairs Works	.0267	14,588.34	.0255	14,193.78
Water Tax	.0019	1,038.04	.0018	1,006.12
Total	.3249	177,789.12	.3160	175,699.46
Residuals	.0146	7,994.51	.0184	10,233.02
Totals	.3103	169,794.61	.2975	165,466.44
Leakage	.0164	.....	.0134	.....
Total manufacturing	.3267	169,794.61	.3110	165,466.44

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Distribution:				
Distribution	.0075	3,877.48	.0071	3,803.38
Complaint Expense	.0066	3,434.41	.0064	3,372.94
Distribution Office Expense	.0125	6,514.47	.0114	6,066.58

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Gratuitous Work	.0109	5,655.39	.0125	6,643.77
Repair Mains	.0146	7,581.60	.0176	9,347.30
Repairs Services	.0075	3,917.84	.0098	5,224.76
Repairs Meters	.0107	5,551.15	.0098	5,221.63
Setting & Removing Meters	.0105	5,439.09	.0101	5,387.46
Street Mains Abandoned	.0005	288.20	.0002	129.20
Total Distribution	.0813	42,259.63	.0849	45,187.02
Commercial Expense:				
Commercial Expense	.0035	1,796.26	.0035	1,890.01
Expense Collection	.0110	5,692.99	.0120	6,374.63
Expense Office	.0270	14,049.35	.0285	15,177.30
Office Salaries	.0454	23,622.36	.0461	24,509.10
Total Commercial Expense	.0869	45,160.96	.0901	47,951.04
New Business:				
New Business	.0060	3,111.00	.0059	3,154.58
Advertising	.0130	6,777.15	.0129	6,853.03
Appliance Demonstration	.0028	1,475.00	.0032	1,711.85
Expense Soliciting	.0182	9,430.33	.0181	9,646.65
Gas Appliances	.0035	1,814.34	.0041	2,188.14
Gas Engine Expense	.0001	47.71	.0001	60.02
House Fitting Expense	.0013	679.11	.0003	178.77
Gas Arc Rental & Maintenance	.0104	5,406.15	.0094	5,005.86
Gas Stove Depreciation	.....	.....	.0002	108.15
Total New Business	.0483	25,112.10	.0454	34,173.23

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	Cost per M. C. F. sold.	Amount.	Cost per M. C. F. sold.	Amount.
Expense:				
Accidents & Damages	.0041	2,143.93	.0049	2,616.71
Association Meetings	.0027	1,367.77	.0022	1,164.92
Expense General	.0024	1,257.89	.0028	1,488.08
Expense Extraordinary	.0082	4,258.69	.0075	3,964.78
Insurance	.0039	2,025.74	.0035	1,841.95
Interest	.0003	154.20	.0001	75.05
Litigation	.0019	1,000.71	.0019	999.96
Salaries General	.0176	9,166.66	.0188	10,000.00
Uncollectible Bills	.0059	3,068.16	.0062	3,329.34
Replacement Values	.0007	348.18	.....	.....
Rate Regulation Expense	.....	.....	.0105	5,602.00
Street Lamp Operating	.0012	604.86	.0012	618.35
Total Expense	.0483	25,088.39	.0594	31,551.04
Taxes	.0728	37,866.74	.0726	38,580.81
Total Operating Expense	.6643	345,282.43	.6634	352,909.58
Net Earnings	.3483	181,011.07	.3496	185,983.42
Miscellaneous Sales	.0007	371.49	.0008	437.04
Gross Corporate Income	.3490	181,382.56	.3504	186,420.46

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DEFENDANT'S EXHIBIT No. 17.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Cost of Services.

Yr.	No.	Length. Total.	Per service.	Salary. Total.	Per service.	Per ft.	Material. Total.	Per service.	Per ft.	Total.	Sundries. Per service.	Per ft.	Total
'06	1272	94,352	74.2	7,093.56	5.57	7.52	7,903.07	6.21	8.39	1,180.19	.928	1.251	44.9
'07	1213	82,588	68.1	5,351.07	4.42	6.49	6,973.14	5.74	8.44	1,154.67	.952	1.398	39.2
'08	886	74,219	83.7	5,446.40	6.15	7.34	6,505.56	7.34	8.76	1,925.81	2.174	2.595	69.3
'09	1058	85,982	81.3	7,952.96	7.52	9.27	7,324.40	6.93	8.52	1,014.20	.959	1.180	45.7
'10	1280	113,958	88.9	9,040.72	7.06	7.93	9,429.67	7.37	8.28	1,631.76	1.275	1.433	330.5
	5709	451,099	79.2	34,884.71	6.11	7.73	38,135.84	6.68	8.45	6,906.63	1.210	1.531	529.7

DEFENDANT'S EXHIBIT No. 17.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Cost of Services.

		Material.				Sundries.			Paving.			Total.		
ervice.	Per ft.	Total.	Per service.	Per ft.	Total.	Per service.	Per ft.	Total.	Per serv.	Per ft.	Total.	Per service.	Per ft.	Credit.
.57	7.52	7,903.07	6.21	8.39	1,180.19	.928	1.251	44.92	.0353	.0476	16,221.74	12.75	17.19	1,356.27
.42	6.49	6,973.14	5.74	8.44	1,154.67	.952	1.398	39.28	.0324	.0476	13,518.16	11.14	16.37	1,194.70
15	7.34	6,505.56	7.34	8.76	1,925.81	2.174	2.595	69.30	.0782	.0934	13,947.07	15.74	18.79	1,357.05
52	9.27	7,324.40	6.93	8.52	1,014.20	.959	1.180	45.75	.0432	.0532	16,337.31	15.45	19.01	1,578.18
06	7.93	9,429.67	7.37	8.28	1,631.76	1.275	1.433	330.50	.258	.2900	20,432.65	15.96	17.93	1,853.70
11	7.73	38,135.84	6.68	8.45	6,906.63	1.210	1.531	529.75	.0928	.1174	80,456.93	14.09	17.83	7,339.90

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Deduction from Gross Corporate Income:				
Fixed Charges	.1539	79,981.07	.1504	80,014.10
Net Profits	.1951	101,401.49	.2000	106,406.36

Gas Summary.

	9-30-1910.	12-31-1910.
Total Gas Accounted for	519,763,172 c. f.	631,991,054 c. f.
Leakage	27,510,104 c. f.	23,972,683 c. f.
Gas Sent Out	547,273,276 c. f.	555,963,737 c. f.
Total Gas Made	547,055,539 c. f.	556,432,721 c. f.

(Here follows Defendant's Exhibit No. 17, marked page 2076*m*.)

2077 Friday Forenoon Session.

AUGUST 11, 1911—at 9:30 a. m.

Counsel for respective parties all present.
Testimony on part of complainant resumed as follows:

JANSEN HAINES, re-called for further cross examination, examined by Mr. Byers, testified:

Q. I have since checked up the memorandum I made at the time when I asked you to produce the minute book covering the transfers of the Capital City Gas Light Company to the Des Moines Gas Company and United Gas Improvement Company, and asked you for your monthly report to the United Gas Improvement Company beginning with September, October, November and December 1910, and I asked for a copy of your last estimate covering improvements and extensions and changes in the plant you say you made, and I asked for the oil contract we were talking about yesterday; now have you with you the minute book that I asked you about?

A. I have here the minute book of the Directors' meeting of February 28, 1906, of the Capital City Gas Light Company, of which Mr. Lewis Lilly, Mr. A. B. Cummins and S. T. Boudine were directors at that time.

Q. For what year?

A. February 28, 1906.

Q. I do not think that is the book I have reference to unless the *the* other minutes I want are in there. The record I want is the minute book showing the transfer.

Mr. GUERNSEY: I think that is the book Mr. Haines refers to, which shows the sale of the Capital City Gas Light Company.

2078 Q. That is what I want. Does that contain the minutes of the meeting of the Des Moines Gas Company when the transfer was made and the property transferred to the United Gas Improvement Company?

Objected to on part of complainant because it assumes the property was transferred to the United Gas Improvement Company.

A. The minutes of this meeting show the sale of the Capital City Gas Light Company as authorized by the board of directors, Mr. Lewis Lilly, A. B. Cummins and S. T. Boudine, under date of February 28, 1906, and the terms of the sale.

Q. What is that?

A. And the terms of the sale.

Q. Is there in the record any minutes of meetings of the Des Moines Gas Company as it was made up at that time, the directory board?

A. No, sir.

Q. Who composed the directory board at the time this transfer was made, of the Des Moines Gas Company?

Mr. GUERNSEY: Turn to the book if you have it.

THIS PAGE
VERTICAL

Mr. BYERS: I have no disposition to get anything I am not entitled to. I want to get the record to show the transfer.

A. Yes, that is all right; I am only too glad to give you any information I can give. I want to understand it before I can give it to you; that is all. The minute book of the Des Moines Gas Company stockholders' and directors' minutes of the meeting held, Des Moines, Iowa, March 1, 1906, shows that the first board of directors were, George H. Carr, James P. Hewitt, Craig T. Wright, F. Corliss Morgan and Rollin Norris.

Q. Does the book you are reading from and the one you referred to a moment ago contain anything else than the record of
2079 the meetings of the directors' and stockholders' meetings"

A. I was going to say, these minute books contain the minutes of the stockholders and directors respectively of the Capital City Gas Light Company and the Des Moines Gas Light Company, as shown in those two books.

Q. There is nothing else in there?

A. No; they are just the minute books.

Judge CARR: You don't mean there is nothing else in the minute books.

Mr. BYERS: I mean whether there are any other matters that ar- not pertinent and relavent to the meetings, in these books, because I am going to have them exhibited.

Judge CARR: The minute books of the meetings of the board of directors, I presume are on a great many subjects.

Mr. BYERS: If Mr. Haines will let me look them over at the office, I will look them over and determine what I want.

Judge CARR: You want the minutes of this transfer of the Capital City Gas Light Company to the Des Moines Gas Company. We are ready to furnish that on the assumption that it is material. I submit to the Master that it is not proper for them to ask us to give them the minute book- to go all through them.

Mr. BYERS: I do not intend to do that. Whatever is proper and material in there I would like to have and would like to get it.

Judge CARR: You are asking us to produce the records, when you ask for a thing you must of necessity show that there is some materiality to it.

Mr. BYERS: How am I going to do that without examining them?

Judge CARR: You do not claim the right to go into all our
2080 records whether they are involved in this case or not?

Mr. BYERS: Of course, the materiality will have to be passed on by the Master.

Judge CARR: The rule is perfectly well settled. If there is anything that is material, we will be glad to furnish it.

Mr. BYERS: I will tell you what I am willing to do. I am willing to let the Master take the book and go through it and let him confine me to the introduction of what in his judgment is material and proper.

Mr. GUERNSEY: I think the rule is absolutely settled in the Federal Court. If a person wants to inspect papers he must set out

what he wants to inspect and that it is material, and set out the facts to show it is material.

Mr. BYERS: Do you want me to do that?

Mr. GUERNSEY: If Mr. Byers has in mind any matters he deems material, if he will let us know what they are, we will either furnish it to him or present the matter to the Master.

The MASTER: This is simply a reorganization of the original Gas Company, a taking it over.

Mr. BYERS: That is exactly one of the things I wanted to get at.

Mr. GUERNSEY: It was an actual sale as a matter of law.

The MASTER: I understand there is an actual deed here and a copy of the articles of incorporation.

Judge CARR: There is an actual deed of transfer from the Capital City Gas Light Company.

Mr. BYERS: I think it makes a good deal of difference whether it is a reorganization or an actual sale. The two books have been produced by Mr. Haines and reference made to matters in them. They may be exhibited at this time and then we will decide later how much of them or what part of them we will want to
2081 use, if any.

Judge CARR: I would like to ask Mr. Haines to state the pages of the minute books of the two records this transfer covers; first state, Mr. Haines, the minutes of the stockholders' and directors' meeting of the Capital City Gas Light Company, that is, the pages where that record is found, and then do the same as to the minutes of the Des Moines Gas Company, if you will.

A. The minutes of the stockholders' meeting authorizing the transfer of the property of the Capital City Gas Light Company are set out in Book 2, Minutes of Stockholders and Directors of the Capital City Gas Light Company, on page 178 to page 182, inclusive; and the Directors' meeting of the Capital City Gas Light Company, following the stockholders' meeting and relating to the transfer of the property of the Capital City Gas Light Company are set out on page 183 to 187 inclusive, in the same book.

Mr. BYERS: The book you were just referring to is the first one you produced?

A. I don't remember which I produred first. It is the Capital City Gas Light Company stockholders' and directors' minutes, Book 2.

Mr. BYERS: What else is there in that book other than the meetings of the directors and stockhoders of the company?

Objected to on part of complainant as being immaterial.

A. I believe that is all, to my knowledge; that is, the minutes of the stockholders and directors at this meeting and other meetings.

Judge CARR: You say that is all. Is that all that is in the book, or all in the book on that subject; I just wanted to understand that answer; is what you referred to all there is in the book
2082 or is it all there is in the book on the subject of the transfer.

A. I think it is all there is in the book on the subject of the transfer.

THIS PAG

The MASTER: He wants to know if the books simply contain the stockholders' meetings and the directors' meetings or whether there is anything else in the books?

A. No, sir; there is nothing else I know of.

Mr. BYERS: The defendants offer the book in evidence.

Judge CARR: We object to the offer of this book in evidence, as a whole, for the reason that it is irrelevant, and immaterial to any matter in issue in this case and is an unnecessary encumbering of the records in this case. Here is a large book containing, I don't know how many pages of matter not shown to be in any wise relevant to the issues in this case. We object to the offer of so much of it as does not pertain to the matter under consideration and object to that part of the book, particularly outside of that which has been referred to and designated by the witness.

The MASTER: I suppose that is merely all you are offering now.

Mr. BYERS: I don't know what is in it. I am going to look at it and see.

The MASTER: The other may be proper as showing the manner in which it is kept.

Judge CARR: Now, your honor will see, General Byers offers this books as a whole in evidence without any claim being made that there is anything in the book aside from the matters specifically inquired about relevant to any issue in this case. He makes the assertion in that connection that he is going to find out what
2083 is in the book. Therefore having offered the book in evidence he will claim the right to go all through the book and go into every matter the book discloses. I submit that is a pretty unusual way of trying a lawsuit.

The MASTER: He can't tear the pages out.

Judge CARR: I suggest that it is quite proper in a case of this kind to seal the document as to any matters not inquired about.

Mr. BYERS: If there is anything you don't want me to have, just seal it. I want everything in there that pertains to this property.

Judge CARR: We simply want to try our case in an orderly kind of a way; we do not want the implication cast that we have something in the book we do not want General Byers to see. If there is anything that can have any possible bearing on this lawsuit, it is there for him.

Mr. BYERS: How can I find out?

Judge CARR: If you have anything in mind that you want you can suggest it. The witness told you that is all there is in the book.

The MASTER: They have a right to examine the books to see whether there is anything they want. The other matter can be determined later.

Mr. BYERS: What is the name of that other book?

The WITNESS: This is the Des Moines Gas Company No. 1 stockholders' and directors' minutes.

Mr. BYERS: The defendant- offers that in evidence in connection

with this cross examination in so far as the matters in the
2084 book refer to the business of the Des Moines Gas Company and its property.

Judge CARR: To that complainant objects as being immaterial and irrelevant to any matter in issue in this case, other than that part of the book which has been referred to and identified and designated by the witness as being the record with reference to the transfer of the Capital City Gas Light Company to the Des Moines Gas Company.

The MASTER: That is all I understand they want.

Judge CARR: Did you point out in your answer, Mr. Haines, the pages of that book?

A. I wasn't asked to.

Judge CARR: In connection with this objection I would like to ask the witness to point out to your honor the pages of that book which contain the record of the transfer between the two companies and designate and specify the pages which contain that record.

A. Pages 1 to 53 inclusive.

Judge CARR: Let me ask you, Mr. Haines, if that book which you have produced designated Des Moines Gas Company Stockholders' and Directors' Meeting, contains other records of the stockholders and directors of the Des Moines Gas Company that relate to wholly different matters from that concerning which you have been interrogated?

Objected to on part of defendants as not re-examination or proper.

A. It does, yes sir.

Judge CARR: We renew our objections. We have been asked to produce certain records here and have produced them, but
2085 they are bound in volumes with these others, and I think that the production ought to be confined to the things we have been asked to produce and that are relevant to the issues in this case. As I understand General Byers, if these books are to be received in evidence, the parts of the books not offered ought to be sealed in some way and it ought to be understood that they are no part of the record offered in this case, and we ought to know that with reference to making up the record finally.

Mr. BYERS: Let me finish my cross examination and see whether I know myself what I want. There will be a good deal less trouble maybe after we get through.

Q. What book have you before you now?

A. This is the Des Moines Gas Company No. 1 Stockholders' and Directors Minutes.

Q. Now you stated that certain pages contain the minutes of the directors meetings of the Des Moines Gas Company for certain purposes; what is contained in the balance of the book, in a general way, not particular things in it, but what is the book made up of the balance of it, what does it show?

Objected to as being immaterial.

A. Is simply shows the minutes of the meetings of the stockholders and directors as they occur regularly, annually and monthly, the annual meetings of the stockholders and monthly meetings of the directors and occasionally a special meeting.

Q. And has reference only to the conduct of the business of the Des Moines Gas Company?

A. So far as I know I would say yes.

Q. Now the other book, what is the name of that?

2086 A. The Capital City Gas Light Company No. 2 Stockholders' and Directors' Minutes.

Q. You referred to certain pages on that one?

A. Yes, sir.

Q. Upon which is written a record of the meetings, minutes of the meetings, of the directors' and stockholders' meetings covering the transfer of the Des Moines Gas Light Company's property to the Des Moines Gas Company?

A. Yes, sir.

Q. What do the other pages of that book contain?

A. Just the minutes of the regular meetings of the stockholders and directors of the company in relation to the conduct of the business, and there may be some special meetings in it.

Q. I said Des Moines Gas Light, I meant the Capital City Gas Company.

A. This book that you last referred to is the book of the Capital City Gas Light Company.

Q. As I understand your last answer, the pages to which you have so far not referred to as showing what was done in the way of the transfer of the property, simply have the minutes of the meetings of the directors and stockholders of the Capital City Gas Light Company in connection with the conduct of its business here in Des Moines in the manufacture and sale of gas, is that right?

A. Yes, that is correct so far as I know.

Q. Now, with that explanation, I am going to leave the books for a minute—have you got these reports I inquired about?

A. I have 26 of them, as the 26 monthly reports, but I did not understand your question as asking for them for a series of months.

Q. I asked for September, October, November and December of 1910.

A. Well I simply have the form on which the report is

2087 made; if you want the report we can produce the report. I thought you wanted the form of the report.

Q. I wanted those, 1, 2, 3, 4, the last reports for 1910.

A. Of course, your honor, that means there are some 75 of these reports to make up and copy.

Q. Oh, no; four months I want.

A. Well, there is 26 for each month.

Judge CARR: You are calling for the reports sent to Philadelphia.

Mr. BYERS: Yes, I understood Mr. Haines to say there was daily reports and monthly reports.

A. There are no daily reports at all.

Q. If you will turn to pages 156 and 157 of the transcript you will

see that I asked for the monthly reports for November—beginning September, October, November and December 1910.

A. I have here just what I said, 26 forms on which these reports are made.

Q. You mean each report is made up of 26 separate reports?

A. Yes, sir; there is no monthly report in the sense of collective monthly reports, but these reports are made up as the information comes to the office from the various departments and is taken off the books and sent in to the office of the United Gas Improvement Company in Philadelphia.

Q. Now, if it will lighten the burden any, if you will get me only one, say for September 1910, as you send that in.

A. I haven't got that report. We would have to make a copy from our books of that report. We can do it, but of course it would probably be four or five days' work of an expert book keeper to do it. Your own bookkeepers can make it up the same way.

Q. The original is in existence?

2088 A. Yes, I presume it is in the files in Philadelphia.

Q. Right at that point, will you furnish the Master a transcript of the books and record of the United Gas Improvement Company in so far as it applies to the Des Moines Gas Company here?

A. I'd be glad if I had them; but I haven't got them.

Q. You say that this material is at the Philadelphia office?

A. I say your own bookkeepers can make it up just exactly the — as ours can, right here from our records. It is purely a matter of arithmetic, the bookkeeping forms are all here and all you have to do is to take it off the books.

Q. I don't question your word about it, but I don't know how they can do it without some direction and instruction from you.

A. The forms are almost self-explanatory; any expert bookkeeper can understand them.

The MASTER: You don't retain a copy?

A. We do of some and not of others.

The MASTER: You haven't a copy of it?

A. I didn't bring any copies over because I understood the request called for the form on which they are made out.

The MASTER: Have you got any copy?

A. I have some of them.

Q. Didn't you tell me the other day in your examination you had copies of these reports in your office?

A. Not all of them.

Q. But the ones I asked you about?

A. You asked me for all of them.

Q. Now I ask you for September, October, November and December, 1910.

A. As I stated, we have some of them.

Q. If you have the 26 of any one of those months, I would like to have you produce them.

2089 A. You understand these reports are taken right from our books and the report itself is made out on a special form for convenience in checking and for convenience in finding the

various functions the different departments are interested in. These reports are made up with that idea in view and sent down to the Philadelphia office.

Q. Do you keep an account with the U. G. I.?

A. What kind of an account?

Q. Any kind?

A. Yes, certainly.

Q. Do you keep a separate set of books covering your accounts with the U. G. I.

A. What do you mean by separate set of books?

Q. Just what the question states.

A. Do you mean a duplicate set of books?

Q. I mean a separate set of books from the books you keep showing the business of the Des Moines Gas Company?

A. Certainly not; what would be the object in it.

Q. I don't know.

The MASTER: He simply want- to know whether that is the case or not.

A. No.

Q. Do the books of the Des Moines Gas Company kept up here in the office show the transactions between the U. G. I. and the Des Moines Gas Company?

A. Absolutely.

Q. All of them?

A. They couldn't show anything else.

Q. Then you make reports, complete monthly reports to the U. G. I. of the business?

2090 A. Yes.

Q. That is what I want; I don't care anything about those 26 separate ones.

A. But that complete monthly report is made up in this form.

Q. I don't care what form; that is what I want, one of those complete reports.

A. Those various transactions are reported on different sheets, the sales, manufacturing results, outstanding accounts, disbursement sheets, journal entries, are all made on these sheets as they go on the books during the month. Those reports are made out and sent to Philadelphia for their own examination and to keep them advised of the operations of the local company. But there is no general monthly report in the sense of a large collective report made.

Q. Do you make an annual report?

A. No, sir; not any more than this.

Q. You will furnish us at your convenience a complete month, I don't care which one of those four it is, as you have it here in the copy?

A. All right.

Q. Now, the estimate you say you made out for last year?

A. Yes, sir.

Q. You say you have it here?

A. I have here the annual estimate of the expenditures required for the year 1911, showing the actual increase in sales up to the

period which this estimate is made, and my estimated increase of the capacity of the plant and the various component parts of the plant, and an estimate of the requirements necessary for the year 1911, in order to keep the plant up and in condition, and to provide extensions and improvements necessary with an estimate of
2091 the cost of the labor and material needed to complete these extensions and improvements. It also contains my letter under date of April 8th to Mr. Rollin Norris who is the superintendent of works of the United Gas Improvement Company and a director of the Des Moines Gas Company, and my recommendations contained in this letter in regard to certain items of improvements required for the plant of the Des Moines Gas Company. This annual estimate is made up of a large correspondence we would be glad to have you, if you wish to do so, examine, or offer in evidence the whole correspondence, and it is so built up together it is difficult to withhold any portion of the correspondence and make the balance of it perfectly clear.

The MASTER: It is a sort of talking the matter over?

A. Yes, sir; correspondence on each item of improvement to determine what is to be done definitely. In addition to that is my annual estimate contained in the letter to Mr. Rollin Norris under date of September 1st.

(Said annual estimate is marked by the reporter as Defendant's Exhibit 18.)

Q. Now, just one thing further——

A. That is not a complete estimate; if you want to know——

Q. That is what you produce as an estimate?

A. I have some more here, which is a copy of my letter making recommendations to the engineering department of the United Gas Improvement Company.

Q. Is it all in the package?

A. Yes.

Q. You can tack it all together in one exhibit?

A. Yes.

2092 Mr. BYERS: The reporter will attach that to Exhibit 18.

The WITNESS: I mentioned Mr. Rollin Norris as a director of this company. I want to correct that mistake. Mr. Rollin Norris is not a director of the company, but it is sent to him for Walton Clark, Second Vice President, who is a director and officer of this company.

Q. There is just one thing further I want to inquire about; do you have at this time any contract between the Des Moines Gas Company and the United Gas Improvement Company with respect to the business here in Des Moines?

A. What nature of contract?

Q. Any nature?

A. That is rather br*a*od, General.

Q. Well, have you any contracts of any kind with respect to the business here in Des Moines?

A. If you could suggest some line of thought on the matter it

would make it more simple for me; I don't understand what you mean to get at.

Q. Do you think of any contracts you have with them?

A. I don't happen to think of any at the present time.

Re-direct examination by Judge CARR:

Q. Mr. Haines, can you state about what has been the percentage of increase in the sale of gas in Des Moines, during, say the last six or seven months, as compared with the corresponding period of last year?

A. I have prepared a statement of the gas sent out and accounted for for the seven months ended July 31, 1911, for the purpose of comparing with the corresponding period of 1910. This
2093 statement shows that the increase for those seven month- was 6.14 per cent.

Recross examination by Mr. BYERS:

Q. At what rate do you furnish the Wellsbach people gas?

Objected to on part of complainant as being immaterial.

A. For what purpose?

Q. Any purpose.

A. At a dollar per thousand cubic feet.

Q. Do you furnish them any less rate than that?

A. Not that I ever knew of.

Q. You have a contract that covers the business?

A. I believe we have, yes sir.

Q. Street lighting and park lighting?

A. Not park lighting, no. We have nothing to do with the park lighting. The park lights are all gasoline lights; we only furnish them gas.

Q. What is the lowest rate that you sell gas for here in Des Moines?

A. One dollar per thousand cubic feet.

Q. None of your customers get it for less?

A. No, sir.

Q. So that you get a dollar for every cubic foot of gas, every thousand cubic feet of gas you sell in Des Moines?

A. Yes, sir; if we are able to collect the money.

The MASTER: No rebating?

A. Absolutely none whatever.

Q. So there is no loss on that end; you get a dollar for every thousand cubic feet of gas to the consumers?

A. We get a dollar, if we are able to collect the bill; that
2094 is what I understand you to mean.

Q. Now the balance sheet for 1886, do you have that with you?

A. I think it was Mr. Hagenah you asked for that. You did ask me for some figures in regard to the number of miles of mains in 1903 on January 1st.

Q. We have got that information since.
A. That was 88 miles. Also as to the number of meters.
Q. We have got that.
Mr. BYERS: There were a few things Mr. Lea was to do.
Mr. GUERNSEY: He is not here this morning, but he will be back next week.
Judge CARR: You called for the contracts for oil.
Mr. BYERS: Yes, I want those copies.
A. I think you called for the coke contract as well as oil contracts; I have them all here. And this is a copy of the correspondence leading up to and the final contract for oil used for gas making purposes, the contract being dated the 6th of May 1907.

(The contract produced is marked Exhibit 19.)

Answer continued. And the correspondence leading up to and the copy of the contract entered into the purchase of oil, the contract being dated the 14th day of May, 1909.

(Which correspondence and contract is marked Exhibit 20.)

Answer continued. The next is a like contract and correspondence for the purchase of coke, the contract being dated May 27, 1911.

(Which is marked Exhibit 21.)

Q. Now, Mr. Haines, this contract, as I understood you the other day, they were all made by the purchasing agent of the U. G. I. United Gas Improvement Company of Philadelphia, is that right?
A. No, sir; I think that is absolutely wrong. They are made by the purchasing agent of the Des Moines Gas Company who
2095 happens to be the same man as purchasing agent of the United Gas Improvement Company.
Q. They were all made by the man who is purchasing agent for the Des Moines Gas Company and the United Gas Improvement Company of Philadelphia?
A. They are all made by the same man, yes sir.
Q. And the rate stated in the contract is the rate that the company furnished the oil for?
A. Absolutely, yes sir.
Q. You swear to that?
A. Absolutely, yes sir.

The defendants offer in evidence Exhibits 19, 20 and 21 which are as follows:

"DEFENDANT'S EXHIBIT 19.

"PHILADELPHIA, *May* 31, 1907.

"Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: Replying to your letter of 20th on the subject of routing of oil by Standard Oil Co., would say that Mr. Higgins writes me as follows:

'We would not care to be committed to make all of the oil deliveries over the C., B. & Q. R. R. It is the intention to divide the business as nearly as practicable between the roads entering Des Moines.'

"This is not a very satisfactory reply, but I wish you would advise me a little later what the C., B. & Q. are getting out of the business and I will try to induce Mr. Higgins to increase the tonnage to them.

"The Standard Co. has a way of denying your request and then doing what you want and it may be this will be the outcome of this present case. Of course we are not able to dictate the routing with this company, as you know from our experience with them in the past.

Yours truly,

J. A. PEARSON,
Purchasing Agent.

(Noted June 3, 1906.)
(J. H.)

2096 *"Reply to Letter of 20th, Referring to Oil Contract.*

PHILADELPHIA, *May* 22, 1907.

Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: Replying to yours of above date and subject, would say I had intended to write you about this matter but had so many of these contracts to close that the point was overlooked.

The C. & G. W. was put in the contract by the Standard Co. as they believed that this was the routing we preferred. The question was not taken up at the time the contract was made because, as a rule, the Standard Co. obliges us in these matters.

I am today writing Mr. Higgins asking him, if his transportation people do not object, to give all your oil business to the C., B. & Q. road. It is barely possible he will want some of this business to go to the Rock Island, but I will do my best to have it all routed by the Q. road in order to cooperate with the arrangements you have made with them.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"(Received May 24, 1907.)
(Noted May 27, 1907.)
(J. H.)"

"May 17, 1907.
Standard Oil Company Contract.

MAY 20, 1907.

Mr. J. A. Pearson, P. A., Philadelphia, Pa.

DEAR SIR: I beg to acknowledge receipt of your letter as above, enclosing oil contract. I note that this contract states that the oil will be delivered in tank cars at Des Moines, Iowa, on the Chicago

Great Western Railroad. I presume that this is intended to give the routing via the Chicago Great Western, but as a matter of fact, we are not on the Chicago Great Western tracks.

I was in hopes that you might swing this routing to the C., B. & Q. in order to hasten the completion of our arrangements with them, but no doubt you had this in mind and adopted the most
2097 advisable contract.

Very truly yours,

——— ———, *Manager.*"

J. H./E. D.

"PHILADELPHIA, *May* 17, 1907.

"Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: Enclosed is copy of contract with Standard Oil Co. for your supply of gas oil for one year from June 1.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"Agreement made this 6th day of May, A. D. 1907, between the Standard Oil Company of New York, a corporation organized under the laws of the state of New York, party of the first part, and Des Moines Gas Company, Des Moines, Iowa, party of the second part, witnesseth:

In consideration of the mutuality hereof it is hereby agreed between the parties hereto as follows:

1. The party of the first part sells and agrees to deliver to the party of the second part the number of gallons of gas oil, 28 to 34 gravity, the second party shall use in the manufacture of gas in its plant during the contract period beginning June 1st, 1907, and ending May 31st, 1908, such supply to be One Million Eight Hundred Fifty Thousand (1,850,000) gallons, 10% more or less.

2. The party of the second part agrees to receive the gas oil defined in section 1 at and for the price of Four and Fifty-five Hundredths (4.55) cents per gallon delivered in tank cars at Des Moines, Iowa, on the C. & G. W. R. R.; such deliveries to be made as the business of the second party may require and as they in writing order, but not less than one tank car at any one time.

This Agreement is understood to cover the liquid gas making material that will be required for use in the plant of the said party of the second part during the period embraced in this agreement, but total deliveries for the year shall not exceed the quantity above specified.

The party of the first part agrees that there will be no unusual or unnecessary detention in the shipment of the oil herein
2098 mentioned, but said party shall not be held responsible for accidents or unavoidable delays in the delivery of same.

It is agreed between the parties hereto that prompt unloading of the cars shall be within forty-eight (48) hours (Sundays and legal holidays excluded) after its delivery hereunder to the party of the second part.

It is agreed between the parties hereto that the payments shall be made in cash, monthly, on invoices of the preceding month, interest at six (6) per cent thereafter, funds current in New York.

In witness whereof, the parties hereto have executed this agreement the day and date first written herein.

STANDARD OIL COMPANY OF NEW YORK,
By —— ——, *Manager Naphtha Department.*
DES MOINES GAS COMPANY,
By —— ——, *Purchasing Agent.*"

DEFENDANT'S EXHIBIT 20.

"Agreement made this 14th day of May, A. D. 1909, between the Standard Oil Company of New York, a corporation organized under the laws of the state of New York, party of the first part, and Des Moines Gas Company, Des Moines, Iowa, party of the second part, witnesseth:

In consideration of the mutuality hereof, it is hereby agreed between the parties hereto as follows:

1. The party of the first part sells and agrees to deliver to the party of the second part its successors or assigns, the number of gallons of gas oil, 28 to 34 gravity the second party shall use in the manufacture of gas in its plant during the contract period beginning June 1, 1909, and ending when full quantity is taken such supply to be Seven Million Five Hundred Ninety Thousand (7,590,000) gallons. This quantity is expected to cover three years' supply.

2. The party of the second part agrees to receive the gas oil defined in section one at and for the price of Two and Eight-
2099 tenths (2.80) cents per gallon delivered in tank cars at Des Moines, Iowa, on the C. & G. W. R. R.; such deliveries to be made as the business of the second party may require and as they in writing order, but not less than one tank car at any one time.

This agreement is understood to cover the liquid gas making material that will be required for use in the plant of the said party of the second part continuously until the full quantity is taken but total deliveries shall not exceed the quantity above specified.

The party of the first part agrees that there will be no unusual or unnecessary detention in the shipment of the oil herein mentioned, but said party shall not be held responsible for accidents or unavoidable delays in the delivery of same.

It is agreed between the parties hereto that prompt unloading of the cars shall be within forty-eight (48) hours (Sundays and legal holidays excluded) after its delivery hereunder to the party of the second part.

It is agreed between the parties hereto that payments shall be made in cash, thirty days after date of invoice, interest at six (6) per cent thereafter, funds current in New York.

In witness whereof, the parties hereto have executed this agreement the dat and date first written herein.

STANDARD OIL COMPANY OF NEW YORK,
By —— ——, *Manager Naphtha Department.*
DES MOINES GAS COMPANY,
By —— ——."

NOTE.—With due notice to the buyer it is optional with the seller to deliver crude oil of suitable quality in lieu of gas oil during any portion of the contract period.

"PHILADELPHIA, *May* 13, 1908.

"Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: I enclose, for your information, copy of oil contract closed with Sun Co. for your supply of Illinois crude oil from June 1, 1908.

2100 The Sun Co. ask me to advise you to send shipping direction to C. W. Pittinger, Agent, Sun Co. Robinson, Ill.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"Received May 15, 1908.
Noted May 15, 1908.
J. H."

"Agreement made this 6th day of May, A. D. 1908, between the Sun Company, a corporation existing under the laws of the state of New Jersey, party of the first part, and Des Moines Gas Company, of Des Moines, Iowa, party of the second part, witnesseth:

In consideration of the mutuality hereof it is hereby agreed between the parties hereto as follows:

1. The party of the first part sells and agrees to deliver to the party of the second part, or its assigns, and the party of the second part agrees to purchase and receive from the party of the first part, Two Million, One Hundred and Thirty Thousand (2,130,000) gallons, 10% more or less, of crude oil from the Illinois field, to be required for manufacture into gas at the gas works of the party of the second part, during the contract period beginning June 1, 1908, and ending May 31, 1909, at the price of Three and Ten Hundredth- (#.10) cents per gallon, f. o. b. cars at the gas works Des Moines, Iowa.

2. The party of the second part agrees to pay for all the crude oil as defined in section 1, monthly on the invoices of the preceding month, deliveries to be made as hereinafter set forth.

3. The party of the first part agrees that during the period of this agreement, deliveries shall be made as the superintendent of the party of the second part may in writing order, but in no case shall less than one tank car be ordered at any one time.

In witness whereof the said parties have executed this agreement the day and date first written herein.

SUN COMPANY,
—— ——, *President.*
DES MOINES GAS COMPANY,
By —— ——, *Purchasing Agent.*"

2101 "May 1, 1908.
Oil Contract—1908.
See File #19—5-5-1908.

MAY 5, 1908.

Mr. J. A. Pearson, P. A., Philadelphia, Pa.

DEAR SIR: I beg to acknowledge receipt of your letter as above and note that the new oil contract from June 1st, is with the Sun Oil Company, for Illinois Crude Oil at 3.1¢ per gallon, delivered here. I am very much pleased to note this price. It is the first ray of sunshine I have seen in a long time.

Very truly yours,

—— ——, *Manager.*"

J. H./E. D.

"PHILADELPHIA, *May* 1, 1908.

Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: I have your letter of April 28th on the subject of oil, and in reply would say you will probably be pleased to know that I have made your new contract from June 1, with Sun Oil Co. for Illinois crude oil, at 3.1¢ per gallon, delivered f. o. b. Des Moines.

Mr. Norris considers that this Illinois Crude is better for gas making than gas oil such as we have received in the past.

I will send you copy of formal contract as soon as it is executed.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"Received May 4, 1908."

2102 "April 20, 1908.
Oil.

APRIL 28, -8.

Mr. J. A. Pearson, P. A., Philadelphia, Pa.

DEAR SIR: I had a visit today from Mr. P. D. Schall, General Manager, Kansas City Oil Company, Kansas City, Mo.

Mr. Schall tell- me that he is refining a superior grade of oil, but that the output of his company, at the present time, is only about 20 cars a month and that they have about 50 tank cars. He tells me that they are increasing their business and will probably be able to make us a bid on our oil contract next year. I suggested his getting into communication with Burlington and Sioux City as these towns are more nearly his size than Des Moines. He, at present, is selling to the Boone Gas Company, at 4½¢ f. o. b. Boone, but tells

me that he could make us a better price if he could supply the demand.

Very truly yours,

——— ———, *Manager.*

J. H./E. D.

"*Reply to Letter of 15th, Referring to Oil.*

PHILADELPHIA, *April* 20, 1908.

Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: I have yours of above date and subject and in reply would say that I anticipate we will get a considerable better price for next year than the one we are at present paying.

I do not know just what you mean by the "opportunities which apparently present themselves for lower prices,' but perhaps you have some locally, and if so, I would be glad to get the benefit of them.

Mr. Kellogg recently wrote me about the Webster Refining Co. offering him a pretty low price for next year's business. It is possible something of this sort has come before you.

I have always felt we must give our oil business to a concern who could take care of it, although I am perfectly willing to use these small fellows to get a low price for you. So far the only oil
2103 companies who have been able to make us satisfactory arrangements were the Standard and Sun Companies. There are one or two other concerns, such as the National Refining Co. at Cleveland and the Indian Refining Co. in Kentucky, but the first named company has always named too high a figure and the Indian Co., I understand, do not keep their contracts.

I think you can safely count on getting good deal better prices,—perhaps a cent a gallon,—than last year, for the coming contract period, and, as I said before, if you have any suggestion or local prices, I should be more than glad to hear from you.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"Received April 22, 1908."

"Oil.

APRIL 15, '8.

"Mr. J. A. Pearson, *P.* A., Philadelphia, Pa.

DEAR SIR: Kindly advise me what you anticipate in the way of oil prices for next year's contract. It seems to me that Des Moines has been paying abnormally high prices for its oil, compared with some of the opportunities which apparently present themselves for lower prices.

Do not think that I do not appreciate your desire to give us the best you can. At the same time I also appreciate that you are handicapped in some ways in your position of purchasing such large quantities from such a limited selection of producers.

Please give me your views on this subject at your earliest convenience, and oblige,

Yours very truly,

—— ——, *Manager.*"

J. H./E. D.

DEFENDANT'S EXHIBIT 21.

"Postal Telegraph. Commercial Cables.

Telegram.

JUNE 9, 1911.

"Mr. J. A. Pearson, Broad and Arch Streets, Philadelphia, Pa.:

2104 Please wire parties with whom you placed coke contract to commence shipments immediately. We have not received notice of shipment since twenty-ninth ultimo.

JANSEN HAINES."

"Confirmation of Telegram.

PHILADELPHIA, *June* 10, 1911.

Pickands, Brown & Co., Colby-Abbot Building, Milwaukee, Wis.:

Our Des Moines Manager advises he has had no shipments of coke since twenty-ninth ultimo. Start shipments to him at once.

J. A. PEARSON,
Purchasing Agent."

"Received June 14, 1911."
Des Moines a/c 10:15."

"PHILADELPHIA, *June* 12, 1911.

"Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: Your telegram of 9th was duly received and I enclose you confirmation of telegram I sent to Pickands, Brown & Co.

Please let me know if you have any further trouble in getting coke shipments.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"Received June 14, 1911."

"PHILADELPHIA, *June* 23, 1911.

"Mr. Jansen Haines, Manager, Des Moines, Iowa.

DEAR SIR: I enclose for your information copy of contract with Pickands, Brown & Co., for your supply of generator fuel for the year ending June 1, 1912.

Please send your orders to them direct,—Colby-Abbot Building. Milwaukee, Wis.,—as your necessities arise.

Yours truly,

J. A. PEARSON,
Purchasing Agent."

"Received June 26, 1911."

Noted June 26, 1911.
J. H."

2105 "Pickands, Brown & Co., Chicago.

Contract for Milwaukee Solvay Run-of-Oven Coke.

MILWAUKEE, WIS., *May 27th*, 1911.

1. Party of First Part.	The Milwaukee Coke and Gas Company, Milwaukee, Wis. By Pickands, Brown & Company, Agents, Chicago, Ill. Agreeing to sell.
2. Party of Second Part.	Des Moines Gas Company, Des Moines, Iowa. Agreeing to buy.
3. Quantity.	Ninety-five hundred (95) tons, 10% more or less for delivery in about equal monthly quantities during the contract period.
4. Quality.	Milwaukee Solvey Run-of-Oven Coke.
5. Delivery.	F. O. B. cars Milwaukee.
6. Duration of Contract.	From June 1st, 1911, to June 1st, 1912.
7. Weights.	Western Railway Weighing Association weights at ovens to govern settlements; 2,000 pounds to constitute one ton of coke.
8. Price.	Four and no/100 Dollars ($4.00) per ton.
9. Terms.	Cash on the 15th of the month for all coke shipped the month preceding (freight cash). Payable in New York or Chicago Exchange.
10. Conditions.	Party of the first part not to be held in damages for failure to furnish coke, as aforesaid, on account of car shortages, railroad delays, strikes, trouble with workmen, accidents, or other causes beyond its control. Each month's shipments to be treated and considered as a separate and independent contract.

Made and entered into the date first above written as witness our hands.

Signed in duplicate.

Copy.

THE MILWAUKEE COKE & GAS COMPANY,
By PICKANDS, BROWN & COMPANY, *Agents,*
By H. J. SCHLESINGER,
Sales Manager, Milwaukee Office.
DES MOINES GAS COMPANY,
J. A. PEARSON, *Pur. Agent.*"

2106 Cross-examination of the witness HAINES continued:

Q. Is this man who did the purchasing of the coke and oil, J. A. Pearson, the purchasing agent?

A. Yes, sir.

Q. I have here in connection with this Exhibit 21 a sheet on which the following appears: "Confirmation of Telegram, Purchasing Department United Gas Improvement Company. Philadelphia, June 10, 1911. Pickands, Brown & Co., Colby Abbot Building, Milwaukee, Wisconsin. Our Des Moines Manager advises he has had no shipments of coke since twenty-ninth ultimo. Start shipments to him at once. J. A. Pearson, Purchasing Agent. Des Moines a/c 10.15 Received June 14, 1911." That was in connection with a shipment of coke, wasn't it, to this plant here?

A. Yes, sir; I wrote to Mr. Pearson and told him we were not re- the shipment of coke.

Q. You telegraphed him, here is what you did: "June 9, 1911. J. A. Pearson, Broad & Arch Streets, Philadelphia, Pa. Please wire parties with whom you placed coke contract to commence shipments immediately. We have not received notice of shipment since 29th ultimo." That is the man you refer to as the Purchasing Agent of both concerns?

A. Yes, sir.

Judge CARR: With the reservation spoken of yesterday, I think this is our evidence, so far as our evidence in chief is concerned.

Mr. BYERS: There were some matters Mr. Lea promised to furnish me.

Mr. GUERNSEY: I told him last night to go home and straighten things out in his office. I suppose it had been forgotten, but he will be back in a few days.

2107 Mr. BRENNAN: We want the balance sheet which he says was furnished him by the company, or the one from which he made his analysis.

Witness excused.

WILLIAM J. HAGENAH, re-called for further cross examination, examined by Mr. Brennan, testified:

Q. Do you have in mind the request made yesterday with respect to certain balance sheets and other records?

A. Yes, sir. You requested a number of items and I tried to get all you asked for, as far as I possibly could in the time at my disposal. You asked for the balance sheets from 1900 to 1910. The balance sheet for 1910, December 31, of that year, is in my report Exhibit 23, and here are the balance sheets for the nine preceding years, completing the ten year period on that. You asked for a statement of the real estate cost as appearing on the company's books.

Mr. BRENNAN: The witness has produced what purports to be an analysis of the real estate account as shown by the books of the com-

pany which the defendants ask to be marked Exhibit 22. It occurred to me that the witness may state upon the record what he has produced and state what years it is for, since our time now is somewhat limited.

A. I was asked to produce the balance sheets from the year 1900 to 1910. The balance sheet for 1910 ending December 31, is in my report, Exhibit 23. I offer the other nine balance sheets for the preceding nine years, which with the one in my report,
2108 cover the ten years called for.

Q. In reference to Exhibit 22, I see you have noted at the bottom the following: "This does not include land taken over at the time of the organization of the Des Moines Gas Company."

A. That is a part of that item of $285,000 which was paid for in bonds, consequently there is no voucher item or classification of it.

Q. Exhibit 22 shows the actual book cost of the real estate?

A. Exactly, the ledger analysis.

Q. What else have you?

A. You also asked for an analysis of the bond discount item to show the discounts on each specific sale of bonds. I offer an analysis of the bond account covering the life of the Capital City Gas Light Company and the Des Moines Gas Company down to the close of the calendar year 1910, showing such details. I was also asked to produce the balance sheet for the year 1886, that would be from the ledger which I have been unable to trace; the 1886 ledger was not offered to me in connection with my cost analysis and could not be provided. I have, however, taken the trial balance from the ledger of 1887 and by checking the charges and construction during the period covering the work, backwards, to the year 1886, I find the ledger for 1887 and the construction account as checked back for the actual charges for the year 1886, check exactly with the cost as shown in my report, schedule 1, Exhibit B.

Q. You have not produced your anlysis of the overhead charges, for the reason as explained by you on yesterday, that the company made no charges on its books?

A. There are no charges for that purpose.

Q. If there are any charges of that character, they are
2109 included in operating expenses?

A. Yes, sir; that is, there are no capital charges. In connection with these balance sheets for the last ten years, the request was made yesterday they be made in such shape that the working capital could be analyzed. In order to do that it would take several weeks' work. I have taken the average working capital shown in the last five years excluding 1911, and the average, not taking into account the growth of the company for that period, shows $196,348.82 for the last five years; that is, the five year period ending with 1910.

Q. Now, Exhibit 22 refers to certain special assessments or improvements made in the way of curbing and paving?

A. Yes, sir.

Q. Those were improvements that were made by the city of Des Moines and assessments made against the property therefor?

A. Yes, sir; and the company reimbursed the city for such expenditure; I believe that is the way it is done here.

Q. You do not understand that the company outside of any resolution of necessity or assessment made by the city, made these improvements?

A. I have no knowledge of that other than what appears on the company's books from which that exhibit is taken.

Excused.

Complainant rests.

At this time an adjournment was taken until 9:30 a. m. August 14th, 1911.

2110 Monday Forenoon Session.

AUGUST 14, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Defendants' Testimony.

A. O. HAUGE, being first duly sworn on part of defendants, examined in chief by R. O. Brennan, Esq., testified as follows:

Q. Where is your residence?

A. East Des Moines.

Q. How long have you lived in Des Moines, Mr. Hauge?

A. Nearly nine years.

Q. What is your business?

A. Banking business and real estate.

Q. With what bank are you connected?

A. With the Iowa Trust & Savings Bank.

Q. What official position do you hold in the Iowa Trust & Savings Bank?

A. I am cashier.

Q. How long have you been cashier of that bank?

A. Five years.

Q. Prioe to engaging in the banking business what other business have you followed, or did you follow?

A. I was cashier in the State Treasurer's office prior to that.

Q. For what length of time?

A. About three years.

Q. So that about five years you have been connected with the Iowa Trust & Savings Bank as its cashier and about three years in the State Treasurer's office?

A. Yes, sir.

2111 Q. To what extent, Mr. Hauge, during your residence in Des Moines have you bought and sold real estate either for yourself or for others?

A. I have been dealing in real estate for the last five years all the time.

Q. I will ask you if your position as cashier of the bank requires you to acquaint yourself with the market values of real estate and properties in the city of Des Moines?

A. It does.

Q. And that is by reason and on account of the fact that the bank makes loans from time to time?

A. Yes, sir.

Q. And before the loans are recommended by the board of directors, is some investigation usually made of the condition of the property and its value?

A. Yes, sir.

Q. And under whose supervision are such investigations made?

A. Under my supervision.

Q. Does your experience in real estate and the values of real estate extent over the city generally?

A. Yes, sir; quite generally.

Q. And have you any peculiar experience with reference to East Des Moines?

A. I have more experience in East Des Moines than in any other parts of the city.

Q. Were you asked by counsel for the city in this case to make an examination of the real property of the Des Moines Gas Company?

A. No, sir.

Q. For the purpose of having you make a valuation of the same?

A. No, sir.

2112 Q. When was your attention first called to the real estate of the Des Moines Gas Company?

A. About a month ago, special attention was called to it at that time—about five weeks ago, I should judge.

Q. And did you in pursuance of the request of some one visit the property of the Des Moines Gas Company?

A. I did.

Q. For the purpose of ascertaining its true market value?

A. Yes, sir.

Q. I will ask you Mr. Hauge, if in the course of your business you know what the reasonable market value of real property is in East Des Moines?

A. Yes, I think I know.

Q. What would you say as to whether or not you are acquainted with the reasonable market value of real estate owned by the Des Moines Gas Company in East Des Moines where its manufacturing plant is located?

A. I am.

Q. I mean exclusive of any buildings thereon?

A. Yes, I don't know anything about the buildings.

Q. But you do know what the real estate is worth exclusive of the buildings?

A. Yes, sir.

Q. Now, I first call your attention, Mr. Hauge, to Lots 9 and 10

in Block C of Scott & Dean's Addition, being the lots abutting upon East Second Street, Lot 10 running the long way on Market Street?

A. That has frontage on the K. D.

Q. Yes. Have you examined those lots to which I have

2113 called your attention?

A. Yes, sir.

Q. You may state what in your judgment was the reasonable market value of those lots say on or about January 1, 1911?

A. I should say $10,000.

Mr. READ: For the two?

A. For the two lots, yes.

Mr. BRENNAN: I show you a plat which is marked Exhibit 5 in this case, I believe, and call your attention to Lots 9 and 10 in Block M, and you will please state what in your judgment was the reasonable value of the two lots in Block M, to which I have called your attention on or about January 1, 1911?

A. $6,000.00.

Q. I wish now to call your attention to Lots 9 and 10 in Block B Scott & Dean's Addition shown upon this plat, Exhibit 5, and please state what in your judgment was the reasonable market value of those lots at or about the time to which your attention has been called?

A. $8,500.00.

Q. I will call your attention to Lots 3, 4, 5, 6, 7 and 8 in Block B Scott & Dean's Addition; please tell the Master what in your judgment was the value of those lots?

A. Of all those lots?

Q. Yes.

A. $22,000.00.

Q. I call your attention Mr. Hauge to lots 1, 2, 3, 9 and 10 in Block C, Scott & Dean's Addition——

A. We started with 9 and 10.

Q. I want you to put a valuation on the five lots; tell the Master what in your judgment was the reasonable market value of the five lots to which your attention is called?

2114 A. $20,000.00.

Q. In the same block, C, I call your attention to Lots 4, 5, 6, 7, & 8; please state what in your judgment was the reasonable market value of those lots?

A. $25,000.00.

Q. Did you place a valuation upon Lots 3 and 4 in Block K, Scott & Dean's Addition?

A. Yes, sir.

Q. Will you please state what in your judgment was the reasonable market value of Lots 3 and 4 in Block K.

A. $12,000.00.

Q. I notice on this plat, Exhibit 5, five lots in Block T known as Lots 3, 4, 5, 6 and 7, fronting upon East First Street and adjacent to the Des Moines river; did you make a valuation of those lots?

A. Yes, sir.

Q. Please tell the Master, Mr. Hauge, what in your judgment was

the reasonable market value of Lots 3, 4, 5, 6 and 7 in Block T, Scott & Dean's Addition at or about January 1st, 1911?

A. That makes five lots there.

Q. Yes; 3, 4, 5, 6 and 7?

A. $3,500.00.

Q. Now, Mr. Hauge, it is a mere matter of adding up the figures you have given, but I would like to have you state upon the record what the aggregate total amount of your valuation is of the real estate of the Des Moines Gas Company to which I have called your attention?

A. $97,000.00.

Q. And that you tell the Master to be in your judgment the reasonable market value of this property exclusive of buildings
2115 and improvements?

A. Yes, sir.

Cross-examination by W. L. READ, Esq.:

Q. Prior to engaging in business with the bank, you had had no experience in real estate in Des Moines, had you?

A. Some.

Q. How much?

A. Just individually, was all. What I purchased myself.

Q. That was where, and what character of property?

A. Residence property.

Q. Out on the east side?

A. No, the west side.

Q. What part of the west side?

A. Over near Forty-second street.

Q. How many properties?

A. Three.

Q. Improved properties or vacant properties?

A. Those were vacant properties at the time.

Q. What is the capitalization of your bank?

A. Fifty thousand dollars.

Q. You are conducting a regular banking business?

A. Yes, sir.

Q. And your time is chiefly engaged in that?

A. Yes, sir.

Q. To what extent do you make loans on real estate?

A. Well, all we are able to in our business.

Q. I know, but to what extent, what volume?

A. Well, we make, I should say forty per cent of our
2116 loans are real estate loans.

Q. What would forty per cent amount to per year?

A. From $200,000 to $250,000; that is the total amount.

Q. Forty per cent of that would cover the real estate loans?

A. No, the total amount of loans would be between $500,000 and $600,000.

Q. On what character of real estate are your loans made upon?

A. On all kinds of real estate.

Q. Chiefly what kind?

A. Chiefly in the city.
Q. On residence property?
A. Both residence and business.
Q. You make any farm loans?
A. Some.
Q. The bulk of your loans are on residence property?
A. No, sir.
Q. The bulk are on business property?
A. No, sir.
Q. Upon what?
A. I think they are pretty evenly divided between residence and estate loans.
Q. Aside from your commercial loans the bulk of the real estate loans are on residence property?
A. I think they are pretty evenly divided between residence and business; I wouldn't be able to say positively.
Q. Have you made any loans within the district, say south of Court Avenue and west of Fifth Street and the river?
A. South of Court?
Q. South of Court?
A. I wouldn't say positive about that; I haven't made
2117 any south of the tracks; I may have made south of Court, I wouldn't say positively.
Q. Have you now any recollection ever having made a loan in that district?
A. No, I have not.
Q. Have you ever had any experience in handling property in that district in East Des Moines?
A. Yes, sir.
Q. In the district south of Court Avenue, west of Fifth street, between that and the river and north of Elm Street?
A. We have had property listed but never bought or sold any.
Q. You never bought or sold property in that district?
A. No, sir.
Q. What is your realty firm?
A. The Union Realty Company.
Q. How long has that been organized?
A. About two years.
Q. And is engaged in handling that kind of property?
A. It has a residence tract of its own and handles property for others.
Q. Its business is chiefly the exploitation of residence tracts?
A. Ground, so far as its holdings are concerned.
Q. Have you or your company ever been interested in handling business property in West Des Moines?
A. I don't think we ever sold or bought in West Des Moines.
Q. To what extent have you bought or sold business property in East Des Moines.
A. We sold a few and bought some.
Q. Well, where have your sales been?

A. Personally, I bought some in East Des Moines on Locust street.

2118 Q. Did the company buy or sell any?

A. No, sir.

Q. You personally bought some on Locust Street?

A. Yes, sir.

Q. Where on Locust Street?

A. Between Second and Third.

Q. How recently?

A. I think it is 1908—I am not positive as to that.

Q. What were the character of the properties?

A. They were vacant lots when I got them.

Q. What size lots?

A. 22 by 132, I think.

Q. How many lots?

A. Two of them.

Q. There has been quite a marked advance in properties along on Locust street, hasn't there?

A. Yes, there has.

Q. Also on Walnut Street?

A. Not so much.

Q. Also on Court Avenue?

A. No, not so much as Locust.

Q. There has been quite a marked advance on First, Second and Third, between Court Avenue and Locust Street, along in there?

A. Yes, since it was cleaned up, yes a marked advance in that property.

Q. There have been some improvements over there that have had a marked effect on the advance in the prices, isn't that true?

A. Yes, sir.

Q. What improvements are those?

A. The City Hall, the Locust street bridge and the raising of the grade of Locust Street.

2119 Q. The Coliseum?

A. Yes, sir.

Q. The Park on the East side?

A. Yes, sir.

Q. The new Walnut Street bridge is also a factor?

A. That will be a factor.

Q. Recently there has been some improvements projected in the way of a switch between Court Avenue and Vine?

A. I don't know about that; I think that was while I was away.

Q. You don't know anything about that?

A. I don't know anything about that.

Q. Now, those few lots on Locust Street are all that you ever bought in East Des Moines?

A. Yes, sir—not in East Des Moines—all the business lots.

Q. Have you been interested or acted as agent in selling any property in East Des Moines?

A. Yes.

Q. How many and what properties?

A. I sold two corners on Grand Avenue and Fifth Street.
Q. Anything else?
A. I can't recall it now; I am quite sure I have sold others; not on the spur of the moment, I don't recall any; I may later on.
Q. Are you acquainted with values in West Des Moines?
A. I think so, from observation and keeping in close touch.
Q. Out on Mulberry Street, at Seventh and Eighth, what are properties worth out there?
A. A good deal more than in East Des Moines.
Q. Well, how much?
A. Seventh, you say, and Mulberry?
Q. Yes, and south; take the Scheuerman Brothers' prop-
2120 erty, what is that property worth?
A. I don't know how much ground there is; I never was down there.
Q. It is a quarter block there.
A. That is on the Rock Island, is it?
Q. I believe it is, it is trackage property.
A. I am not sure where that is.
Q. Do you know the values of any of these properties in and around that vicinity?
A. I know what the Ellingson property sold for.
Q. That was a bargain counter affair?
A. I don't know anything about that.
Q. You just know what it sold for?
A. Yes.
Q. Do you know the property?
A. Yes, I have been in and through that.
Q. When did it sell?
A. Well, it wasn't very long ago.
Q. How long ago?
A. I think within the last year.
Q. How much property was there?
A. I think that was a quarter block.
Q. Where is it?
A. Right over in here. (Indicating on the map.)
Q. On what street?
A. What track?
Q. What track and what street—that is Seventh Street in fact?
A. I think it is Seventh Street.
Q. Seventh Street and nearly down as far as Tuttle, isn't it?
A. It is down on the tracks.
Q. It isn't on the Rock Island; it is south of Elm Street, isn't it?
2121 A. I don't think so.
Q. Well, where is it?
A. I would say it was Vine Street, to the best of my recollection.
Q. Do you know what that sold for?
A. Yes.
Q. You don't know whether that was its fair market price or not?
A. I should say it was a fair price.

Q. Do you know whether it was its fair market price or not?

A. Yes, I would say it was the fair market price.

Q. You don't know anything about any of these other properties, the Scheuerman quarter block or the quarter block across the street?

A. No, I wouldn't attempt to place a value on them without inspection for that purpose.

Q. By looking at it would you venture an expression?

A. Yes, I would be willing to give you my opinion.

Q. What do you imagine the property where the Browne-Camp Hardware Company are located is worth down here?

A. On Court Avenue and First?

Q. Where their wholesale house is?

A. Well, I wouldn't place a value on that without inspection; I never was over the ground.

Q. What do you imagine the Warfield Grocery Company property is worth across the street south of Brown-Camp Hardware?

A. Faces on front?

Q. It has some, call it front and Court?

A. How much of it is there?

Q. 132 feet; how much by the foot?

A. Has it got trackage?

Q. Yes.

A. I would figure trackage there worth from $200 to $300
2122 a front foot; I would have to be indefinite about that.

Q. From $200 to $300 a front foot would leave a margin on it?

A. Yes.

Q. Take the Brown-Camp frontage, how much is that a front foot?

A. That hasn't got trackage.

Q. It has trackage, a switch through there, assume that.

A. That has frontage on Court too?

Q. Yes, it corners on First and Court.

A. Well, I wouldn't care to place a value on that without inspection; I can't recollect right now——

Q. You know where it is?

A. Yes, sir.

Q. As well as you do the Warfield property?

A. Yes, sir.

Q. And is that worth more or less than the Warfield property?

A. If the Warfield property—I haven't got it clear in my mind now—if I had a map I could tell you more about it. I should say if it has Court avenue frontage besides trackage, it is worth a little more.

Q. Maybe this map, Exhibit 6, can help you out some.

A. The Brown-Camp is south of Court, isn't it?

Q. It is on the north side of Court, the corner of Court and First; my inquiry is as to the value per front foot?

A. I should say it would be worth fifty dollars more than the other with the same trackage facilities.

Q. The range would be about where?
A. From $250 to $350.
Q. Do you know where the Kratzer Carriage property is?
A. I am not so sure about that either.
Q. Well, it is south of Court Avenue just west of the west
2123 bank of the river from the Gas Company property.
A. On Vine Street?
Q. Yes, have you any idea what that is worth?
A. 132 feet depth, is it?
Q. It is trackage property, about the usual width 132 feet?
A. I should say that would be worth from $200 to $250 a front foot, somewhere along there.
Q. Going back to the Ellingson property, what is that property worth now?
A. The Ellingson over here on Seventh?
Q. Yes.
A. I would say it would be worth about what it sold for, in that neighborhood.
Q. What do you say it is worth now?
A. Just the ground alone, you mean?
Q. The ground alone.
A. I should say from $65,000 to $75,000.
Q. That is a quarter block?
A. That is what I was figuring.
Q. That includes the improvements, does it?
A. No, I was figuring that.
Q. The Ellingson quarter block value now you say is about how much?
A. From $60,000 to $70,000; $60,000.
Q. The Scheuerman property, you don't know where that is?
A. I don't know anything about that.
Q. The Des Moines Ice Company property, do you know where that is?
A. I don't know where that is.
Q. You purchased on East Locust Street in 1908. I think you stated?
A. I think so, I wouldn't say positively.
Q. There has been quite a marked advance since that time?
2124 A. Yes, quite a little.
Q. How much, speaking in percentages?
A. About sixty per cent on Locust Street.
Q. What is the percentage of advance on Walnut Street?
A. About forty on the East side.
Q. Directly your attention to West Locust Street, what has been the advance on West Locust Street from Eighth to the river, in the last five year.?
A. It has been more.
Q. How much more?
A. Well, I am not so familiar with that; I wouldn't know offhand.

Q. What is the general range of values on West Locust Street, say from Eighth Street east to the river?

A. About the average you mean?

Q. No, the range, the maximum and minimum?

A. I would say from $200 to $1,000 a front foot.

Q. Where would you locate the $1,000 a front foot property on Locust Street?

A. About where the Equitable Building is, between Seventh and Fifth in there somewhere; I may be a little high.

Q. How much high do you think that would be?

A. O, I think that is about right.

Q. Let us see, in your judgment property on West Locust Street, say the corner of Sixth Street is about $1,000 per front foot?

A. That would depend on whether you have a corner or an inside lot.

Q. Take the Equitable property?

A. I should think that would be worth that much.

Q. Now, going east toward the Coliseum, how much a front foot is it down there?

A. That is where I placed the $200 property.

2125 Q. On West Walnut Street from Eighth east to the river, what is the general range of prices?

A. Well, I should say from $250 a front foot to $2,500.

Q. $2,500 a front foot would be where?

A. The Fleming corner.

Q. The $200 a front foot would be down by the river?

A. Down by the river; there is no $200 front foot down by the river. It is improved; we have got the Post office on one side and the Library on the other.

Q. It runs down to that level to the block west of that?

A. Yes, the further west the more valuable.

Q. This property of the Des Moines Gas Company has trackage facilities?

A. Yes, sir.

Q. Do you count that a factor making for value?

A. Yes, sir.

Q. Does it make much difference?

A. Yes, it makes difference to the owner that wants trackage.

Q. Does it make any difference in your estimate; do you call it worth more because of the trackage than without it?

A. No, it wouldn't be worth more as compared with the Fleming Building.

Q. No, not by comparison; is the Gas Company property in your judgment and estimation worth more with trackage than without trackage?

A. Yes, in that location it is.

Q. What do you conceive are the available uses of this property?

A. About all it could be used for is factory purposes, storage purposes, purposes in connection with railroad trackage.

Q. It is adapted for such uses?

A. Yes, I should say it would be.

Q. And rather well adapted, isn't it?

A. All except the lowness of the ground; if it was higher
2126 it would be worth more.

Q. Is the Des Moines Gas Company property subject to overflow?

A. I don't think the overflow ever went over there; it has overflowed around it though, which affects this property, that would be an island.

Q. Where does the overflow come around it, south of it?

A. Yes, it used to overflow north of it.

Q. It is not within the overflow district now north of it, is it?

A. I am not sure whether Walnut would be overflowed under the present conditions or not.

Q. Isn't it true that the overflow ground is south of Elm street?

A. The lowest overflow ground, yes.

Q. Aside from some sink holes is there any overflow ground north of Elm street and west of Fifth street?

A. Since Locust Street has been raised we haven't had any floods; I couldn't say just exactly; I am not an engineer. There was water on Walnut Street during the flood.

Q. Do you regard the Des Moines Gas Company property as being adapted for factory purposes, storage purposes and such like?

A. Yes.

Q. Well adapted?

A. Quite well adapted.

Q. To what extent is the ground over there already appropriated and in use?

A. Well, with buildings on, I don't think there is half of it appropriated.

Q. Will you take the map and point out where there is an unappropriated piece of ground south of Court Avenue and west of Fifth street to the river and North of Elm street?

A. Some of this Gas Company property is really not ap-
2127 propriated very much; they have got a couple of tanks on it.

Q. Well, outside of the Gas Company property?

A. This map only goes to Third street.

Q. Let us consider then what the map shows.

A. There is unappropriated ground over in here (indicating).

Q. What block is that?

A. I couldn't say exactly; east of Third and south of Market. And all of this ground the great part of that ground over there the improvements on it are not of a permanent character; they are shacks a good many of them.

Q. What ground are you talking about when you speak in that way?

A. I am not talking about the Incubator Factory over there, is not a permanent building; the Prouty Soap Works over here has got a building which is pretty fair.

Q. I haven't asked you with respect to the character of the buildings; I have asked you to point out unappropriated ground not in use.

A. I presume it is all being used a little bit; some of it has got scraps of iron on it.

Q. There is an iron concern over there?
A. Yes.
Q. Is there any considerable area over there that is not now in use?
A. Well, I wouldn't positively say about that; they may be used as much as the Gas Company there with one of those oil tanks on it, just a small tank, and that would be in a sense appropriated to a very limited extent.
Q. What tracts are there over there on the market for sale?
A. There is one east of Third and south of Market.
Q. Will you name it, describe the tract?
A. I just looked at the tract.
2128 Q. That is east of Third and south of Market?
A. Yes, sir.
Q. Is that the only one you know of?
A. That is the only one I inquired into.
Q. You do know there is a great deal of ground in there that is appropriated and used for railroad purposes?
A. Yes, sir.
Q. And you do know in a general way most of that ground in the district I have called your attention to is already appropriated and in use, don't you?
A. Well, it is being used, but it is not built up; that is what I have reference to.
Q. You do know there are not any considerable tracts on the market for sale in that district?
A. I don't know of very many, no.
Q. Suppose, Mr. Hauge, you had a customer for two blocks of contiguous trackage property, where would you find it over there?
A. Further east.
Q. How far east?
Q. You can follow the tracks down and find it somewhere.
Q. You could find it if you had to go to Altoona for it?
A. Yes.
Q. Where would you find it in the district I have described south of Court Avenue and west of Fifth or Sixth Street, if you please?
A. I do not believe we could find it all belonging to one person; you would have to buy it up from different parties.
Q. You don't know of any tract so large as that owned by one person or a tract so large as that that is on the market for sale, do you?
A. No, I do not.
Q. Do you know of any such tract in west Des Moines or
2129 trackage property, aside from the holdings of the Hubbell Estate?
A. No, sir; I do not.
Q. You couldn't get it in town, could you?
A. Not that I know of unless you go further east.
Q. The truth of the matter is, close in desirable trackage property is a scarce article?
A. Well, it is all owned by somebody and most of them are not very anxious to sell.

Q. I was speaking, aside from the Hubbell holdings, the close inside trackage property is scare, isn't it?

A. Yes.

Q. And there is a good demand for it?

A. Well, I don't know as to the demand; I haven't been asked, I haven't seen very many purchasers.

Q. There is an increasing growth in the manufacturing business in Des Moines?

A. Yes.

Q. Quite a stimulus?

A. There has been the last three or four years.

Q. And the storage business has called for the construction and they have been constructing large warehouses?

A. Yes, sir.

Q. Now, that property of the Gas Company is not far from the post office, is it?

A. No, it is not very far from the post office.

Q. It is really desirable property Mr. Hauge?

A. For the purpose I have described it is.

Q. For the use?

A. It is all right.

Q. Close in?

2130 A. Yes, sir.

Q. Accessible from the paved streets, Walnut Street, Locust Street and Court Avenue a short distance?

A. Yes, sir.

Q. And all in all it is for such use and such purpose a desirable property?

A. Yes, sir.

Q. How long did you spend inspecting the property of the Des Moines Gas Company?

A. The first time I was down there I was down there about a half a day; the second time I was there about two hours and a half to three hours.

Q. Was anyone with you?

A. One time there was.

Q. Who was with you?

A. Frank Mathis, Mr. Walker and Mr. Wilcoxen.

Q. Bye the bye, in placing your appraisal what question did you ask yourself; what did you put the question—what could this lot or this lot *or this lot* be sold at as a separate lot?

A. I took the quarter blocks; I took them by quarter blocks.

Q. Just as you have given them in your answers?

A. Yes, sir; I wouldn't say positively how I gave them in the answer.

Q. With reference to what assumed or supposed uses did you make the estimate?

A. Oh, general trackage purposes.

Q. Suppose, Mr. Hauge, there were no Gas Company in Des Moines and that the people were projecting the construction of a gas plant and were to come over there and desire, say two blocks of ground within the district I have described, south of Court Avenue

and west of Fifth and Sixth Streets and north of Elm Street,
2131 and they should commission you to buy two blocks in there, what prices do you suppose you would have to pay for it?

A. I would get it as cheap as I could.

Q. What would be the price?

A. It may be impossible to buy two blocks, if it was owned by different parties.

Q. If you would pay enough you could get it?

A. Not always; some of the Hubbell tracts are not for sale.

Q. What do you imagine now would be the cost of collecting under one ownership two blocks of ground contiguously situated within that territory south of Court Avenue and west of Fifth Street and north of Elm Street?

A. About $100,000.

Q. Well, now what property would you get and where would you get it?

A. I haven't started that job yet.

Q. Start out and point out where it is?

A. I would get the one easiest——

Q. Make a start, tell us wher*h*e you are going to begin and end?

A. That would be impossible for me to tell you how I would do it; that would take some time and energy.

Q. You say about $100,000 would buy it and you say you haven't any idea where you can get the ground, from whom you can get it; why do you venture the statement that you could get it for $100,000?

A. If you could get it at all, you ought to get it for $100,000.

Q. Why?

A. That is what I consider it is worth.

Q. Supposing you had property owners that wouldn't sell it for that?

A. They may over-estimate it.

Q. A man who owns property has to get his price before he sells it?

A. Yes, sir; he don't have to sell it.

2132 Q. I am putting it to you, Mr. Hauge, whether after all you would not have to give something more than $100,000.

A. I think that $100,000 would buy two blocks in there if there was two blocks for sale.

Q. That is because that is what you think it is worth?

A. Yes, sir.

Redirect examination by Mr. BRENNAN:

Q. Mr. Hauge, if you were going to plan for a site for a gas works, you would not be confined to the two blocks now occupied by the Gas Company, would you?

A. I shouldn't think so; I don't know anything about the gas business.

Q. I wish you would tell the Master in a general way, without too much detail, where there are in East Des Moines factory sites for property which is adaptable for factory purposes.

A. Well, there is large tracts clear to the city limits

Q. Well, tell the Master about where they are located and the size of the tracts.

A. On the Northwestern road there are tracts of land from East Fourteenth Street up to and beyond Hull Avenue a distance of two miles northeast; there is ground up in there that can be bought for $300 an acre; probably less; I can buy it for $250 today. The Short Line, the Rock Island, runs through it, and the Northwestern runs through it and the Great Western runs through it.

Q. The Short Line is the Des Moines & St. Paul?

A. Yes, sir.

Q. What is the fact whether or not there are manufacturing establishments already located in that part of the city?

2133 A. There are in that vicinity, not on these tracts.

Q. Tell the Master the character of the factories that are now located in those places?

A. There is a threshing machine factory up in there——

The MASTER: Where are they with reference to the Sixth Avenue bridge?

A. They are east of the Sixth Avenue bridge; they are on the line towards Marshalltown.

Q. It lies north and west of the Fair Ground?

A. Yes, it is west and north of the Fair Ground, on Delaware Avenue, what would be about Twentieth Street.

Q. The Des Moines & St. Paul and the Great Western at that point run almost due north and south?

A. Yes, sir.

Q. And then west of the territory to which you have called attention are there any factory sites, going over towards Highland Park and towards Sixth Avenue bridge?

A. Yes, sir; there are switches that could be run over in there I presume.

Q. Does the Interurban serve that territory now?

A. It serves it across from the east in over west.

Q. Do you know whether or not the Interurban carries on a freight business in connection with its passenger business?

A. I see them carrying freight, yes sir.

Q. Now, going out on East Walnut Street or East Grand Avenue, are there any factories in that vicinity?

A. Yes, sir.

Q. What is the character of the factories in that part of the city?

A. Well, there is a peanut roaster factory and the hosiery mills further out, and I believe the Des Moines Bakery is going to

2134 put up a plant about Twentieth, I have been informed by the owner.

Q. Those properties are all served by railroads, are they not?

A. Yes, sir.

Q. Then going south of Court Avenue where the Agar Packing plant is located, are there some factory sites in that part of the city?

A. Yes, sir; there is trackage along in there, trackage on the Rock Island out towards the Fair Ground.

Q. All the railroads aside from the Northwestern and Milwaukee,

in reaching the city, parallel, do they not, the tracks of each other in entering the city from the east?

A. The Great Western I don't believe goes straight east, it goes on up when it gets to Twentieth Street.

Q. When it reaches the crossing near Twentieth street then it runs parallel to the other railroad tracks?

A. Yes, sir.

Q. And there are the Des Moines & St. Paul, the Great Western, the Rock Island, the Wabash, the Keokuk & Des Moines, and the Burlington?

A. Yes, sir.

Q. And there are factory sites in the vicinity of all these railroads?

A. Yes, sir.

Q. Spurs and switches?

A. Yes, sir.

Q. So that if I understand you, Mr. Hauge, if you were going to locate a gas works in Des Moines, you would not be confined to the particular two blocks to which counsel has called your attention?

A. No, I should not think they would have to be confined to two blocks; if they would go out where we are talking now,
2135 you could buy it for less than $100,000.

Recross-examination by Mr. READ:

Q. You could still find trackage property if you would go as far out as Borwick or Altoona?

A. I would confine myself to the city of Des Moines.

Q. Within proper limits?

A. Yes.

Q. Assuming there are prackage properties in the outlying districts, nevertheless the fact is there is a demand, to some extent at least, for inside trackage property, isn't there?

A. Well, I don't know that; I have had some——

Q. That answer- the question.

A. I don't know of any particular amount of demand there is for trackage; they are definitely decided whether they want to go one plave or another.

Q. There are certain businesses, such as storage that requires to be inside?

A. Yes, sir.

Q. For instance, we have large storage houses in the west Des Moines district?

A. Yes, sir.

Q. I think there is one in the east Des Moines district too?

A. Not a very large one.

Q. For such uses as that it would be impracticable to go out into the outlying districts?

A. For storing city goods it would be impracticable.

Q. Merchandise and such things as that?

A. Yes, sir.

2136 Q. Or if you were manufacturing and your business was such that you wanted to come in contact with the buying public, it would be desirable and a necessity?

A. The closer in the better.

Q. If you were going to locate a gas plant you would think about it a good while if you didn't know anything about it?

A. I don't know anything about gas plants, no.

Q. What you were undertaking to do was to point out grounds that were served by tracks in the outlying remote districts of the city?

A. Yes, sir; about fifteen blocks away from this.

Q. From fifteen to thirty?

A. Yes.

Q. Now you suggest that properties out there are cheaper than the inside?

A. Quite a little.

Q. Nevertheless if a man wants inside property, why of course that is the only kind that he would be satisfied with; he may be mistaken in his judgment as to what he wants, and there have been people located in the inside too?

A. Yes, sir.

Q. And that gives to inside trackage property a certain value?

A. Yes, sir.

Q. Now, I surmise, Mr. Hauge, that you may have been over-conservative in your valuation of the Gas Company property because of some theory in your mind that the existence of this property outside tends to cheapen the inside property?

A. I did not have that in mind at all when I appraised the property on the east side there. I didn't have the other trackage in mind.

Q. What was the basis of your valuation of the gas property?

2137 A. My general knowledge of real estate values in that vicinity and inquiries I made as to sales that had been made in years gone by, and what is on the market now for sale.

Q. What is there on the market for sale; I asked you that?

A. I found one quarter block east of East Third Street that could be bought for about $7,000; 132 feet on the K. D.

Q. Will you describe that quarter block?

A. It is not on this map.

Q. In what block is it?

A. It is south of the K. D. and east of East Third.

Q. Is it in the corner of the block?

A. It corners on Third.

Q. What other street?

A. And Market.

Q. Is it low or high ground?

A. It is about like all that ground in there, except the Gas Company's ground is a little higher; it has been filled in.

Q. Who owns that property now?

A. I don't know; I talked with the agent who had it for sale.

Q. Who is the agent?

A. Mr. Wilcoxen.

Q. Mr. A. S. Wilcoxen?

A. Yes.

Q. Was he down there inspecting the gas property when you was there?

A. Yes, sir.

Q. He told you he had this quarter block for sale for $7,000?

A. As I recall it, that is what he could sell it for; he had been trying to sell it for that for a long time and couldn't sell it; 132 feet on the N. D.

Q. And so you concluded that property was as good as the gas property?

A. No.

2138 Q. That at least was the basis of your valuation of the gas property?

A. Not altogether.

Q. What else?

A. My general knowledge as to real estate values in that and other parts of the city.

Q. Such as you have disclosed here in your examination?

A. Yes, sir.

Excused.

B. S. WALKER, being first duly sworn on part of defendants, examined in chief by R. O. Brennan, Esq., testified as follows:

Q. Where do you reside?

A. 1525 Columbus Avenue, Des Moines, Iowa.

Q. How long have you lived in Des Moines?

A. Thirty years.

Q. What is your business?

A. Real estate.

Q. How long have you been engaged in the real estate business in the city of Des Moines?

A. Twenty-eight years.

Q. Practically continuously?

A. Yes, sir.

Q. Were you formerly connected with any real estate firms before engaging in business on your own behalf?

A. Yes, I was with the firm of Percival & Hatton for eleven years.

2139 Q. What was the nature of the business conducted by Percival & Hatton?

A. General real estate business in all lines.

Q. In the city of Des Moines?

A. Yes, in the city of Des Moines.

Q. State whether or not it was one of the leading real estate firms in the city?

A. It was so considered.

Q. How long have you been engaged in the real estate business on your own behalf?

A. Since 1892.

Q. Have you purchased property for yourself and for others during that time?

A. I have.
Q. And sold properties?
A. Yes, sir.
Q. Business properties and residence properties?
A. Yes, sir.
Q. Have you confined your business to any particular part of the city, side of the river?
A. My personal business has been confined largely to the south side. As one of the trustees of the Joseph B. Stewart Estate we have owned property on the east and west side of the river.
Q. By reason of your relation as trustee of that estate were you called upon in the course of your business to purchase or sell real estate?
A. We had to sell it.
Q. You have kept in touch with the market values of real estate in Des Moines?
A. I have endeavored to.

Q. You may state whether or not you are acquainted with
2140 the reasonable market value of real estate in the city of Des Moines?

A. I think I am.
Q. Do you know the property of the Des Moines Gas Company?
A. I do.
Q. You have known that property for a good many years?
A. Yes.
Q. Did you investigate that property some time ago for the purpose of placing a valuation upon the same?
A. I did about a month ago.
Q. I will ask you whether or not you know what a reasonable market value of that property is and was say about January 1st, 1911.
A. I think I do.
Q. And please tell the Master what in your judgment was its reasonable market value?
A. Speaking as a matter of lots or the aggregate?
Q. The aggregate, and then we will take up the lots?
A. I made the aggregate valuation $97,500.
Q. Now, the map which is before you there Mr. Walker, Exhibit 5, being a blue print showing the location of the Des Moines Gas Company property, within the tracts outlined by the red borders, I will call your attention to Lots 9 and 10 in Block M of Scott & Dean's Addition to the City of Des Moines, and I wish you would tell the Master what in your judgment was the reasonable market value of those lots on or about January 1st, 1911?
A. $6,000.00.
Q. Now referring to Lots 9 and 10 in Block B——
A. $8,500.00.
Q. I call your attention to Lots 3, 4, 5, 6, 7 and 8 in Block B and please state what in your judgment was the reasonable market value of those lots about January 1st, 1911.

2141 A. $20,000.

Q. Referring now to Lots 1, 2, 3, 9 and 10 in Block C,

Scott & Dean's Addition, please tell the Master what the reasonable market value of those lots was on or about January 1st, 1911?

A. $22,000.00.

Q. Now referring, Mr. Walker, to Lots 4, 5, 6, 7 and 8 in Block C of Scott & Dean's Addition, please tell the Master what in your judgment was the reasonable market value of those lots on or about January 1st, 1911?

A. $25,000.00.

Q. Now, referring to Lots 3 and 4 in Block K of Scott & Dean's addition, please tell the Master what in your judgment was the reasonable market value of those lots at the time at which your *your* attention was called?

A. $12,000.00.

Q. Lots 3, 4, 5, 6 and 7 in Block T, Scott & Dean's Addition, what in your judgment was their reasonable market value?

A. $4,000.00.

Cross-examination by W. L. READ, Esq.:

Q. Your activities in the real estate business for a great many years have been chiefly confined to exploiting some property of your own in South Des Moines?

A. Yes, sir.

Q. Residence property?

A. Yes.

Q. In fact you have not been at all active in the general real estate business during that time?

A. Well, not in the general business; I have sold some of
2142 my own properties during that time in other parts of the city.

Q. Residence properties?

A. No, some business properties.

Q. Where?

A. On Second & Chestnut Street-, southwest corner of Second and Chestnut Streets, I sold a piece of property there five or six years ago.

Q. Have you bought or sold any business property in East Des Moines?

A. We have t-ied very desperately to sell some but were not successful.

Q. Where?

A. On Grand Avenue.

Q. Where on Grand Avenue?

A. The second lot on Front on the north side of the street, 40 feet on Grand Avenue between Sixth and Seventh and property out at First and Des Moines Street-; and then property on Des Moines between Sixth and Seventh; those were Stewart Estate properties.

Q. Have you handled anything on East Locust Street or Walnut Street or Court Avenue or Elm, Vine or Market?

A. No.

Q. East of Sixth street—you say no?
A. No.
Q. Have you known of any property in that district selling in the past five years?
A. Yes.
Q. Where?
A. This property spoken of here, Lots 9 and 10 in Block M; I noticed that sold for $4500.
Q. How long ago?
A. That is within four or five years, by Mr. George Wright to Mr. Jansen Haines.
2143 Q. You don't know when that sale was made?
A. I don't know at this moment.
Q. Do you know of any other property?
A. Yes, four and five in Block C sold by Rowett to Ben Younker.
Q. How long ago was that?
A. Five years I think; for seven thousand dollars.
Q. Any others?
A. These are all I have looked up.
Q. There has been quite a marked advance in the price of real estate in East Des Moines on Locust Street and Walnut Street in the last two or three years?
A. Well, there has been a theoretical advance on Locust; as to actual sales I have no memory of sales being made at an advance. The raising of the grade on Locust Street has changed the actual value and created a sentimental advance.
Q. That is to say, the holding price has advanced?
A. The holding price has advanced.
Q. When the sales are made they will necessarily be made at an advanced price?
A. Yes.
Q. How much of an advanced price?
A. That is problematical. Of course it was very dead over there. I should think probably an advance of fifty per cent over the prices on Locust Street before the bridge was built and the grade raised. The raising of the grade to my judgment added a greater factor than any other item.
Q. There has been a marked advance in the price of real estate and business property, inside properties in west Des Moines?
A. There has been in West Des Moines, marked.
Q. What is the range of prices on Locust Street do you
2144 suppose from Eighth Street east to the river?
A. I presume the choicest properties would seel there for $3,000 a foot and range down to Front street, I presume about $500. I put the range between $500 and $3,000
Q. Take the corner on Locust Street, the property on which the Equitable building is located, what is that worth per front foot.
A. That property is easily worth $3,000 a front foot.
Q. What is the range of prices on Walnut Street from Eighth east to the river?
A. Well, you have taken, with the Equitable Building, you have

taken in my judgment the choicest spot on Locust Street and on Walnut there is some property that is worth in the neighborhood of $3,500.

Q. The Fleming Block corner?

A. Yes, that is $3,500.

Q. Harris-Emery?

A. That is not quite so good, a little further west. My theory of values is that there is always a north and south axis in every city; Sixth Avenue is the north and south axis.

Q. You know where the Brown-Camp Hardware building is and the Warfield Grocery?

A. Yes.

Q. What are those grounds exclusive of the buildings worth per front foot?

A. Well, I should think those properties, exceptionally fine location, in the neighborhood of $600 per front foot.

Q. Do you know where the Kraetzer property is?

A. Yes, sir.

Q. What is that?

A. That is a much cheaper property; that is simply a
2145 manufacturing property; the other- have a business element. That would be about $250 per front foot in my judgment.

Q. The Scheuerman Block, do you know where that is?

A. Yes. It is south of the Rock Island on the east side of Eighth Street.

Q. Do you know the values down in there?

A. There is a peculiar situation there, where the railroads have to help them; some of these days they can be very strenuous in their prices; they have that as a market feature.

Q. The Ellingson property, do you know where that is?

A. Yes, sir.

Q. Do you know what that is worth?

A. It has been sold recently to the Rock Island road. There is 132 feet square, if I recall it. I don't remember the consideration; in my judgment I should say $300 probably $45,000 or $50,000.

Q. That was bought within a year or two for this money?

A. I didn't notice the transfers on that; I noticed the stories on it.

Q. Precisely where is the Ellingson property situated?

A. At the southwest corner of Seventh and Vine Street.

Q. Do you know where the Des Moines Ice Company property is?

A. Fronting over the old artificial ice plant, over on Ninth street.

Q. West Ninth Street?

A. West Ninth Street.

Q. What other street?

A. I don't recall definitely whether that is south in that same block or a block south; my impression is it is in the same block.

Q. Do you know what it is worth?

A. No, I don't remember now just how it is situated as to railroad

access, nor do I know the size of it, but if it were given railroad trackage it would be of the same value as the Ellingson, the
2146 Ellingson property is on Seventh Street. It would be two blocks west, facing west and this Ellingson property faces east.

Q. Inside trackage property in Des Moines has a value hasn't it?

A. Yes, there is the same distinction in my judgment between inside trackage and outside trackage, as there is between inside retail and outside retail.

Q. Aside from the holdings of F. M. Hubbell or the Hubbell Estate, south of Vine street in that district, are there any considerable areas of trackage property unappropriated?

A. No, the fringe is very narrow between what Hubbell owns and the retail business.

Q. In east Des Moines south of Court Avenue, west of Fifth Street and north of Elm Street, what is the extent of unappropriated trackage property?

A. Elm street being the line of the Q. Railroad—well that area is very largely appropriated; the Standard Oil comes in there for a lot of space.

Q. And the Linseed Oil Works?

A. Yes.

Q. And Nicholas Shepherd?

A. Yes, the Gas Company have two and a half blocks in there.

Q. What unappropriated tracts in that district do you know, Mr. Walker?

A. Well, I have not made any personal investigation of the record titles there, but in driving by, there are quite a number of vacant lots.

Q. Single lots?

A. Single lots, yes. I know a number of them belong to the different railroad companies.

Q. There are quite a number of lots that belong to the railroad companies?

2147 A. Yes. While vacant they are still appropriated. That particular tract is not very considerable; I suppose there would be an estimate of seventy-five per cent.

Q. What there is not occupied is held in single lots?

A. I have not investigated the titles; there are contiguous lots. I notice in driving through there two lots without buildings on them; I could not state definitely from this plat without checking it up.

Q. I show you a map, Exhibit 38, and ask you if you recognize and know it—for your own information, I understand it is a photograph of a map not completed to date, but showing the location of the different enterprises within the area shown on the map. Here is the Prouty-Bowler Soap Company; on the corner of Court and First Street is the Des Moines Boiler Works, and further up on Walnut Street the Eagle Iron Works; the Gas Works are shown on First Street between Vine and Market?

A. I recognize this is a map of that section of the city. I am

able to identify some of those buildings; I can not locate all of them.

Q. I want to ask you whether you could identify and point out on the map the different buildings. You may examine the map and note the buildings and then answer whether it is not true that within the district chown upon the plat or map, Exhibit 38, the ground is not practically occupied either by railroads for railway purposes or by various manufacturing and storage enterprises?

A. This map indicates that this territory is largely appropriated by buildings, but as to the extent and also the car lines I am not able to identify all of the buildings; a number of them I am, but others I am not.

2148 Q. Now that district is rather favorably located and situated for inside manufacturing, storage and warehouse property, isn't it?

A. It is.

Q. It is well served by railways?

A. It is.

Q. Is there any district in East Des Moines as close in that affords anything near like the same facilities for such uses?

A. Nothing as close in.

Q. In fact that is about all there is over on the east side of that character?

A. No, that is a different proposition; it is the nearest, but adjoining that and going out it extends——

Q. You will note my question precluded going outside.

A. If you don't go outside of this, that is all there is of it.

Q. Not to go beyond that distance from the post office, if you please.

A. No, you have got to go farther than this. I do not want to appear to state that this is the only property available there.

Q. Of course there is outside property; but there has been a growing demand for inside properties for warehouse, manufacturing and storage purposes for the last few years?

A. There has been for warehouse and storage, unfortunately more than for manufacturing.

Q. But there is a growing demand, isn't there, for such use?

A. Well, we can't notice it grow as fast as we would like to see it.

Q. You belong to the Booster Club?

A. I am simply a private subscriber; I help pay the freight, Mr. Read.

Q. You couldn't find as much as two blocks of contiguous property in that district or in the West Des Moines district, aside from Hubbell's trackage property, that is on the market for sale,

2149 could you?

A. Well, I imagine, Mr. Read, if you were to go south of the Q tracks as this land here is in Block 9 and 10 in M you could buy up all that country through there.

Q. That is below water level though?

A. Well, there is no great different between the elevation of one side of the track or the other.

Q. You will notice the map, Exhibit 5, and see some of the elevations. It goes down to 19 in Block A and south of Block A in Coon point, it is much lower?

A. I don't know what elevation that 19 and 23 is taken of, but the general surface south of the Q track is practically the same.

Q. At any rate, the height given is very much less than it is in Block B or C, isn't it?

A. Yes, this — shown 23 and 71.

Q. Then, Mr. Walker, there are no railway tracks over in that territory either?

A. Well, there is a track there.

Q. The Q is the south track?

A. Yes.

Q. So that is not served with trackage over in that district?

A. My understanding is they have a uniform transfer service and if yon are one one road you get the benefit of the local shipment of all of them.

Q. When you go south of the Q. there are no tracks between that and the river?

A. No, the Q is the south track in this portion. When you go further east towards the Packing House then other lines cross it.

Q. What is the range of prices on Court Avenue from First east to Fourth street per front foot?

A. On East Court Avenue?

2150 Q. Yes.

A. I haven't any information of any sales there for a long time.

Q. Do you have to have sales?

A. That is one of the surest ways of determining values, Mr. Read.

Q. Doesn't that depend on whether the sale is a normal one or not?

A. Oh, yes; when a man buys anything for use in the ordinary course of business I would assume that was a fair price.

Q. That is a series of sales?

A. Yes, not a single sale.

Q. One sale wouldn't make a market?

A. No, because there might be many things surrounding that particular sale.

Q. Do you know what the range of prices is on East Walnut Street from the river east to Fourth?

A. Well, I have known a sale there at $75 a front foot, a purchase made there two or three years ago.

Q. Where was that?

A. A purchase made by J. C. Hume at the southeast corner of Third and Walnut.

Q. What is the holding price now, $500?

A. I don't know.

Q. I ask you if you know the prices and values on Walnut east from the river to Fourth Street and you have given one sale.

A. I would say $100 a foot. The Stewart Estate have a frontage of 88 feet and we have figured $100 as being a fair price.

Q. On Locust?

A. On Walnut Street.

Q. Is that on Walnut Street?

A. Yes, west of the Northwestern station on the north side of the street.

2151 Q. How much frontage is there?

A. 88 feet.

Q. Right joining the track?

A. No, it is retail property. You are asking about Walnut street. It is immediately west of the passenger station on the north side of Walnut and it is retail property.

Q. When you inspected the Gas Company property did anyone go with you?

A. Yes, sir.

Q. Who was it?

A. Mr. Frank Mathis, W. H. Arnold, Mr. A. S. Wilcoxen and I think Mr. Hauge and myself—that makes five.

Q. Did you discuss the matter and arrive at a valuation over there while you were together?

A. We discussed the property, yes, but made no agreement——

Q. There is considerable similarity between your valuations?

A. I said we discussed the property but made no agreement as to valuations.

Q. I didn't ask you that—referring again to that 88 feet of the Stewart Estate on Walnut Street, that is held for how much now?

A. We have held the property at $100 a foot.

Q. I think I was informed you were holding it at $10,000? That is a mistake?

A. Why, yes. We haven't offered the property but that is our estimate of its value.

Q. There was some 22 feet of a tract belonging to the Stewart Estate you refer to?

A. No; I spoke of a 30 foot tract on Grand Avenue; and 40 feet on Grand Avenue, in reply to an earlier question; but on Walnut Street the only property the Stewart Estate now holds is 88 feet.

Q. Suppose that you were to receive a commission to buy

2152 two blocks of trackage property in West Des Moines east of Twelfth street and south of Mulberry and north of the Hubbell ground, what price do you suppose you would have to pay for it, two blocks contiguous, some place along the Sheuerman property there?

A. That would be a difficult matter. I doubt whether that amount of property could be found that was not owned by the railroad companies.

Q. Well, assuming that it could be outside of the railroad property?

A. Well, I suppose on the basis of sales and values on that west

side property—out to Twelfth—I don't remember the property south there, west of Ninth.

Q. Don't get down into the flood district.

A. You were giving me the property that did not belong to Hubbell. I was selecting the nothwest corner as being the cheapest in price.

Q. You might just as well take in two blocks and a half or two and three quarters?

A. When you go north of Cherry street you have got into property that has value more than simply for factory purposes.

Q. It is inside factory property?

A. Yes.

Q. What would two blocks and a half in there cost today?

A. Oh, I suppose on a basis of, oh probably $300 to $350 a front foot.

Q. A block is how many feet square?

A. 264.

Q. Let us get that down to dollars if we can?

A. What is the frontage now?

Q. Two blocks and a half contiguously situated?

A. On a frontage of 660 feet, $300 a foot would be
2153 $198,000.

Q. A frontage of 660 feet how much?

A. Would be $198,000.

Q. Isn't it more than that?

A. Didn't I understand that to be your question?

Q. What would it cost at present values to reduce to one ownership two blocks and a half of the ground in the district referred to, using the Sheuerman property as a nucleus?

Objected to on part of defendants as irrelevant, immaterial and not cross examination, and because it relates to a place remote from the property in question.

Q. You said about three hundred and how much a foot?

A. I said taking such property as the Sheuerman property, in that neighborhood, I said from $300 to $350 per front foot.

Q. That is, you mean take it in one block, there would be a frontage on two streets, that is right, isn't it?

A. Yes.

Q. Passing that now, Mr. Walker, the Kraetzer Carriage company property is situated in what block?

A. That is on Front street between Court Avenue and Vine—no between Vine and the street south of Vine; between Vine and Market.

Q. Using the Kraetzer Carriage Company property as a nucleus, what would it cost to get together there under one ownership two blocks and a half, assuming that it is not appropriated to railroad use and that it could be purchased?

A. I think on that basis $250,000.

Q. How much per front foot do you count on the average?

A. Well that would average probably from $150 to $200 per front foot.

Q. Now, Mr. Walker, over on the east side, having in mind the general situation between Court on the north and Market
2154 on the south, and Fifth on the east and the various uses to which the property is devoted, what would it cost now to obtain two blocks and a half trackage property, all served by tracks beginning and using the Des Moines Boiler Works property in Block D as the nucleus?

A. You mean taking and assuming the property was vacant?

Q. Exclusive of the buildings—assume of you please the buildings would have to be paid for in addition to what they are worth and assuming the properties are owned and occupied as they now are?

A. Running from Court Avenue south?

Q. Yes, south, or from Front street east on Court Avenue, beginning with Block D and get two blocks and a half.

A. I should say $125 a front foot.

Q. Do you call that the value of the property of the Des Moines Boiler Works?

A. Yes, sir.

Q. The Eagle Iron Works, east of that?

A. Yes, when you get back from Court Avenue south I should taper it down.

Q. Why would you do that?

A. Because Court Avenue is a thoroughfare, through street, and adds value to the property by reason of its location and accessibility to outside trade; it is more showy a place in other words.

Q. Toss your eyes on Exhibit 5 and find Block T?

A. Yes.

Q. That is a showy place?

A. Yes, it is showy.

Q. If one had a manufacturing plant on that it would be a good advertiser?

A. It would.

Q. Were there any peculiar circumstances you took into
2155 account in placing the valuation of $4,000 on that?

A. The fact of the narrow size of it between the street.

Q. Did you allow the old river front problem to enter into that estimate?

A. No, I simply figured on what was there; but I didn't figure on the difficulty of getting a foundation on the outer edge of that cinder pile.

Q. What assumption did you make with reference to the size of the lots?

A. I assumed it to be the size at the top of the bank as now graded.

Q. What is that?

A. My impression is it was about fifty feet; it was a month ago I made the examination.

Q. Mr. Walker, the map by scaling it shows the depth of the lot to be 84 feet; you didn't take that depth?

A. I stepped the distance across there and my impression was it was not as much as 84 feet.

Q. Your impression is it was about 50?
A. About 60 feet.
Q. So you assumed a narrow lot?
A. Yes.
Q. Did you consider them dissassociated from other property of the Gas Company, as separate property?
A. As separate property.
Q. Of course, they would have an added value, wouldn't they, if they were owned by the same parties that own Block B and associated with that property?
A. Well, if the street divides them, I don't see how that adds, that particular tract, especially, I could see no occupancy, save where their pumps were to clean out the pipes.

Q. That is to say, you attribute no utility to Block T by
2156 reason of its use in connection with the other property of the Gas Company, or by reason of its use in the gas business?

A. No, I did not. I simply took that as a piece of ground by itself.
Q. You asked yourself what somebody would pay for it?
A. Yes, what would this be worth to use as a manufacturing proposition.
Q. Disassociated from other property, as a separate piece of property?
A. Yes, a separate piece of property.
Q. Now, Mr. Walker the use for which a property is or may be available is a factor making for value, isn't it?
A. It is.
Q. So far as you know Block T may have a use in connection with the other property of the Gas Company in the operation of a gas plant, that is true, isn't it?
A. It might, yes.
Q. You gave no consideration whatever to that aspect of the question I mean its possible uses in connection with the gas business?
A. No, in placing my value on Block T I did not consider it an integral part in the operation of the gas plant; I could see the pumps were there.
Q. Well, now, Mr. Walker, assuming, if you please, that the two blocks, or assuming rather that the quantity of ground the Gas Company has is reasonably and fairly required in the conduct of the gas business, and assuming no less, substantially than the Company now owns would be sufficient, and assuming that the property is in its characteristics, so far as soil is concerned, adapted for that business, and assuming that there is a demand for the location for the site for a gas manufacturing and distributing plant, wouldn't

that tract of land located as it is centrally, accessible as it is,
2157 in your judgment command a much greater price than the valuation you have placed upon it for such a use?

A. Well, not being a gas expert, I cannot answer that, save in this way, if a concern needed more ground—
Q. You don't need to be a gas expert, you only need to be a real

estate expert. I require by the question you to assume the adaptability of the ground for use for that purpose, then I ask you whether the tract of ground of two and three-fourth- blocks substantially would not command a much greater price than the valuation you placed upon it for such a use?

A. Well, it would command a greater, but how much greater I am not able to say.

Q. Wouldn't it command substantially as much as the ground, and equal quantity of ground, just north and in block D and in Block I?

A. Well, if one piece of ground would be as valuable to them as the other, both serving the same purpose, the values would be the same.

Q. The other two blocks you had about $225,000 or $250,000?

A. No. That was on the west side of the river. What I endeavored to state the valuation on Court Avenue I put at $125 a front foot and then tapering down south on Court Avenue.

Q. On the frontage on Vine you would put it what?

A. Block D, as I did here, substantially $100 a foot. The only answer I could make to that question was requiring all of that ground for one purpose, would add to its value; to what extent, I wouldn't state.

Q. How much you wouldn't want to say?

A. How much I wouldn't want to say.

2158 Q. What I am trying to get before your mind, Mr. Walker, is the question of the value of this property of the Des Moines Gas Company for the uses to which it is devoted, or to a similar use requiring so much ground as that similarly located?

A. Well, it would only—all I could do, Mr. Read, would be in my judgment make an estimate; in other words, on the theory I was going to buy the ground I would have to pay extra prices for some — it there; some men would hold one up; on that basis on that sort of a basis I should say an increase of ten or fifteen per cent would cover the fair going prices on the whole tract.

Q. Just precisely what do you mean when you say that in your opinion the gas property is worth $97,500?

A. I mean, taking these special and separate descriptions as I testified to their value and selling them for factory or warehouses or similar plants, that would want 132 feet frontage, taking 132 feet as the unit.

Q. Suppose you take the property or you have a customer who wants all that ground, two blocks and three quarters substantially, that would command a greater price than if you were dealing in smaller units, single lots or two lots?

A. It would if you know a man had to have that amount of ground.

Q. Suppose there was a customer in the market for that much ground in that locality?

A. Of course, if the owners of the lots in that locality knew that fact it would appreciate it.

Q. Suppose you owned that ground and the Gas Company would come to you to buy it for the purpose of devoting it to the business it is now devoted to, your estimation of the value of the property would be greatly in excess of what you made it now?

A. I suppose I am human, along with the rest of you. That undeveloped ground if a man wanted to buy a tract of it. I
2159 would sell it for less money than I would peddle it out lot by lot; on the other hand if the land belonged to a number of owners, a tract of that size, you would have to pay a little more than lot prices in some cases. Answering your question to the best of my ability all I could do would be to make the estimate of an increase I should say ten or fifteen per cent.

Mr. BRENNAN: That is to take care of this element of human nature?

A. Yes.

Q. To reproduce this property, that is to say, obtain a tract of equal size in the manufacturing district on the west side of the river, according to your figures, would cost something like $500,000 or $600,000 of the Sheuerman corner?

A. No.

Q. $425,000 to $600,000?

A. I think I said from $300 to $350 a front foot for the highest.

Q. To reproduce it in the neighborhood of the Kraetzer Carriage Company property would cost $250,000?

A. Yes.

Q. To go just across the river and reproduce it there you have given the figure of $97,500?

A. Yes, but when you cross the river you cross the dead line of real estate values.

Q. That has been more so in the past than it is just now?

A. I have not seen the advance on the east side property. We have been in the market as sellers of east side property.

Q. Not such property as that?

A. Generally the advance has been with the west side property, on all the properties, it has been on the fringe to the west.

Q. Precisely what is the basis of your valuation of the Gas
2160 property; on what do you base it, speaking accurately now and precisely?

A. Well, I base it, having the two items as one of the things; I form my basis on two sales, the sale of Jown Rowett to Ben Younker and the sale of George Wright to Mr. Haines; and the general familiarity with property off to the east and south on the river there, and the general value of real estate on the east side, value on the business streets.

Q. What assumptions have you made now with respect to the general values of real estate?

A. I don't wuite understand that.

Q. You say you base your judgment upon two sales, the Rowett sale and the George Wright sale, and upon your general knowledge of east side values?

A. For instance, Walnut street property is selling at $75; and

Grand Avenue property not being able to sell at $100 and the fact that there has not been the growth of population in the town that we anticipated and hoped for.

Q. Why do you recur to the Walnut street sale of $75; that is not the asking price now by any means?

A. No; Hume has built a building on there; that property was for sale a long time before it went for $75.

Q. Don't you know properties that sold on Walnut Street for as high as $300 since?

A. I don't know of those sales; but what are the improvements?

Q. Without improvements?

A. A specific sale of $300 a front foot, I don't know of such.

Q. Do you refer to the sale of $75 a foot some years ago?

A. Yes.

Q. During the panic?

A. No, it wasn't in the panic.

2161 Q. It was an exceptional sale, wasn't it?

A. It was not so considered; I was trying to sell him some property at $100 and he took this at $75.

Q. You was trying to sell on Grand Avenue at $100?

A. Yes, sir.

Q. What is the asking price now?

A. I don't know.

Q. Mr. Hume bought it for speculation?

A. Or investment, whatever you may term it. He has since built a building on it.

Q. Do you know just when that sale was made?

A. I don't recall now, but I should say within about three years. I could look up the record and determine it.

Q. Who was the seller?

A. I don't remember.

Q. A resident or a non-resident?

A. I don't know as to that; I simply know Hume bought a piece of property on Walnut Street.

Q. That is the only sale you have in memory and that is the one you used as a factor in making up your mind as to the value of the gas property?

A. One of the factors.

Q. You spoke about the Rowett sale?

A. Yes.

Q. What property was that?

A. Lots 3 and 4 in Block K.

Q. When was that sold?

A. I don't recall that date; I should say within five years.

Q. Nearly five years ago?

A. I should think so.

2162 Q. And the price of that?

A. $7,000.

Q. For the two lots?

A. Two lots 132 feet square.

Q. The other sale was the George Wright sale; what was that?

A. That was lots 9 and 10 in Block M.

Q. Now, Mr. Wilcoxen was present when you were inspecting the property.

A. Yes, sir.

Q. Did he give you the same figure he gave to Mr. Hauge with reference to the lot over here on the market?

A. We drove over in a machine and he pointed out some ground and said the man asks $7,000 for it. I didn't question him about it; we had fixed—we started over that way.

Q. Did he give you the figures of the Rowett sale?

A. No, I found that from the record. Mr. Wilcoxen spoke of some piece of property that he had for sale for $7,000.

Q. Then upon that assumption east Des Moines property was the dregs of Des Moines?

A. I didn't make it as strong as that.

Q. It was the yellow god anyhow?

A. You can define it.

Q. You put that valuation on it that you wished?

A. No, as I stated, Mr. Read, that the purchase of this Rowett property was $7,000.

Q. Five years ago?

A. Now, since that question is brought up, I would like the privilege of referring to the record and give the dates, of this Lot 9 and 10 in M being sold at $4,500.

Mr. READ: You may do so.

At this time an adjournment was taken until 1:30 P. M.

2163 1:30 P. M., MONDAY, *August* 14, 1911.

B. S. WALKER being continued on cross examination by W. L. Read, Esq., testified as follows:

Q. You have got the dates of those two sales you referred to?

A. I have, yes.

Q. You may give them?

A. The sale of lots 9 and 10, Block M by George G. Wright to Jansen Haines was on October 16, 1905 and the sale of Lots 3 and 4, in Block K was by John Rowat to B. A. Younker on April 18, 1905.

Q. What is your present appraisement of these lots in Block K?

A. In Block K my valuation is $12,000.

Q. The Younker sale was how much?

A. Was $7,000. And the Wright sale my valuation was $6,000 and the sale was $4,500.

Q. Were there any unusual circumstances connected with either of these sales that you know of?

A. Not that I know of, no sir.

Q. Did you have any personal knowledge about them?

A. No information.

Q. Somebody told, you of them?

A. I looked them up on the record.

Q. Somebody in the first instance told you of these two sales?

A. No, after I looked this property over and before I came to a determination as to its value I looked up the record for sales in that immediate vicinity and found those two sales.

Q. I wish you would tirn your attention to Exhibit 5 and along on the north side of Court Avenue just north from the Des
2164 Moines Manufacturing and Supply Co., you observe it do you?

A. On the north side of Court Avenue.

Q. On the corner.

A. Yes, sir.

Q. There is 132 feet frontage on Court Avenue that was sold to or bought for the Bentley & Olmsted Manufacturing Co., a boot and shoe concern?

A. I saw a statement in the paper.

Q. Do you know at what price?

A. I do not.

Q. Did you take any pains or make any effort to find out?

A. No, I did not.

Q. For your information I will state, and you may accept it as *a* authoritative that that property was sold and purchased recently for $22,000. That is to say about $222 per front foot. Does that seem to you to be too much?

A. That would seem to me to be a very liberal price.

Q. Too much for your conservative estimate?

A. It might be.

Q. If that sale were made that would have something to do in modifying or changing your judgment wouldn't it as to the Des Moines Manufacturing & Supply Co. property?

A. Well I would consider the—of course the use for which it was bought, there is a manufacturing plant that wanted a central location.

Q. By the bye, that property on the north side of Court Avenue is not a trackage proposition there is it?

A. No, not trackage property.

Q. Could be worth less than property to the south, south of the street?

2165 A. It would for the ordinary manufacturing purpose only I was told by Mr. Olmsted that they didn't need trackage because they didn't have shipments in car lots. The ordinary factory that gets in material in great quantities of course must have trackage or a great deal of cartage.

Q. That may be a particular circumstance as far as that property was concerned, bur generally speaking trackage property in that district would be worth more than non-trackage property.

A. It would for the ordinary manufacturing purpose.

Q. To what extent of course would depend on the demand for it for that purpose?

A. Yes, sir.

Q. The Des Moines Manufacturing & Supply Company just across the street is trackage property?

A. It is.

Q. So is the gas company trackage property.

A. It is.

Q. The gas company property is only one block away?

A. Yes, one block. It is a long block or ordinary block and a half; it is only the distance between two streets.

Q. The south end of the Des Moines Gas Company's property is more than one block from the Des Moines Manufacturing & Supply Co.'s property?

A. Yes, the block between Court Avenue and Vine street is a half — wider than ordinary blocks.

Q. Do you care to modify your judgment as to the value of the Des Moines Manufacturing & Supply Co's ground, you placed it this forenoon as I recollect at $125 a front foot on Court avenue?

A. Yes, sir.

Q. Don't you think that is too low?

2166 A. I do not sir. It strikes me that was an exceptionally high sale, this other property strikes me as an exceptionally high price and I would not believe that other property would see for any such figure.

Q. Do you know what the holding prices of property on Court Avenue east of this property I have called attention to is?

A. I do not. I had a general talk with Mr. Patrick who owns the Dempster Manufacturing ground some time ago, but he is the only person I talked with.

Q. How long ago was that?

A. That was a year or two ago. I don't recollect the price he made, he said he was anxious to sell.

Q. You don't know the present holding prices of properties on east Walnut street do you from First to Fourth?

A. Well we have a piece of property that we would be glad to sell for $100 or $125 a foot. Aside from that I don't know.

Q. Aside from that you have no information?

A. No.

Q. Do you recall what is was the city paid for the new city hall site at the corner of First and Locust street?

A. My impression, I don't know, but my impression is about $70,000.

Q. $78,000, wasn't it?

A. I don't remember definitely.

Q. And that was ab-ut 100 feet frontage on Locust street and the same on Grand?

A. It is probably something not far from that, but I would rather figure that the other way, Second street frontage.

Q. About $390 a front foot wouldn't it be?

A. If it was a hundred each way it would be 200 feet and

2167 that would figure $390 for $78,000.

Q. That would be $390 per front foot for the frontage on Grand Avenue?

A. Yes, sir.

Q. The same for the frontage on Locust street?

A. Yes, sir, but if I may be permitted to say that property was especially valuable for that specific purpose.

Q. So the gas company property is for that specific purpose isn't it?

A. Well I don't know whether some other location might not be just as good for the gas company as the present one, it is a convenient location.

Q. Assume it would not be.

A. If that is the only place they could make gas of course it would be especially desirable one.

Q. Assuming it to be well adapted for the business, it is centrally located?

A. Yes, sir.

Q. Accessible from all points?

A. Yes, sir.

Q. Served by trackage well by more than one railroad. That would be worth more for that specific purpose just the same as the city hall lot would be for the city hall site?

A. Yes, if necessary for them to have a location well served by trackage, as to the advantage of that identical spot for a gas plant I am not prepared to say that it would have great advantages over any other one where it has the same amount of ground and trackage.

Q. In fact it is then worth more money than you have given in the start is it?

A. I gave my best judgment on its value for that purpose.

2168 Q. Yes, from your point of view. You say the city hall site was exceptionally valuable for that purpose?

A. Yes, I do.

Q. And you testify then the value of $390 a front foot, that was the Grand Avenue frontage and Locust?

A. Well I was not buying that property, they bought it and I assume the best price they could get.

Q. You think that was too high?

A. Frankly I do yes.

Q. How much too high do you think it was?

A. I would think $50,000 would have been a very good round price for that property, but I was not consulted when it was bought.

Q. I am just inquiring because I imagined you being conservative thought that possibly too high?

A. Yes, I do.

Q. On west Locust street you said property graded down to about $400 a front foot next to the river is that right?

A. I was under the impression I said five. Call it five.

Q. Go across the river what is it worth immediately on the other side of the river?

A. On the east side?

Q. Yes.

A. Oh I would place the highest value on vacant property there at $150 on Locust street.

Q. Where do you find that property.

A. Well I should find it any place between the river and 4th street.

Q. What would be the highest, you said vacant property?

A. I would consider the most valuable property that on the river front which would be across from the city hall what would be the northeast corner of Locust and Front.

2169 Q. What would you call that worth?

A. Well the 132 feet square, I should think $250 possibly a front foot would be a very high price for that would be top proce for that 132 feet front on the river and on Front street and Locust street.

Q. Were you on the condemnation board that appraised that?

A. I was not.

Q. Were you a witness in court?

A. I was not. I was not aware there had been condemnation on that 132 feet.

Q. You are speaking of the property known as the Snook property?

A. It belongs to Hubbell. I was endeavoring to testify about the property across on the east side of Fr*no*t street and the south side of Locust, the east side of Front.

Q. The old Bottling works?

A. No, the bottling works was on the west side of Front street; ran down to the river.

Q. I am talking about property on the west side of First Street that was condemned and is now part of the parkage over there. What would you call that worth. There on Locust street?

A. Well I should think $250 a foot was a good price for it.

Q. Do you know where the Shaver Carriage Co. property is, the corner of Third and Locust?

A. Yes, sir.

Q. What is that worth on frontage?

A. I would say $150 a front foot.

Q. Do you know what the holding price of properties along there is?

A. I do not.

Q. What do you *gua*ge prices by?

2170 A. Well on the rental that you derive, and on the property of the Stewart estate as on Walnut and Grand Avenue.

Q. You are capitalizing the income, are you?

A. Yes*m* that is about it.

Q. And that without regard to the holding or asking price?

A. Yes, sir.

Q. And without regard to the price you could buy such properties for?

A. Well properties in there have been—I have heard statements that property was sold there for $200.

Q. You thought it was too high didn't you?

A. I thought that was a good fair price for it.

Q. Butler property about $150 a front foot?

A. Yes, sir.

Q. Frontage on Locust street?

A. Yes, sir.

Q. Do you know where the Bolton property is?

A. Across the street some place.

Q. Do you know what the asking price of that is?
A. No.
Q. Don't know the holding prices of any properties along there?
A. I do not.
Q. All you do know is the Stewart estate has got some over on Grand north of that you would be goad to sell for so much?
A. Yes, a hundred dollars a foot.
Q. But you don't know the holding price of property on Locust street?
A. No, sir. I have seen that property on Locust street and Grand Avenue go down 50 per cent on the asking prices.
Q. And you have seen them a good deal cheaper than they
2171 are now too haven't you?
A. Of course these people—there have been a number of sales on Grand Avenue I have not investigated.
Q. The truth of the matter is, you don't regard east side property, Locust, Walnut, Court Avenue or Vine street down there of much value relatively?
A. Relatively I do not, no sir.
Q. You regard it as cheap stuff?
A. I do as compared to west side property.
Q. Do you know a tract of thirty three feet on the northeast corner of east First and Locust streets, of about 132 feet deep?
A. I know that location, yes, sir.
Q. Do you know what that is held at?
A. I do not.
Q. Did you inquire?
A. I did not, no.
Q. Do you know who owns it?
A. I do not.
Q. Did you ever hear it was held at $15,000 or practically $500 a front foot?
A. I never heard that, no sir.
Q. Of course you would think that too high too?
A. I would think that too high.
Q. There is 22 feet on Locust street just west of the Northwestern track owned by J. H. Phillips, Harry Phillips, do you know what that is held at?
A. I do not.
Q. Do you know whether it is held at $8,000 or not?
A. I do not. Harry is amply able to hold it at most any price.
I base my valuation on what property would produce with a
2172 reasonable anticipation of increase.
Q. You take the income that can be produced from the property and after paying taxes and expense of keeping you capitalize the income?
A. Yes, and if it is situated where the growth of the city is toward it I would add something in anticipation, speculation.
Q. Capitalize at 5 per cent or six per cent?
A. I would capitalize it on six per cent.
Q. So in figuring the Des Moines Gas Company property you necessarily assume some income that could be produced from that?

A. Oh surely.

Q. What did you assume, what income?

A. Well I hardly—well I figured that—I probably a little anticipated myself. Speaking of the gas company and considering their use of it in the gas company's use of it, I did not figure a specific rate of interest or income that they would get on that property. I simply figured the value of that property as any person would buy it to use for an ordinary commercial use.

Q. You have given us aggregate values on the company's property of $97,500?

A. Yes, sir.

Q. What rental do you figure would be produced from that as a basis for your valuation?

A. I did not make any single estimate of that particular property But I was trying to state in figuring the question of value *on* I would figure a specific piece of property as to what it was worth as to the rent that might be obtained from it, that would be my basis of value.

Q. Take lots 9 and 10 in Block M, you have given us a valuation of $6,000?

2173 A. Yes, sir.

Q. Now what income did you figure that that property would produce?

A. It would be very hard to figure any income from that property.

Q. Did you figure any income from that?

A. I figured no income from that. That property along there I would figure would simply be held--that its value would be anticipatory, if a factory came along and wanted a piece of ground they could pay that amount of money for it, you would have to get an income in the increased price above what you bought it at.

Q. You figured no income then for lots 9 and 10?

A. No.

Q. It is in use now?

A. Yes, sir.

Q. You allowed nothing for that use?

A. I figured it was in use, both used as part of the plant and adjoining ground lying along side of it, in other words take that piece of ground and detach that building and there would be no important income. I assumed no income from it putting that value of $6000 on it.

Q. Lots 9 and 10, Block B did you as-ume any income there?

A. No more than the general use of the property by the gas company.

Q. What did you assume the general use was worth by the gas company?

A. Well about the only way to answer that would be to say the interest on the valuation that I placed on it.

Q. That is going around in a circle, that don't get any place.

A. In none of that property, none of these values did I figure this company gets a certain per cent from this property.

Q. Did you assume this on the income that could be
2174 obtained from that property by the owner. Did you do that?

A. Simply in this way. In figuring these values I figured if there was a use for it for actual manufacturing purposes or for actual occupancy that use would be worth a given rate of interest at six per cent on the valuations I made. In other words *in other words* there was a valuation of $6000 I would figure worth $480 use to the plant.

Q. I understood you, you capitalized the income to obtain value.

A. As the general valuation to determine the values.

Q. You don't get any place assuming a valuation and then saying the rent is worth the interest on that much capitalization do you?

A. Well I figure a value that when the property is used when there is somebody to use it and they put it into use that it must pay an income on what the property is worth.

Q. How do you fix values then by that?

A. Well I would figure a manufacturing plant could afford to pay so much for its ground based on general sales in that neighborhood if the price was too high for them they would have to go to some cheaper neighborhood. Where a piece of ground is vacant like this stuff along the track, a man who buys that for speculative purposes expecting to hold it until somebody comes along he can't use it, in other words he must get unearned increment as his profit.

Q. Here is the gas company the property all in use. What is the calue of the use?

Objected to as not proper cross-examination and incompetent.

Q. In that same connection how much rental would a person have to pay to obtain the use of all of that ground?

Objected to for the further reason that the witness has already explained three different times the manner in which he
2175 arrived at his valuation in real estate.

A. In determining my values I figured that the use of the gas company would be the same as the use of any other occupant of these lots, I did not figure there was a specific value in their use by the gas company about other use by a factory or warehouse or any other manufacturing purpose.

Q. What would be the rental value then for any purpose, any use to which the property is adapted?

Same objection.

A. Well six per cent of the real estate values would be a fair rental in my mind.

Q. Now then what are the real estate values?

A. Well $97,500 in my judgment on this property.

Q. A moment ago I started out by asking you a question and you said you determined values by capitalizing the income or rental.

A. Yes, sir.

Q. Now I find that you assume a value first and then figure the income from that, am I right about that?

A. Well hardly. It is probably like little Lord Fauntleroy in Mrs.

Hodgson's book he said he was a very poor "'splainer" and that may be my difficulty Mr. Read. I have tried to state this, if you will permit me that the question of the value of a piece of property, the thing that would occur to me would be what can that be used for and what price can be paid for its use and if it is property for which there is immediate demand it is comparatively an easy thing to determine that value. If it is outlying property that the demand is uncertain, that there is no ready market for it, has to lay there until some concern comes along and wants it the man who buys that property must pay the anticipatory value on it, the
2176 speculative value covering the period held while not productive.

Q. You had the problem presented to you of placing a value on the gas company property?

A. I did.

Q. Precisely how did you do it?

A. I looked the property over and I looked up sales of these particular pieces, I knew of the sales of the property on Walnut street and Locust and the prices we were asking for our property and on that basis I came to this conclusion.

Q. Isn't it a fact Mr. Walker that properties, quarter blocks on Mulberry street at 10th and Mulberry along through there and this side of there five years ago would not and did not sell for more than $10,000 a quarter block?

A. Yes, that is true.

Q. It is true now is it not they are selling for as high as $20,000 a quarter block, held for that?

A. I know they are held at very high prices, I know a friend of mine who has bought one said he would like to know what to do with it.

Q. Well he better sell it again at advanced prices.

A. He is the fellow that paid the advanced price.

Q. Do you know a property on the corner of east First and Walnut street that was condemned about a year ago by the city for park purposes belonging to Dr. Patterson?

A. Yes, sir.

Q. Do you know the price?

A. I don't remember the price. I saw the condemnation and looked ot over.

Q. Let's see if I can't refresh your recollection. That was forty feet frontage on First street and 47 on Walnut, do you
2177 recollect the price?

A. I do not. There was a bunch of those, I read it over at the time and paid no special attention afterwards.

Q. Don't you recollect the price of the Patterson property was $8500 or $8,250?

A. I don't recollect these different prices, there was quite a number of condemnations in there and I don't recollect the irems of each condemnation.

Redirect examination by R. O. BRENNAN, Esq.

Q. You have been identified with some of the institutions here in the city, that is Commercial Exchange?

A. Yes, sir.

Q. You were formerly president of that organization?

A. President of the Commercial Club, yes.

Q. You are also a member of the Greater Des Moines Committee?

A. No, I am not. As I said I simply helped pay the freight.

Q. Have you laid out additions to the city of Des Moines?

A. I have, yes.

Q. How extensively have you been engaged in the real estate business in that connection?

A. With the Vermont Syndicate that laid out Kingman Place a matter of twenty five years ago I was one of the inforporators and the first secretary of that. That is the country that is bounded by 28th and 30th and Kingman Boulevard and old North street, now University Avenue. Then I have been identified with Clifton Heigh- company for 20 years past.

Q. So you have been actively engaged in the real estate business in the city practically all of your residence in the city?

2178 A. Yes, sir. Then as I stated I was one of the trustees of the Joseph B. Stewart estate.

Q. How extensive were the holdings of the Joseph B. Stewart estate?

A. They had probably $250,000 worth of real estate.

Q. Some of it down town property.

A. Yes, some of it.

Q. Now Mr. Read persisted in saying that this property that you refer to on east Walnut street was up against the railroad. I don't know whether that detracted from its value or not, and I would like to have you tell the master just where the property is located?

A. It lies west of the alley that is west of the Northwestern Station on Fourth and Walnut.

Q. Now another thing, Counsel asked you about the value of the use of this property to the Des Moines Gas Company and of course you keep in mind that in connection with the use is the use of all the streets and highways which they use for their distribution system do you not?

A. That would count, yes.

Q. So that it would be as you say hard for the purpose of determining just what rate of return was accrued from the real estate itself.

A. I don't want to be understood to testify as to what rate should be paid on the company's investment. My statement of percentage was intended as indicating a general factor to determine values of real estate.

Q. You were also placed in a position by counsel in that you were required to assume that in case parties were organizing a gas company that there was no other site in the city which they could pur-

chase. Now I would like to have you tell the Master in a
2179 general way just what factory sites are available contiguous to railroads either in South Des Moines, East Des Moines, West Des Moines or North Des Moines?

A. Well it is practically without limit taking railroads with the cross roads and the outside territory after you get out a mile and a half or two miles all that northeast country that Mr. Hauge testified about, then the Highland Park country crossing over the Belt Line and all of the southeast bottom and all of the south side, there is hardly any limit. We have 54 square miles in the city and I suppose there is occupied possibly fifteen square miles and the rest of that is available for factory sites and the tracks, it is possible to run spurs from the tracks and cover the outlying country immediately continguous to the close settlements.

Q. The Rock Island, the Keokuk division, the Wabash, Burlington, Des Moines and St. Paul all enter the city from the east.

A. Yes, sir.

Q. And their tracks parallel each other?

A. As they enter, yes.

Q. The Northwestern Railroad runs in a northeasterly direction from its station?

A. It does, yes.

Q. Then after it gets east to 14th street it runs——

A. Practically north.

Q. And the Chicago Western after it leaves east 20th street in what direction does it run?

A. That runs practically north parallel to this so called short line.

Q. And the so-called short line is the Des Moines & St. Paul.

A. Yes, sir.

Q. Now controlled by the Rock Island?

2180 A. Yes, sir.

Q. So that all the railroads that reach West Des Moines come by way of the east side of the river except the Milwaukee road?

A. Except the Milwaukee road, yes.

Q. The Northwestern does not enter the Union station or any other station in west Des Moines?

A. No.

Q. Now it is a fact is it not Mr. Walker in the city of Des Moines that for instance you may find at Sixth and Walnut streets property that is worth from $2,000 to $3,000 a front foot yet you may go two blocks from that particular point and find property way below that?

A. That is true.

Mr. READ: I suggest that — easily open to the objection leading and suggestive.

Q. The retail section of the city of Des Moines, the principal retail section in West Des Moines is bounded by what streets?

A. It is bounded on the south by Walnut, the southside of Walnut on the north side by Locust and on the east by Fourth and on the west by Ninth. That covers the heart of it.

Q. The heart of the retail section of the city of Des Moines?

A. Yes, sir.

Q. Now as you radiate from that center in any direction what is the fact as to the general range of prices?

A. The prices are very much less and especially as you go to the east or to the south of it. As you go north the growth of the city being north and west the values have increased in these directions more than elsewhere, that is asking prices have.

Q. Counsel tried to have you say in east Des Moines,
2181 that is you sort of threw cold water on east Des Moines. You don't mean you have any particular aversion to east Des Moines or anything of that sort?

A. Not at all sir. I was trying to state what my experience had been, the difference between east and west Des Moines real estate. I was trying to state facts as I saw them without any malice towards east Des Moines.

Q. Simply looking at conditions as they appear with regard to real estate?

A. Yes, sir.

Q. You were asked about property along Front street in East Des Moines. You were asked about the old Butler property which is now under investigation in district court under condemnation proceedings. Do you know the property immediately south of that where Mr. McGrew used to live between those two blocks?

A. I knew McGrew had a piece of property there.

Q. Do you know at what price it was sold to the city?

A. I don't know. I know that the city bought one or two pieces in *in* and condemned the others, I saw the result of the condemnation or award but didn't follow it up, I read it as published in the papers.

Q. Your attention was called to that by reason of property at 1st and Walnut street, I believe some reference was made to the Paterson property and the price $8,250. Do you know just what claim was made when the matter was under investigation in the district court on an appeal from the sheriff's jury?

A. All that I saw the newspaper statements that he claimed to the river line, that he was claiming greater depth than the city conceded.

Q. You don't know whether he got that or not?

2182 A. I don't know sir.

Q. He was claiming some $15,000 or $20,000 did you know that?

—. I didn't know that. I remember the Taylor case, I paid more attention to that than the condemnation. The Taylor case decided the river line did not include artificial filling and my understanding was that Patterson claimed to the river line not including part of this that was platted.

Q. His claim in that case was based upon the Walnut street frontage?

A. I would naturally suppose so.

Q. Rather than the Front street?

A. Yes, sir.

Q. Now the city hall site, he asked you about that?
A. Yes, sir.
Q. And your remembrance is that they paid $87,000?
A. $70,000 was my impression, Mr. Read stated $78,000. No doubt he is right?
Q. That is some distance from the gas works is it not?
A. Yes, four or five blocks I would say. It is between the third and fourth block.
Q. Well the gas works is south of the Rock Island railroad?
A. Yes, sir. Would be a block and a half as we figure blocks, it is a long block to Court and Walnut would be two and Locust would be three. It would be three and a half blocks as we measure blocks and the width of the street, that is from the south side of the Walnut track would be three and a half blocks and the width of the street to the south line of the city tract.
Q. Suppose you start the west side of the river at say Sixth and Locust and proceed three blocks south and is there any difference in the value of real property?
A. A vast difference.
2183 Q. About what percentage of difference?
A. Well that would take you there to south of Vine street on Sixth, of course there you get into some valuable trackage, but there is a difference there, the Sixth and Locust frontage would be worth six times, easily six times in my judgment as Sixth and Vine frontage on west Sixth.
Q. Now as you proceed south from east First and Locust street is the range of prices higher or lower?
A. It is lower.
Q. I believe you have said there are tracts of ground in south Des Moines which are available for manufacturing institutions.
A. There are.
Q. Any railroads in south Des Moines?
A. Yes, the Great Western is there.
Q. What advantages come to a manufacturer by reason of the Des Moines Union, the transfer privileges that obtain in Des Moines?
A. To answer personally I had or did have a lumber yard on the south side and it was convenient to have my cars of lumber set on the buggy works switch, as it was called, and the transfer charges were absorbed by the shipping road was my understanding so my understanding is the shipper on any of these lines get cars set to his track or his switch without any specific payment for it.
Q. I presume there are certain lines *if* business where it would be a great advantage to be close in and be near the business center.
A. Yes, there are.
Q. But where you are manufacturing a product which is delivered *to* under conduits, mains or pipes, all over the city there would not be that same necessity as where you had a business which requires it to be close in or in the business center.

2184 Mr. READ: I don't believe Mr. Walker is qualified to give an expert opinion on the gas business.

A. Storage houses would have to be close in but a concern that

people did not have to go to the plant could be farther away in my judgment.

Q. Without suffering any inconvenience?

A. Yes, sir.

Recross-examination by W. L. READ, Esq.:

Q. You of course don't know anything about what the cost of constructing underground pipe means?

A. Only laying water pipe, Mr. Read up to Clifton Heights where I could not get the water company to do it.

Q. That is just one pipe.

A. Well it has been several pipes, several times.

Q. You this forenoon said you made some distinction between outside and inside business property?

A. Yes, I did.

Q. You mean in each instance inside property is worth more money.

A. Yes, far more.

Q. Very great deal more?

A. Very great deal more.

Q. Your south side Clifton Land Company property is residences is it not?

A. Well largely, we have land adapted to factory purposes but of course it is chiefly residences.

Q. It is not a factory district to any considerable extent?

A. Not any considerable extent although we have factories over there.

2185 Q. This Stewart estate is on the east side is it?

A. The great bulk of it, but there are scattered properties.

Q. You since you have been engaged in the Clifton Heights land deal have not made any deals in other east Des Moines or west Des Moines business property or manufacturing properties have you?

A. Yes, I have sold on my own account property on——

Q. On the south side?

A. No, I am speaking of this at Second and Chestnut Street property I have been instrumental in disposing of *that* the last few years.

Q. But you have not been active in the general real estate business?

A. No.

Redirect examination by R. O. BRENNAN, Esq.:

Q. In your valuation of the real property of the Des Moines Gas Co., does the amount which you have stated $97,500 represent your independent judgment as to its valuation uninfluenced by any other valuation that has been placed upon the property by any other witness in this case?

A. I have arrived at it from my own conclusions.

Witness excused.

2186 W. H. ARNOLD being called on the part of the defendant and sworn and examined in chief by R. O. Brennan, Esq., testified as follows:

Q. Where is your place of residence?

A. 1032 west 20th street.

Q. City of Des Moines?

A. Yes, sir.

Q. How long have you resided in this city?

A. Came here in 1886, 25 years this fall.

Q. What has been your business during your residence in Des Moines?

A. Buying and selling property.

Q. All sides of the river?

A. Yes, sir. Mostly on the west.

Q. Have you handled any large estates for non residents during your experience as real estate agent in Des Moines?

A. I handled the Cranston estate and I handled estates for Mr. John Gibson a few years ago. That has been a number of years ago.

Q. Where is your office?

A. 201 and 03 Youngerman Block.

Q. And in the course of your business of buying and selling real estate have you become acquainted with the market value of real estate in Des Moines?

A. Yes, sufficient for my use and my clients at least.

Q. Does your business take you into the sale of business property as well as residence properties?

A. Yes, sir.

Q. You have handles a good many business properties in Des Moines?

A. Some, not as many as some, but some.

2187 Q. Have you made an inspection of the real estate of the Des Moines Gas Company?

A. Yes, sir.

Q. I wish you would tell the Master if you knew what the reasonable market value of that property was, say, about January 1, 1911.

A. As a whole?

Q. The questions first whether you know?

A. Yes, I think I know.

Q. I call your attention to the plat before you or blue print which is marked Exhibit 5 in this case, and call your attention first to Lots 9 and 10 in Block M of Scott & Dean's Addition and please state to the court what in your judgment was the reasonable market value of these lots at the time to which I have called your attention?

A. I placed these at $50 a front foot, $6,600.

Q. Now referring to lots 9 and 10 in Block B shown upon the plat Exhibit 5, please state to the Master what in your judgment was the reasonable market value of those lots on January 1, 1911?

A. $55 a front foot for the frontage, 132 feet, $7,160.

Q. Referring to lots 3, 4, 5, 6, 7 and 8, in Block B shown upon the plat Exhibit 5, please state to the Master what in your judgment as the reasonable market value of these lots on or about January 1, 1911?

A. I took the values, the railroad values here, 264 feet and I put that at $70. That is that would take in 4, 5, 6, 7 and 8, that would be $18,480. And then I took 3, as about 44 feet and it is too long to back there for it for trackage, I valued that at $40 a front foot making $1,760 for that 44 feet.

Q. Just what 44 feet are you referring to?

A. Well 44 feet if you take as that plat shows it would be the north 44 feet of Lot 3. This is 1, 2, 3, 4, 5, and 6 and there
2188 is more lots on this side than that. In the east there are four lots and on the west six.

Q. I was asking you about the six lots in block "B", 3, 4, 5, 6, 7, and 8?

A. That would *ne* $20,240.

Q. Referring to lots 4, 5, 6, 7, and 8, in Block C, please state to the Master what in your judgment was the reasonable market value of these lots on or about January 1, 1911?

A. I valued these at $26,400.

Q. Referring to lots 3 and 4 in Block *k*, shown on Exhibit 5, please state to the Master what in your judgment was the reasonable market value of those lots about January 1, 1911?

A. I valued those at $90 a foot or $11,800.

Q. Referring to lots 3, 4, 5, 6 and 7, in Block "T" shown on Exhibit No. 5, please state to the Master what in your judgment was the reasonable market value of those lots January 1, 1911?

A. $4,000.

Q. Now Mr. Arnold please tell the Master what the aggregate value of the several tracts of real estate to which your attention has been called was on or about January 1, 1911?

A. Did you call my attention to 1, 2, 3, 9 and 10, in Block C?

Q. I will ask you now, about lots 1, 2, 3, 9 and 10, in Block "C"?

A. I placed those at $75 a front foot or $20,000.

Q. Did I ask you about lots 3 and 4 in Block K?

A. Yes, sir.

Q. Have you given separately the valuation upon all the real estate of the Des Moines Gas Company?

A. That you asked me, that I have looked at.

Q. What is the aggregate?

2189 A. $96,200 unless I have made a mistake in figuring it up.

Q. You say now Mr. Arnold in your judgment as a real estate man that that is a reasonable market value of the property?

A. Yes, sir.

Q. That was $96,240?

A. $96,200 and something, yes.

Cross-examination by W. L. READ, Esq.

Q. Lot 3 in Block B you valued at $40 a front foot?
A. Yes, sir.
Q. Why?
A. No trackage only in connection with the other.
Q. That is also true of lots 2, 3, 4, and 5, in Block C isn't it?
A. There is trackage here—you are asking about B now?
Q. About C. You say that lot 3 has no trackage. I say to you isn't it true that lots 2 and 5 have no trackage?
A. If there is no alley through there but it makes it longer—that is true but you make 132 feet back here about as long as you usually get when you get beyond that it is the distance from t-ackage makes it a little bad.
Q. Lot 4, is just as far from the track as lot 3 isn't it?
A. No.
Q. Why not, lot 4 is the third lot from the track on Market street and lot 3 is the third lot from the track on Elm street?
A. But other parties I understand own the ground between, hence, it is not accessible.
Q. You think a depth of four lots is too much to count for trackage property so you leave off one lot?
A. Yes, sir.
2190 Q. Make it non t-ackage and then price it as non trackage?
A. Yes, sir.
Q. That is the idea?
A. Yes, sir.
Q. What uses do you assume that property is fit and adapted for?
A. For manufacturing and such purposes as its present us
Q. Storage?
A. Yes, sir.
Q. Manufacturing?
A. Yes, sir.
Q. It is well served by trackage?
A. Yes, sir.
Q. And I think you said that it was fit and adapted for the use which it is now devoted to?
A. Yes, sir.
Q. Do you know any place over on the east side south of Court Avenue west of Fifth street and north of Elm where one might obtain as much as two blocks and a half of contiguously located property for his use?
A. No, I do not.
Q. It is not over there?
A. I looked up about a year ago and had some maps, but I have laid them away.
Q. Do you know any place in west Des Moines south of Mulberry and west of 12th or 15th if you want to go that far west and north

of the Hubbell property where you could find as much as two blocks and a half of trackage property contiguously located?

A. No, I do not.

Q. It is not there is it?

A. I don't know. A. Not thoroughly. No I am just
2191 speaking—I don't remember, I don't know.

Q. Your impression is that there is no such body of land in that district?

A. It might be but I have not investigated, I don't know.

Q. What is the range of prices on Mulberry street and Vine street west in that district?

A. Where on Mulberry?

Q. Tenth and Mulberry, Seventh and Mulberry Eighth and Mulberry and along the same streets on Vine?

A. Well take it perhaps on Tenth and Mulberry some would make a difference on the south side and north, on the north there would be worth running back 132 feet would be worth $400 say at 10th and Mulberry.

Q. Well Tenth and Vine, Eighth and Vine, along in there, what would be the range of prices?

A. Vine is north of Elm, between Elm and Cherry?

Mr. BRENNAN: Vine is the Rock Island railroad.

A. I have not sold any in there, I have figured with some party there, but I have not sold any. They offered me the Ellsworth property there,—that is Seventh.

Q. That is all right, speak of that.

A. They offered me that about that time for $40,000.

Q. When was that?

Q. That is less than a year ago. I think last winter.

Q. What is it worth now?

A. Oh it is worth some more than that I think.

Q. That has been doing service with you quite awhile for cases of comparison hasn't it?

A. I don't know as I ever referred to it before.

2192 Q. It is worth more than $40,000 now isn't it?

A. Merely a matter of judgment.

Q. It has been sold for more than that lately hasn't it?

A. I understood it, but I don't know it to be a fact.

Q. What did you understand it to be sold at?

A. I just understood it was sold, I don't know how much.

Q. $60,000?

A. I didn't understand so.

Q. What did you understand?

A. Just that it was sold.

Q. As a real estate man you have had no curiosity to find out?

A. Not specially.

Q. The Sheurrman property is held at what?

A. I don't know where that is.

Q. Adjoining the property you just mentioned on the west?

A. I have not examined into it.

Q. Have you examined into the Des Moines Ice Company property?

A. No, sir.

Q. What is the property of the Des Moines Manufacturing & Supply Company on the corner do you know where it is?

A. I never looked into that. How much do they have?

Q. It is the corner of *east* First and Court, it is more than a

Q. It is the corner of west First and Court, it is more than a quarter block nearly a half block I suppose.

A. Well I think that would be worth $150 a front foot.

Q. The property just across the street on the north side of Court is worth what, that quarter block.

A. I don't know the names of the people over there, I could not refer to it by the names of the people.

Q. Refer to it by location, it is on the northeast corner of Court and First.

2193 A. Would it be a quarter block?

Q. 132 feet front.

A. On Court Avenue running back 132?

Q. Well goes back the depth of a lot, I suppose 132, yes.

A. I have not looked into this, I have some general idea. I would not make much difference with that and on the other side of the street.

Q. You are aware are you not that property has been purchased, the north side of Court for the use of Bentley & Olmsted Shoe manufacturing business?

A. I didn't know just where they did buy no sir.

Q. Do you know the price?

A. *Nom* sir.

Q. For your information I will state to you the price was $27,000 for the quarter block, $222 a front foot. How does that sound to you?

A. Sounds pretty big.

Q. Too big does it?

A. Yes, sir.

Q. You have constantly used the term you have not looked into these properties. What do you do, what do you ascertain when you look into them what process, how do you make out the value?

A. What they are good for or what they are liable to become in the future. What they may be used for, the surrounding trackage if any and other things that are liable to come near them.

Q. You have looked into the Des Moines Manufacturing & Supply Company property?

A. No, sir.

Q. So you don't know what it is good for, you don't know what the future is likely to be?

2194 —. ——.

Q. That is all you have of the gas property isn't it?

A. Well I looked into that more, I looked into that matter.

Q. You went over there and looked at it?

A. Yes, sir.

Q. What did you determine in that respect as to the future of the property?
A. I think it has a future to it.
Q. You didn't see much future to it did you?
A. Yes, I think it has a future to it, yes.
Q. It is good trackage property isn't it?
A. Yes, sir.
Q. Specially good?
A. I don't know especially good, it is good.
Q. It is close in isn't it?
A. Yes, sir.
Q. It is how far from the new city hall?
A. About three blocks.
Q. That is not very far is it?
A. No.
Q. Close isn't it?
A. Yes, sir.
Q. How far from the new post office?
A. According to what you call across the river. Not very far though.
Q. Across the river and south one block to the north line of it?
A. Yes, to the north line.
Q. It is close in well located trackage property isn't it?
A. Yes, sir.
Q. It is good trackage property?
A. Yes, sir.

Q. What is the Krtazer Carriage property worth on the
2195 west bank of the river fronting on Vine street?

A. I don't know how the railroads are, I don't know how that comes in the railroad I know where it is, I don't know how the railroads strike it.
Q. It has trackage on one end of it.
A. I don't know the shape of the ground and all that that enter into it.
Q. What about the Waffield Pratt Howell Grocer Company?
A. I don't generally aim to testify to things I have not looked into have a general idea.
Q. I just asked you about the Warfield, Pratt Howell Grocery Co.?
A. That is the Grocery Company on Walnut?
Q. Yes. I am speaking about these properties without the buildings, the ground alone?
A. That is on the corner of First and Court isn't it?
Q. Yes, the south side of Court?
A. How many feet have they got there?
Q. I suppose they have 132 feet, how much is it worth a front foot? In other words what is property worth at that place by the front foot?
A. $300.
Q. The Brown-Camp Company property on the north side of the street how much is that worth?

A. Well about the same across the street from it.

Q. About $300 a foot. Suppose you had a commission to gather up under one ownership or for one person two blocks and a half of trackage property inside and you were limited to a district in east Des Moines south of Court Avenue west of Fifth and north of Elm and limited on the west side between the river and 12th or 15th street south of Mulberry and north of Tuttle, what would
2196 it cost to gather up at prevailing current prices?

A. Oh I don't know as I could answer just what it would cost. There wo-ld be a difference in those places there I should judge but just what it would cost I would not want to say.

Q. What it would cost would be a pretty fair index of what it would be worth?

A. Not necessarily so.

Q. Why not?

A. Because if you had a little piece or good fair piece and wanted to make out the square you could afford to pay more to finish out the square than you could the little piece of land. You can't always judge property by what you can buy it for or what you sell it for.

Q. It would cost more humanly speaking to gather up a large tract such as two blocks and a half in such locality than to buy one lot independently?

A. Yes, sir.

Q. How much more, half?

A. I would not wonder if it would cost half more because when you start to pick it up the other fellow raises on his.

Q. You will run across some people who will not want to sell?

A. Yes, sir.

Q. And run across some people that had a notion as to what the value was and you would have to pay him his price wouldn't you?

A. Might not want to sell.

Q. So that you figure you probably would have to pay double?

A. Well have more any way, 50 per cent more to pick up that amount.

Q. You haven't handled any properties over in the vicinity there of the gas company property have you?

A. Not very close there. A little over on 4th street, but
2197 nothing to speak of.

Q. You haven't paid any attention to it? Over there?

A. Oh yes.

Q. You haven't paid much attention have you?

A. Not much no, but just a general idea.

Q. Your activities have been mostly in west Des Moines haven't they?

A. Mostly yes.

Q. Mostly in residence property?

A. Mostly.

Q. What business properties have you been interested in selling and handling as agent?

A. I have handled and sold to Mr. Hubbell the Ellingston prop-

erty south of Elm street near the track. Have some holdings on Mulberry.

Q. That was how much property?

A. Oh quite a little frontage.

Q. How much consideration?

A. $75,000.

Q. Aside from that what have you handled?

A. I have handled property on west Walnut street, some on Locust street some on Mulberry, some years ago, I have not late years, nothing very much in there.

Q. Of late years prices have run away from you haven't they?

A. No I don't think they have. They have got higher, I don't think they have run away from me.

Q. I was just wondering whether you have been able to keep up to them or not, whether you always try to buy at low prices. There has been a good deal of property handled in there?

A. Yes, sir.

Q. You haven't handled it all?

2198 A. No, sir.

Q. In fact mighty little of it haven't you?

A. Very little of it yes.

Q. You haven't handled any over in the east Des Moines district?

A. I have had something to do with some over there, I have not been agent for any properties except lots and there are several ypu can pick up there at your own price on Fourth street. On east First street over there are several little houses and lots and on Fourth street south little houses and lots and a year age I took about a half a day or a day to look up matters from Fifth street to Ninth street along trackage and prices on them and I tried to find that map.

Q. From Fifth to Ninth on the east side?

A. Yes, sir.

Q. Where did you find any trackage property in there?

A. All along on the track I found different lots, not big pieces I could buy together.

Q. Of course that district over there is not a retail district, no depand for small lots?

A. Not a retail. I picked up several there, I tried to find that plat, I didn't want to go over it again to see the places given me, but it was much lower than——

Q. West Des Moines?

A. And than I gave you on the gas company too.

Q. By the bye, how did you figure out the gas company valuation, precisely the basis and method of determining value you have given us on the gas property?

A. There is only one way I know of and that is to draw to some extent on your imagination what the thing is going to be in the future, what it has been in the past and the uses that it can

2199 be used for in the process of development.

Q. And from that somehow in some manner you evolve prices and values fo you?

A. Yes, sir.

Q. How do you do it, how did you do it in this case?

A. I just told you.

Q. I don't understand.

A. Just the same process, take what it had been and the price that it is liable to be in the future chance of future growth and uses to which you can use it in the meantime and income you are liable to get out of it and the interest on your investment in the future. No other way I know of.

Q. You didn't figure this from the point of view of the utility to a person who wanted to use so much as the entire tract of the gas company?

A. Oh yes, what it is used for now yes.

Q. What use did you make of that thought in arriving at your valuation?

A. From the us*u*ing it and it is perhaps to continue to use it.

Q. What conclusion did you reach as to the value of the use of the gas company?

A. Per*g*aps it would pay them a percentage on that investment in the growth of it.

Q. Don't you think a good way to have determined something about *about* value was to have undertaken to gather together so much property in the same locality equally closely situated in?

A. No, I don't believe that would be a good way to do it.

Q. Why not?

A. Well it would not be the true way.

Q. Why wouldn't it be the true way?

2200 A. You might find difficulty in getting that in one locality now. There have been other tracts.

Q. The gas company is using this company now isn't it?

A. Yes, sir.

Q. It seems to your understanding to serve the company's use, the property seems to be well enough adapted?

A. Oh yes.

Q. Suppose something were to happen that would deprive the gas company of the use of this property and it was obliged to get another property equally large and equally convenient, equally adapted for its service, be equally convenient I mean situated no more remotely from the center of the city than it is. Now I asked you some time ago what it would cost to procure that much property in some of these other localities and you didn't answer me.

A. I don't know where I could get it.

Q. Take it in the west Des Moines district which I named then it would cost two or three times as much wouldn't it?

A. I don't know what could be bought. What I sold sold for a good deal less.

Q. You are talking about the Ellingston property?

A. Yes, sir.

Q. That has been sold since that time at a good deal more money?

A. Oh no, it has been resold. I don't understand the Ellingson property has ever been sold.

Q. It would cost very much more than it would cost in east Des Moines, the same locality I have described?

A. I have that thought in mind if they ever abandoned it it could be sold to anybody else.

Q. I am not supposing an abandonment of it. I asked
2201 you if it would not cost a great deal more money to buy an equal area of ground in west Des Moines between the river and Fifteenth street and south of Mulberry and north of Tuttle two blocks and three quarters wouldn't it?

A. Yes, it would cost more on the west side, yes.

Q. How mucy more?

A. Oh cost more, considerably more.

Q. Two or three times as much?

A. Yes, sir.

Q. More than that wouldn't it?

A. Well I don't know where you can get it, that is the long and short of it.

Q. Well pay your money until you get it?

A. A man would say he didn't have to have it, he would go out farther.

Q. At any rate it would cost two or three times as much?

A. A man would say he would not have to buy it, would go out farther, a man has the privilege you know.

Q. Now go over in east Des Moines in this district I have described to you and assume a requirement for two and three quarter blocks or two and one half blocks contiguously located. Won't you have to pay for it now more than the valuation you have placed on this gas property?

A. I doubt it.

Q. Where will you get it, point out on the map where you will get it.

A. As I told you I went over that very question a year ago and looked into it and I could at that time buy and I think——

Q. You could have bought one or two together?

A. In pieces all along there.

2202 Q. I told you two blocks and a half or two and three quarters contiguously located. You don't answer me by saying you could buy isolated lots. I inquire again where would you secure two blocks and a half or three quarters contiguously located?

A. I tell you again that I have not looked into it hence I don't know where I would go to get it.

Q. From your knowledge of that district in east Des Moines you don't know where you would find it do you — it is not there?

A. Well, I don't know, I would not say that. I would not say it is not there. The chances are it is there but I have not looked it up.

Q. Look at this map Exhibit 38 and see if you recognize that and recognize the buildings and institutions in that district and then say in view of that whether you can point out where you can obtain so much ground there?

A. I have not looked into it,I don't know.

Q. I ask you to look into it now.

A. Before I did that I would want to go see it to satisfy myself. I heled up my hand when I came in here to swear to the whole truth.

Q. You came in here to swear to your opinion?

A. Yes, as I view it, you are asking things now I know is only guess work.

Q. Speaking from your present information you don't know where you would go to find such a tract of land?

A. I have not looked in the matter there to find out.

Q. You have told me that several times, but you don't know now where you could go to look for it do you? You don't know of any such tract of land on the market.

A. No, I don't know to say that was on the market.

2203 Q. You know pretty well over there the different institutions, within the district don't you?

A. Yes, sir.

Q. There is the Des Moines Manufacturing & Supply Co., Eagle Iron Works, American Linseed Works, and the different institutions there, Nichols & Shepherd, you know of those?

A. Yes, sir. You may go down along east——

Q. That groung *is* pretty well taken up isn't it?

A. Yes, sir.

Q. Somebody said this morning that there was at least seventy five per cent of it taken up, that is about true isn't it?

A. I would think so yes.

Q. These institutions over there are going concerns as far as you know and for all we know they will keep on going won't they?

A. I hope so.

Q. Nobody offering to sell out over there, none of these institutions.

A. Not that I know of.

Q. Now if you had a commission to buy two blocks and a half or two blocks and three quarters of ground over there in that district and you were to go and gather up paying the current prices *prices* that would be sufficient to induce the people to sell, pay prices that were asked, when you got through you would have a good deal more money in that two blocks than you have given as the price or value of the gas company property wouldn't you?

A. I don't know that to be a fact.

Q. What is your opinion about that.

A. I don't know what it can be bought at.

Q. You have no opinion?

A. I have an opinion but I doubt if I could get it at all

2204 I don't think — would cost any more.

Q. I wonder why you say that. Tell me the thought in your mind.

A. Because I don't believe they are worth any more.

Q. I don't get that distinctly either?

A. If you will put it so I can get at it I will try to inform you to the best of my knowledge.

Q. What makes up worth?

A. I told you that. The future prospect and past and present uses.

Q. You have made a statement that if you could buy such a tract of ground at all you don't believe it would cost any more than your appraised value of the gas property, I ask you why and you said because it was not worth any more than that. Do you mean by that to say that people would be willing to sell at such prices?

A. I don't know what they would do, that is another question.

Q. Is there a difference between what property is worth and what people who own it are willing to sell it for?

A. Yes, difference in values. A great many people ask more than their property is worth. Some don't want to sell it. That don't establish values always.

Q. What does establish values in your estimation?

A. I have told you three times.

Q. Past present and future?

A. Yes, sir.

Q. If you have a man who wants to buy property and find a man who wants to sell, if they come to an agreement then you have fixed a price?

A. Yes, sir.

Q. You have fixed a value of it have you?

A. Not necessarily so.

2205 Q. What is the difference between value and price?

A. Just as I explained awhile ago I might have three quarters of a block and pay a man a big price to finish the square out or I might have frontage or inside track and might want to get on the corner, all these things come in.

Q. These things are abnormal. What is the difference between price and value, is there any difference?

A. I think many people sell for less than va-ue and some sell for more than value. For instance if a party had a big mortgage on a place I might buy for less than it was worth.

Q. That would be an abnormal condition.

A. I don't know, those conditions exist every day, we meet them.

Q. If you find enough of them of course you would have glutted market, but going back to the question you are undertaking to say you would not have to pay more for two blocks and a half than the price you have given because it was not worth that.

A. Once you go north——

Q. I am not going north, we are keeping within the district.

A. I say I don't believe if I could get the ground I would have to pay more than that, that is what I said.

Q. If you could get the ground for that price naturally you would not. Could you get the ground for that price?

A. I haven't looked into that, I don't know.

Q. You don't know where there is such ground?

A. No.

Q. You said awhile ago to reduce to one ownership so large a tract would probably — 50 per cent more?

A. More than what?

Q. More than the price for isolated lots.

2206 A. You misunderstood me, I said to find that would cost 50 per cent more to get together property to make that would be that much. I didn't mean to convey the idea that this piece of ground because of that is worth 50 per cent more than I put on it. I have taken that into consideration.

Q. I didn't intend to say anything to increase the price of the particular property, I was talking about prices generally. If this piece of property was in small tracts it would not be worth as much.

A. It has value in it because a large tract.

Q. You have only considered it in quarter blocks and in one case an isolated lot?

A. One case a whole block I think. One whole block.

Q. And one isolated lot?

A. Two quarters.

Q. And one isolated lot?

A. Yes, sir.

Q. That is on the theory more than 32 feet was not trackage property.

A. Well not necessarily, the back end is not as valuable.

Redirect examination by R. O. BRENNAN, Esq.:

Q. You have I take it from the length of time you have resides in the city and by virtue of your occupation, you have been over the city some have you not?

A. Yes, sir.

Mr. READ: I want to suggest that you do not lead this witness, let him answer the questions.

Q. Counsel has confined you exclusively to a little district
2207 over there in the vicinity of the gas works. Now let's go outside of his favored zone just for a few minutes and tell the Master if you know where there are other sites for manufacturing purposes?

A. Further east you can get them.

Q. Say within a radius of a mile or mile and a half of the present gas works?

A. You can get blocks in along about east 20th and 22d and down in there.

Q. What is the general range of prices of real estate in that vicinity?

A. That is very much less that would be five to ten dollars a front foot.

Q. Is the property you now refer to contiguous to railroads?

A. Yes, sir.

Q. Now going east of the manufacturing plant of the gas company are there any available sites a mile or a mile and a half east of that point?

A. Out on the Rock Island, branch of the Rock Island about 20th there are several large chunks in there can be bought.

Q. Several large tracts you say?

A. Large blocks, yes.

Q. That would be 20th street, that would be how far from the east line of the gas company's property?

A. That would be over a mile east. About 14 blocks makes a mile does it not.

Q. Well I understood 16.

A. Be something over a mile at least.

Q. In the neighborhood of a mile would it not?

A. Yes, sir.

2208 Mr. READ: We object to this line of inquiry because it is immaterial and not any aid in any way, they are differently and more remotely situated properties.

Q. Proceeding north of the Rock Island tracks say up along the Des Moines & St. Paul Railroad company right of way, and the Chicago Great Western right of way, have you in mind any tracks of ground that would be suitable or adaptable for manufacturing purposes?

A. I think you can find a good deal, I know they have not sold all of them.

Q. Well do you know of any sites in that part of the city which may be utilized for these purposes?

A. Blocks can be bought there in T. E. Brown's official plat, somewhat south there is one tract I think you can buy most of it ten acres I think would be suitable for it right near University Avenue and the Great Western.

Q. What is acreage worth in that part of the city?

A. Oh lots or land in there would be worth perhaps $10 a front foot, eight to ten dollars.

Q. That is north Avenue on the east side of the river?

A. Yes, sir.

Q. That is where you refer to Mr. Arnold, North Avenue?

A. Yes, sir.

Q. Now pursue the same course north and west going up into Highland Park out in that way, are there any manufacturing establishments?

A. On the Interurban or Urbandale.

Q. I mean on the interurban railway?

A. Yes, sir.

Q. Go out north on the interurban we have the Flint
2209 Brick works and the other manufacturing establishments do we not?

A. Yes, sir.

Q. And then south Des Moines, what do you say as to south Des Moines having any sites?

A. Plenty of them I should think.

Q. Which could be used for manufacturing purposes?

A. I should think there would be plenty of them.

Q. And which would be contiguous to railroads?

A. Yes, sir.

Q. In other words, Mr. Arnold, if we were to start out today to construct a gas works and this site to which attention has been

called was not available would you be able to find another site in the city of Des Moines?

A. I think I would.

Q. Now I will ask you if the valuation which you have placed upon the real estate of the Des Moines Gas Co. exclusive of the buildings and improvements thereon represents your independent judgment uninfluenced by the valuation that others have placed upon it?

A. It is my own judgment.

Recross-examination by W. L. READ, Esq.:

Q. I take it you have been stating that there are properties, trackage properties within the corporate limits of Des Moines that are cheaper in price than those over here of the gas company?

A. Yes, I think there is.

Q. That is the purport and effect of your testimony wasn't it?

A. Yes, sir.

2210 Q. Now of course you don't undertake to say that you know anything about the requirements of the gas company, what kind of property it would need?

A. No.

Q. Or adapted to it?

A. No, only a general idea of it.

Q. When you say you know that, you would want to look into it, and find property for the gas company, all you mean to say is that you could find a piece of ground that if it was adapted to the situation and other places that a gas plant could be put on it?

A. Yes, sir.

Q. But whether it would be the best practical place to put a gas plant you don't undertake to say?

A. I have not looked into that no sir.

Q. You don't know anything about that subject?

A. No.

Q. You could not look into that subject?

A. I am not posted on that subject.

Redirect examination by R. O. BRENNAN, Esq.:

Q. You don't know anything peculiar about the gas works requiring it to be say next door to Harris-Emery's or Younker Bros., or anything of that sortn do you. Nothing occurs to you as a reasonable man to suggest anytying of that sort is there?

A. No.

Mr. READ: You haven't looked into that subject either.

Witness excused.

2211 A. S. WILCOXEN being called on the part of the defendant and sworn and examined in chief by R. O. Brennan, Esq., testified as follows:

Q. You reside in Des Moines do you?

A. Yes, sir.

Q. Where is your residence?

A. 1730 Arlington.
Q. How long have you lived in Des Moines?
A. Since 1871.
Q. What has been your business since you have been in Des Moines
A. The last 18 or 20 years real estate.
Q. What is the character of the real estate which you have handled or dealt in?
A. Well some business property, some outside property, general real estate.
Q. Bought and sold for yourself and for others?
A. Yes, sir.
Q. And have handled some business property?
A. Very little.
Q. But some.
A. Yes, sir.
Q. You keep in touch with sales of business properties?
A. I try to.
Q. I will ask you Mr. Wilcoxen if in the course of your business as a real estate man yon know what the reasonable market value of real property was in the city of Des Moines say about January 1, 1911?

A. I think so.

2212 Q. Do you know the property of the Des Moines Gas Co. in east Des Moines?
A. Yes, sir.
Q. How long have you known that property?
A. Well for a great many years.
Q. Have you bought or sold or had listed with you by the owners any property adjacent to the property of the Des Moines Gas Company?
A. Yes, sir.
Q. I will ask you if you know what the reasonable market value of the real estate of the Des Moines Gas Company was on or about January 1, 1911, exclusive of the buildings and improvements thereon?
A. I think so.
Q. Now if you will refer to the blue print or plant marked Exhibit 5 before you, I wish you would take the property shown thereon and known as lots 9 and 10 in Block M and tell the Master what in your opinion was the reasonable market value of these lots on or about January 1, 1911?
A. $7,000.
Q. Referring now to lots 9 and 10 in Block B, Scott & Dean's Addition shown by the plat, please state what in your judgment was the reasonable market value of these lots at the time referred to?
A. $6,000.
—. Referring to lots 3, 4 5, 6, 7 and 8 in Block B shown by the plat Exhibit 5, tell the court what in your judgment was the reasonable market value of these lots at the time referred to?
A. $20,000.

Q. Referring now to lots 1, 2, 3, 9 and 10, in Block C
2213 shown upon the plat, please tell the Master what in your judgment was the reasonable market value of these lots at the time referred to?

A. $17,000.

Q. In that same block, Block C I wish you would refer to lots 4, 5, 6, 7, and 8, shown upon the plat and tell the Master what in your judgment was the reasonable market value of these lots at the time referred to?

A. $22,000.

Q. Referring now to lots 3 and 4, in Block K of Exhibit No. 5, state to the Master what in your judgment was the value of those lots at the time referred to?

A. $10,000.

Q. Referring to lots 3, 4, 5, 6, and 7, in Block T shown on Exhibit 5 please state to the Master what in your judgment was the reasonable market value of these lots at the time referred to?

A. $3,000.

Q. Having given the va-ues of the respective pieces of property to which your attention was called I wish you would tell the Master now what the total or aggregate value of the real estate of the Des Moines Gas Company was exclusive of buildings and improvements say on or about January 1, 1911?

A. $85,000.

Q. I believe you have said the valuation you place upon this property is based upon your general knowledge of real estate values gained by your experience in the real estate business in Des Moines?

A. Yes and what like property is worth in that vicinity.

Q. And what property would sell for in that vicinity
2214 A. Yes, sir.

Cross-examination by W. L. READ, Esq.:

Q. Have you considered what the property as a whole would sell for?

A. No, sir.

Q. It is only when cut up in piece mea-, this way that you have considered the price at all?

A. Yes, sir.

Q. Then you have no notion as to the value, at least you are not prepared to value the property as a whole?

A. Well that is the total valuation of the property in my judgment taken it as a whole.

Q. You answered my question a moment ago you had not valued the property as a whole?

A. Well my estimation of the property valued as a whole is $85,000.

Q. Did you consider the property as a whole for the purpose of valuation?

A. No, I took it in detail.

Q. Why did you do that?

A. Because I thought it was the more just way to arrive at a conclusion of the value of the property.

Q. More just from what point of view?

A. From the fact that some of it was worth more than others and *and* some less.

Q. What difference would that make when you consider it as a whole?

A. I considered it as a whole when I got through the estimates on the pieces.

Q. That is simply the aggregate of your piece meal estimation?

2215 Q. What concern have you, why should you concern yourself with the value in piece meal when the question is what is the property worth as a whole?

A. $85,000.

Q. But why trouble yourself to find out what the piece meal valuation is when you are asked to tell what the property is worth as a whole?

A. Because I was asked to find out what in my opinion was the value of the property describing it by lots and I priced it that way.

Q. By lots?

A. Yes, sir.

Q. You seemed to have included several lots?

A. Yes, the sum total.

Q. You didn't consider it by lots?

A. Indeed I did.

Q. For instance you have the valuation of lots 3, 4, 5, 6, and 7, Block T?

A. Yes, sir.

Q. You valued these by lots did you?

A. No, sir; I didn't that particular piece of property.

Q. You valued that as a whole?

A. As a whole because it is very shallow.

Q. Lots 3 and 4, in Block K did you value those two lots as a whole or did you value them separately?

A. No, sir; I think I considered those as a whole.

Q. Are they worth more the lots separately or taken as a whole?

A. Lot 4 is worth more than lot 3 if taken separately.

Q. Lot 3 is worth how much?

A. About half the price of four.

Q. Will you answer my question now are the two lots taken together worth more than the separate lots, for instance Lot 3,

2216 you say is worth about $2000, how much is lot 3 worth according to your valuation.

A. Worth about $3000, $3500 possibly.

Q. Lot 4 taken separately and without regard to Lot 3 is w[illegible] how much?

A. Worth from $6000 to $7000.

Q. Why is Lot 3 worth less than Lot 4?

A. Because it hasn't the trackage.

Q. Lot 3 is worth $3000 and Lot 4 worth $7000.

A. Yes, sir.
Q. Why then is lot 3 worth less than lot 4?
A. Because it has not the trackage.
Q. You have assumed now that the unit of greatest availability there would be a single lot have you?
A. No, I can't say that Mr. Read.
Q. That is not a retail district over there is it?
A. No, sir; it is not.
Q. Such demand as there is over there is for larger tracts than a single lot as a rule?
A. Well I don't know as to that.
Q. Well do you know to the contrary, what do you know about it?
A. No, generally consider about 66 feet as a pretty good lot for factory site or for warehouse.
Q. So you assumed then that a larger tract over there is no more in demand and hence a greater value relatively than a smaller one? In other words you assume that 66 feet frontage is the normal size.
A. Yes, sir.
Q. For factory and warehouse and storage purposes.
A. Yes, sir.
2217 Q. Do you know anything about what the fact is as to that. That is I mean what do you know about that being the fact?
A. Well that is generally the size they are sold in.
Q. In Block C Lots 4, 5, 6, 7, and 8 were they separately valued or valued together?
A. They were considered together.
Q. Why did you consider them together?
A. Because it is a quarter of a block making 132 feet square.
Q. Wasn't that too -arge to give them their greatest value according to your theory?
A. They gave got the same trackage the other has.
Q. They haven't got trackage have they according to your theory?
A. Yes, six has got trackage on it.
Q. Lot 5 hasn't trackage on it?
A. No, sir; nor four.
Q. Nor three nor two?
A. N-, nor three nor two.
Q. Well you considered them together anyway?
A. Yes, sir.
Q. Is that true of the other properties?
A. Yes, sir.
Q. All of them?
A. Yes, sir.
Q. All considered together?
Q. Yes, sir.
Q. By their value what do you mean?
A. Do you mean how I arrived at the value of the property?
Q. No, I mean what conception you have of value, what does value mean as you use it?
A. Well what property can be bought and sold for.

2218 Q. Under normal conditions.

A. Yes, sir.

Q. A willing buyer and willing seller?

A. Yes, sir.

Q. Turning now a moment to the idea of the property as a whole do you think this property as a whole, that is say ta-ing practically two blocks and a half or two blocks and three quarters lying contiguously and being trackage property and being capable of serving some establishment for large area such as the gas company serving such a demand is worth more as a whole than its constituent parts? How do you find its greatest value?

A. Well I don't know as I understand your question Mr. Read-

Q. This property is over there and it is devoted to this use of the gas company.

A. Yes, sir.

Q. It may be assujed that the gas company requires that much property now. If some other concern were coming to Des Moines and wanted that much ground located on trackage, trackage property would that ground sell for more because of the fact that it is in one body or would it be worth less? In other words is it worth anything to have so much property as that under one ownership?

A. Yes, it is probably worth more than it otherwise would be. If you will find a man that wants that much ground.

Q. Suppose you were to start out with a commission to get together over in east Des Moines in the district lying south of Court Avenue and west of Fifth street and north of Elm, what price do you suppose you would have to pay for it to get together property under one ownership having in mind now the uses that are being made of the various properties over there.

A. Well you are restricting that to a very narrow locality, I
2219 don't know whether a man could find it or not.

Q. Well do you think you could in that district?

A. Oh I could find plenty of pieces over there, but whether I could get together two blocks and a half together contiguously I don't know.

Q. Could find plenty of small pieces?

A. Oh I could pick it up, simply a case of what you have got to pay for it.

Q. How long would it take you to do that do you suppose?

A. Oh I don't know.

Q. What pieces could you find over there?

A. There is one the corner of Third and Market street- over there, I think Third and Market.

Q. That is the one you called Mr. Hauge's attention to?

A. I guess so, I didn't know he testified in regard to it.

Q. Tha- is one piece you have in mind is it?

A. Yes, sir.

Q. Who owns that?

A. By the name of Hyland.

Q. Live here or away?

A. Lives here.

Q. What frontage is there there?
A. It is 132 feet frontage of 66 feet.
Q. Frontage on what street?
A. Third street.
Q. And the side on the track?
A. Yes, sur.
Q. Well what other piece?
A. That is the only trackage piece I have for sale there.
Q. That is the only trackage piece?
2220 A. Yes, sir. I have some property down below the gas works——
Q. I asked you to stay within the limits, north of Elm street.
A. I am within the limits. I have three pieces there on Raccoon street, Raccoon and Third 132 feet square in there taken as a whole can be bought for $7800.
Q. Raccoon street is south of Elm street isn't it?
A. I don't know whether it is or not, lays right across the alley from the——
Q. Raccoon street is the street south of Elm street isn't it. One tract on Raccoon street.
A. This is the property in here. This is the gas company property here.
Q. It is the southeasy corner of Block M?
A. Yes, sir.
Q. You say this property you have this listed?
A. Yes, these three pieces here.
Q. That is not trackage property?
A. No.
Q. I asked you to confine yourself to the district north of Elm west of Fifth and south of Court?
A. I don't think you can get it in there unless you have the right of eminent domain.
Q. Why can't you get it?
A. Because largely controlled by railroads and they won't sell it.
Q. There is the Des Moines Manufacturing & Supply Co. property in there?
A. Oh yes they might sell there.
Q. There is all of Block "D" isn't there?
A. "D" yes.
Q. All of Block "I" isn't there?
2221 A. There comes the railroads in there, I don't know how much ground they have got.
Q. Those two blocks in there what would it cost to gather up those two blocks?
A. I don't know what it would cost to gather them up.
Q. It would cost a good deal more than your valuation on the two blocks of the gas company?
A. Yes, they are worth more up here than down there.
Q. How much are they worth?
A. This ground in here I think is worth, probably 132 feet in

there is worth—this is Court Avenue over here and that ground in there is probably worth $200 a front foot.

Q. You are referring to the property of the Des Moines Manufacturing and Supply Co.?

A. Yes, sir.

Q. The northwest quarter bloack of Block "D"?

A. Yes, sir.

Q. $200 a front foot?

A. Possibly that.

Q. What is the other the northeast quarter block worth?

A. Well I don't think that is worth as much money.

Q. Why not?

A. Not as desirable property.

Q. Why not as desirable.

A. I don't think it is as desirably located.

Q. What is the difference in the location, what makes it less desirable?

A. Well I think this is better business property.

Q. What makes it better?

A. This is simply my judgment.

2222 Q. What qualities or characteristics, what quality makes that better the one than the other?

A. I think it a better location.

Q. Why?

A. Because I think so.

Q. Is that as far as you go with it, any reasons why?

A. Yes, sir.

Q. What reasons?

A. Because I think it better located.

Q. What is property in Block I worth fronting on Grand Avenue?

A. Probably $150 a front foot.

Q. Why that $150 and the other corner $200?

A. The same reason I gave before I think better located.

Q. Do you know anything about what holding prices are of this property?

A. I do not.

Q. What is property worth on the north side of Court Avenue on the northeast corner of First and Court, that quarter block in there 132 feet?

A. It is worth about the same as this here.

Q. About $200?

A. Something like that.

Q. That is the property purchased by Bentley & Olmsted?

A. I don't know.

Q. Don't know whether that property was purchased at $27,000?

A. I don't know.

Q. You don't know anything about property over there?

A. I don't know what that property was purchased for.

Q. Do you know anything about the holding prices of property on Court Avenue, First to Fourth?

2223 A. I do not.

Q. Do you know anything about prices on Walnut street east First to Fourth?

A. No, I have none for sale.

Q. On east Locust street First to Fourth?

A. Only in a general way.

Q. Do you know what the holding prices are?

A. I think about $150 to $200 a front foot, $250.

Q. That is the maximum is it?

A. I think so, $200 to $250.

Q. Do you know what the city paid for the city hall site a few years ago?

A. I don't know only what was in the paper, I suppose $78,000.

Q. That was about 100 feet frontage on Locust street?

A. I don't know the frontage, I presume it is.

Q. Ever try to figure out what that would be per front foot?

A. No, sir.

Q. About $390 for the frontage on Locust street and the same for frontage on Grand Avenue wouldn't it?

A. It runs clear through, yes, one side to the other. It would be about that price I expect. I hadn't figured it out.

Q. Do you know any sales on east Locust street in the last year?

A. No.

Q. The last two years?

A. No.

Q. Any sales on Walnut street the last two years?

A. No.

Q. Where is your office?

A. 607 Iowa Loan & Trust Building.

Q. You say you have handled some inside property?

2224 A. Yes, sir.

Q. You said not much though?

A. Yes, sir.

Q. What property have you handled?

A. Well I was instrumental in the sale of the property to the C., B. & Q. railroad company there on Seventh street.

Q. That the only one?

A. The only recent one.

Q. What is the bulk or aggregate of your real estate transactions last year?

A. It varies, $115,000 to $130,000, some years only $40,00- or $50,000.

Q. When was the Q. property purchased?

A. This year.

Q. What time this year?

A. I think probably May some time probably May.

Q. How much property was there?

A. I think they bought 132 feet square, was a piece 132 feet square.

Q. On the east side?

A. No, sir.

Q. Where?
A. Seventh and Market.
Q. Are you acquainted with values over on west Vine street, Seventh street, Eighth street and along in there?
A. Some little.
Q. Do you know the Sheruerman property?
A. I know its location, yes.
Q. Do you know the value of it, know the holding price?
A. I do not.
Q. Did you hear it was $50,000?
A. No, sir.
2225 Q. Do you know the Illingston property?
A. I know the location of it.
Q. Has it been sold lately?
A. I was told it had been sold, yes.
Q. What price?
A. I think it was $50,000.
Q. Do you control any property along there?
A. No, sir.
Q. Haven't been interested in handling any of these properties there?
A. No, sir.
Q. What is the property of the Kratzer Carriage Company worth per front foot, trackage front foot?
A. I suppose that is worth about $400 a front foot.
Q. That is just across the river from the gas company?
A. Yes, sir.
Q. What is the Brown-Camp Hardware Company property worth, the ground?
A. About $500 a front foot.
Q. The Warfield Grocer- Co.
A. Right across the street from it, about the same.
Q. About $500?
A. Yes, sir.
Q. You said you had some properties near the gas company listed with you, what properties do you refer to?
A. These properties in Block M.
Q. The ones you have already referred to?
A. Yes, sir.
Q. Have you any others than those?
A. Nothing excepting this one that belongs to Mr.—well
2226 the corner of Third and Market.
Q. That belonged to Mr. Hyland.
A. Yes, sir.
Q. This piece and three pieces in Block M?
A. That one there and three pieces in Block M.
Q. What three pieces in Block M the south half?
A. Yes, sir.
Q. Non trackage property?
A. No, sir; not trackage property.

Q. Where is the other piece?
A. On Third street.
Q. On the west side of Third street?
A. Yes, sir.
Q. South of Market?
A. Yes, sir.
Q. A quarter block there?
A. No, sir; 66 feet. The other belongs to the railroad company.
Q. These two pieces are the only pieces that you have listed with you?
A. In that locality yes.
Q. And so far as you know the only pieces for sale.
A. Yes, as far as I know the only pieces for sale.
Q. Precisely how do you get at this valuation, how do you do it, what were your assumptions, what was your basis?
A. Well I took the valuation there on like property what it could be bought for.
Q That is the first proposition. Now where is the like property?
A. This specific piece of property I have mentioned, Mr. Hyland's property on Third street.
Q. You call that like property?
A. Yes, sir.
2227 Q. You distinguish between the Des Moines Manufacturing property and the gas company property didn't you?
A. Yes, sir.
Q. But don't distinguish between the gas company property and this other?
A. No, sir. That is down below the railroads farther.
Q. The property on Market street was listed with you at a certain price?
A. This property, yes.
Q. At what price?
A. $7,000.
Q. That was so much a front foot?
A. No, sir; it was not the front foot at all, listed by the lots. If you take 132 feet frontage, take the trackage part of it——
Q. There was a lump price given?
A. $7,000.
Q. You said that property was the same as the company's property, like property?
A. For trackage, yes sir.
Q. So far as the gas company property was trackage?
A. Yesk sir.
Q. And then you placed the same valuation on the gas company property?
A. Not entirely no.
Q. Well so far as the gas company's trackage property was concerned?
A. I took that as a basis, yes.
Q. Well did you call the gas company property worth more or less?

A. I think more.

Q. What particular properties and lots or groups of lots
2228 did you call more and what less?

A. Well I think I took it by the trackage.

Q. The trackage property you called the same?

A. Practically the same, yes.

Q. And the property that you considered non trackage, you called it less?

A. Well I considered it as a quarter block.

Q. Was there some of the gas company property which you did not call trackage property?

A. Yes, sir.

Q. What?

A. This down here in M.

Q. Name them b- lots?

A. It is 9 and 10 in M.

Q. Is that all you did not consider as trackage property?

A. No, sir, I think some of these lots in here 9 and 10 in B I did not consider trackage property.

Q. Nine and 10 in Block B did you call that trackage property?

A. I don't think so.

Q. There is a track on Elm street isn't there?

A. Yes, and track on Market.

Q. Lot 10 in Block B and lot 9 in Block M front on Elm street don't they?

A. No, sir.

Q. Abut on Elm street.

A. Oh 9 and 10 in M, yes that is right.

Q. Your lot on Market street and Third has what railway track along the side of it?

A. Has the Rock Island.

Q. How do you figure out that property trackage property
2229 and these others not?

A. I see that I was mistaken, I didn't notice this railroad in there, this is trackage property.

Q. Now to go back was there any gas company property you did not consider as trackage property and if so what, give the lot number?

A. No, sir; I guess there was none of it.

Q. Then the basis of the valuation was the price at which you had listed with you the Hyland property, the property at the corner of Third and Market?

A. Substantially so.

Q. What do you mean by substantially?

A. Well I took that as the basis of what the property was worth.

Q. What was the next step?

A. I took that as the basis of what the property was worth.

Q. What use did you make of that basis?

A. Considered the value of the other property on like trackage.

Q. Did you call the trackage the same or was it dissimilar in you- consideration?

A. Nom because the ground laid better in the gas company, I don't know whether it has been filled or what.

Q. Made some allowance for the fact your ground was low ground below grade and the gas company property up?

A. Exactly.

Q. What allowance did you make for that?

A. I am not prepared to say what allowance, I took that into consideration.

Q. Anyway the basis was the price at which the owner valued the Market and Third street lots with you?

A. Yes, sir.

2230 Q. And that was all there was to it. I mean that is the method and basis by which you arrived at your valuation?

A. Yes, and this other property down there in Block M could be bought a quarter block for $7,800 I took that into consideration also.

Q. That was non trackage property.

A. Yes, sir; non trackage property.

Q. Used that to put the price down?

A. No, sir; I tried to consider it altogether.

Q. The basis of your valuation of the gas company property was the price at which there was listed with you the 66 feet on the corner of Market and Third street- and the price of the two quarter blocks in Block M?

A. Yes, sir.

Q. Now what price did you make in the gas property relatively you have the same area which was concerned, practically the same?

A. What do you mean, in taking into consideration a large block?

Q. Well a particular quarter block or particular lot. For instance a 66 foot lot on the corner of 3d and Market was listed with you for $7,000?

A. Yes, sir.

Q. Now go over in Block C and you will find lot 7, is on east Second and abuts on Vine street, what did you call that worth?

A. I didn't consider that, I took the two lots together.

Q. What two lots?

A. Seven and eight in C.

Q. What did you call the two together worth?

A. $11,000.

Q. How much did you call seven worth alone?

A. I didn't consider that alone Mr. Read. I took the half

2231 block by itself, both got equal frontage in there and priced it at $22,000.

Q. You didn't call lots 7 and 8 worth twice as much as you call the one 66 foot lot over in the other block east, did you?

A. No, sir; I did not.

Q. Why did you call it less?

A. Because seven has trackage and 8 has not.

Q. Suppose you were to divide lots 7 and 8 north and south so as to make two 66 foot lots facing north, what about them?

A. Well it would be trackage frontage that governed the price then, be worth practically the same.
Q. Have 132 feet frontage?
A. Yes, sir, be 132 feet deep, could not be 132 feet trackage, but 132 feet deep.
Q. So wouldn't they be worth by the same method $14,000?
A. You have no more trackage.
Q. Depth don't count then in your estimation?
A. Surely, you have got 132 feet in depth there.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

2232 Tuesday Forenoon Session.

AUGUST 15, 1911, at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

A. S. WILCOXEN, re-called for further cross examination, examined by W. L. Read, Esq., testified:

Q. I think, Mr. Wilcoxen, we were considering lots in Block C, weren't we?
A. I think it was M, Mr. Read, I don't remember.
Q. Lots 3 and 4 in Block K, you may direct your attention to that now. You had placed a valuation of $10,000 upon the two lots and as I recall it, yesterday evening you placed a valuation of $7,000 on Lot 4 and $3,000 on Lot 3, is that right?
A. What block is that?
Q. Block K?
A. $10,000, yes sir.
Q. And you said, I think, didn't you, $7,000 on Lot 4 and $3,000 on Lot 3?
A. About in that proportion, yes sir.
Q. That was on the theory that Lot 4 was the trackage lot?
A. Yes, sir.
Q. And that Lot 3 was not a trackage lot?
A. Yes, sir.
Q. The idea being, I take it, from what you have already said, that since the Hyland lot over on the corner of Market and Third which was listed with you and regarded worth $7,000, that you regarded Lot 4 in Block K as practically the same kind of a lot and the same value?
A. Practically so; the trackage is the valuable part of it.
2233 Q. At any rate, you compared Lot 4 in Block K with the Hyland lot?
A. Yes, sir.
Q. Since the Hyland lot had been listed with you at $7,000 therefore you said Lot 4 in Block K was worth $7,000, that is the idea?
A. Yes, sir.

Q. And then looking at Lot 3, you concluded that wasn't a trackage lot?
A. No, sir.
Q. And hence, would be worth less money?
A. Yes, sir.
Q. And something less than one half only of Lot 4?
A. Something like that, yes sir.
Q. And you regarded the trackage making that difference in the value, did you?
A. Yes, sir.
Q. I think I asked you yesterday why it was that you appraised the lots separately; why didn't you appraise Lots 3 and 4 together?
A. Well, I did appraise them together, Mr. Read.
Q. Will you explain how you appraised them together?
A. I took the two of them together and considered them worth $10,000.
Q. You considered Lot 4 worth $7,000?
A. That is the way I arrived at the conclusion; I lumped them both together.
Q. After you made a separate appraisement?
A. Yes.
Q. My inquiry is why you did not consider them for valuation purposes together?
A. I haven't any particular reason why I didn't.
Q. There wasn't any particular reason.
A. I just simply did it that way; that is all.
2234 Q. Well, let us consider a moment—the lots were held by one owner, the two lots?
A. Yes, sir.
Q. If you had held them and had been offered and been desirous of selling them it would have occurred to you, you could just as well as not divide the lots the other way and make two lots facing the railway track and why didn't you do that?
A. You would arrive at the same result.
Q. Will you explain how you would arrive at the same results?
A. I shouldn't have taken the two together and divided them up and asked the same price for both of them.
Q. The point I am getting at is this: you had in mind the Hyland lot over at Third and Market?
A. Yes, sir.
Q. Being $7,000 in value?
A. Understand Mr. Read——
Q. That was a lot 66 feet wide by 132 feet deep lying sidewise with the railroad?
A. Yes, sir.
Q. Now you could have made out of Lots 3 and 4 two lots each 66 feet wide?
A. Yes, sir.
Q. With a frontage of 66 feet on the railroad?
A. Yes, sir.
Q. Why didn't you do it for the purpose of the appraisal?

A. Wouldn't it amount to the same thing?
Q. I don't know.
A. Well, if you had taken the property in Block K, $10,000, and divided those lots up and made two lots with the 66 foot front, you have got two lots——
2235 Q. That is begging the question. Our object of the inquiry is to find out what they are worth?
A. I don't think they are worth any more cutting them up the other way.
Q. You would have had two trackage lots?
A. Yes, 66 feet in place of 132.
Q. 66 feet of frontage is sufficient to accommodate and serve the lot?
A. I suppose it is; not as much as 132 feet would be.
Q. It would have served the lot for all practical purposes and made it a trackage lot?
A. Possibly.
Q. You concede that trackage lots are worth more than nontrackage lots?
A. Certainly.
Q. You had an opportunity by that subdivision to do it, now why didn't you do it?
A. I don't understand your question.
Q. You said trackage lots were more valuable than nontrackage lots?
A. Yes, sir.
Q. You further conceded a trackage of 66 feet insufficient to serve a lot?
A. In one way; in another way it isn't.
Q. You have conceded that much; now I ask you why then, since the lots are worth more as trackage lots, why for the purpose of appraisement you didn't make two trackage lots instead of one?
A. I failed to see where you would derive any benefit from that.
Q. Will you answer my question why you didn't do it?
A. I don't know why I didn't do it.
Q. If a trackage lot in that locality is worth $7,000 and you had two trackage lots, you would have had a value of $14,000?
2236 A. No, sir; I was taking 132 feet of trackage.
Q. You insist upon the fact that you have 132 feet of trackage?
A. Yes, sir.
Q. That makes the distinction in your mind?
A. Yes, sir.
Q. You make that distinction notwithstanding you admit 66 feet of trackage is sufficient to serve a lot?
A. No, I don't think it is in all cases.
Q. Well, in this case?
A. It might be.
Q. Since it might be, why didn't you treat them that way?

Mr. BYERS: I submit that has been answered two or three times.

A. I don't know why I didn't.

Q. All right then. Now go to Lots 7 and 8 in Block C; you have placed a value of $22,000 on Lots 4, 5, 6, 7 and 8; that is right, isn't it?

A. In C?

Q. Yes.

A. Yes, sir, 4, 5, 6, 7 and 8 in C.

Q. How did you reach that aggregate, did you value the lots separately?

A. I took that on the basis of being 132 feet deep.

Q. Did you consider the lots separate and then take the aggregate?

A. No, I don't know that I did; I took that into consideration in determining the value, but I considered them as a whole.

Q. What value did you place upon Lot 7?

A. I placed two of them together in there.

Q. What value did you place upon Lot 7?

2237 A. Well, I could figure them in their entirety.

Q. Well, what did you do?

A. Well, I took it, I took the depth in there, 132 foot deep—132 feet trackage.

Q. What value did you now place upon Lot 7?

A. About $7,000.

Q. Well, now, what value did you place upon Lot 8?

A. About $3,300.00.

Q. You place that now, do you?

A. Practically so.

Q. What value do you now place on Lot 10?

A. In C?

Q. In C. I am asking for your present judgment; you do not need to consult this memorandum.

A. That is all right. I made this memorandum after I went over there.

Q. If you placed a valuation at the time of your inspection, I want that?

A. That is what I placed the valuation on the two lots.

Q. Not on Lot 10 separately?

A. No, sir.

Q. Then let the memorandum go; I am asking your present judgment of the value of Lot 10.

A. About $7,000.

Q. Did you make a separate valuation of Lot 9 at the time of your inspection?

A. No, sir; I don't believe I did.

Q. What value do you now place upon it?

A. $3,500 or $3,000.

Q. Which is it?

A. Well about $3,000.

2238 Q. Now that makes a total valuation of what?

A. I don't know.

Q. Will you add it up—I have added it up.
A. $20,500.
Q. That doesn't correspond with your—I beg your pardon, now I will go a little further with that; now what value did you place upon Lot 4 in Block C?
A. I considered the quarter block, Mr. Read.
Q. I am asking you now for your present estimate of the value of Lot 4?
A. About $2,000.
Q. What is your present estimate of the value of Lot 5?
A. About $2,500.
Q. What is your present estimate of the value of Lot 6?
A. About $5,000.
Q. Now, turn your attention to Lot 1 in Block C and state what your present valuation is of that, unless you made some separate valuation at the time of the inspection.
A. I did not.
Q. Well, what is your present valuation of Lot 1?
A. About $3,000.
Q. What is your present valuation of Lot 2?
A. $2,500.
Q. What is your present valuation of Lot 3?
A. About $2,000.
Q. Mr. Wilcoxen, the figures you have given of the separate valuation of all the lots in Block C aggregate $37,500?
A. Yes.
Q. While the valuation of the lots in Block C as testified about by you on direct examination aggregated $39,000?
2239 A. In Block C?
Q. Yes; how do you reconcile that?
Mr. BYERS: You had better check up your figures.
Mr. BRENNAN: What are your figures?
Mr. READ: $37,500 is the present valuation and the other valuation is $39,000.
A. A difference of $1,500.
Q. How do explain that discrepancy?
A. I took them as a whole, Mr. Read, and divided them up.
Q. You had a memoranda of your former valuations before you?
A. Yes, sir.
Q. Did you consider that?
A. I didn't make any division.
Q. You was looking at that as you testified?
A. That is true.
Q. Did you make a calculation as to where you were going to come out?
A. No, sir.
Q. Which valuation will you take then as your judgment?
A. I should take the first valuation $39,000.
Q. Now turn your attention to Lot 7 in Block C, you have placed upon it a valuation of $7,000.

A. Yes, sir.

Q. You did that upon the basis of a comparison with the lot on the corner of Market and Third Street?

A. Yes, sir.

Q. And upon Lot 8 Block C you now place a valuation of $3,500, and that is upon the assumption that Lot 8 is not a trackage lot?

A. Yes, sir.

Q. You admit, of course, that it was capable of division north and south?

2240 A. Yes, sir.

Q. But you didn't do that and you don't know why you didn't do it; that is the explanation you gave with respect to Lots 3 and 4 in Block K, does that apply here?

A. Yes, sir.

Q. On Lot 10 in Block C you now give a valuation of $7,000; that was also upon the basis of a comparison with the Hyland lot?

A. Yes, sir.

Q. Lot 9 in Block C you now give a valuation of $3,000; that also was upon the assumption that Lot 9 was not a trackage lot?

A. Yes, sir.

Q. You admit also that these two lots 9 and 10, in Block C, were capable of division north and south so as to make two trackage lots?

A. Yes, sir.

Q. You didn't do it and you don't know why you didn't do it?

A. No.

Q. Now going to Lot 6 in Block C, you now place a valuation upon it of $5,000; that is right, isn't it?

A. I believe so.

Q. Now, you will notice that lot is but 44 feet wide?

A. Yes, sir.

Q. Your Hyland lot on the corner of Market and Third was 66 feet wide?

A. Yes, sir.

Q. You have made a valuation of $5,000 by comparison of the width of the lot with the width of the Hyland lot?

A. Yes, sir.

Q. You don't consider the lot per front foot worth any more than the Hyland lot?

A. It has the same frontage.

Q. Will you answer my question?

2241 A. No, I don't know that I do.

Q. That lot is but one block south of Court Avenue?

A. Yes, sir.

Q. The property on Court Avenue and First you consider what value per front foot?

A. $200.

Q. What valuation per front foot do you place upon Lot 4—what does that amount to—Lot 6 in Block C?

A. Well, if you take the front feet on First Street there it would be $5,000; 44 feet—it would be a little over $100 a front foot.

Q. Your valuation per front foot on the Hyland lot is how much?

About the same price, isn't it, approximately considered, as the frontage on Third Street, 66 feet, $100 a foot; so that you- judgment is the frontage of Lot 6 on First Street is of no more value than the frontage of the Hyland lot on East Third Street?

A. I consider the trackage value.

Q. You considered their frontage is the same practically?

A. Practically so.

Q. Now the trackage is practically the same?

A. Just the same.

Q. You did not consider that the location of the lots makes any difference; that is to say, your opinion as to its value depends upon the trackage wholly?

A. To a large extent.

Q. Wholly evidently so here?

A. No, I think property that has not got trackage has got some value, Mr. Read.

Q. Well, a comparative value rests upon the fact of the identity of the trackage?

A. Yes, sir.

2242 Q. Lot 5 in Block C you value at $2,500; what is the theory of that?

A. It has not trackage.

Q. It is regarded as non-trackage property?

A. Yes, sir.

Q. And hence, the very inconsiderable value you place upon it?

A. Yes, sir.

Q. Lot 4 in Block C you value at $2,000?

A. Yes, sir.

Q. What is the theory of that valuation?

A. No trackage and further away.

Q. Further away from what?

A. From the trackage.

Q. Of course, you must concede that Lots 4 and 5 and 6 are capable of division north and south so as to make two trackage properties fronting on Vine Street?

A. Yes, sir.

Q. You didn't do that?

A. No, sir.

Q. You don't know why you didn't do it?

A. No.

Q. Lot 1 in Block C you valued at $3,000; what is the theory of that?

A. It has trackage.

Q. What is the width of the lot?

A. 44 feet.

Q. You placed a $3,000 valuation upon that lot?

A. Yes, sir.

Q. By comparison with the Hyland lot, considering that it was narrower.

A. Yes, sir.

Q. But the Hyland lot is the basis of comparison?

2243 A. Yes, sir.

Q. Lot 2 in Block C you valued at $2,500 and that I suppose is upon the theory that it is non-trackage property?

A. Yes, sir.

Q. Lot 3 you value at $2,000 and that also upon the theory that it was non-trackage property?

A. Yes, sir.

Q. You concede of course that these three lots might have been divided north and south and made about 66 feet trackage lots fronting on Market Street?

A. Yes, sir.

Q. You didn't do that?

A. No.

Q. You don't know why you didn't do it?

A. No.

Q. You will notice Lot 6 in Block C and Lot 1 in Block C are of the same width?

A. Yes, sir.

Q. And they are each trackage property according to your conception of what constitutes trackage property?

A. Yes, sir.

Q. Lot 6 you valued at $5,000 and Lot 1 at $3,000; why the difference in figures?

A. I think trackage on the Rock Island is worth more than on the K. D.

Q. Worth $2,000 more to this lot?

A. Yes, sir.

Q. Why?

A. Because I think it is a better road to be on.

Q. That is the reason for the difference?

A. Yes, sir.

2244 Q. It is not because it is farther away from Court Avenue?

A. No, sir.

Q. That you do not regard as an important circumstance?

A. It has its bearings.

Q. What bearings does it have?

A. In a general way.

Q. In a general way, how, what; can you tell?

A. No, I don't know as I can.

Q. Are you aware of the fact that the K. D. the Keokuk & Des Moines is the Rock Island?

A. No, sir.

Q. The Hyland lot is on the K. D.?

A. Yes, sir.

Q. Well, you are not aware that the K. D. is operated by and has been for a great many years, by the Rock Island?

A. It is leased by them, I believe.

Q. And is operated by them?

A. I presume so.

Q. So far as the operation service is concerned it is the same as the other?

A. I presume so.

Q. Do you want here the distinction you made with respect to the difference of being on the main line?

A. Yes, sir.

Q. Makes two thousand dollars?

A. Yes, sir.

Q. Now, according to that, why don't you add $2,000 each to Lots 7 and 6 in Block C, because they are on the main line of the Rock Island, while your Hyland lot is on the K. D.; don't you think you could afford that on your theory?

2245 A. No, I don't think so.

Q. Why do you take it off then from Lot 1 because it is on the K. D. and in that connection why don't you take it off Lot 10 in Block C because that is on the K. D.

A. Lot 10 is a wider lot than Lot 1.

Q. Yes, that is true, but it is no wider than Lot 7 in Block C.

A. No.

Q. I just want you to make what answer you care to in respect to that situation; explain yourself, if you can, or want to; if not, we will leave it as you have it.

A. Well, I don't know as I have got any explanation to make on that.

Q. Let me ask you, did you at the time of your inspection and valuation place separate valuations upon the various lots in Block B?

A. No, I don't think I did, Mr. Read.

Q. What valuation do you now place on Lot 7 in Block B, the northeast corner lot.

A. $7,000.

Q. That is upon the theory of a comparison with the Hyland lot?

A. Yes, sir.

Q. What valuation do you place upon Lot 8 in Block B?

A. About $3,500.

Q. That is upon the theory of a comparison with the Hyland lot?

A. Yes, sir.

Q. But regarding Lot 8 as a non-trackage lot.

A. Yes, sir.

Q. You concede the two lots might have been divided north and south making two 66 foot lots fronting on Market Street?

A. Yes, sir.

2246 Q. You don't know why you didn't make that division?

A. No.

Q. What valuation do you now place upon Lot 10 in Block B?

A. About $7,000.

Q. That is upon the theory of a comparison with the Hyland lot?

A. Yes, sir.

Q. Regarding it as a trackage lot?

A. Yes, sir.

Q. What value do you now place upon lot 9?

A. $3,000.

Q. That is upon the theory of a nontrackage lot and by comparison with the Hyland lot?

A. Yes, sir.

Q. That is to say, you regard Lot 9 as of $4,000 less value than the Hyland lot by reason of the fact that it is a nontrackage lot?

A. Yes, sir.

Q. These two lots might also have been divided north and south making two trackage lots?

A. Yes, sir.

Q. You didn't consider that at all and don't know why you didn't?

A. No.

Q. What valuation do you now place upon Lot 6, Block B—I want your present individual judgment without regard to any previous value placed upon it?

A. About $4,000.

Q. That is also upon the theory of a comparison with the Hyland lot?

A. Yes, sir.

Q. But regarding lot 6 as only 44 feet in width and giving it substantially the same valuation per front foot?

2247 A. Yes, sir.

Q. What valuation do you now place upon Lot 5?

A. $2500.

Q. That is upon the theory that it is nontrackage and by comparison with the Hyland lot as a basis of valuation?

A. Yes.

Q. What value do you place upon Lot 4?

A. $2,000.

Q. That upon the theory that it is a nontrackage lot and by comparison with the Hyland lot?

A. Yes, sir.

Q. What valuation do you now place on Lot 3 of Block B?

A. About $2,000.

Q. That also upon the theory that is is a nontrackage lot and by comparison with the Hyland lot valuation?

A. Yes, sir.

Q. These four lots might be divided north and south?

A. Yes, sir.

Q. Making two 66 foot lots fronting on Market Street trackage property and of a very much greater depth than the Hyland lot?

A. Yes, sir.

Q. You did not consider that in your consideration of the matter and don't know why, is that right?

A. No, I guess not.

Q. Turning your attention now to Block M did you place separate valuations upon Lots 9 and 10 in that Block?

A. I did not.

Q. What valuation do you now place upon Lot 9 in Block M?

A. $4,000.

Q. I noticed you looking at the memorandum?

2248 Mr. BRENNAN: He has a right to look at the memorandum.

A. No, sir; I was looking at the lot here on the north.

Q. That is upon the theory that it is a trackage lot?
A. Yes, sir.
Q. That is $3,000 less than the Hyland lot?
A. Yes, sir.
Q. Why—before answering that question I will ask you another one; what valuation do you now place upon Lot 10 in Block M?
A. About $3,000.
Q. You recollect that your aggregate valuation on these two lots was $7,000 given yesterday, do you?
A. Yes, sir.
Q. The valuation of $1,000 on Lot 10, Block M, is upon the theory that it is nontrackage lot?
A. Yes.
Q. Your valuation of Lot 10 in Block M, of $3,000 is upon the theory that it is a nontrackage lot?
A. Yes, sir.
Q. These two lots also might be divided north and south making two 66 foot lots fronting on Elm Street?
A. Yes, Sir.
Q. You notice the valuation of those two lots is the same as the Hyland lot?
A. I haven't added it up.
Q. You have testified that the Hyland lot was $7,000?
A. Yes, sir.
Q. You know the aggregate of $3,000 and $4,000 is $7,000?
A. Yes, sir.
Q. So that it is the same?
A. It is the same.
2249 Q. Why didn't you consider Lot 9 in Block M as of equal value with the Hyland lot; it is the same size, has trackage for the same distance and trackage on the same railroad; why that distinction—it is a mistake, it is on the Q.; Lot 9 is on the Q. while the Hyland lot is on the K. D.
A. I presume that is the reason then.
Q. Is it?
A. Yes.
Q. That is to say, two lots on the Q. are anly worth what one lot is worth on the K. D., and the difference is because one is the K. D. and the other is the Q. Railroad?
A. Yes, that is my difference, yes sir.
Q. Well, that is your view of it now?
A. Yes, sir.
Q. Another situation I call your attention to for the sake of receiving such explanation as you care to make, the Hyland lot is 66 foot lot on the K. D.?
A. Yes.
Q. Lot 10 in Block B is a 66 foot lot on the Q. railroad; you have placed the same value on Lot 10 as the assumed value of the Hyland lot; now if there is the distinction in value because a lot is on the Q. rather than upon the K. D., why don't you make it in that instance?
A. I don't know.

Q. Don't there seem to be something wrong in the working theory?
A. Mr. Read, I did not consider the Hyland lot worth $7,000.
Q. That may be true, but you used it for comparative purposes and for comparative purposes it is immaterial whether it is worth that or not.
A. Yes, sir.
2250 Q. Isn't there something wrong with your hypothesis and don't you want to recede from it and make some explanation?
A. No, sir.
Q. Very good. Now turning your attention to Block T, did you place separate valuations upon the various lots in that block at the time of your inspection of the property?
A. No, sir, I did not.
Q. What valuation do you now place upon Lot 7 in Block T?
A. About $700.
Q. What on Lot 6 ?
A. About $600.
Q. What on Lot 5?
A. About the same.
Q. What on Lot 4?
A. About $500.
Q. What on Lot 3?
A. About $400.
Q. Lot 7 is regarded by you as trackage property?
A. No, sir.
Q. It is not?
A. No, sir;
Q. None of the lots in Block T are regarded as trackage property:
A. No, sir.
Q. Lot 7 abuts upon the main line of the Rock Island Railway, doesn't it?
A. No, sir.
Q. Why not?
A. Because it is right at the end of the bridge and you can't get in there with a track.
Q. Well you regarded it as nontrackage property, all of it?
2251 A. Yes, sir; all of it.
Q. The lots are 40 feet frontage?
A. Yes, sir.
Q. The basis of comparison is still the Hyland lot?
A. Not in that case, no sir.
Q. What is the basis of comparison there?
A. What in my opinion the property is worth for factory purposes.
Q. Regarded as nontrackage property?
A. Yes, sir.
Q. And regarded as separate property?
A. Yes, sir.
Q. Not regarded in connection with the ownership of Block C or any part of Block C?
A. No, sir.

Q. Now, I believe you said yesterday that you had inspected and valued this property in groups as given by you?
A. Yes, sir.
Q. That is to say, Lots 9 and 10 in Block M in one group?
A. Yes, sir.
Q. Lots 3, 4, 5, 6, 7, 8 in Block B as in another group.
A. Yes, sir.
Q. And so on as given by you in your testimony?
A. Yes, sir.
Q. Why did you do that?
A. I don't know why I did it, but I did it that way.
Q. As I recall it some of the witnesses said they were directed or requested to make the valuations as they gave them; did you have any direction?
A. Yes, sir; that is just the way they gave them to me.
Q. Who gave them to you?
2252 A. I don't remember now who it was, whether it was the City Engineer or who it was.
Q. I would like to have your best recollection as to who gave you that direction?
A. I couldn't tell you, Mr. Read.
Q. Who did you talk to about it as to acting as an appraiser of this property?
A. I think Mr. Brennan suggested it to me first.
Q. About when was it that he first suggested it to you?
A. Oh, some two or three weeks ago; maybe longer.
Q. I wish you would think about that a moment, so as to fix the time as definitely as you can?
A. Well, I couldn't Mr. Read; some two or three weeks.
Q. The trial of this case began on the 12th day of July this year; you know that?
A. No, sir.
Q. You were in the court room along about that time, weren't you in this court room?
A. I dropped in several times, Mr. Read, I guess so.
Q. Weren't you in here in the early days of the trial?
A. I expect likely I was.
Q. Had Mr. Brennan spoken to you before that?
A. Yes, sir.
Q. How long before that?
A. I don't know a week or ten days probably.
Q. Do you recall anything about that?
A. That is the best of my recollection.
Q. Mr. Brennan was the first person who spoke to you about it?
A. I can't say; it is my impression Mr. Read.
Q. Well, who else did speak to you about it if anybody?
2253 A. I am not sure but what the city engineer spoke to me about it.
Q. Who is the city engineer?
A. Mr. Dobson.
Q. What did Dobson say to you?

A. I don't remember what was said, but they asked if I would appraise that property and I said I would.
Q. What did Mr. Brennan say?
A. He asked me to appraise the property.
Q. Did he speak to you before Dobson did?
A. I couldn't say.
Q. Were you asked to take charge of the appraisement?
A. No, sir.
Q. Did you speak to anybody else about the appraisement?
A. No, sir.
Q. Did you speak to Frank Mathis?
A. No, sir.
Q. To B. S. Walker?
A. No, sir.
Q. To Mr. Arnold?
A. No, sir.
Q. You were not in charge of the appraisement then?
A. I don't know of anybody that was particularly.
Q. Were you in charge?
A. No, sir.
Q. Weren't you in charge?
A. Not that I know of, no sir.
Q. Didn't you take upon yourself the duty and responsibility of seeing to it that the appraisers were obtained and were assembled and performed their duty?

A. No, sir; I did not. I did not know who the appraisers
2254 were until the morning we went over there. Mr. Hauge I never met in my life that I know of.

Q. Then as the matter stands you were first spoken to by the city engineer or Mr. Brennan a week or ten days before the *the* 12th of July?
A. Sometime about that; I can't remember exactly how many days.
Q. You said you had the Hyland lot listed with you?
A. Yes, sir.
Q. When was it listed with you first?
A. I think about three months ago.
Q. Listed by whom?
A. Mr. Hyland.
Q. What is his name?
A. I think it is Frank; he is with the Merchants Transfer Company.
Q. Are you willing to say you were not spoken to by some one on behalf of the City earlier than the time you have given about the appraisal of the property?
A. I couldn't say; I don't think so.
Q. Last March, say or April?

Objected to on part of defendants as irrelevant and immaterial.

A. Not that I remember of.
Q. Did Mr. Hyland come to your office to list the property?

Objected to on part of defendants as being immaterial.

A. No, sir.
Q. Did you go to see him?
A. I was up there talking about other business and he gave me that lot there.
Q. You didn't go to see about this lot?
A. No.
2255 Q. You was at his office on other business?
A. Yes, sir.
Q. And he gave you this lot?
A. Yes, sir.
Q. And fixed the price at $7,000?
A. Yes, sir.
Q. You put it on your books?
A. Yes, sir.
Q. Did you make an entry in writing?
A. No, sir.
Q. Just carried it in your head?
A. I took a written memoranda on it.
Q. Have you got that memorandum now?
A. I have not.
Q. Is it in your office?
A. No, sir.
Q. Do you know where it is?
A. I don't know where it is; it may be up at the house.
Q. Now, returning to the question of the property, you appraised it in groups?
A. Yes, sir.
Q. A piece of property that is adapted to some particular use as a whole is of greater value and worth more than when cut up into pieces, isn't it, as a general rule at least?
A. Sometimes that is true and sometimes it is not.
Q. A piece of land adapted for stock growing, because of having a stream of water running through it or running through one forty of it, taken as a whole, adapted for stock raising and stock growing purposes, would be worth more considered as a whole than if it were divided up and the stream of water segregated and cut
2256 off into one fractional part?
A. Most assuredly.
Q. And a piece of property that as a whole is served by railway trackage is worth more if taken as a whole than if the trackage is segregated by setting off and attaching it to separate fractional parts?
A. Well, I think that depends.
Q. You wouldn't admit that proposition?
A. If a man wanted to use all of it, that would be true.
Q. The general proposition is true, Mr. Wilcoxen, isn't it?
A. What do you mean, Mr. Read, as regards to a block?
Q. I mean just as I stated it in the question, that property as a whole considered as trackage property is worth more than if the trackage be segregated and out off and attached to a fractional part of it and the remainder of the property rendered non trackage.
A. Yes sir.

Q. Now this property over here of the Gas Company is used by the Gas Company as a whole, isn't it?

A. I presume so, yes sir.

Q. You know so?

A. Yes,—well on Block T I don't think they are using all of that.

Q. You don't know what that is used for in the property of the gas plant?

A. I see they have got a pump or something in there.

Q. That is all you know there?

A. Yes.

Q. You know that because you saw the pump?

A. Yes, sir.

Q. But you don't know what appliances may be in there
2257 in the economy of the gas plant?

A. No.

Q. So now, if you can tolerate the idea that Lot 10 is used in connection with the other property, then the whole of it is used in connection with the management and conduct and operation of the gas plant?

A. Yes, sir.

Q. And the property as a whole for that use is worth more, isn't it, than if you cut it up into smaller fractions, especially than if you segregate the trackage off the property?

A. For their use, yes sir.

Q. You admit the proposition that property is worth what it is worth for its highest available use?

A. I expect that is correct.

Q. That sounds like a good proposition?

A. Yes.

Q. You have not, of course, apparently undertaken to value the property of the gas plant for what it is worth for its highest available use, assuming that the purpose for which it is now used is its highest available use?

A. No.

Q. You apparently at least have undertaken to value it upon the theory, upon the basis, of cutting it up into small fractions and of rendering a part of it nontrackage property, haven't you?

A. Yes, sir.

Q. It is worth more as trackage property than it would be without it?

A. Yes, sir.

Q. And when you say that in your opinion the aggregate value which you have given is the true, reasonable present market value, you mean necessarily the market value in your opinion as
2258 cut up and segregated as you done it?

A. Yes, sir.

Q. You don't mean its present market value for such use as it is now devoted to and you don't mean that that tract of ground if it were occupied and used as other ground over in that vicinity is used, such as the property of the Des Moines Manufacturing & Supply Company, the American Linseed Oil Company, the Nicholas Shedherd Co., could be obtained at the prices you fixed?

A. I think they could be obtained at the prices I have given you.
Q. But if the property of the Gas Company were devoted to such use as the other properties I have called your attention to, do you think they could then be obtained for the price you have given?
A. Not in that locality, no.
Q. You don't think so?
A. Not in that locality.

Excused.

F. A. MATHIS, being first duly sworn on part of defendants, examined in chief by R. O. Brennan, Esq., testified:

Q. Where do you reside?
A. In Des Moines.
Q. How long have you lived in Des Moines?
A. Since 1882.
2259 Q. And what has been your business?
A. Since about 1884 I have been in the real estate business most of the time in East Des Moines.
Q. What is the name of your firm?
A. Mathis Realty Company.
Q. Have you devoted yourself excusively to the real estate business?
A. Yes, sir.
Q. Are you familiar with real estate values in the city of Des Moines in a general way?
A. Yes, sir; in East Des Moines especially.
Q. Do you know the property of the Des Moines Gas Company?
A. Yes, sir.
Q. Did you investigate that property at any time for the purpose of placing a valuation upon it, Mr. Mathis?
A. Yes, sir.
Q. And at whose instance and request?
A. At the instance of yourself and the Mayor.
Q. Did anyone else at any time request you to?
A. Yes, sir.
Q. Who was that?
A. Mr. Keffer of the Gas Company.
Q. W. D. Keffer, of the Des Moines Gas Company?
A. Yes, sir.
Q. He asked you at one time to place a valuation on it?
A. Yes, sir.
Q. When was that, Mr. Mathis?
A. It was probably in late winter or early spring, I have forgotton; some seven or eight months ago.
Q. You are familiar with the property of the gas Company, are you Mr. Mathis?
2260 A. Yes, sir.
Q. And know the property in that vicinity as well?
A. Yes.
Q. And kept touch with the sales over in that part of the city?
A. Tried to, yes sir.

Q. Directing your attention to the plat before you, Exhibit 5, blue print showing the location of the Gas Company's property, I wish Mr. Mathis you would refer to Lots 9 and 10 in Block M shown on the plat and tell the Master what in your judgment was the reasonable market value of those lots say on or about January 1st, 1911?

A. I put a value on that of $65 a front foot fronting to the railroad.

Q. What would be the aggregate valuation of the two lots?

A. $8,580.

Q. Is that Block M or Block B?

A. I think I placed the value in Block M at $60.

Q. I want to get Block M first, what was the frontage?

A. 132 feet square.

Q. At $60 a front foot it would be $7,920?

A. Yes, sir.

Q. Is that what you would say, Mr. Mathis, would be the reasonable market value of the two lots?

A. Yes, sir.

Q. Now take Lots 9 and 10 in Block B, shown on Exhibit 5, and tell the Master what the reasonable market value of those lots was on January 1, 1911?

A. I put those at $65. a front foot.

Q. $65. a front foot?

A. Yes, that would be $8,580.

Q. Now, referring to Lots 3, 4, 5, 6, 7, and 8 in Block B,
2261 please tell the Master what in your judgment was the reasonable market value of these lots at the time referred to?

A. I put those and 7 and 8 together and appraised them on the basis of $75 fronting to the north.

Q. What is the aggregate?

A. $19,800.

Q. Referring to Lots 1, 2, 3, 9 and 10 in Block C, Mr. Mathis, will you please state what in your judgment was the reasonable market value of those lots at the time referred to?

A. I put that at $80 a front foot.

Q. What is the aggregate amount?

A. $21,120.

Q. What are the dimensions?

A. 264 feet. They are marked on this plat 140 feet; I have figured it on the basis of 132 feet; that would be 280 feet. That would also be true with these others. I had taken the city plat. This plat shows 140 and the city plat shows 132.

The MASTER: Which ones are those?

A. Both blocks B and C; that is on account of the alley.

Q. You took the city plat which showed the alley?

A. Yes, on a basis of 132 feet deep.

Q. On the basis of 264 feet, I just wanted to know if you had not made a mistake in your multiplication?

A. I make it $21,120.

Q. Now taking lots 4, 5, 6, 7, and 8 in Block C?

A. I put those at $100 a front foot on the Rock Island.
Q. What is the aggregate?
A. That would be $26,400.
Q. On the basis of eliminating the alley?
A. Yes, $26,400.
2262 Q. Referring to Lots 3 and 4 in Block K, tell the Master what in your judgment is the value of those lots.
A. $100 a front foot.
Q. What is the aggregate?
A. $13,200.
Q. Now, referring to lots 3, 4, 5, and 7 in Block T shown upon the plat, tell the Master what the value of the lots to which your attention is called was on January 1, 1911?
A. I appraised that at $4,000.
Q. So that if I have added your figures correctly the total value of the property is $101,020.
A. I haven't got it totaled here.
Q. Your figures are, as I have them, $7,920; $8,580; $19,800; $21,120; $26,400; $13,200 and $4,000?
A. That is $101,020.
Q. Now, Mr. Mathis, is that your judgment of the market value of this property on or about January 1, 1911?
A. Yes, sir.
Q. I wish you would tell the Master which is the principal thoroughfare in East Des Moines, business street?
A. Walnut and Locust Streets.
Q. Are property values higher on Locust than on Walnut?
A. Yes, sir.
The MASTER: Locust Street runs to the Capitol?
A. Yes, sir.

Cross-examination by W. L. READ, Esq.:

Q. Who was present when you inspected and examined this property?
A. B. S. Walker, A. O. Hauge, Mr. Arnold and Mr. Linthicum.
2263 Q. Did Mr. Wilcoxen refer to the lot on the corner of Third and Market known as the Hyland lot?
A. He did some time during that time, I think the latter part, after we probably had looked at the property.
Q. Did he tell you that lot was listed with him at $7,000?
A. Yes, sir.
Q. Did he tell you about another lot over on Raccoon Street?
A. No, sir.
Q. Just the one lot, the Hyland lot?
A. Yes, sir; I think he told me about a lot on Raccoon Street after that one time, but not at that time.
Q. Did he tell you about the Raccoon Street lot before you had reached your conclusion as to the appraisal?
A. No, sir.

Q. About the Hyland lot he told you the day you were down there?

A. Yes, sir.

Q. He told you that lot was listed with him at $7,000?

A. Yes, sir.

Q. Why have you appraised this property in lots as you have given it?

A. I didn't see any other way to arrive at any conclusion as to its value.

Q. It was upon your own suggestion then?

A. Yes, sir.

Q. Mr. Mathis, it is a coincidence perhaps, but Mr. Arnold, Mr. Wilcoxen and Mr. Hauge and Mr. Walker have, as I recall it, given appraisements in this method, that is, by including the same lots in the same block; did you talk it over and agree upon it?

2264 A. I made this appraisement for Mr. Keffer first six or eight months ago on this basis.

Q. Did you talk with Mr. Wilcoxen, Mr. Arnold and the rest of the appraisers of this method of getting at it?

A. I think I suggested—I don't know whether I suggested it or somebody else; I suggested that I had already made an appraisal I think, and I may have suggested that it was appraised that way; I don't remember.

Q. As I recall it, some of the witnesses stated that they had been requested to appraise in this method, that is in lots?

A. Not that I know of; I did not understand we were.

Q. At any rate, you and all the appraisers for the city seem to have appraised in this method and including the same lots in the same bunch?

A. Well, I don't know; I can tell you that I made this appraisement for Mr. Keffer several months before I ever talked with the other gentlemen.

Q. Mr. Mathis, if you will pardon me, I did not inquire about that; I am trying now to find out how you appraisers all adopted the method of appraisement by lots?

A. I only can explain for myself.

Q. Do you think you told the others you had appraised it in that way?

A. I think so.

Q. Did you suggest then that was the better way?

A. I may have done so; I don't remember.

Q. You don't recall?

A. No.

Q. You just stated a moment ago you could see no other way to appraise it?

A. I think we could get at its best value by appraising it on railroad frontage.

2265 Q. Were you in the court room when Mr. Wilcoxen testified?

A. Part of the time.

Q. Let me ask you, how you did appraise, for instance take Lot- 9 and 10 in Block M?

A. I appraised it on the basis of the railroad frontage.

Q. You appraised the two lots together?

A. Yes, sir.

Q. And on the basis of railroad frontage?

A. Yes, sir.

Q. What was your basis of comparison as to those values?

A. Well I commenced on the Rock Island trackage first and appraised that $100 a front foot.

Q. What did you begin with first?

A. I appraised the Rock Island trackage first.

Q. Let us get the job lot you first appraised?

A. Lots 4, 5, 6, 7, and 8 in C.

Q. Now you appraised that upon the basis of Rock Island frontage?

A. Yes, sir.

Q. What did you first appraise?

A. 4, 5, 6, 7 and 8 in C.

Q. Did you consider Lots 4, 5, and 6 as trackage property?

A. Yes, sir.

Q. You took 132 feet frontage on the Rock Island?

A. Yes, sir.

Q. And called that $100 a front foot?

A. I took the whole block and called it $100.

Q. That is true of those three lots at any rate?

A. Yes, sir.

Q. What was the basis of comparison to obtain that $100 per front foot?

A. Well, at that time there hadn't been any sales I knew
2266 of in that exact locality, that is any recent sales.

Q. The Hyland lot was listed with Mr. Wilcoxan, he told you that?

A. Not when I fixed this value.

Q. He told you that anyhow?

A. I fixed this value some months before I talked to Mr. Wilcoxen about the Hyland lot.

Q. Go ahead and tell me how you obtained the basis of comparison?

A. I simply had to take into consideration the values as to what I believed they were worth in that locality; since then there have been some sales in that locality which I think justify my——

Q. Just precisely how did you arrive at your conclusion of $100 a front foot being the proper valuation?

A. Well, there was trackage on Court Avenue on a public street at that time——

Q. What trackage was that?

A. Between Second and Third on the south side of Court Avenue; at that time we could offer at $200 a front foot; I considered it was worth twice as much as this on the Rock Island.

Q. Why?

A. Because of the fact it had frontage on a public street and had streets all around it.

Q. Vine Street is a public street?

A. It is a railroad track.

Q. It is a public street?

A. It belongs to the city I guess.

Q. It has not been vacated?

A. Not that I know of.

Q. Then the difference was, because of your estimate, the difference between Court Avenue and Vine street as a street?

2267 A. To a certain extent.

Q. What trackage does that property have?

A. The Des Moines Union.

Q. It is served by a track through the middle of the block?

A. Back of the frontage.

Q. What property was that?

A. The Patrick property.

Q. Did Patrick offer his property?

A. He was offering it at that time.

Q. At $200 a front foot?

A. Yes, sir.

Q. What other factor entered into the formation of your judgment of $100?

A. The Baylor property of First and Court Avenue was held or had been sold, I don't remember which; at that time it was held at $28,000 and I think sold for $27,000.

Q. About $200 a front foot?

A. I don't remember now. A little less than $220.

Q. The Baylor property is not trackage property?

A. No, sir; that was a corner property near the river and right by the bridge.

Q. It was not trackage property.

A. No.

Q. What other circumstance or fact did you have in mind in reaching your conclusion as to the valuation per front foot of the gas property in Block C?

A. Well the Nicholas Shepherd property on the corner of Fourth and Vine was bought by the Loetcher-Yeager Manufacturing Company for $35,000 a quarter block with a three story building on it.

Q. That is trackage property?

2268 A. Yes, sir; that is on the Northwestern, the Rock Island and the Des Moines Union.

Q. That was unusually cheap property, wasn't it, a low price?

A. I think it was a good buy; I think it was a little below its value.

Q. It was really below normal?

A. I think so.

Q. In your estimation?

A. Yes, sir.

Q. You are rather conservative, aren't you?

A. I hope so; I think I am.
Q. You take some pride in the fact that you are conservative?
A. I don't know that I take any pride in that fact.
Q. You recognize it as a fact that you are conservative?
A. Yes.
Q. Was there anything else now that was a factor?
A. There was a sale on the corner of Third and Vine by the American Linseed Company to the Loetcher-Yeager people of a quarter block of $8,000.
Q. When was that sale?
A. That was this spring; it was consummated in March; it was made earlier than that.
Q. That was regarded by you as a low price?
A. I think it was a low price.
Q. It was a bargain counter sale?
A. I don't know whether—I don't think they were forced to sell it; but I think they sold it at a low price.
Q. Anything else?
A. There was a lot of the Iowa Loan & Trust Company on Fourth street between the K. D. and the Rock Island, on the east side of the street sold for $2,500; 60 feet, not trackage.
2269 Q. That was a lot the Company had taken on foreclosure?
A. I don't know how they got it.
Q. The Iowa Loan & Trust Company is not a holder of property at all, not a buyer?
A. I think not.
Q. It simply takes what it has to on foreclosure?
A. I think so.
Q. From those circumstances you concluded the frontage in Block C was worth $100?
A. Yes, sir.
Q. What did you do with Lot 9, the remaining lots in that block?
A. I put them out fronting on the K. D. at $20 less.
Q. Why did you do that?
A. From the fact they are a little farther away from the crossing of the bridge, crossing of the river, and because of the fact they were on the K. D. instead of a through line.
Q. And the properties in Block D you considered all as trackage property?
A. Yes, sir.
Q. And so placed a valuation upon them making it less per front foot because of what circumstance?
A. Well, it is a little farther from the crossing of the river.
Q. What figure does that short distance cut in your estimation?
A. Well it would be a very ha-d thing to explain, but sometimes property in one block is worth a little more than any other if the streets are open.
Q. In your estimation in Block B, K. D. frontage, you put it at how much?
A. I put the Rock Island frontage that is the K. D. at $80—no in Block B I put that at $75.

2270 Q. The Q frontage, what is that?

A. That is $65 in Block B.

Q. Why did you make that difference?

A. Because of the difference in railroads and the difference in location as compared with crossing the river bridge further from the bridge.

Q. You made $35 difference per front foot between property in Block B fronting on the Q. and Block C fronting on the Rock Island?

A. Yes, sir.

Q. You made it because of the difference in the two railways and because of the difference in the distance from the bridge?

A. Yes, sir; and the location as to the business property in East Des Moines also.

Q. This isn't business property?

A. No, this would be manufacturing property, factory property.

Q. How much difference did you make because of the two railroads?

A. I don't think I could tell you. In the sale of property we find——

Q. Have you——

Mr. BRENNAN: Let him finish his answer.

A. In the sale of property we find that Rock Island trackage is much preferable to the Q. or K. D.

Q. Have you sold any?

A. Not recently.

Q. Have you ever?

A. I have sold some trackage, yes sir.

Q. Have you had an opportunity to know the circumstance you call attention to, and to see whether it is true or not as to whether it is on the Rock Island or Q.?

A. I don't know that we have sold any but in offering property we find that distinction.

2271 Q. When did you find it and where; I am disposed to doubt that proposition and defend the Q. railroad.

A. I don't know that I can tell you, Mr. Read.

Q. The property in Block T, what did you regard it, for what uses did you regard that property as available?

A. I thought it might be available for small factories.

Q. Did you regard it as having trackage facilities?

A. Yes, sir.

Q. But you didn't value it according to the frontage?

A. I valued it because of the fact that it was so much deeper than it was fronting on the railroad track, taking into consideration the fact it had trackage.

Q. You didn't regard it as a part of the Gas Company property, used and essential to use in connection with the maintenance and operation of the gas plant?

A. No, I think not.

Q. You didn't regard any portion or any lot that you separately appraised as an integral portion of the gas plant?

—. No, sir.

Q. Or necessary to its operation?

A. No, sir.

Q. Where it is necessary to have a certain tract of land, I mean a certain area, to serve the purpose for which it is desired, that property so necessary is worth more consequently than it is cut up and separate?

A. It might bring more if they had to have it just in that location.

Q. Well it is worth more in that location?

A. If they had to buy it in that location and pick it up in small parcels——

Q. It is worth more in that location because if the then owner were to sell, if there should come along a buyer who wanted
2272 the same tract or an equal tract of equal area, it would be worth more to him?

A. I think it would bring more money split up than in a tract.

Q. Take my proposition, that piece of ground, that whole tract, if a person should come along who wanted a tract of equal area and equal character of trackage and all, it would be worth more to him, he would pay more for it as a whole than he would if it was in separate tracts?

A. Usually in buying large tracts of that kind they want to buy it cheaper.

Q. Take this illustration: suppose one had a piece of agricultural land adapted for stock growing and watered by a running stream, now if a person wanted to buy a stock farm he would pay more for that farm as a whole than he would if it were cut up into forty acre tracts seggregating into one forty all the water?

A. That individual man might.

Q. People of that class would?

A. Yes.

Q. So that applied, that illustration applied to the situation over here, here is a tract of land adapted for a use where trackage facilities were necessary, where it was necessary and desirable to be inside and not remote from the business center, and where it was desirable and advantageous to be near to the thoroughfares of the business, now such property as a whole would be worth more than if it were cut up into separate properties?

A. It usually brings more money cut up into small parcels.

Q. That might be true of business property, but that could not be true where a demand was for a large tract—I am trying to get into your mind now the idea of a demand for a large tract, a tract
2273 as large as this?

A. It is pretty hard to answer that question as you put it. Usually if they can't get one location that suits when they want a large tract, they go to a location where they can get it.

Q. This is a problem of having it in this location?

Mr. BRENNAN: I submit the witness has answered the question two or three times.

A. I am inclined to think Mr. Read, the property would bring more money split up in parcels than a large buyer would pay for it as a whole.

Q. Suppose you had the problem on hand of buying up in one tract two and a half blocks or two and three fourth- blocks in that general locality, for instance, south of Court Avenue and west of Fifth Street and north of Elm, what could you go in there, what would it cost to go in there, taking that location as it is, the uses that are made of it and gather up two and a half blocks of contiguous property?

A. I don't think it could be done.

Q. Why?

A. Because of the fact that the Gas Company and the railroad companies have got most of it.

Q. There are a good many factories in there?

A. Small factories, yes sir; quarter blocks. It is hard to get into one block where a railroad company hasn't got a part of it.

Q. Well, take block D and Block I, the Des Moines Union goes through that block, but eliminating that, what could you get those two blocks for?

A. I don't know whether they could be bought or not.

Q. I wish you would take a pencil and figure out what the cost would be?

A. I can't do it, because I don't know what the owners want for it.

2274 Q. You know what they are worth?

A. Court Avenue frontage would be worth $200 here.

Q. Mr. Mathis, it would cost more to get those two blocks than the valuation you placed upon Blocks C and B?

A. Yes, sir.

Q. Doubly more?

A. I don't know whether doubly more but it would cost more.

Q. Now, suppose you would go on the west side of the river, south of Mulberry and east of Twelfth and Fifteenth and north of Tuttle and undertake to buy up two blocks and a half there——

A. I haven't any idea what it would cost there, I haven't handled anything there.

Q. Suppose you were to gather up two blocks and a half, using the Kraetzer Carriage Company as a nucleus, what would it cost there? Can you state what it would cost there?

A. No, sir.

Q. Well, return to the east side then, it would cost a sum considerable in excess of the valuation you placed upon the gas property to gather up under one ownership an equal area of ground in the district I have called attention to?

A. I think so.

Q. Now, Mr. Mathis I want you to get into your mind the idea of a buyer who desires two blocks or two blocks and three quarters

of ground, situated west of Fifth Street and south of the south line of Court Avenue and north of Elm Street, who requires that the property shall be trackage property, thoroughly trackage and in that general location; now suppose that you had the property of the Gas Company, what price do you imagine you would make to that buyer for the gas property, remembering and keeping in mind the conditions as they prevail in Des Moines, the inside trackage property in West Des Moines and inside trackage property in East Des Moines is high priced?

2275

Objected to on part of defendants as incompetent and not proper cross-examination.

A. That would depend very largely on what I thought I might be able to get for it; I would get all I could for it.

Q. That is true; wouldn't you sit down and figure for yourself—this man requires this large tract of ground, it has got to be trackage property, he can't get it in the outside trackage districts, he must get it in here; he can't get it in West Des Moines and buy an equal area without paying a half a million dollars as a rule, and he cannot well go into this district because he has got to buy up from individual owners and he will be held up along the line; wouldn't you figure all these things as factors in determining what you ought to ask for it.

Defendants interpose same objection las- made.

A. In selling I would try to get as much as I could; if I figured he was going to be held up by somebody else, I would try to hold him up myself.

Q. Wouldn't you figure all the elements, factors to which I have called your attention in fixing the price that you ought to ask for your two and three fourths blocks of ground?

A. I perhaps would.

Q. Wouldn't you be right in doing that, aren't they just the factors to be taken into consideration?

A. Those are taken into consideration.

The MASTER: You would sell it for all you could?

A. Men usually get all they can.

Q. Aren't those just factors to be considered by you and wouldn't you justly argue that the man you was trying to hold up would look at it in the same way, isn't that true? 2276

A. I suppose I would insist upon getting as much as I could for the property.

Q. You recognize that supply and demand are vital elements in determining values?

A. Yes, sir.

Q. If you had the only available piece of ground several people wanted you would think you could get more for it?

A. Yes, sir.

Q. What is the range of values on East Locust Street from First to Fourth street, referring now to ground irrespective of improvements?

A. From $175 to $200.

Q. Do not limit yourself to what may be offered for it; I am simply asking what is a just value rather than price?

A. About $200 a front foot.

Q. Where do you find $200 a front foot property?

A. We sold some near Fourth Street just east of Fourth Street last year for $3,500, 20 feet, that would be less than $200.

Q. The Shaver property, what do you think that is worth a front foot—you had a chance to testify about that and put it down low; see how low you go again.

A. I was not a witness in the Shaver case.

Q. What is it worth?

A. That is a corner—is it 44 feet?

Q. I think so?

A. About $250.

Q. Go one block east to the corner of Fifth and Locust; what is property worth there per front foot?

2277 A. Probably $300 to $400.

Q. Well, let's take the corner that Teachout has bought, the northeast corner of Fifth & Locust, what valuation would you place upon that ground; in that same connection what valuation would you place upon the southeast corner of the Smucker & Loper property, and in that same connection the Capital City Bank property?

A. I think the Teachout corner worth about $400 a front foot.

Q. What did he pay for it?

A. $110,000 I think.

Q. How much?

A. 100 feet.

Q. The building and all?

A. Yes.

Q. How deep?

A. 132 feet.

Q. The building is old, it isn't worth much?

A. Part of it is old and part isn't.

Q. Well take the Capital City Bank corner, how much is that ground worth?

A. About the same, about $400 a front foot.

Q. And the Smucker & Loper frontage?

A. About the same basis.

Q. And the other corner?

A. About the same.

Q. Where is the highest priced property frontage in East Des Moines?

A. On Locust Street between Fifth and Sixth.

The MASTER: What is the next street south of Walnut?

A. Court Avenue.

Q. What is your idea for placing so low a valuation on the Teachout property?

2278 A. There is a good building there excepting just on the corner.

Q. Teachout bought it recently?
A. Yes, sir.
Q. When?
A. Something over a year ago.
Q. Paid $100,000?
A. Yes, sir.
Q. You figure the building worth $50,000?
A. Around there someplace; about $60,000.
Q. He didn't pay too much for the property, did he?
A. I think not.
Q. Smucker & Loper have an asking price?
A. I don't know whether it is offered or not.
Q. Don't you know they are holding it at $35,000?
A. No, I do not.
Q. Do you know what the bank values its property at?
A. No, sir.
Q. When you get down west of Fourth Street it is about $150 to $200 per front foot?
A. Yes, sir.
Q. You know that the city bought a site for the city hall?
A. Yes, sir.
Q. And paid $78,000?
A. I don't know what the price was.
Q. About 100 feet frontage on Locust street and about the same frontage on Grand Avenue?
A. I don't know what the frontage is.
Q. That would be about $390 a front foot, double frontage on Grand and Locust?
A. Something like that.
2279 Q. How has property sold on Locust street east of that on the corner of East First and Locust?
A. There has been nothing sold but some condemned by the city.
Q. The holding prices are from $500 to $600 per front foot, aren't they?
A. I don't know anything except the corner of First which has been held I think for something like $15,000 for 60 feet.
Q. Since the city hall was located at the present site and since the new Locust street bridge has been completed and since the *the* grade of Locust street has been raised and since the park improvement commenced on the river front there have been a good advance in prices of property over there?
A. Yes, sir.
Q. How much?
A. About double.
Q. That is pretty nearly equally true of Walnut street east from the bridge to Fourth street?
A. Yes.
Q. There has been an advance on Court Avenue?
A. Yes, sir.
Q. About equally?
A. Yes, sir.

Q. The recently projected improvements in the way of a contemplated track through there has also tended to increase the prices?

A. I think perhaps so.

Q. So that for the last two or three years there has been a market and decided upward tendency in prices?

A. Yes, sir.

Q. There have not been many sales on those streets because of the people holding the prices anticipatory?

2280 A. Yes, sir.

Q. Therefore you find it difficult in finding a basis of values, don't you?

A. Well, I guess that is true, yes sir.

Q. You have not been able to adjust your mind and judgment to the advance in prices?

A. I think I have; I think they have about doubled in the last four or five years.

Q. That is to say, property worth $150 now on Locust Street three or four years ago was worth $75.

A. I think so.

Q. What property did you have in mind?

A. I didn't quote any property so low.

Q. At $200?

A. Property west of Shaver's sold something like three years and a half ago for $100 a front foot.

Q. What would it sell for now?

A. It has got buildings on it now; the ground would probably sell for $225.

Q. There are no properties offered for sale along that street?

A. Not very much.

Q. You know where the Bolton property is?

A. Yes, sir, some of it.

Q. Are the range of values on Walnut Street about the same as Locust street?

A. Yes, sir.

Q. How do the values on Court Avenue from the river east compare with Walnut street?

A. Probably a little lower.

Q. But all with the market of an upward tendency?

A. Yes, sir.

2281 Q. The owners are expecting to have advances?

A. Yes, sir.

Q. And so far as you are able to see they will come, too?

A. I think so.

Q. Your judgment is there will be a continuous advance in prices?

Objected to as being incompetent.

A. Yes, sir.

Redirect examination by Mr. BRENNAN:

Q. Mr. Mathis, who is W. D. Keffer for whom you made the appraisement in the first instance?

A. He is connected with the Gas Company.
Q. As Secretary?
A. Yes.

Mr. READ: That is not a very proper subject of inquiry. The witness volunteered that; evidently if he did make one it was so extremely conservative that nobody would look at it.

Q. Were there any criticisms directed against it by any one or any witness testifying against it?
A. Mr. Keffer objected and said it was too low; he said he couldn't use it.
Q. Did anybody else say anything about it?
A. Connected with the Gas Company?
Q. Yes, or who testified here on their behalf.
A. I talked to Mr. Porter one time in connection with it.
Q. What did he have to say?

Objected to on part of complainants as immaterial and hearsay.

2282 A. Mr. Porter said he had been asked by the Gas Company to make an appraisement and he wanted to get my idea about its value; he was looking it up some. I told him I had already given Mr. Keffer a figure. Mr. Porter took my figures and talked about them. He said he thought I had it too high.

Recross-examination by Mr. READ:

Q. You talked with Mr. Keffer some last winter?
A. Early winter.
Q. Don't you know Mr. Keffer has been ill and away from town since January last winter?
A. I am not sure about the date; if I was I would fix it.
Q. You said the latter part of the winter?
A. Well, to a certain extent it is a guess.
Q. It was before the coming of spring, wasn't it?
A. I think so.
Q. In the winter?
A. I think it was probably along in the winter.
Q. You know as a matter of general information that Mr. Keffer has been sick and was sick and is away and has been away?
A. I don't know anything about that; I haven't seen him.

Excused.

2283 WILLIAM D. MARKS, being first duly sworn, examined in chief by R. O. Brennan, Esq., testified:
Q. Where do you reside?
A. I do business in New York City.
Q. What is your profession?
A. Consulting Engineer.
Q. What preliminary or technical training have you had Professor to qualify yourself as consulting engineer?
A. I was graduated from the Yale School of Science in 1870, and

in 1871 took an additional degree in civil engineering. Since that time I have either been in actual practice or in instructor in engineering.

Q. Did you pursue any studies abroad in connection with your profession?

A. I spent the better part of a year in special studies on bridge construction abroad.

Q. You say that you have taught engineering, tell the Master in what schools you have been instructor.

A. In 1876 I was appointed instructor of mechanical engineering in Lehigh University; after serving there for a few months I was made Professor of Dynamical Engineering in the University of Pennsylvania, serving from 1876 to 1887.

Q. Please state in general and somewhat in detail what has been the character and nature of the professional work which you have been doing during your experience as consulting engineer?

A. By degrees I have become a specialist in gas and electricity. In 1871 I was assistant division engineer for the Delaware & Lackawanna Railroad and then later became transit man on the Chicago & Northwestern Railroad; in 1872 I was appointed resident
2284 engineer and accountant for the contractors building the La Clede Gas Works in St. Louis. I was with them from the beginning of the work until completed and in operation for some little time. After that I became contractor for blast furnaces, blast engines and railway locomotives and railway machinery. That occupation lasted until 1876. In 1887 I got a leave of absence from the University to design a ten thousand horse power electric light station built in Philadelphia, and did so design it, erect it and operate it until 1896. During the most of the latter part of the operation of this station I was the president and in 1896 I resigned the presidency to again become consulting engineer.

Q. So that from 1876 to 1887, I understand you, your activities were devoted to teaching in the University of Pennsylvania?

A. Yes.

At this time an adjournment was taken until 1:30 P. M.

2285 1:30 P. M., TUESDAY, *August* 15, 1911.

WILLIAM D. MARKS being continued on direct examination by R. O. Brennan, Esq., testified as follows:

Q. Now Prof. Marks, I think just before we took the noon adjournment you were stating in a general way your early experiences and also the time which you devoted to teaching in the University of Pennsylvania. After the year 1896 when you resigned as president of the Electric Light Company in Philadelphia, just what was the character of the work which you took up and what did you do during the years after 1896?

A. From 1896 on I was engaged in electric railway, in electric light works, and in gas works. Dropping the question of electricity I during that period, between that and 1905, when I went to New York—I was then located in Philadelphia—I built the Durham,

North Carolina, Gas works, a town of about 22,000 inhabitants and I took up the incomplete gas and electric light works at Fostoria, Ohio, and completed the gas works. That was all the distinctively gas business that I did except an occasional report. I should have told you that during the period between 1876 and 1887, I was actively employed in nearly all of my leisure time by the president of the Brooklyn Gas Light Co., and his associates in investigating gas works in which they were interested acting not only as a technical trained engineer in gas matters but also as accountant and going over their works, examining them as an engineer and sometimes going into their books as an accountant for the purpose of advising them as to the economics of their operations and as to the possibility of their future.

2286 Q. You spoke about going to New York City in 1905. What was the nature of the work in New York City at that time?

A. I was called from Philadelphia by the corporation counsel of New York City and entered into an agreement with him to render exclusive services if necessary, that is all of my time if necessary for three years. I began about the beginning of 1906 and continuously toiled until the beginning of 1909 in the service of New York City on the various suits, or more particularly the suit of the Consolidated Gas Co., against Wilcox as it was afterwards called although Mr. Wilcox had nothing to do with it at all had no connection with it.

Q. You refer to the case of Wilcox against the Consolidated Gas Co.?

A. Yes, sir.

Q. A case in the supreme court of the United States?

A. On the appeal of Wilcox *vs* the Supreme court of the United States.

Q. What was the nature of the work which you performed for the city of New York in reference to that case?

A. That of a technical expert in *g*as matters, more particularly appraising and accounting so far as the operating expenses were concerned.

Q. About how many gas works were involved in that investigation?

A. There were six manufacturing gas works on the island of Manhattan and four sub-gas works or distributing stations all of which I was compelled to appraise. I ought to explain to you when I say that there were a number of appraisements made, but that there was no definite classified appraisement made by any person except myself. The appraisement made for the Consolidated Gas Co. was given in the form of oral evidence entirely and in a very disconnected form in response to questions. The only classified written ap-

2287 praisement was made by myself.

Q. Did you perform any service for any other cities in the United States and if so please state what cities?

A. In the city of Buffalo I was called upon to appraise gas works there and as all information was refused had not only to make out the list, but also to look up all of the details and appraise their

throughout. There were there four gas works, two of them had been entirely abandoned, one of them was a coal gas works and the other was a water gas works which they were not allowed to use on account of the supposed -oisonous qualities of the carburetted water gas.

Q. Did you perform any services in Jersey City?

A. In Jersey City I was called upon to appraise the gas works there that belonged to the public service corporation of New Jersey, just before I came out here. I forgot to mention that I also appraised three gas works in Cleveland, Ohio. In that case it was necessary for me to make all of the drawings and a complete set of drawings and then go over the works and appraise not only the active large gas works of about a billion and a half yearly capacity, but also two gas works which had been recently abandoned on account of the inroads of natural gas. I appraised the Bronx Gas & Electric Light Company works in the northern end of the Island of Manhattan for the corporation counsel, I had forgotten that. That makes eleven there.

Q. Have you performed any services for the city of Minneapolis?

A. I was employed by the city of Minneapolis in the autumn of 1909, if I recall correctly for the purpose of advising them on technical matters connected with gas and for the purpose, as all information was refused of making an estimate of the value of the gas works under an appraisal and fixing the price of gas, the reasonable
2288 price of gas for the information of the Mayor and of the city council.

Q. They had under discussion at that time a rate ordinance?

A. They had and also a new or prolonged ordinance. The result was that they entered into this contract and the city of Minneapolis received gas at 65 cents a thousand and its citizens at 85 cents.

Q. In New York City what was the occasion of your work there, what was the controversy, was it a rate case?

A. It was a rape case.

Q. And what was the nature of the work in Cleveland, did that involve fixing of rates?

A. That involved fixing of rates in Cleveland. The contract that the city have gas at seventy-five cents and it having, the city and the citizens — both expired and the east Ohio Gas Company of which the president was Mr. Dailey, desired to establish the price of gas at 95 cents or at least finally settled on 95 cents after suggesting something higher and I was called in there and not only made the appraisement and the drawings but also investigated their books and the result was that the company agreed to seventy-five cent gas if the output or sales was more than one billion annually and to 80 cent gas if the output or sales was less than one billion annually.

Q. Please state to the Master in a general way how extensive the gas works were which you appraised and valued in New York City in connection with the Wilcox Gas case indicating about the amount of gas sold annually?

A. The gas manufactured on the island of Manhattan amounted to about ten billion five hundred million. The gas sold on the island of Manhattan in the year 1905 amounted to about fourteen and one-

fourth billion cubic feet, the extra gas being brought there
2289 through extensions in underground conduits underneath the East river.

Q. Please state in a general way the capacity and output of the Buffalo Gas works with which you were connected in making an appraisal or valuation of the works.

A. Recalling roughly the Buffalo Gas works was selling between seven hundred and eight hundred million cubic feet annually. Their capacity, however, was about four times that amount but was not required on account of the inroads of natural gas.

Q. Were your services in the city of Buffalo in connection with an ordinance fixing rates?

A. My services there was before a gas commission which is not extinct, it was extinguished in the formation of the public service commission No. 2, the upper part of the state.

Q. What was the character of the gas works which you appraised in Cleveland?

A. They were in part coal gas and in part ca-buretted water gas.

Q. Do you recall the capacity?

A. The capacity of the water gas plant was about three million cubic feet a day and the capacity of the coal gas plant was I think about a million and a half a day.

Q. Do you recall in a general way professor, the number of miles of mains in the distribution system in Cleveland?

A. It was very close to 500 miles of mains.

Q. And what was the number of miles of mains in Buffalo in round numbers?

A. It was something over 400 miles in round numbers.

Q. And in New York City, do you recollect and the Island of Manhattan exclusive of Brooklyn?

A. It is odd, I should have forgotten it. I think, how-
2290 ever, it was 822 miles.

Q. As I understand you in connection with your work in the various cities which you have mentioned you were called upon and did in fact prepare and submit an appraisal or valuation of the respective properties?

A. In each case.

Q. What relation if any do you sustain to the Public Utilities Commission of the state of Massachusetts?

A. I have for the past two years been called before it by the city of Worcester in the matter of rates for public street electric lighting and at intervals have gone before them and communicated the results of my investigations of some sixteen or seventeen different cities in that state.

Q. What professional employment have you had with the city of Providence Rhode Island?

A. The city of Providence, Rhode Island, has employed me to take up the matter of gas and electric light rates and also to take up the study of the physical distribution of the street and public building lighting of Providence, the idea being to bring about a modern and up to date system of lighting of all the streets of Providence. I am due there on the 15th of this month.

Q. Does that work involve an investigation of the rates and prices for gas and electric light?

A. It does for both.

Q. Do you belong to any society or association of engineers and if so what are they?

A. I belong to quite a number. Those of the larger size, American Institute for Gas Engineers, The American Institute of Electrical Engineers, American Philosophical Society, an honorary life member of the Franklin Institute for Scientific services rendered and I am a member of quite a number of smaller societies difficult to recollect.

2291

Q. Now I will ask you Professor Marks, whether you have been employed at any time to do any work in connection with the Des Moines Gas Co.'s property in the city of Des Moines. If so, please state when you were first employed, when you came to Des Moines and what service you have performed.

A. The first I knew of the Des Moines matter was about the 1st of this year and Mr. John MacVicar employed me to take up this matter and about the 1st of February I came out here, remaining here long enough to look around the city and loot at the works in a general way. I returned again later on for a week or two and at that time was granted access to the works and went over them identifying apparatus and forming a general opinion in regard to it. I returned some six or seven weeks ago and since that time have been occupied on an appraisement mostly.

Q. Have you made a valuation of the property of the Des Moines Gas Company based upon the quantities shown in complainant's Exhibit No. 15 introduced in this case?

A. I made an appraisement of the Des Moines Gas works property but I have the mere list of names and the lineal measurements, I have not used the quantities and I have not been given the prices used by the company. The quantities as for instance the brick work given by the company are incorrect. The prices I don't know what they are, have no information.

Q. Did you reduce this valuation to writing in some form?

A. I did.

Q. Have you a copy of it for the Master and also counsel for complainant?

A. Yes, sir.

2292

Q. Is the paper which has been marked Defendants' exhibit No. 23, your estimate of the value of the Des Moines Gas works?

A. It is.

Q. Does this valuation and report Exhibit 23, correspond in its number of the items and in its arrangement with complainant's Exhibit 15?

A. It does. It has references to complainant's exhibit 15.

Q. You spoke about some quantities as shown in the list Exhibit 15 not being entirely correct. I wish you would state to the Master in what respect the quantities of brick referred to in Exhibit 15 are incorrect?

A. This is a case of an inventory and appraisement, it is not a

case of a preliminary estimate. In the making out of the quantities of brick from the measurements I find that Exhibit 15 gives a cubic foot of brick as containing 21 brick or a thirteen inch wall at 22 and one half. This is what is known amongst engineers kiln count and it does well enough for a preliminary estimate because then you always have enough brick and to spare to haul away afterwards. But that is not the actual fact with regard to the inventory count and I will show you what the facts are. To explain what I mean I had a section of thirteen — wall built. It is thirteen inches this way, it is also thirteen inches in this way and it is also 11 and one half inches in height and it contains one and one eighth cubic feet, precisely one and one eighth cubic feet. There is the ordinary three eight-s mortar joint laid underneath, but no mortar joint on top and no mortar joints on the side so that I am losing a three eighths joint on one end of this. When these are actually counted this one and
one eighth cubic feet there are eighteen bricks. These
2293 eighteen bricks are what are known as the ordinary mud brick of Des Moines and are picked up and taken out of an old building just north of the gas works, a building which was torn down so that they are the veritable material out of which many of the buildings, perhaps most of them have been built here. That eighteen brick to one and one eighth cubic feet, the fact is that there is a little over sixteen ordinary Des Moines brick to each cubic foot of wall. In all the company's estimates they have taken twenty two and one half brick to a thirteen inch wall or twenty one brick to a cubic foot and that is just five bricks too many in every cubic foot for sixteen from twenty one leaves you five bricks. And sixteen into five is about 30 per cent. So that the average over estimate of the number of bricks in this estimation, and they have a very perfect list in Exhibit 15, is about 30 per cent and leaving out the gas holders which have been calculated on another unit basis there is in the neighborhood of between six and seven thousand dollars over estimate of brick computed at $16.00 a thousand with one dollar additional for each thousand, scaffolding, or $17.00 a thousand in round figures. That is a fundamental error.

Q. Is the matter which you have just explained referred to in your valuation?

A. In the case of almost every building I have personally picked out a certain area of walls throughout it and counted the number of bricks used taking the corner of the building so that I could see the bricks on the side and at the end the bricks and the thickness of the joints varied some so that you will find in that report that to go on the safe side I have averaged about eighteen instead of sixteen bricks for every cubic foot which has been computed.

Q. What was your principal object in preparing this report
2294 Exhibit 23 in connection with your testimony in this case?

A. In order to find first of all the real money spent, the structural cost of the building and in addition to that to find its present value which is the structural cost less the residual depreciation.

Q. I wish you would tell the Master what you mean by residual depreciation?

A. Depreciation and repairs are linked very closely together, inseparably I might say. If a concern has its repairs very thoroughly made, promptly at the time any weakness appears, the depreciation becomes less because of that care. On the other hand, neglect of repairs means large depreciation. However, a building or a machine is very much like a man, no matter how good the repair or how well it is treated and cared for there is an end to its life which cannot be avoided and there is consequently a residual depreciation going on in a building a machine or a man while any one of them may have the most thorough repairs and care and attention and it is this residual depreciation which cannot be covered by repairs which I speak of when I say that the structural cost of those buildings and of the whole plant is in the neighborhood of $1,700,000, the residual depreciation in the neighborhood of $300,000 and the present value in the neighborhood of $1,400,000.

Q. In connection with your rep-r-, Exhibit 23, did you endeavor to ascertain by your investigations the cost of supplying gas to the consumer's meter and if so please state what investigation and analysis of the books and records of the company you made?

A. Of course in the limited time which has been afforded I was not able personally to examine the books and had to rely upon the accountants employed by the city. These accountants verify-
2295 ing accounts giving me the resulting figures for five years back, by that I mean the cash operating costs. Taking these figures and dividing it by the sum total for five years, by the sales for five years as reported by the company, and we have to accept what the company shows in that matter I find the cash operating cost per thousand cubic feet to be 63.33 cents for gas delivered at the consumer's meter. In addition to that there is this residual depreciation of nearly $300,000 which would have to be divided by all the gas made by the works since it started as near as we could estimate it and that was in the neighborhood of five billion cubic feet. It is recorded up to about four and a half billion cubic feet and presented in one of the exhibits here. That gave about six cents for the residual depreciation on each thousand cubic feet as a charge. There is no possible connection as a rational and practical matter between the depreciation of the works and machinery and apparatus and the amount of gas made. The depreciation is dependent upon the time elapsed and upon the value of the apparatus used and this is not largely affected by the volume of the sales or output so that this six cents is an arbitrary quantity put in simply because the company should be allowed to recoup itself to that extent for the residual depreciation which cannot be prevented. That made the cost of gas including the depreciation at the consumer's meter 69.33 cents. I think that is what you wanted.

Q. Yes, I wanted you to explain whether or not in your report you have gone into the question of the cost of gas in connection with your valuation and I think you have covered that fully by your answer. Now I want to ask you this question, in making your val-

uation of the property of the Des Moines Gas Company and
2296 compiling your report Exhibit 23, whether or not you have made any personal inspection and investigation of the company's property and if so to what extent.

A. I examined and identified all of the more important pieces of apparatus on the land of the company and in its buildings, examining also the buildings as I went around. It is plainly impossible that I should have examined the street mains under the ground, the services or the meters in the cellars of the houses served. I found the list exhausted and complete many things being mentioned in it that ordinarily would not be taken notice of because they are practically scrap, nothing being omitted that I have been able to find.

Q. That is now you are referring to the property scheduled in Exhibit 15 are you?

A. Yes, sir.

Q. Are the descriptions of the buildings and apparatus shown in your report Exhibit 23 based upon your personal observation and investigation of the property of the Des Moines Gas Company?

A. They are with the qualifications which I have already stated to you.

Q. Now I believe in your report Exhibit 23, and I will call your attention to it later on you make an appraisement of the low carburetter water gas apparatus. In making that appraisement were you obliged to depart from the order in which it was set forth in Exhibit 15?

A. I was for the reason that the United Gas Improvement Co. is practically the sole manufacturer of the low water gas apparatus in the United States, although I do not know that it has any monopoly of it under patents. It usually when apparatus is put in gives a lump bid for all of the apparatus that is required for each
2297 capacity of course not insisting on this but finding it the more convenient way. I happened to have in my possession a contract signed by the United Gas Improvement Co., for three million cubic feet daily capacity plant. The contract price being given and the diameter of the generators being eight and a half feet which is not very far off from what they have right here although they have one generator somewhat larger. Using a proportionate amount for the larger generator made it very easy for me to find that the contract price which differs from the structural cost in this case would be for all of the apparatus about $50,000.

Q. From your experience as consulting engineer and keeping in mind the work which you have done in connection with the investigation of gas works, making appraisals of the same, I will ask you to state if the list of quantities contained in Exhibit 15 indicate that the company has included all of its property which you would expect to find in a gas works of this size.

A. It has and more than is usually included in such appraisement lists.

Q. I want you to tell the Master in a general way the manner in which you arrived at the unit values of the quantities as used by you in your report, Exhibit 23?

A. Going more into detail I opened the book of details at random and I find that for building No. 10, smith, carpenter shop and store room, I measured, and this is personal measurement, a portion of the building and find from these measurements that in building No. 10 there are 16.53 bricks in each cubic foot. I in the same way measured most of the buildings in the yard. Now with regard to the matter of unit values my first care was to find out the cost of labor and material. For instance on March 14, 1911,
2298 the following scale of prices for labor was given to me from an authoritative source in Des Moines. Bricklayers 70 cents an hour. Plumbers 60 cents an hour. Carpenters 50 cents an hour. Building labor 33 cents an ho-r. Tinners forty cents Pipe layers 35 cents, electrical workers 50 cents. Cement workers 50 to 55 cents an hour. Plasterers 62 and ½ to 70 — an hour from and after May first of this year. Painters $3.60 to $3.90 for an 8 hour day. Iron workers 50 cents an hour. Lathers $5.0- to $5.00 a day. Stationery engineer work, $3.15 to $4.50 a day. I also had the statement made to me by parties familiar as engineers of the cost of material and also by contractors that the cost of excavation here in this city in the streets for the purpose of laying conduits or pipes was about 40 cents a cubic yard including back filling. I recollect Mr. King, contractor for all underground telephone conduits has made that statement to me. It was also verified by others whose names I cannot recall. I also recall a statement made to me by Mr. Dobson who was formerly city engineer of this city that such excavations could be made on the land where the gas works is here if you could use a horse and scraper which is the way in which they dug out their foundations there was worth about 15 cents a cubic yard. In fact that the contractor for this bridge out here had a bid of doing the excavation of 15 cents a cubic yar- a local bid and refused it because he thought he could get it out cheaper than 15 cents a cubic yard with his own apparatus. Also the cost of digging excavations 12 or 14 feet deep to hoist the material out would be about 50 cents a cubic yard and that t/e cost of excavation ran all the way from 15 up to about 50 cents a cubic yard. In regard to brick work or brick they have a brick here they call mud brick, this mud brick I have shown of an old building, mud
2299 brick of standard size and I presume it is mud brick all old buildings of the gas works are made of.

Mr. GUERNSEY: We move to strike out the witness' presumption as not anything responsive and certainly nothing that is competent.

A. From that up to hard burned red stock brick at about $8.00 delivered. It is difficult to say what this mud brick is worth but six or seven dollars was guessed at as being about what—— I examined this mud brick very carefully in their old generator house using a finger nail to scratch in it and I found that the powder ran down freely so that it was very poor quality. It is something new to me and I would not have been awarre of its peculiarities if my attention had not been called by a former city engineer to it. In regard to the price of lumber I got a number of figures from

various lumber people about town and found on making inquiry and the company may have been subjected to this too, that if one had enough lumber to make it worth while to inquire to a point on the Mississippi that a very great reduction would be made for car load lots way below anything that the people here would bid. So the price- that I have fixed for lumber here are very much higher than probably a shrewd contractor could get it for. I refer more particularly to the building of this bridge, Walnut street bridge is it?

Q. Yes.

A. Who made that statement.

Q. You refer to Mr. Wheeler?

A. Mr. Wheeler, yes. I don't recall any other details except that so far as I have been able I have omitted no opportunity to learn the price of iron castings for instance, you take common
2300 casing of the common kind frequently used, we will say a lamp post, made in large quantities would be a little over two cents a pound, probably you would find three cents an outside limit. It is very much so with wrought iron. The wro-ght iron used with corrugations for reinforcement of this bridge I may be wrong in this matter, but I think about two cents a pound, may be a little less. Of course I only sought prices from men I considered able and competent men. I am not talking about buying in small quantities.

Q. You made mention in one of your answers of the defects of some of the buildings used in the manufacturing plant of this company. I wish you would be a little more specific and tell the court what criticisms you have to offer against the buildings?

A. The new building, the generator house inside the yard, the boiler house and what they call the engine house appears to be built of good hard burnt red sand brick called here a shale brick and built with good mortar. Take the building on the northwest corner of the northern lot in which they have a lot of exhautsers and other machinery it appears to be of the mud brick variety. The roof trusses are of a very common kind such as are used *in st*anties and cheap stables. The walls have sagged and gotten so that they found it necessary to put iron tie rods through from side to side and then for fear the tie rods would pull loose in them they have put iron stays across to keep them from drawing out and hold them that way. The only value of these buildings is because of the locality and machinery in them. If they were empty buildings they would be considered valueless not worth the cost of tearing them down for the sake of the m-terial. The roof of the building on the northeast corner is part tin and part rubberoid. It is very
2301 much out of line—I beg pardon I didn't mean rubberoid, it is part tarred felt, very much cheaper than rubberoid. It is very much out of line and while it might hold water it looks in very bad arch*i*tectural shape. In examining the walls of this building on the outside you will find it very carefully painted and yet if you will look at it closely you will find they have had ap-ertures in it

punched and filled up again so it is difficult looking at the painted wall to see just how the walls were originally built. Take the roof over the separate gas generators, the corrugated iron roof in the northwestern corner, it is as full of holes as a seive, so that the rain would pour down in on the apparatus underneath and evidently it has for the brick floor around their ge-rators has heaved and sagged so there is a difference of level of five or six inches in successive waves going up and down as you walk over the floor. Tha abandoned retorts, old abandoned retort house, some of the trusses have been taken down and there is no roof at all over it. Part of the wall has been knocked down so that they could build an addition to the boiler house. All of these I find very carefully lifted and all of the quantiti- put in.

Q. Were these some of the building- which were illustrated here in drawings which were produced here in evidence?

A. Yes, sir. The drawings were as carefully made as though they were for a new building to be built in the best possible manner and would serve that purpose.

Q. In making your valuation of the manufacturing plant have you considered in connection therewith the condition of the buildings to which you have called attention?

A. I considered, computed and added 12 and one half per cent overhead charges and depreciation to each building according
2302 to Summer's rule for depreciation. This Summer's rule for depreciation is the one adopted in the city of Cleveland as a whole, in part by the city of New York and I understand adopted now by the tax assessors in a good many of the cities of the United States, although I don't know specifically.

Q. That is the method of computing value of buildings?

A. Yes, present value of buildings for taxation purposes.

Q. In what manner were you able to verify the company's list of quantities with respect to its distribution system, its services and meters as also the apparatus used by the company in serving customers in Valley Junction?

A. Buried material it was of course impossible for me to do otherwise than accept the list furnished b- the company. It would be quite impossible to dig it up. I have no reason to believe thathere was anything omitted or that any of the measurements were incorrect.

Q. So that you have accepted the quantities given by the company in Exhibit 15.

A. I beg your pardon I have not accepted them, I have made use of them as the only available material.

Q. And you have not deducted on account of any observations or investigations on your own behalf?

A. I have made no deductions having no knowledge that would authorize me in doing so.

Q. Do you know whether or not in supplying gas to consumers in remote parts of the city especially the western portion of the city and to serve Valley Junction the company is obliged to use gas pushers or any other device for reinforcing pressure?

A. I know that the company does use what is known as gas pushers two of them, and also the special high pressure main
2303 leading out to the western portion of the city and I have been told that it is included in the street main system furnished and I have accepted them believing it to be good engineering and a wise precaution and computed the values not only on the gas mains, but als- on the pushers.

Q. So as I understand you in the distribution system of the Des Moines gas company you have included therein this high pressure gas pipe running from the works to Valley Junction?

A. If it is included in the list furnished by the company I have done so.

Q. I presume I am safe then in saying that you have not deducted from the list showing distribution system anything on account of this high pressure main which serves Valley Junction?

A. I have not. And I should have added that while I saw what appeared to me to be abandoned or possibly abandoned mains or extra pipe in and around the yards, yet I did not deduct any of these either from the list furnished by the company.

Q. And I presume you are not able to say are you just what underground pipes connected with this abandoned apparatus is included in this list?

A. I cannot.

Q. Did you make any deductions on any presumptions indulged in by you with respect to abandoned apparatus?

A. None whatever.

Q. How have you treated river crossings in your report?

A. In the matter of river crossings I have carefully computed the probable engineering cost of getting these pipes across the river. I have taken the 16 foot pile shown in their drawings and knowing
2304 that a pile driven would probably cost about 50 cents a foot allowed $8,000 for the pile driven and a couple of dollars for the yoke which attached the pipe to the pile. I also made allowance for the extra ditch and an estimate of the cofferdam work. I have no means of knowing how this cofferdam work was carried out or whether or not the pipe was laid in part by means of cofferdam or in the usual way suspended from frames and lowered into the water. I can give you the exact amount of the estimate.

Q. You are referring now to your report?

A. I am referring to Exhibit 23.

Q. Tell us where that can be found, what page?

A. Page 56. Turning over to page 57 I find that the estimate I gave for the mains laid underneath the river is $14,277 and the mains laid in the street, the estimate is $638,670. And on the top of page 58 the total cost of the whole main distributing system $652,947.00.

Q. I will take these items up more in detail later on. I simply wanted you to state at this time in a general way the manner in which you treated river crossings and what method you provide for their construction and that you have set out in some detail at pages 56 and 57 of your report, Exhibit 23.

A. I have.

Q. With a note outlining the process of constructing river crossings and at page 58 a recapitulation in which these items are included in cost or present value of the distribution system.

A. I have.

Q. Have you taken pains in connection with your investigations to inform yourself with respect to the character of soil in the city of Des Moines which would be naturally encountered in con-
2305 structing trenches for the purpose of laying gas mains therein?

A. I have availed myself of every opportunity to learn about the soil hereabouts from experienced and practical men asking Mr. King, the contractor, of whom I have already spoken about any difficulties that he found in the nature of rock or extremely hard excavations. I inquired also of Mr. Dobson who had been city engineer and been busy with sewer work as to whether or not any difficulties were found in the deeper excavation of sewer work. The reply in both cases was that there was no point in the city where the difficulties were at all serious due to heavy rock work or anything of that sort, that the soil at some points was alluvial formed of silt and stood up fairly well and other points it was gravelly and would stand up without bracing for any ordinary depth of four or five feet of ditch. In fact, I then examined any openings that I have been able to find here for sewers or in the streets. There is a building being built now just north of Locust street the other end of the bridge or just north of Walnut street where you can see a sheer excavation of six or eight feet. It stands fairly well not requiring any bracing to amount to anything at any point and take it for three or four feet would not require any at all. I also examined a building up on Locust street that has a cellar, or a proposed building up there where there is quite a deep excavation as compared with ditches. There again I found this gravelly stiff soil and from all I have been able to hear from men whose experience was sufficient to make their opinion worth anything the soil here is peculiarly favorable to ditch work.

Q. Did you ascertain from your investigations anything which lead you to believe as an experienced consulting engineer that
2306 there were any conditions in Des Moines extraordinary or hazardous with respect to digging trenches?

A. No, I was told and from what I saw I believe that exactly the reverse is true that conditions are more than ordinarily favorable.

Q. What have you used in your report Exhibit 23, as representing the unit cost for excavations, unit cost or price?

A. Well, in Buffalo, New York, in 1907 I had access to the official records of cost of excavation——

Mr. GUERNSEY: We object to all this as hearsay and not responsive to this question.

Mr. BRENNAN: I suppose he wants to explain. That question perhaps calls for some explanation.

Q. I want you to tell the Master the price, unit price used by you

in your report Exhibit 23, representing the cost of excavations and how you arrived at this unit value?

A. Well in Buffalo I had occasion to originate a graphical system of recording costs in a gravelly or alluvial soil. For this purpose I made a very large number of computations based on the actual records of the cost of laying pipe, water pipe in the city of Buffalo, New York. The whole of it after being tabulated was reduced to a graphical form for sizes of pipe running from two inches up to 60 inches in diameter. The basis for the excavation and back filling in this ditch which was used in this place, the ditch being dug under the ordinary difficulties occurring in the streets of any city such as interference of sewer inlets or going under street railways or going under steam railways or occasional slight difficulties from water, small quantities of rock and occasional small quantities of paving and crossings that come up in other words what might be
2307 called the rough and tumble condition of the city street work as is usually the case they kept out of the way of the more expensive pavements as far as they could. Under these conditions I have the actual practical fact of the cost of excavation and back filling in these ditches of various sizes average about 4 cents a cubic foot. The question then came up of the cost of the cast iron mains. This was 1907. The cost of cast iron mains was taken from the records of the purchase of the city of Buffalo for water purposes and $1.00 a ton added to the piping used for gas purposes. The pipe used for gas purposes being nearer the standard dimensions are lighter than the pipe used for water purposes. The average price the best price of that year for the small three inch pipe was in the neighborhood of $30.80. Where large quantities are used they are not apt to lump all sizes under the same price so that in getting my average for five years back of 1907 I had the following prices given: Three inch cast iron pipe per ton of 2000 pounds $30.80. Four inch, $28.80; six inch, $27.80; 8 inch $27.80; ten inch $27.80; 12 inch, $27.30; 16 inch, $27.30; 20 inch $26.80; 24 inch $26.80. I won't carry it any further because I think the Des Moines company has nothing larger than 24 inch mains.

COURT: That is for the pipe alone?

Mr. GUERNSEY: We move to strike out all of the witness' answer because it appears it does not refer to conditions in Des Moines, but refers to conditions in Buffalo at the period indicated, 1907, because it appears this plat was copyrighted by the witness in 1907, March 20th, and for the further reason that the witness has not answered the question and the answer is not responsive, the question asked
him what his unit prices were in Des Moines and his answer
2308 being a dissertation on conditions in Buffalo five or six years ago, and it does not appear any of these matters are based on the witness' personal knowledge or experience set out in this plat.

A. So by reason of checking up these prices, by reason of quotations in 1910 I found from the Iron Age which is authority, I think May 16, 1910, I am not sure about the month, that the average price quoted for cast iron pipe was about $30 a ton.

Complainant moves to strike out the answer for the same reasons.

Q. What I am getting at is the manner in which you arrived at your unit prices for excavation you have adopted as I understand 40 cents per cubic yard using the back filling, including back filling?

A. Yes, sir.

Q. Now I want you to tell the Master just how you arrived at 40 cents representing the reasonable price or charge for that kind of work?

A. By taking all of the excavations labor that was charged to the ditch work in Buffalo, compute the cubic contents of this ditch work and as I explained before not making any allowance for ordinary obstruction, but taking the rough and tumble conditions I found 40 cents covered the back filling and the excavation in the city of Buffalo in the ditches in the ordinary streets of Buffalo.

Q. Now in applying conditions in Buffalo to Des Moines was it necessary to increase or decrease the unit values which were used there?

A. Seemed to be as near similar as possible to find them.

Q. What I wanted to know was if anything in conditions in Des Moines required this unit price to be raised or lowered in
2309 making valuation?

A. What I was trying to do was to give you my unit price, not only for excavations but also for iron mains and also for such further details as occur in street laying.

Q. Have you talked with persons in the city of Des Moines who have had actual experience in making excavations?

A. I have.

Q. You have received advice from them as to their experience?

A. I have.

Q. I wish you would refer to Exhibit 23 and tell the Master what you estimate the actual present value of the street mains to be?

A. On page 58 near the top of the page total present value of mains $852,947.

Q. Now just what items are included in that total sum that you have just named?

A. The cost per ton of two thousand pounds of cast iron pipe of each diameter the weight per foot length in pounds, special castings, lead, cement, and so forth for joints, carting pipes, tools, etc., labor, miscellaneous special castings and ditching mostly in streets without pavements.

Q. Now you may explain to the Master the manner in which you arrived at the cost of cast iron pipe which you have used in this report, explain as fully as you care to?

A. The cost of cast iron pipe varies with the cost of pig iron. It does not vary very greatly, and since 1883 has hovered around about $30 a ton being on the average some below it.

Mr. GUERNSEY: I think the record ought to show this is not testimony of the witness, but he is reading from a book here.

Mr. BRENNAN: Simply referring to the table there I don't think he has been reading anything from the book.

2310 Q. Just state what you are using?

A. Page 393 of hand book of gas data by Gillette, copyright 1905, published 1906. Finding that the cost of iron as quoted by the Iron Age 1907 and 1910, was not different to any extent I adopted the Buffalo Table. However, I was not willing to adopt it merely on the basis of the coincidence of the price of iron and so I referred to the prices fixed by other parties in Cleveland and in Des Moines page 53, Exhibit 23. The secretary of the Cleveland Gas Light & Coke Co. gave the following scale of prices or cost per lineal foot of laying cast iron street mains in 1904.

Objected to by complainant as hearsay, secondary and incompetent on that account.

A. For three inch cast iron pipe 36 cents.

Mr. GUERNSEY: What page do you read from?

A. Page 55. For three inch cast iron pipe 36 cents a lineal foot. For four inch cast iron pipe 47 cents a lineal foot. For six inch cast iron pipe 65 cents per lineal foot. For eight inch cast iron pipe 93 cents per lineal foot. For ten inch cast iron pipe, $1.19 per lineal foot. For 12 inch cast iron pipe $1.44 per lineal foot. For 16 inch cast iron pipe $2.17 *cents* per lineal foot, for 20 inch cast iron pipe $2.80 per lineal foot, for 24 inch cast iron pipe $3.75 per lineal foot.

Q. In arriving at the value of cast iron pipe for use in connection with your valuation of the property of the Des Moines Gas Co., did you have the benefit of the testimony of William Henry White given in the case of the Capital City Gas Light Company against the city of Des Moines, or City of Des Moines against the Capital City Gas Light Co., in this court?

A. Top of page 56 of Exhibit 23 William Henry White——

2311 Objected to for the same reasons, incompetent, hearsay, immaterial and further because it refers to conditions about seventeen years old at the present time.

A. William Henry White gives the following scale of prices——

Q. (Question read.)

A. Yes, sir.

Q. And is that referred to in your report, Exhibit 23?

Same objection.

A. Yes on top of page 56.

Q. In making your appraisement of the property of the Des Moines Gas Company have you considered in your report the question of expenditures involved during the construction period, and if so just please tell the Master what you have assumed with reference thereto.

A. In Exhibit 23, pages 7 to 10, inclusive, I have given the overhead charges on the contract price of work furnished at 12 and one half per cent.

Q. What do you mean by overhead charges?

A. Interest during construction period drawings and supervision the taxes during construction period, the general manager during construction period. I have not included anything for omissions because of the fact that all of my work is based upon a verified inventory and particularly in this case there appears to be nothing left omitted, if there is any fault to be found with the inventory it is an excessive detail.

Q. What period have you assumed as covering the construction period?

A. About a year and a half or rather two summers.

Q. Just tell the Master why you assumed that period of time as being required or necessary and also if the time which you have assumed is based upon some former experience which you

2312 have had in laying gas mains.

A. It is obvious I think to everyone that two summers would suffice to put up all buildings and apparatus in the yard or on the land of the gas works, the real cause of delay in a gas works like this would be the possibility that 180 miles of mains in the streets could not be laid in two summers, but it is a fact *the* derived on my part from personal experience in laying mains that it ought not to be difficult for a gang of from 450 to 500 men to lay down 180 miles of mains in such digging and under the conditions existing in the city of Des Moines. My reason for venturing this opinion is the fact that I have underlaid nearly all, in fact all of the busy streets of Philadelphia, between the Delaware and Susquehanna and South street on the south to Vine street on the north with electrical conductors and conduits and at various oth-r times I have made or superintended the laying of gas mains in Durham and Fostoria and in St. Louis beginning to get practical knowledge of the difficulties that occur there and knowing how relatively slight the difficulties are here as compared with the difficulties say for instance in Philadelphia.

Q. Did you have any similar experience in St. Louis?

A. In St. Louis the gas works stood on the levee and on main street when it was necessary to lay a particular main up Washington Avenue one of the pr-ncipal streets there, a large main and it was then in this district my first experience. I was what was commonly known as a squab engineer, I was put in charge of a gang laying mains up that street and I had quite an experience too.

Q. What period of time was required to perform the work in Philadelphia you have described.

A. About two summers. It was performed if I may ex-

2313 plain, it was performed under very great difficulty, difficulties of a great deal of trackage. It was necessary by order of the director of Public Safety that no two connecting blocks should be opened at the same time. We had to dig our ditch, open the ditch, lay our conduits and get it covered up again and the pavement *at* loosely put back before the inspectors allowed us to lay the next block. The blocks in Philadelphia are about 550 feet long and it was necessary to do a great deal of maneuvering in order to get

through with the work and divide the gangs and systematize the work.

Q. Did you have charge of the supervision of the gangs in Philadelphia?

A. I had entire charge of everything in connection w-th the work there.

Q. And was that true to any extent in St. Louis?

A. My duties in St. Louis have grown rather dim but I was obliged as inspector and resident engineer to see that all contracts complied with the specifications and I was obliged to keep all the accounts of the concern too at the same time. I had to see over all the work but towards the end of the fifteen months which was occupied by putting those works together that inspection work down at the yard slacked off and the president or the vice president, acting president started me out on the streets with the pipe laying gangs.

Q. In a former question I asked you to tell the Master how you treated river crossings in your report and I don't know whether I askes you to tell us how you have treated steam railroad crossings and street railway crossings. If not I wish you would now state how you have treated them in your report, Exhibit 23.

2314 A. Of course a street railway crossing and steam railway crossing make a certain amount of interruption in your work when you come to it. If you can you are very apt to tunnel it. If there is a concrete bed underneath t-e street railway, there sometimes is, I don't know whether there is here or not it is very convenient business to take a long handled shovel and tunnel and run things through and fill it in again. If it has not you would probably have to get a couple of old ties and lay them along side the ditch and underneath just close to the rails as you can and hammer them in there with a bar about all that is necessary to do in an ordinary street railway crossing, probably cost you a dollar in extra trouble. As far as steam railways are concerned it may be necessary to do a little more than that but ordinarily there is very little attention paid to it. The inspector for the railway is on hand and the job is driven with the utmost rapidity. The work where a steam railway is concerned is alike inconvenient to the steam railway and dangerous for the men but I have no reason to believe that there is any more difficulty here or as difficult here as it is in most other places and if it was necessary to go under these roads I would not allow as a contractor more than about a dollar per pair of rails.

Q. Have you taken these matters into account and included them in your appraisal shown in your report?

A. That is another reason why I adopt the Buffalo price, keep going back to it all the time. All of this work was done not under ideal conditions at all, but under annoyance and trials and tribulations that occur in actual practice and these are all included. Did not make any deductions from the pay roll, from the material or because of unusual conditions. Just charged them in there along with the rest.

2315 Q. Now then while we are on this subject of street railway crossing and steam railway crossings and the difficulties that

are ordinarily encountered in making excavations in the streets and having to encounter the interruption of traffic and all these things just how have you applied the experience which you gained in Buffalo to conditions in Des Moines on this assumption that it would require you the use of two summers to lay 180 miles of mains. That is to say about as you applied conditions here as to comparative labor and material, etc.

A. First of all I satisfied myself as I stated before that the price of labor averaged about the same as that did here in Buffalo, that is about the same in Buffalo as they did here. Then I had to find out whether there was any variation in the cost of cast iron piping that amounted to anything. Then I had to find out whether or not there was difficulty in street excavation here that did not occur in Buffalo. I found out that it was easier to dig in the streets here in this land than it was in Buffalo. Then I checked my own opinion by comparing carefully the different rates of each size of main with the rates given by William Henry White in his appraisement of mains here. I found Mr. White's appraisement was lower than mine, that my figures were higher than his per lineal foot. I found also that the Cleveland figures per lineal foot were lower than my figures out here.

Q. I believe Professor, you made some mention that you have not allowed for omissions and I want to ask you this question whether as an experienced consulting engineer if you had been furnished with what purported to be a true accurate and complete list of the quantities entering into and forming a manufacturing plant and distribution system of a gas works together with all services
2316 mains and connections, buildings, apparatus and all property both real and personal constituting plant and gas works in making up your appraisal or your valuation thereof would you or would you not under those circumstances add anything thereto for or on account of omissions.

A. I would not make any addition to such a list as that after my comparison with it and finding its thoroughness and completeness.

Q. In this particular case from investigation you made of the inventories to verify the list of quantities contained in Exhibit 15. Were you obliged either to deduct or add to the list for any reasons?

A. I made no deductions and no additions to the list.

Q. What I want to get at was you took this inventory and listed quantities Exhibit 15 and you have made the investigations and verifications which you have told us about, I want to know now if going over the list of properties in your inventories, to verify the list if you were called upon to note anything or add anything to your report which had been omitted in this list?

A. I found no omissions whatever.

Q. Did you find from your investigations or observations that any of the properties shown in Exhibit 15 was not in use or had the appearance of having been abandoned, if so please tell us what it was?

A. I found a wreck of a bench of coal gas retorts standing in the

northern or northwestern part of the building in which or on which the roof had been removed or had fallen in. I also found two water gas generators in the northeastern corner which looked as if they had been very little used and the machinery specially intended for them in the next room I might say was practically out of use. I found an elaborately drawn coke shed which was
2317 tumbling down, or bursting, standing out on one of the lots the walls apparently burst open and the coke was flowing out from the walls from every side. There were quite a number of buildings, for instance like the oil barrel store house carefully drawn which evidently was built out of scraps picked up around the works, stray pieces of lumber, it was good management but was not a very valuable building after it was built. There seemed to be more or less material on hand there, but it was not inventoried, I mean such material which was not inventoried, but intended to be in working capital and it looked to me like a surplus and some of it very old. Special castings and that sort of thing.

Q. So that in a general way this property which you found had the appearance of not being in use?

A. Yes, sir.

Q. Now taking up your report, Exhibit 23, you first use a table of contents or an index. Then at page 1, Section 1, you state the object of your report and incidentally you say the growth of the consumption of gas is related to its price, that is considered in con nection with your report.

A. It is.

Q. Section 2, you describe this appraisement list Exhibit 15, which was furnished you and you make your comments on that?

A. I do.

Q. And in that same connection in Section 2, you make mention of this discrepancy between the actual cou*b*t of the brick in the wall and computing it upon the wall measurement?

A. I do on page 2.

Q. And that you have demonstrated for the Master by the production of a model here on the desk using a certain number of
2318 brick and mortar of a certain thickness which by measurements is what size?

A. I have done so.

Q. I say what size have you found from the measurements of this brick which you have shown here is?

A. It yields sixteen brick to the cubic foot. The size of the model which I have gotten up here is thirteen by thirteen inches by eleven and one half inches high. This model gave me one and one eighth cubic feet of nine eighths of a cubic foot and there are eighteen bricks in those nine eighths amounting to sixteen bricks to the cubic foot with this old fashioned form of mud brick commonly used until a few years ago in the city of Des Moines.

Q. Well now in the buildings then have you stated the discrepancy in percentage?

A. In each building I have measured the brick to the wall so as *and the wall so as* to be able to state just how it varies.

Q. Now section 3 at page 3 of your report refers to the accounts and records of the Des Moines Gas Company and that suggests this question to my mind whether or not in making up your appraisal and finding the actual present cost of the property of the Des Moines Gas Company you were influenced in any wise by the reports which you received from the city's accountant with respect to the situation on the books or what the books actually show as representing the costs of those items?

A. With the exception of the operating costs in which I was wholly dependent upon the books all of my appraisement was done before the accountants were able to give me any figures. I had to anticipate any result which they might produce. All the figures with regard to construction which I quote are subsequent to the completion of my appraisal.

2319 Q. So that the actual present value of the property as shown in your report is an independent valuation found by you along the lines and by the methods set forth in this report Exhibit 23, and as testified by you upon the stand today in identifying this report? Is that correct?

A. That is correct.

Q. At pages 5, 6 and 7, you take up the subject of depreciation and proceed to subdivide the subject by using first physical decay, next obsolescence and then inadequacy. Is that the manner in which you divide the subject of depreciation?

A. It is.

Q. By physical decay I presume you mean when it was worn out and cannot be longer used in the service?

A. That is what I mean.

Q. And obsolescence where the apparatus has not kept pace with the art, or where the art rather has progressed beyond the apparatus?

A. Yes, sir. A very good example of that is the old gas lamp posts which are superceded by electric lights on the streets, became obsolete.

Q. In what manner does inadequacy form an important factor in depreciation?

A. Inadequacy occurs practically in rapidly growing places like western cities and towns and is occasioned in this way, when it is necessary to take out we will say a small main and put in a large one it is a custom to charge the cost of a small main and deduct it from the cost of the large main, the difference being charged to capital account and then the cost of the small main which is taken out is charged to repairs and the consequence is that inadequacy is very apt to disappear entirely without going into depreciation except for the residual depreciation of which I speak at considerable length which means an incurable depreciation no matter how fareful your repairs may be.

2320

COURT: What is your allowance where the property is kept up and in good repair?

A. Per thousand cubic feet?

COURT: I don't care how you put it, I just want to know what your allowance is, I just want the figures.

A. I will try to give it as briefly as I can. In the case of the works and the yard the total depreciation is about two and a half per cent, subtract from that your repairs and you get the residual depreciation.

COURT: Now for mains, services, etc.

A. In a cast iron main there is no depreciation whatever. Cast iron in the ground so far as we are able to learn from practical experience does not depreciate beyond rusting a certain amount and then stops. No man has lived long enough to know what the life is of a cast iron main. We have no records far enough back. The residual depreciation of a wrought iron service pipe is about seven per cent on the value of the pipe less the repairs for one year. The residual depreciation for meters is about fifteen per cent on the value of the meter less the cost of repairs. I think I can refer you to an article here which will give you a better understanding.

COURT: I will read this as it comes along.

A. On page 77 Section 94 residual depreciation is discussed at length in this report.

Q. Now the next item appearing in Exhibit 23 at page 7, and at section five, is the item overhead charges. What do you mean by that item.

—. When a contractor takes a contract for instance to build a gas holder he has his contract price for it which is to
2321 be paid to him. As a practical fact that contract price is not all the gas holder costs the gas company. The gas company has to have an engineer whose business it is, even if he does not make the drawings to prescribe the proper dimensions of the gas holder and to see to the location of its tank and the digging of its tank. Also has to have an inspector whose business it is to see that the gas holder is put up as specified in the contract.

COURT: That is sometimes called superintendence and construction?

A. Drawing and supervision. In the case of the Laclede Gas Works of St. Louis was the first case I know of, and William Farmer New York's greatest engineer in those days charged one per cent of the cost of the gas works, none of the street distribution, for his drawings and specifications. The gas works cost about $750,000 and he received $7,500. During the eighteen months' time that a foreman and an engineer, a resident engineer were busy in looking after the work following out William Farmer's drawings and specifications, about the same amount was paid in the amount of salaries for what might be called supervision, that is about $5,000 a year, making two per cent.

Complainant moves to strike out the statement of the witness as to Mr. Farmer's charges in St. Louis and as to the extent of the plant in St. Louis and the other expense referred to in St. Louis as not proper direct examination and as offering no criterion as to what the cost would be for services of an engineer at the present time in the city of Des Moines, and is therefore irrelevant and immaterial.

A. At the time there was a certain amount of it seemed to me

unnecessary and rather costly organization expenses amounting to about four per cent or twice what the drawings and super-
2322 vision cost. In the matter of taxes it is a very rare thing that taxes are charged on unfinished buildings or an unfinished piece of machinery so that the taxes would be practically only on the land and perhaps a little towards the end on some of the completed buildings so that I have put the taxes at two per cent. And the question of interest, interest being fixed at six per cent on the amount, nine per cent on the contracts in the eighteen months provided they were all paid for at end of eighteen months or at the end of nine months. The real fact of the matter is the great bulk of payments are not made on contracts or anything except pay rolls until the job is practically finished so in allowing four and a half per cent interest for half the time required in construction is a very liberal allowance making the aggregate of interest four and one half per cent drawings and supervision two per cent, taxes two per cent general management four per cent, total 12 and one half per cent overhead charges.

Q. Does that include meetings of the board of directors and legal advice and matters of that kind?

A. It was what I meant to include.

Q. The aggregate amount of your overhead charges is 12 and one half per cent?

A. Yes, 12 and one half per cent representing overhead charges.

Q. In what manner is this 12 and a half per cent overhead charges applied to the property appraised by you in this report?

A. Taking for instance a gas holder, it is evident the contract price, that is the price to be paid to the man who builds the gas holder on the ground, 12 and a half per cent is added to it. That gives you then what might be called the structural cost to the company. If the gas holder is depreciated by long usage or by
2323 any length of usage the proper depreciation is taken from it and that leaves you the present value of the gas holder.

Q. What I wanted to know is if this overhead charge of 12 and a half per cent is applied to any of the distribution system for instance, or if confined to buildings and apparatus and machinery used in the manufacture of gas?

A. It is confined to the machinery and apparatus and buildings used in the manufacture of gas and does not apply to the distribution system in the streets such as the street mains and services, but does apply to the meters in the cellars.

Q. At page 10 near the close of section 5 of your report, Exhibit 23, I note that you make some reference to the application of ten per cent in distributing charges and 15 per cent margin for profit or bad management extending over the property outside of the walls of the gas works. I wish you would tell us how you arrive at those amounts and why you apply them in this way?

A. When a gas works starts up it starts only a small patch of its distribution usually at the beginning and puts in only a few services. After getting to going it keeps surrounding it a gang of caulkers, a boss caulker and boss fitter usually and these men with such

help as they need extend the street main system and put in the house services as the demand comes for them. The result is that they do not and they cannot no matter how good men they are do as cheap work, as economic work—I won't call it cheap—as they would for a large contract where an organized gang of men could be got out for laying street mains and for laying services. After finding the raw material and the labor as well as I can and from such
2324 authorities as I could in the matter I add ten per cent for undistributed charges meaning by that whatever portion of the time of an official of the company might be required in chasing these men around looking after the work, receiving salary of all the officials of the company, but you only could get it by guessing, making a guess, it does not appear. So this ten per cent is added more for the sake of being on the safe side towards the company in the matter of the cost. The 15 per cent on top of that makes 26 and one half per cent on the original cost of raw material and labor and is added because of the fact which cannot be gotten away from that doing work on the installment plan here and there all over the city as it is handled requires a great deal of time getting to and from it and in getting ready for it and necessarily renders the labor of the men less effectual so that the 26 per cent added to what might be called the bare cost, contract cost if it was a contract job to afford a good margin for the contractor and if it was a small job take care of the company and its necessary loss in doing it.

Q. How have you computed the meters and services, what overhead charges are included therein?

A. The services nowadays if they are not ought to be about one and a quarter inch in diameter and ought to cost in the form of pipe about five cents a foot net. To that I have added from purely practical results four cents a foot for such fitting and handling and hauling as may be necessary and then taking an ordinary ditch added about ten cents a foot for the ditch making a total of 19 or 20 cents, but call it 20 cents a foot as the cost of the services. The whole increment to the service charge is practically the four cents out of the 20 cents or about 20 per cent.

2325 COURT: How much is it, 20 cents a foot?

A. The ditch and pipe and laying of the pipe cost 20 cents a foot for inch and quarter wrought iron service.

COURT: What did you figure the average length of service?

A. I accepted what the company stated, 80 feet making the structural cost of the services $16.00.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

2326 Wednesday Forenoon Session.

AUGUST 16, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

WILLIAM D. MARKS, continuing his direct examination, examined by Mr. Brennan, testified:

Q. We were discussing on last evening, Professor Marks, at the adjournment, the subject of residual depreciation as shown in your report. If I am informed correctly, you have taken up that subject at some length at page 77 of your report, section 94. I wish you would state in a general way, and yet in some detail, your method of computing res*i*dual depreciation.

A. A gas works may be treated in two ways: the repairs on it may be deferred as long as possible, or the repairs on it may be kept up as thoroughly as possible. In the first case, the diminution in the value of the works results from depreciation without any abatement of this depreciation by reason of repairs. In the second case the depreciation which is natural to all works is abated by repairs made as thoroughly and as promptly as possible. These thorough and prompt repairs keep the works in good working order and efficient, and to all outward appearances, in most cases, as good as new; nevertheless, there still remains what I have called residual depreciation. I have tried to explain that by taking the case of a man who is taking the utmost care of himself and whose health is perfect, and yet who is growing old. For all practical purposes an old man may be and frequently is as useful or even may be more useful than a young man, and yet we all know that the end of his wearing power, his usefulness in work is approaching;
2327 and the residual depre*pre*ciation is the depreciation which repairs cannot cure. In taking it up in the case of these works I have assumed that so far as the buildings and the useful apparatus is concerned, the repairs are thorough and complete, and yet the end of this apparatus and the end of these buildings is approaching. By taking up the plant, as you will see in this report, building by building, and the machinery item by item, and by using my best judgment resulting from experience, and depreciating these buildings and this machinery as it stands before you today, I get two values: The first value is the structural cost—when I say structural cost, I mean real money spent by the Company for the purpose of erecting these buildings and of bringing together in place this gas apparatus. So far as I am able I have, in getting the structural cost, held myself down to the actual facts. There is no qualification, no condition that can be avoided that is not avoided in attempting to get the structural cost. To repeat, the structural cost is the real money spent by the Company itself at the time and under the conditions when the buildings were built and the apparatus purchased and put in place. There is no question of replacement value, there is no question of reduplication value, there is no question of any theory whatsoever. The structural cost is as near as I can get to the

real cost of these works as though I were to step on the street and seeing a horse I liked, go down in my pockets and bring up $150 and pay $150 for the horse; it is the same with the buildings. Now with regard to present value. The present value is a more uncertain quantity. To get the structural cost most accurately, I would say that the books are the best evidence, provided they have been kept properly and are properly interpreted; always the books
2328 are the *the* best evidence for the structural cost. When you come to the matter of the present value, then you have a matter in which the honest convictions of experienced men widely differ. There are three ways in which works depreciate. Physical decay, as I have called it, is called in England and in the published reports of English works, wear and tear. Then there is the question of obsolescence. The progress in the manufacture of gas, that is, in the art is, compared with many other arts, rather slow. At the same time there is and has been, particularly of late years, a good deal of progress in the direction of high economy, and in order to get the best economy it is necessary, if not to vary the principle, at least to vary the methods of applying the principles concerned in the manufacture of gas. Inadequacy, the third factor in depreciation, is a growing factor. The plant grows inadequate as the community grows larger; and this inadequacy is to be covered by the enlargement of the works—sometimes by means of additional apparatus, sometimes by means of larger apparatus. Now, there are three factors acting on the works to depreciate its value, each one giving what might be called a life to the particular building or piece of apparatus or pipe; and whichever factor gives the shortest life, is the one to be used. If wear and tear or physical decay for a certain machine would give it a life of twenty-five years, and inadequacy a life of twenty years, and obsolescence a life of fifteen years, we will have to ignore the twenty year and the twenty-five year, and use only the fifteen year for obsolescence as the measure of its actual depreciation. I have stated in my report at the outset that it would be impossible and insincere to state that the art of depreciation
2329 could be reduced to a science of rigid rules; it can not be. Depreciation of these works, to the best of my judgment, amount on the whole—allowing also for the appreciation of the land from $36,000 to $100,000—to about $300,299. Now the records of this Company in one of its exhibits show that since the Company started they have had about 4,400,000,000 sales of gas, and still further back of that an unknown quantity of which the last year was about 43,000,000 and the period in the neighborhood of twenty years. I have not been able to learn the history of this Company, but have been told in a vague way it started about 1868 and became organized, or crystallized in about 1875. So that I have taken in round figures as the probable total sales from the beginning about five billion cubic feet, and dividing this into 299,000 gives me about six cents per thousand cubic feet as a depreciation which good repairs—and the works are in good repairs—have not been able to cure. Now I wish to say that when I speak of six cents as being the residual depreciation per thousand cubic feet I am forcing a relation between the sales of gas and the depreciation which has no rational,

no practical connection. The depreciation is based upon the time elapsing and upon the value of the apparatus, buildings or plant, and therefore, as you see, is not directly connected with the sales of gas or the output of the plant. But as it is necessary in ordinary business to protect the company, having found the lump sum of residual depreciation, it seems proper to add about six cents to every thousand cubic feet and put it in the cost of gas. Now I had occasion to make a very long investigation in Massachusetts in a somewhat different field, in regard to depreciation per thousand
2330 cubic feet, and I found that the depreciation went down, growing smaller and smaller in quantity per unit of sales as the number of units of sales in each year increased. In other words, this six cents per thousand cubic feet which I have obtained is the average depreciation. Going back toward the middle of the period which is included, at the early part of this period, the depreciation per thousand cubic feet was very much higher than six cents per thousand cubic feet, and in new works is sometimes very high indeed at the outset, and along towards the present date it has grown lower than six cents rather slow, so that in putting in this six cents residual depreciation, I have put in a quantity which in my opinion, and depending entirely in the case of others on your reliance, on my experience and judgment, is considerably over rather than under the actual residual depreciation occurring in the year 1910.

Q. Now, you use the figure six cents per thousand cubic feet of gas sold as representing the amount charged off for depreciation, that is in round numbers, in your report at page 78, you use the exact figures as 5.98 cents?

A. I do, and for the reason which I have just explained, that I do not claim decimal accuracy at all for my results.

Q. In valuing the real estate as you have in this report, at $100,000 was that your independent judgment of the value of the real estate or was it based upon information which you received?

A. Upon information which I received. I know nothing about the value of your real estate.

Q. How did you happen to adopt in round numbers $100,000 as representing the value of the real estate of the Des Moines Gas Company?

2331 A. I think I heard General Byers say to you that a certain man in whom he had great confidence said $100,000 was about right.

Q. Now before I forget it, I want to ask you a little more in detail in respect to the unit prices and the cost of cast iron mains in Des Moines, I want to ask you, Professor, whether or not the prices which you have used in your report are based entirely upon your experience in the city of Buffalo or the city of Cleveland, or are there other factors which enter into the prices which you have used in Des Moines, if so, please state just what you considered in that connection?

A. Again in the matter of prices the question of experience and judgment comes up. In attempting to obtain the structural cost of the street mains here, it was necessary for me to gain a knowledge of the average cost of work covering in a general way your system of

street mains. From the records of the trial between the Capital City Gas Light Company and Des Moines in 1894, I found at that time that your best authority, William Henry White, so far as I personally knew, the people concerned gave a list of cost of laying mains in the streets of Des Moines that coincided very closely with the prices per lineal foot which I had obtained and graphically laid out in the blue print which I handed to you yesterday based on Buffalo figures in 1907. In the year 1904 I found amongst my *my* papers a memorandum of the cost of laying mains in the city of Cleveland, whose soil and conditions resemble yours very closely, and I found that this list of prices sworn to by Mr. Beardsley, if I remember rightly, for Cleveland, coincided very closely with the rates and graphical diagram for Buffalo. In both cases I found that the price for the four inch and six inch mains which form the bulk of
2332 your system *are* fixed by Mr. White in 1894 and Beardsley in 1904, was somewhat less than the price per lineal foot which I had obtained in Buffalo, and feeling it necessary to always be on the safe and liberal side in so uncertain a matter as an appraisement, I took the Buffalo scale and used it as giving the larger results for Des Moines than had been claimed by Mr. William Henry White, or had been claimed in the case of Cleveland by Mr. Beardsley, giving a larger and higher appraisement of the street mains than would have resulted from either Beardsley's prices or William Henry White's prices, and also what I was desirous of getting, not the price of today in 1910, but the average price during a period ranging from 1894 up to 1910, the money, the real money probably paid out by this company for its underground system.

Q. Now with respect to your unit prices for productive labor and materials entering into the building connected with the manufacturing plant, what basis did you have for using the prices you have used in your report?

A. Well, in Cleveland I was obliged to begin from the ground up in regard to each——

Mr. GUERNSEY: I beg your pardon I do not believe the question is about Cleveland, and I submit we will get along faster if we confine ourselves to Des Moines.

A. I was obliged to begin from the ground up in Cleveland and obtain there the prices of 1910, both for labor and for materia', and I again compared my Cleveland prices with such prices as I could get here in Des Moines, and I concluded that the results would be correct enough if I used my Cleveland unit prices, for instance for brick. Taking the matter of brick, for instance, I figured
2333 this way: Knowing that the mud brick was very cheap and far below eight dollars, and that the hard burnt red stock brick used in other parts here probably cost a little more than eight dollars per thousand; I again added four dollars a thousand for brick layers, that is about forty cents a hundred, and a brick layer is supposed to do thirteen hundred or fourteen hundred brick a day in factory or warehouse work if he is left to his own way, although in large walls an active brick layer has been known to throw in three thousand brick a day and put them in good enough shape for ware-

house and factory work. Fourteen hundred brick a day was what I took, cutting it in two, and that gave me twelve dollars. I find that your lime here in small quantities is seventy-five cents a barrel, and in large quantities one might be getting it somewhat less; and the sand, in trying to dig the foundations of the works there they had to dig out a lot of sand; so you see sand is very cheap and everywhere along the banks of the river here. So I added a dollar for the lime and sand, making thirteen dollars. Well the contractor ought to have some profit, so I added three dollars contractor's profit, making sixteen dollars. Then as he had to put in scaffolding I added the customary cost of that, which is about one dollar per thousand cubic feet, if the scaffolding is new and has never been used before. But in this case, as in all cases, I assumed the conditions most favorable to the company, which is $16 a thousand for brick and $1 extra for scaffolding. I presume if you will average over the mud brick with the hard red stock brick which *which* I heard called shale brick here, that $16 to $17 is about what you can figure the brick work having cost here. That is one of the units I obtained.

2334 Q. You spoke about securing some information from local people did you talk with persons who have been engaged in constructing buildings in the city of Des Moines?

A. I was largely guided or rather confirmed in the figures which I have obtained here by a conversation with an outside contractor who is building this bridge over here; I can't recall his name, who appeared to me very intelligent, and who shipped in his material most of it from the outside, buying it in the best market, and by the information of a Mr. King—that is all hearsay—who I had been told dug up most of the streets.

Q. Do you refer to Mr. Wheeler of the Wheeler Construction Company?

A. Yes, that is his name.

Q. Now turning to Section 7, page 13, of your report, Professor Marks, you first have a description here of house #1-A and B erected in 1892, with a description of the building, and under the heading structural cost we find the contract price $6,904.92, to which you add overhead charges of twelve and one half per cent and then find the total structural cost $7,768.04 from which you have deducted depreciation for 18 years, 25 per cent, $1,942.01, the $5,826.03 represents the present value of that building, does it?

A. It does.

Q. Now in your judgment, Professor Marks, does that sum represent the present value of that building for any purpose?

A. It does not. It represents the present value of that business for the purpose of making gas. If you will allow me to add to that—throughout every part of this work the value for the purpose for which these buildings and this apparatus is intended is a value which I faithfully tried to obtain. Taking for instance the ma-

2335 chinery; we all know that the moment machinery is bought and put in use it- salability cuts it right down to fifty per cent of its price new; it is second-hand. I have done no such thing

as that in connection with the machinery or anything of that sort. I have always tried to rate the value for the purpose for which it is intended.

Q. Is the sum $5,826.03 does that represent in your judgment the true value of that property for the purpose for which it is used?

A. At present, yes.

The MASTER: What do you fix the life of the building at?

A. In this case about fifty years. I summarize the system of depreciation——

The MASTER: I wanted to know what you fixed it at?

A. Fifty years.

The MASTER: How old was it?

A. It is 18 years old.

The MASTER: Did you examine the foundation?

A. I could not examine the foundation without digging, except what I saw.

The MASTER: The length of life very much depends on the life of the foundation?

A. Yes.

Q. Now, you take up Section 8, which contains purifying house, and you have used as the contract price $16,835, to which you have added as overhead charges 12½ per cent or $2,108.37 and have deducted as depreciation $6,440 your present value as found on page 14 in your report?

A. It is $13,819.

2336 Q. In your judgment does that represent the true present value of the contents of the purifying house described at page 14 of your report for the purpose for which it is being used?

A. It does.

Q. Now, each and every one of the items referred to in your report makes a cross reference to the inventory?

A. It has.

Q. And that is Exhibit 15?

A. Yes.

Q. And in each and every case in this report where you have fixed the present value of the property referred to at the prices and values which you have used, are they in your judgment the true present value of the property for the purpose for which it is being used?

A. Yes.

The MASTER: Right there I want to understand one thing as to Section 8. You get an average annual depreciation of $147.

A. Yes.

The MASTER: Now, how do you get that, by dividing 17 into the 6440?

A. Depreciation, 17 years immediately above it, dividing that into the total depreciation, 6440.

The MASTER: Which would be more than $147?

A. I will multiply that out. There is such a large number of those computations, I forget how did each one of them, I have to go over it. Will you allow me to bring the memorandum from my room?

The MASTER: Yes. I wanted to know whether you figured any interest on this?

A. There is no interest on it at all, straight depreciation.

2337 The MASTER: 34 per cent would be pretty near right—17 into 6440—it would be a good deal more than $147?

A. Yes, the fact of the matter, there has been something about the obsolete steam hydraulic elevator in there. I will get that this afternoon and bring it out exactly.

Q. At page 58 of your report, the recapitulation being a part of section 76, that shows the total present value of all mains in the system, 183.98 miles in length, $652,947. Does that represent the total cost of street mains from the beginning of the first gas company up to the date of your report?

A. On the top of page 58 $652,947 gives you the total present value of the mains.

Q. Are there any overhead charges included there?

A. Above cost of productive labor and raw material there are two charges made in there; one of ten per cent for undistributed charges and another 15 per cent to allow for contractor's profits if the work is done on a large scale, and to allow for unavoidable losses if the work is done in an interrupted way by the company itself.

Q. Well, in your judgment, Professor, did $652,947 represent the true value of the street mains in the distribution system of the Des Moines Gas Company as shown in this report?

A. It does.

The MASTER: I thought there were four mains in the river?

A. There is one 24 inch main and there is two 16 inch mains, aggregating 1300 feet, and one 8 inch main.

Q. Now, commencing at page 72 of your report, you show a summary of the tangible property of the Des Moines Gas Company up to November 1, 1910; why do you use November 1, 1910, as the end of the period used by you?

2338 A. It was the date of Exhibit 15 furnished by the Gas Company as the list of its property.

Q. Now, at page 75 of your report, Exhibit 23, you have a recapitulation of your appraisals up to November 1, 1910, and you have itemized the buildings and contents and other property and deduced as the structural cost the sum of $1,700,215, and in the other column under present value, you fix the present value of the tangible property of the Des Moines Gas Company at $1,410,087. Now I wish you would tell the Master whether or not in your judgment the amount which you have used as representing the present value of the property of the Des Moines Gas Company is its true present value for the purpose for which it is being used on the first day of January, 1911?

A. On the 1st day of November, 1910, I think it is.

Q. You mean the property that was in use by the Des Moines Gas Company on the 1st day of November, 1910?

A. Yes, that was the date of the list furnished me by the Company.

Q. Now, at page 76 you have a summary of rejected tangible

property claimed by the Des Moines Gas Company and not allowed by appraisal in rate cases; now I wish you would explain to the Master why you considered the items which you have rejected as being properly rejected in an appraisement of this character?

Objected to on part of complainant as calling for the conclusion of the witness on a question of law and therefore incompetent.

A. The pavements claimed by the company, according to the figures given by the city authorities, amounted to $204,994. These pavements were put down by the taxpayers and the city authorities and not by the company. The cost of lifting pavements off the mains $28,242 was rejected by me, because, except for re-
2339 pairs or replacements, which would properly be charged up in most instances to repairs. It is my opinion these pavements had not been lifted at all. Line pot drips, $3,000, is a small quantity which is included in the rates given resulting in $652,000 total. The steam and street railway crossings $636, is also included in the $652,000. The pavements for services laid under street paving $35,441. is rejected for the same reason; that is, while there are pavements I presume lifted for the purpose of putting in services, the proportion of them is very small, and in the majority of cases these pavements are lifted for the purpose of repairs and charged to repairs and consequently to the cost of gas. The taking up of these pavements for services is left out for the same reasons. This gives a total of rejected claims of $280,081.

Q. Now at page 58 of your report in the recapitulation shown thereon you give as the total present value of mains $652,947. and below the figures to which I have called your attention, you say that the total cost of street mains from the beginning of the first Gas Company to date, appears to be recorded in the company's books as $647,290.35; so that your estimate of the value of the street mains is in excess of that shown upon the company's books, if you have given the figures correctly of the condition of the books?

A. I should make a correction in regard to that last figure, $647,-290. Yesterday evening the city's accountants told me that in further investigating the books of the company they had found that $5,000 or about that of the cost of sinking the mains in the bed of the river had been charged to operating expense and not to capital
account, so that that sum as reported from the books should
2340 not be $647,000 but should be about $652,000. I ought to say at once that I utterly disclaim, except as a matter of accident, any such accuracy as would appear from the books and the estimate.

Q. What I want to know is whether or not your present estimate of the present value of the street mains $647,000 was arrived at through the use of the books of the Company by you in connection with your investigation?

A. I had never seen or heard a figure from the books until my estimates were completed.

Q. So that it is absolutely independent from the books and records of the Company?

A. Entirely independent.

Q. I notice at page 98 of your report Exhibit 23, you have given some consideration to the subject of going value. I wish you would please state to the Master whether by so doing you considered it a proper subject in connection with a rate case?

Objected to as being incompetent.

The MASTER: It strikes me that is a law question.

Mr. BRENNAN: The only purpose for which I asked the question is to show, by introducing this subject into this report that he has not admitted thereby that it is a proper item to be considered in connection with the rate making cases and neither does the city admit it.

A. Going value as defined there should not be used in rate cases; it was introduced for another reason.

Q. What purpose did you have for introducing the subject in your report.

Same objection as last above made, and it is wholly irrelevant and immaterial.

2341 A. To show that the market value of a proper capitalization would not be injured, but on the contrary would be somewhat enhanced by the fixing of the rate at 90 cents.

Q. Now that suggests to my mind this question, Professor: In computing the cost of manufacturing and distributing gas in the city of Des Moines, and the earnings of the company, based upon a 90 cent rate, what have you used as representing a reasonable return on the investment, what per cent.

A. Six per cent.

Q. And in this report at page 98, you have taken the excess profits as I understand it, derived from the earnings over and above the six per cent return?

A. 86 cents, yes.

Q. Now if you shall take the amount of profit over and above the six per cent which you have computed as a reasonable return upon the investment and add it to the six per cent, what rate of return will be afforded the Des Moines Gas Company on the 90 cent rate as shown in your report?

A. About 7.4 per cent on the present value and the working capital added together.

Q. On last year's sales?

A. For the year 1910.

Q. Does that profit 7.4 per cent in the investment in your report accrue to the Des Moines Gas Company after taking care of operating expenses, overhead charges, depreciation and taxes?

A. That is it. Pardon me for correcting a little bit—also allowing six cents as a fund which they have never yet created to take care of what I have called residual depreciation, after making all the repairs in the most thorough manner possible.

The MASTER: That is, six cents per thousand cubic feet of
2342 gas?

A. Yes.

Q. The MASTER: That makes your gas actually cost 69⅓ cents delivered to the consumer?

A. 69⅓ cents.

Q. I wish you would explain at some length your method of capitalizing excess profit, what choice the company would have with respect thereto, whether they should add it to the six per cent and declare dividends thereon or whether it would enhance the value of the stock in the investment?

Objected to as being purely argumentative and irrelevant. Everybody knows it is a matter of common knowledge that you can do what you please with your earnings.

A. It is purely a matter of opinion, I was going to say, amongst the investors as to whether six or seven and a half per cent is what they should demand on an investment in a gas company. The Supreme Court has fixed it at six per cent. If six per cent is satisfactory, there is a margin left of four cents of extra profit per thousand, because 86 from 90 leaves 4. I am talking in round figures, and as there was 528 million cubic feet of gas sold that year, I would multiply 4 cents by 528 million cubic feet and that gives me $21,135, a lump sum of extra profit for the year 1910. If I capitalize that at six per cent it gives me as the capital $352,250, which at six per cent will produce $21,135. If now I add the present depreciated value $1,401,000. working capital, $68,000. going value, as I call it, which is simply capitalized extra earnings, I get a total market value of $1,821,000. I assume what is perfectly natural in this matter,
2343 that the company issue stock for all the money which it got or spent, and that is the structural cost of the concern, or about $1,700,000. and if all the stock is worth in the market $1,821,000 it will put each one hundred dollar share of stock at $103. Now that boils itself down to a six per cent investment worth $103 a share; on the other hand, if the investor insists on seven and a half per cent, or 7.4 per cent you bring the stock at once down to par by that insistence and the rate of profit on it to 7½ per cent, speaking in round figures. In that case there is no going value because if 7½ per cent is right then there is no extra profit, and in fact if the city council had fixed on any given rate of profit and then fixed the price which actually brought that profit to this company which would be theoretically just and right, there would be no going value; in fact there is no going value in this rate case at all, and there shouldn't be.

Q. So that your method of computation is to give to the company the choice of returning in the first instance of this 7.4 per cent on the true present value of its investment or to use the excessive profit of four cents per thousand cubic feet of all gas in increasing or enhancing the value of the stock.

A. Yes.

Q. Now, Professor Marks, something has been said in this case that the company has paid some nonresident officer the sum of $10,000 which has been charged into operating expenses, and I

presume in arriving at the cost of gas you have included that $10,000 as being properly there in the operating account, is that true?

A. No, but I have included the charge of $10,000 in the cost of gas.

Q. You have assumed for the purpose of this report that
2344 the $10,000 is in there?

A. I have allowed the $10,000 to remain there.

Q. Now if we shall deduct the $10,000 from the cost of making gas, what would be the rate of the return on the investment based upon the sales for the year 1910?

A. If we consider the $10,000 and the 528 million cubic feet together, it is very nearly two cents per thousand cubic feet if we take off the $10,000. The cost which I got originally was 69.33 inclusive of depreciation. Taking off 2 cents I get 67.33. The investment in present value and working capital is 2.78 per thousand cubic feet and the profit on each thousand cubic feet of gas is 90 cents less 67.33 or 22.67 cents, which gives me 8.1 or in round figures eight per cent on 2.78, the investment due to present value and to working capital in the thousand cubic feet of gas.

Q. Will you tell us, say for the year 1910, if we shall deduct $15,000 representing the amount paid nonresident officers, and $5,000 for legal expenses, if we deduct $15,000 from the cost of making gas for the year 1910, will you please state to the Master what it cost the company to manufacture and distribute gas in that year?

A. If the Master will permit me to say, $5,000 is about one cent per thousand cubic feet; so the first $10,000 is two cents off of the cost of 69.33 and the next $5,000 is another cent off so that you have 66.33 as the cost of taking off $10,000 and then $5,000. It might be a little more than 66.33; between that and 67 cents.

Q. What I was trying to find out, do you assume 69 cents in round numbers was the cost of manufacturing gas in the year 1910 or did that represent the average cost?

2345 A. The average cost for five years is given in my report in considerable detail in section 96, page 82, and the average cost for the period of 5 years is given on page 84, at the bottom of the page, for making and distributing and measuring gas, collecting bills, making repairs, allowing for residual depreciation, taxes, legitimate expenses, donations, insurance, bad debts, and sundry small expenses, as 69.33 cents; this covering a period of five years.

Q. What I would like to have you do if you can conveniently is to take for instance the amount of gas sold by the company in the year 1910 and the amount of revenue derived therefrom, and then add to the net receipts $15,000 and thn tell us what it actual- cost them to sell gas in the city of Des Moines in the year 1910 and assuming that the books show for the purpose of the question that the net receipts were in round numbers $186,000?

A. I beg your pardon—if I take the reecipts and divide by the amount of gas I get the average price which is received; if I take the operating expense and divide by the amount of gas I take the

cost which is paid. As this question reads I am requested to deduce the cost of gas from the receipts for gas.

Q. What I wanted to have you do is this: The company's books you may assume for the purpose of this question, show that they received net in the year 1910, $186,000. Now there is $15,000 that has been used in paying legal expense and in paying salaries to non-resident officers; so that if we add $15,000 to the $186,000 we then have $201,000 net receipts. Now what we wanted to know if you could, by knowing the net receipts, and the amount of gas sold, considering the expenses which were charged off, whether you could give us the cost to the company of selling gas in Des Moines
2346 in that year?

A. The price to the consumer you wish?

A. Yes.

Q. Then I divide by 528,375. It does not divide out right. I should like to go into the matter if you will allow me.

Q. All right.

A. On page 85 you will find the collections for the year ending December 31, 1910, were $538,893. Now immediately opposite that to the left hand side you will observe that the sales in cubic feet are given 531,991,054 cubic feet. In this case they have given you not only the sales in the city of Des Moines but also as I understand it the sales in the village of Valley Junction, and it is the only place where it appears. Ordinarily I have somewhat incorrectly used 528,375,000 cubic feet of sales in the city of Des Moines in my computations of cost. I have done this as I have uniformly done throughout my whole report in a spirit of liberality towards the company to throw any doubt there might be in the matter in their favor. Now returning again to the $538,893. collected December 31, 1910, you wish me to add $15,000 more to that?

Q. What I want to get, if we deduct this $10,000 and the $5,000 what I want to get at first, is what it would cost to consumers of Des Moines for gas in the year 1910; what they paid for gas?

A. You are asking me for 1910, not for the five years?

Q. For the year 1910.

A. Computing it roughly, it may be slightly wrong, $1.01.29 on an average in the year ending December 31, 1910.

Q. Now the return which you have computed to the company on the basis of the ordinance in controversy, as I understand you, is based entirely upon the sales for the year 1910 and does not
2347 take into account any future sales?

A. It does not.

Q. What is the effect, if you know, upon the business, especially the gas business due to a reduction in the rate; that is to say whether or not business is stimulated or retarded?

A. Business is increased by a reduction in the price, and by that I mean the sales per capita of population is increased by a reduction in the price in almost certain regularity.

Q. Have you made any observation with respect to the results of the reduction in the price of gas in other cities?

A. I have made extremely careful studies of the results of reduction in the price of gas, beginning as far back as the year 1900 in a numerical way and using as the basis of my study the recorded facts in regard to the gas light companies of Massachusetts, that is all the various cities of Massachusetts, following them up at intervals carefully and in detail.

Q. Are these tables referred to in your report?

A. On page 91 I have given the results of investigation of all of the towns and cities in Massachusetts for the year 1910 and on page 94 I have given the relation of the price of gas to the per capita sales of gas for the years 1901, 1907 and 1910, showing average results from the various gas companies grouped under the prices at which they sell gas, beginning with $2.25 and running down as low as 80¢ per thousand cubic feet.

Q. The table to which you have just called attention shows when the price of gas was $2 per thousand cubic feet in 1901, the sales per capita were 584, and the sales per capita for 1910 were 988 and the average sales per capita for that period was 910. Now going to the bottom of your table where the price of gas was 80¢ per
2348 thousand the sales per capita increased to 5,760, is that correct?

A. Yes. That is in the year 1910. You will note, I will call your attention to the fact that the price of gas in 1901 was as high as $2.25. When you get to 1907 the number selling gas at $2.25 became so inconsiderable it was not worth while putting it in; that was equally true of 1910. The whole trend and drift and everything goes slow in Massachusetts, but is from a high price down to a lower price, and it is only in 1910 that any noticable number of Massachusetts gas companies have reached 90 cents and 80 cents and the very large returns that resulted from selling at 90 cents and 80 cents.

Q. Now assume that at the end of the year, we will say one year after the ordinance was in force, the one in controversy, that the sales of gas would amount to say 600 millions, about what would be the rate of return based upon your valuation in this case?

A. About ten per cent with gas at ninety cents. I obtain that in this way: it is only a rough, rapid approximation, which will make matters clear to you. The present gas company is turning out about 531 million feet annually and it is drifting on towards 600 million annually. I don't know what it is to-day; but the thorough business management—I hope Mr. Haines is not here—that Mr. Haines gives this concern, the way in which as a business man he has pushed it and has made your consumption per capita quite large, unusual under the conditions of dollar gas, showing as I said before, admirable management, I have no doubt that impetus will carry it right on to 600 million in a very short time. When you get to 600 million, all that will happen will be they will use some more oil and some more coke and some more purifying material; but speaking generally they will have no more men at work, they will
2349 have to put in no more apparatus than they have to-day; and an odd thing will happen, which is very rarely thought of.

While the additional cost of gas per thousand becomes about 25 cents as shown on page 96 of my report, the increase in the sales from 528 million to 600 million will reduce the investment per thousand cubic feet of sales so that this increase of sales works both ways under existing conditions; it cuts the cost of gas down and the gas to consumers down to about 64 cents, because all there is added for each thousand is 25 cents worth of material, oil, coke, etc., at the same time it cuts the investment per thousand cubic feet down to about two fifty and 64 cents cost taken away from 90 cents price, leaves about 26 cents which is profit on a thousand cubic feet of gas and also profit on about 2.50 investment; and it is a little over ten per cent that today these gentlemen could have for 600 million cubic feet.

Q. If the reduction in the price of gas shall stimulate the business beyond that, of course the profits will increase proportionately?

A. Yes; there is one point I ought to qualify and that is this: in my report I called attention to the fact that about three million cubic feet daily capacity sales was about all that was safe for them to carry. I called attention to the fact that their purifiers and possibly their holders would have to be increased when they got up to three million cubic feet or 600 million annual capacity. Now the moment they reach that point that they have to put in more investment in holders and purifiers and that sort of thing, why you then have again a larger investment that is perhaps temporarily even larger than 2.78 which I found to be the case with 528 million cubic feet annual sales. I am only talking now of going over 500 million cubic feet to 600 million cubic feet. This is not a case of
2350 going on indefinitely, like Mr. Hagenah's computation would lead you to believe.

Mr. GUERNSEY: We move to strike the answer as grossly improper, not responsive and argumentative.

Mr. BYERS: We except to counsel's remarks *of* grossly improper.

The MASTER: Would it not also likely increase the mains' services and meters?

A. They would have to increase the mains some if it went up beyond 600 million.

The MASTER: And services and meters?

A. Not necessarily services and meters because of the fact that consumers seem to have just about so much money in their mind that they can spend for gas, and if you reduce the price of gas in a community the family will move up to the use of it to the sum they will stand and the increase comes right along up in that way. The addition in new meters is comparatively trivial as well as in new services. I was referring more particularly to the large apparatus for storing gas, the holders and from the fact that they ought to have another set of purifiers or a bigger set as soon as they got up to three million a day.

Q. I was going to tell you to tell the Master what the experience was in New York City after the case had gone to the Supreme Court

of the United States and after they commenced offering it under the new ordinance.

Objected to as being incompetent.

The MASTER: His judgment, observation and experience is competent, but what is done in this place or that place and another raises a collateral question.

Mr. BRENNAN: I was going to have him tell in a general way after the price was reduced in New York how it affected
2351 the sales.

Same objection as last above made.

A. In New York City and the Island of Manhattan it resulted in increased sales and increased profits, causing the company after a year's trial to decide to go on at 80 cents and not ask the court to decide it.

The complainant moves to strike the last part of the answer as hearsay and incompetent.

Q. What is the fact as to whether or not the company did renew its application in New York to have the rate fixed in the ordinance set aside?

Objected to on part of complainant as being incompetent.

A. It did not apply to have the 80 cents set aside.

Q. I wish you would refer to the tables in your report commencing at page 91 and explain a little more in detail, if you care to, with respect to the experience in Massachusetts due to the reduction in the price of gas?

A. The tables I am speaking of are based entirely on the practical results to be gotten in the state of Massachusetts as reported by the gas companies to the Massachusetts Gas and Electric Light Commission each year, and these reports go back as far as 1888, but I have only referred to them as far back as 1901. Beginning, however, with 1910, and working backwards, I find that the cities of Boston, Lynn, Worcester have gas ranging from a price of 77.8 cents to 80.5 cents and that the average sales per capita under these conditions are 5760 cubic feet. The cities of Charlestown, Cambridge, Fall River, East Boston Laurens, Lowell, New Bedford and Springfield have gas at a price ranging from 85.4 up to 92.7 and the average sale per capita in those cities at these prices is
2352 4,106 cubic feet. The cities of Dedham, Haverhill, Milton, Newton, North Adams, Revere and Taunton sell gas at a price from 97.7 cents up to $1.04 and the average sales per capita are 4,007 cubic feet. The cities of Adams, Brockton, Fitchburg and Salem sell gas at prices ranging from $1.10 to $1.14 and the average sales per capita are 2,608 cubic feet. The cities of Arlington, Foxboro, Dover, Blackstone, Chicapee, Williamstown, North Hampton and Pittsfield sell gas at prices ranging from $1.16 to $1.33 and the average sales per capita are 2,220 cubic feet. The cities of Athol, Quincy, Clinton, Danvers, East Hampton, Framingham, Leomin-

ster, Barre, Woburn, Norwood, Spencer and Webster sell gas at prices ranging from $1.41 to $1.62 and the average sales per capita are 1,341 cubic feet. The cities of Emsboro, Greenfield, Marblehead and Plymouth sell gas at prices ranging from $1.63 to $1.84 and the average sales per capita are 988 cubic feet. The cities of Nantucket, Gardner, Ipswich, and Stoneham sell gas at prices ranging from $1.88 to $2.06 and the average sales per capita are 614 cubic feet. Referring now to the year- 1901 and 1907 as well as the year 1910 for which I have just given the details I find also that there is a steady growth in the sales per capita of gas due to the growth of apparatus with which the gas is consumed—I refer more particularly to heating and cooking purposes—and looking over the results for instance in the case of $1 gas in the state of Massachusetts I find that in 1901 the average sales per capita of $1 gas was 2393 cubic feet and in 1907 3824 cubic feet and in 1910, 4007 cubic feet, showing a steady growth at a constant price of one dollar, just such a steady growth as you have found very markedly shown here, owing to the excellent business management of which I have already spoken on the part of Mr. Haines.

2353 Now if we take the sales per capita in 1910, 4007, and subtract the sales per capita 2393 for 1901, we have a difference of 1614 cubic feet occurring in the space of nine years, or an average annual increase in the sales per capita of $1 gas of 179 or 180 cubic feet. In addition to that referring again to the same page, 94, we find an increase in the sales of gas which appears to come from a reduction in the price. Now, where the price of gas is reduced when it is higher than about $1.25 the results seem to be very irregular; but when you get down in the neighborhood of a dollar, the gas changes its relation to the community and is no longer a luxury, but becomes a sort of a commodity which everybody expects to use for cooking and for the purpose of occasionally heating, and then the response to reductions in prices becomes very regular as compared with anything that it is when it was a luxury; and you can expect for each cent reduction in Massachusetts—of course I don't know what it is elsewhere—an increase in the sales per capita ranging all the way from 15 to 50 cubic feet; but always an increase every time you put down the price of gas.

The MASTER: In other words, it has a tendency to make them a little more extravagant?

A. It seems as if every man had a lump sum he was willing to spend for gas; if the gas is high he cuts it down; if it is low, he lets it go until he gets up to that sum.

The MASTER: He gets it anyhow?

A. Yes, he spends it anyhow.

Q. You said something a while ago about your reasons for not considering this going value in connection with a rate case. This thought occurred to my mind, if a man in the ordinary affairs of life and business was permitted or thought it prudent, rather,

2354 to add to the cost of a commodity he had for sale what he might term the value of his going concern, would he be able to get anywhere in the field of competition on that basis?

Objected to as wholly argumentative, irrelevant and immaterial.

A. He would probably not be able to succeed in a competitive business if he added his going value as a basis to the price.

The MASTER: Would not that depend a little on the business?

A. Nothing except in the case of patents.

Mr. BRENNAN: The defendants now offer in evidence defendants' Exhibit 23.

Mr. GUERNSEY: Objected to because it is incompetent and because it is based upon hearsay and not based upon the experience of the witness or the conditions here in Des Moines, and the same objection is made to each part of it. I want to make a separate objection to each part of it and as to each section of it on account of the quotations contained therein.

Q. I want to ask you in reference to the item of $68,000 which you allow for working capital. Upon what basis did you compute working capital and arrive at the sum of $68,000 as the proper amount for that purpose?

A. On the basis of about 13 cents per thousand cubic feet of annual sales, giving about $69,000.

Q. And the cost of gas includes this amount as working capital as computed by you?

A. It does.

Q. Do you refer in your report to the 13 cents which you have computed as the basis for your working capital?

2355 A. I do.

Q. Please state where it is referred to in your report?

A. On page 81 I go into the subject of working capital, both when construction is going on and also when operation is going on, calling attention to the distinction between working capital required during construction and the working capital which may be required during operation.

Q. Is the 13 cents you use simply an arbitrary figure, or is it one you use based upon your experience as a consulting engineer?

A. It is empirical constant, and something the result of considerable experience, modified by my judgment as to what would be liberal.

Q. Was the subject treated in the consolidated gas case with which you were connected by Judge Huff?

Objected to on part of complainants as being hearsay and argumentative.

A. It was. Judge Huff didn't pay very much attention to the testimony. He said a million dollars was enough and let it go at that on annual sales of about 14 million cubic feet of gas.

Q. Well, is it your judgment, Professor Marks, that 13 cents per thousand cubic feet of gas is all that should be allowed to the company to represent working capital?

A. Yes.

Cross-examination by N. Y. GUERNSEY, Esq.:

Q. Turning to page 14 of your report, which was referred to in your direct examination, can you tell us the theory on which you obtained the average annual depreciation there of $147.

A. The Master just asked me about that.

Q. I want to know, whether without looking it up you can
2356 tell us the theory on which you computed that?

A. I think it is a typographical error; it was computed and not used afterwards and overlooked in my final revision, simply because that method of obtaining annual depreciation, residual depreciation was abandoned.

Q. What was the method; I don't care for the figures, and I don't care whether you abandoned it or not; but I would like to have you tell me the method that was adopted to compute that?

A. The general method——

Q. No, I want the method so that we can apply it and compute it?

A. I think that is a typographical error.

Q. Give us the method that was adopted to compute what should be here.

A. I mean by that general method——

Q. I mean something so that we can compute it; not glittering generalities—let us get down to brass tacks.

A. That is what I want to do. There must be a general method in anything of this sort. The attempt that was made and abandoned was to find the annual depreciation in the case of each item, by finding the total depreciation and then dividing it by the number of years which that depreciation existed or was computed. But in cases of obsolescence—I have marked one obsolete here—I used my own judgment as to what sum ought to be put in, because in the case of obsolescence the annual depreciation disappeared. I will endeavor to explain that to you.

Q. Can you without referring to your notes tell us how to compute it?

A. Not further than the general method.

Q. Did you make the computation yourself?

A. In this case I did.

2357 Q. As to each one of those things?

A. It was abandoned.

Q. As to each one of the items that go into the plant you made the computation on that theory?

A. You mean the computation as to the annual depreciation. I did not, because it was abandoned. Nobody made it.

Q. How recently was it that it was abandoned, when did you make these figures?

A. Within a couple of weeks.

Q. You can't tell us now what the theory was?

A. I just told you.

Q. You can't tell us any more specifically than you have?

A. I shan't go into the English language any further trying to explain it to you.

Q. You usually qualify as a statistician as well as these various other things?

A. Very rarely.

Q. But also as a statistician?

A. Sometimes people call me statistician.

Q. You qualify as a statistician, don't you?

A. I don't recall that I ever did.

Q. Now, you were sincere in making this computation for Mr. Brennan of the amount which you had to deduct from your 69⅓ cents as the cost of gas, if we eliminate those two items aggregating about $15,000?

A. I did; I was taken by surprise.

Q. You thought you were doing it right?

A. Yes.

Q. There was an obvious error in your theory of computation, wasn't there?

2358 A. I don't know.

Q. In the theory of it wasn't there?

A. It was the elimination of $15,000——

Q. You remember the transaction. You were sincere in making this computation for Mr. Brennan of the amount which you had to deduct from your 69⅓ cents as the cost of gas if we eliminated those two items aggregating $15,000?

A. Why, of course?

Q. There was an obvious error in your theory, wasn't there?

A. Well, I was not aware there was; I don't think there was any theory connected with it.

Q. Your computation was based on some theory, wasn't it; tell us what the error was, I don't mean error in figures, I mean the underlying proposition you adopted in getting at that result?

A. You mean to tell me my figures are incorrect—I often slip up on the decimal.

Q. I am not splitting hair; I am getting at what underlies your computation; that was obviously wrong, wasn't it?

A. Certainly not.

Q. Your 69.33 was an average for five years?

A. Yes.

Q. You deducted this $15,000 which only occurred one year from your average of five years, didn't you, and got a result five times as big as it ought to be in your deduction?

A. I think I can make that clear to you.

Q. Go on and answer the question, if you please.

A. I certainly did not get a result five times too big, but I would be very glad to explain it to you if you wish to know.

Q. You are still satisfied that your compitation there was right and that this where you were dealing with the average five

2359 years and you took an expense of $15,000 which only occurred in one year, it was proper to deduct it from the average instead of spread it over the five years?

A. If you reduce it to terms cents per thousand cubic feet of gas if my figures are numerically correct, I am satisfied I was entirely right.

Q. The record here shows that the cost for 1910 in cents per thousand cubic feet, the year in which this expenditure occurred, was 66 cents and a fraction, and this amounted to about three cents, and that would make it 63 cents and a fraction?

A. You are wrong there. The cost was 69 and a fraction.

Q. You added to that your 6 cents that you had after you got your average?

A. Yes.

Q. The cost shown here by the record was 66.47, which appears from one of the exhibits here, complainant's Exhibit 24, as the operating cost of the company for the year 1910; now if you had taken $15,000 from that you would have reduced it three cents, roughly?

A. Yes.

Q. Would that have reduced your average for the five years three cents or one fifth of three cents?

A. I was asked about the price of gas——

Q. No, answer my question, please. Can't you answer that without referring to anything or making a computation?

A. No, because it is a catch question.

Q. It is a question that is plain and clear to you as a statistician?

A. It is.

Q. Will you answer it and tell us whether the reduction of the operating cost three cents for one year would reduce the
2360 average of five years operating costs, which includes this one, three cents or one-fifth of three cents?

A. I will as soon as I can look it up, the costs for those five years.

At this time an adjournment was taken until 1:30 p. m.

2361 1:30 P. M., WEDNESDAY, *August* 16, 1911.

WILLIAM D. MARKS being continued on cross-examination by N. T. Guernsey, Esq., testified as follows:

Q. Do you still think that the elimination of this item or these two items of about $15,000 in 1910 would reduce the average cost of making distributing and measuring gas, etc., from 63.33 cents about three cents?

A. Referring to page 83 of the report I find using the cash cost only, that is 6 cents less than the 69.33 I find that for 1910 we are given 65.30 while I use as an average 63.33 preferring to use an average of five years as being more nearly accurate. I would reduce the cost for the year ending December 31, 1910, which is given at 65.3 by about three cents, to 62.3 cash cost but there is no question of one third of an error or one fifth being divided out.

Q. Now let me repeat my question. I ask you whether you still think that the elimination of this $15,000 in the last year would reduce this average for the five years, 69.33 cents three cents. Now please answer that?

A. It will reduce it about three cents.

Q. You didn't make up these figures shown on your page 83 did you?

A. I did not. I obtained them from the city's accountants.

Q. Now take these figures that I will give you here that are in evidence Exhibit 24. You have taken on your page 83 the two months ending February 28th to begin with haven't you?

A. Yes, sir.

Q. Now taking figures over the same period that have been sworn to and are in evidence here at .7415 for that two months?

2362 A. Exhibit 24 two months, .7515 cents.

Q. Now for the twelve months ending February 28, 1907 which is your next period, take .6581. Then for the next succeeding twelve months .6401.

A. Ending February 29, 1908, is that?

Q. Yes. Then for the next twelve months .5961. For the next ten months ending December 31, 1909, which is the next period which you take as shown on this exhibit take .6256 and for the year ending December 31, 1910, take .6647 and tell us what the average is. Get at the average in the same way you got your average for the five years December 31, 1910?

A. I have not the data here to do that with.

Q. What do you want besides the figures?

A. The average for the year ending December 31, 1910—the total amount of sales for the five years preceding divided into the total amount of the operating expenses of those five years and is not the average of the averages above it.

Q. You took the total sales—well I can give you that from this same exhibit if you prefer to do that way?

A. If you give me the total sales for five years.

Q. For the two month period 59,059,182 cubic feet, the first two months' period. For the twelve months ending February 28, 1907, 38,892,656, for the twelve months ending February 29, 1898, 441,877,493, the next twelve months ending February 28, 1909, 465,970,133. For the ten months ending December 31, 1909, 404,-244,022, for the twelve months ending December 31, 1910, 531,-991,054. You want the total operating expense also as I understand.

A. If you please.

A. For the first two months' period $43,790.62. For the
2363 next twelve month period $255,967.82. The next period $282,801.70. The next period $277,745.76. For the ten months' period ending December 31, 1909, $252,914.90. For the twelve months' period ending December 31, 1910, $353,600.42.

A. I obtained for the amount of sales 2,292,034,540 cubic feet but I find on referring to the bottom of page 84 that I have there 2,292,034,290 instead of 540. I don't know but what I may have made some mistake in taking down your figures.

Mr. GUERNSEY: We get 2,292,034,540.

Mr. BRENNAN: That is what I get.

Q. There are two people that agree with you, and I think you can acceot that as O. K.

A. I obtained $1,466,821.22 as the amount of the cash operating expenses for the period of five years.

Mr. GUERNSEY: That checks.

A. In order to shorten the division I have taken 2,292,035 thousands. Do you wish me to carry it to the decimal, I find I am so very close to 64 cents, I could make it——

Q. Call it 63.99, that is what our figures are. Now then Professor, will you deduct from your operating expenses of the last year these two items which amount to $15,602 and tell us what this average is with those items deducted?

A. Using 531 millions?

Q. Use the same figures you had before except that you eliminate these items you eliminated in making your calculation this morning.

A. Dividing $15,602 by 531,991 thousands it amounts to 2.93 cents deduction.

COURT: That is only for one year, he wants you to do it for the five years.

Q. I asked you to deduct the $15,602 from the operating
2364 and then divide by your number of cubic feet.

A. Oh I never did such a thing.

Q. I didn't suppose you did because if you had you would not have testified the way you did this morning.

A. I think you misunderstood me.

Q. Will you please do that?

A. Acting as your computer I will.

Q. Acting as a witness. Deduct $15,602?

A. Deducting $15,602 from the total cash operating and then dividing by the total number of cubic feet of sales to get the average per cubic feet, I do this merely as your computer, I would not do such a thing as that.

Q. Well I inferred from what you said this morning you would not.

A. Subtracting $15,602 from $1,466,821.22 I obtain, $1,451,-219.22. What do you wish me to do with that?

Q. That is the gross operating for that five years' period less these two disputed items?

A. Yes, sir.

Q. Now will you divide that by the number of cubic feet of gas sold during that period, will that give you the average operating expenses per thousand of cubic feet with those two items omitted for that period?

A. Making that deduction and dividing by 2,292,035 thousands I obtain if I done it accurately 63.31 cents per thousand cubic feet.

Q. Now will you deduct that from your 63.99 and tell us what the difference in the average the deduction of those two items would make?

A. The difference between 63.99 and 63.31 is .68.

Q. .68 of a cent?

A. Of a cent.

2365 Q. Then that would be the difference in the average operating cost for the five years if those two items were eliminated instead of something over three cents?

A. Not if applied to one year. Correct if applied to five years as shown on page 84 of my report Exhibit 23.

COURT: What amount did you divide by 2,219,000?

A. Referring to page 84 of my report?

COURT: No, right there.

A. $1,466,821.22 less $15,602 gives me $1,451,219.22. That operation is practically a duplicate of my report, page 84.

Q. Now asking the question over again and I hope for a direct answer the difference in the average operating costs for these five years that would be made by deducting these items amounting to $15,602 is .68 of a cent per thousand, is it not?

Objected to for the reason that the question has already been answered and for the further reason that the question assumes that the witness has not given a correct answer to the former question.

A. Yes, sir.

Q. I notice Professor that on the outside of this report of yours that is marked Defendants' exhibit 23, you are referred to as Ph. B. C. E., consulting engineer and statistician. Was the word statistician put in there without your acquiescence or consent?

A. No.

Q. Then what did you mean by telling us this morning that you were not a statis-cian?

A. I told you I had not qualified as a statis-cian.

Q. And that you did not remember having ever qualified as a statis-cian.

A. I don't recall having qualified as a statis-cian. It is too indefinite.

2366 Q. What is?

A. The statis-cian part.

Q. Now passing that for a minute who made this blue print commencing your report?

A. The United Gas Improvement Company made the original drawing.

Q. Who copied it?

A. One of my assistants.

Q. How old is it?

A. Oh it is quite old. I don't know exactly, it was merely to elucidate the general appearance for the benefit of the Master.

Q. What is the size of the generator that is shown here?

A. Not stated.

Q. I know, but don't you know?

A. I do not.

Q. What did you do, take something you found in an advertisement and ask one of your assistants to copy it or trace it?

A. Yes, to trace it, never looked at it again.

Q. All you did was to put your name here William D. Marks, C. E.

A. Yes, sir.

Q. Now in your direct examination when you were called in the Consolidated case entitled William R. Wilcox and others, against

the Consolidated Gas Co. of New York, or the reverse, was this the first question asked you and is this your answer? "Q. You may tell us something about yourself, what your profession is. Ans. I am a consulting engineer and statis-cian, making a specialty of gas and electricity, I have had a good deal of experience more particularly in the direction of statistics of gas. I have attended all of the meetings in this hearing and also before the State Gas and Electricity Commission and listened to the testimony. I have spent a good deal of time in careful study of the reports of the
2367 legislative committee of the state of New York 1885 and '86 and report of the Stevens Commission in 1905"?

A. Yes, sir. I did not attach special importance——

Q. I did not ask you that, simply asked you if that is the question put to you?

A. I do not recall, I think though that is substantially correct as reported there.

Q. Now does this blue print returning to that, show correctly one of these machines as it is arranged today?

A. No, it only illustrates the general principle as the United Gas Improvement Co. tried to show it.

Q. What are the differences between this machine as shown in this blue print and say the ten foot six set over in the plant there?

A. I have not looked at that closely enough knowing it to be an advertisement.

Q. Will you kindly look at it and tell us?

A. In what way do you desire to have me differentiate?

Q. I am not an expert, I wish you would tell us the essential differences in your mind as a gas expert between the machines shown by this drawing and the ten foot six set over at the works.

A. Except in the matter of detail there is no essential difference.

Q. Take it in the drawing where do they begin the process of manufacture?

A. Well usually where you put the coke in. On top of the generator.

Q. Where do you begin unusually?

A. I don't know.

Q. Then what do you mean, this is a pleasantry?

A. No, not a pleasantry, that is the way I noticed them doing here.

Q. They always begin there don't they?

2368 A. Yes, sir.

Q. That is at the left hand side as we look at this?

A. Yes, sir.

Q. Now is the apparatus set up here in the diagram in the order in which it appears over there?

A. That I don't know.

Q. Is it set up here in the order in which it is usually set up and used?

A. Yes, sir.

Q. You are certain about that?

A. Oh yes.

Q. Do they ordinarily run the gas through the condenser before it goes to the scrubber?

A. No.

Q. This shows the condenser before the scrubber don't it?

A. I see it is here now. It was a drawing I told you made by my assistant, I paid no attention to it.

Q. That is wrong isn't it?

A. Not necessarily no. If you have a multitubular condenser.

Q. What is the function of a condenser?

A. A condenser is to condense to *coll* the gas.

Q. Is that done before you put the gas through the scrubber?

A. It is generally done before in the case of coal gas.

Q. Well how about water gas, this is not a coal gas apparatus is it?

A. No, this is a water gas apparatus. I don't know how you do it, I don't know — which you put it.

Q. How is it usually done in a water gas apparatus?

A. If I used my way I would always condense before putting it through the scrubber.

Q. I didn't ask you that, I asked you how it was ordinarily done?

A. I told you I didn't know how you did it.

2369 Q. I asked you how it was usually done in a water gas apparatus ?

A. I am not connected with the U. G. I. in any way and they are the only people that do it, I can't tell you what they usually do.

Q. Do you mean to say you don't know how that is done with water gas?

A. By the U. G. I., I don't.

Q. I asked you how it was usually done in the operation of a water gas apparatus?

A. If you want to know how I would do it, I would use the condenser first.

COURT: He asked you if you knew how it was usually done?

A. I don't know how it is usually done if you put it that way, by the United Gas Improvement Co.

Q. I didn't ask you that. I want to know if you know how it is usually done leaving the United Gas Improvement Company out of consideration?

A. As the U. G. I. is the only one organization practically that is practically all I have to say about the matter.

Q. I would like to have an answer to the question.

A. My answer to that is it is impossible because *because* the U. G. I. control most all there is.

Q. That is not my question. My question is whether usually in the operation of these machines gas goes through the condenser before it goes through the scrubber?

A. In the case of coal gas, yes always.

Q. Do they make coal gas with these machines?

A. No.

Q. Then read the question to the witness?

A. I have answered yo-r question as far as it is possible to answer.

COURT: If you answer the questions promptly we will get along better and faster.

2370 A. It is this way, the U. G. I. are the only people that make these and I said I don't know how they arrange that scrubber and condenser therefore when I say that I have covered the question as far as I am able.

COURT: If you don't know what theu usually do then just say so.

Mr. BYERS: I submit he has said that twice.

A. I can't answer you any more than I have answered you, it is out of the question.

Q. Now what proportion of gas in this country is made by water gas apparatus?

A. I don't know.

Q. Is it about 75 per cent of the gas used in this country made with water gas apparatus?

A. I don't know.

Q. You would not say that was wrong?

A. I simply say I don't know.

Q. As a gas expert you don't know under these circumstances whether it is usual to run gas first through a condenser or first through the scrubber with this water gas apparatus?

A. I have already stated that I don't know what the United Gas Improvement Company does it as much as I can say. I have also added to that that I would myself use the condenser first. That is as much as I can say with regard to that multitubular.

Q. Is the United Gas Improvement Company the only concern in the United States that manufactures Water gas apparatus and sells it on the market?

A. The only noticeable concern that manufactures.

Q. Who else manufactures and sells it?

A. There is a firm in Toronto, Canada.

2371 Q. I asked about the United States?

A. That is about the only one I know of.

Q. How about the Western Gas Construction Co. of Ft. Wayne?

A. I have read their advertisements, I have never seen any of their apparatus.

Q. How long have they been in the business of manufacturing this water gas apparatus?

A. I don't know.

Q. How about the Gas Machinery of Cleveland, do they manufacture and sell this water gas apparatus?

A. I never have seen any of their apparatus, I have seen their advertisements.

Q. Do you know whether they manufacture and sell it, that is what I am asking you?

A. All I know if that they advertise.

Q. That they manufacture and sell it. Does the gas engineer Co. of Trenton, N. J., advertise gas apparatus of this kibd?

A. The first I ever heard of this concern.

Q. Does the American Construction Co. of Newton, Iowa, manufacture and sell such apparatus ?

A. The first time I ever heard of the concern.

Q. Now can you tell us any gas plant in the United States using water gas apparatus which follows what you say you would do and pass the gas through the condenser before it goes through the scrubber?

A. I never have looked into it.

Q. You said I believe that you went to St. Louis in 1871?

A. In 1872.

Q. You were there how long?

A. Fifteen to eighteen months.

Q. You did not design that plant?

2372 A. William Farmer did so.

Q. You kept the books for the construction company?

A. For the contractors.

Q. That were constructing the plant?

A. Were building the plant.

Q. And you also inspected the work to see that Mr. Farmer's designs were carried out?

A. I followed every contract as to the materials and the correctness with the drawings that Mr. Farmer furnished.

Q. So that your business there was to keep the books and act as sort of an inspector?

A. I should think that was about it.

Q. Now when did you next have something to do with the construction of a gas plant?

A. Do you mean to say with the design or with the looking after fixing up?

Q. Either one.

A. It must have been about 1900.

Q. About thirty years?

A. Just about 1900.

Q. And what plant was that?

A. That was a small plant at Fostoria, Ohio, that was partly completed. I was sent out to get it to going. Part coal and part water gas.

Q. That plant had been designed by somebody else as I understand?

A. The United Gas Improvement Company as far as the gas was concerned.

Q. Now far had the work of constructing the gas plant and laying mains progressed when you went there?

A. The water gas plant was partially completed and had been in operation. The coal gas plant the benches had to be rebuilt.

2373 Q. Then the water gas apparatus had been installed and the coal gas benches had been built but the coal gas benches you rebuilt?

A. Yes, sir.

Q. Now how much had been done in the way of laying mains when you went there?

A. A good many of the mains, I think almost all of them were completed at that time. It is a small job, I think some more work was done. I know I recall opening—going to ditcher there that were open and opening ditches. It was in the hands of a local boss who knew everybody and everything and he did most of the location.

Q. What was the total number of miles of mains in this plant?

A. It was not much, not many. I have not the faintest recollection.

Q. Let's see if I can refresh your recollection, wasn't it about eight.

A. It certainly was not more than eight or ten miles, I know it was a small place.

Q. Most of the mains had been laid prior to your going there?

A. They were finishing up the job when I got there in all directions.

Q. They were making gas when you got there.

A. Yes, sir.

Q. Selling gas?

A. Yes, sir.

Q. How long did you stay on that job?

A. Off and on I should say about a year getting it to going and arranging operations there.

Q. How much of your time did you spend there?

A. A year. I should think about half my time. I had three or four other things to look after.

Q. It took about six months to get this plant with about — miles of main going after they had commenced making gas?

A. Oh no, it was going when I got there.

2374 Q. I am just quoting your language, you said to get it going and straighten things out that took about a year.

A. No, it was not the gas plant altogether. There was an electric plant. They had consolidated the electric plant with it and the street arc lighting system the lamps had to be all fixed over beginning the street arc lighting system, I think took the bulk of my attention.

Q. So you paid comparatively little attention then to the gas plant there.

A. Well I had to pay most attention to the electric I suppose. I remember they told me to divide the expense half and half between the electric and the gas so I suppose they believed I did about half of each.

Q. Now what additional experience have you had in connection with the construction or designing of gas plants?

A. The next thing that came up was the Durham North Carolina gas plant.

Q. When was that?

A. That was along I think in 1903 or '4, I don't recollect which. I know it was just before I went to New York. That was a town of about 22,000 inhabitants.

Q. How many white inhabitants

A. I think we figured there was about 7,000 niggers there, I don't know, out of 22,000.

Q. How many miles of mains were there there?

A. I have not any recollection of that. I recall at the outset making a requisition for about five or six miles of mains.

Q. About twelve miles altogether weren't there?

A. Not at the start.

Q. I didn't say at the start, altogether about twelve miles
2375 of *of* mains in that system.

A. Now.

Q. No, when you built it?

A. I don't think so, I don't think it could be that much.

Q. How high did it go?

A. I told you about five or six miles.

Q. Aside from your experience in St. Louis and Fostoria and Durham you have mentioned, have you had any experience in the construction of a gas plant?

A. You mean as engineer?

Q. Yes, or any other way what have you had to do with building a gas plant, I don't care whether it is as engineer or as contractor or as laborer.

A. I have had no experience in the actual building of anything more that these three plants, but in the estimating for others I have had a great deal of experience.

Mr. GUERNSEY: I move to strike out the last part of the answer, I didn't ask the witness for that.

Q. Now what experience have you had in designing gas plants other than with reference to the three plants that have been referred to during the entire forty years?

A. I have originated none whatever.

Q. Did you design the plant at St. Louis, you did not I understand?

A. I said I had originated none whatever.

Q. You did not even design the plant at Durham?

A. Yes, but it was a little bit of a coal gas plant and no engineer that regards a matter of any great importance.

Q. Now aside from your experience in Ohio, that was at Fostoria wasn't it?

A. Yes, sir.

2376 Q. Did you ever operate a gas plant after you left St. Louis or have anything to do with its operation?

A. Except at Durham. I never have stayed at a gas plant any longer than to complete its building and get it into operation. I have always been—I would not stay at any plant after built and going.

Q. The thing I want to get at is what you actually did, not what you would have done. So as a matter of fact you have had practically no experience in designing constructing or operating gas plants?

A. I should deny that entirely.

Q. Do you say you have had a broad experience in designing, constructing or operating gas plants?

A. No, I should not call it broad experience in the actual creation of plants.

Q. In what line wi-ther designing, construction or operating gas plants has your experience been broad?

A. More in estimating.

Q. I didn't ask you that.

A. Yes, that is part of desiigning of a plant always and I have been used for years beginning in 1876 on that particular point in connection with gas works by men largely engaged in the operation of the old fashioned coal gas works.

Q. Who were they?

A. The principal man, that is the one who put most money in was Seymour L. Husted of Brooklyn, Henry Atrell of Baltimore, Suter & Company of New York, Arthur W. Benson, President of the Brooklyn Gas Light Company and a number of others who I never came in contact with whose money they had to handle.

Q. When was the last year you did anything for any of these people?

2377 A. In 1887.

Q. Twenty four years ago?

A. Yes, sir.

Q. At that time how far had the actual operation of water gas plants been developed?

A. It was just beginning.

Q. Have you had any experience whatever in the operation of water gas plants personally?

A. At the beginning of the water gas business.

Q. I asked about experience in the operation of plants.

A. Yes, sir.

Q. Where was the plant located?

A. The first plant was Prof. Lowe's plant the originator of this business at Manayunk, outside of Philadelphia, his experimental plant.

Q. How many miles of main did they have there?

A. None whatever that I know of. It was his experimental plant set up for the purpose of introducing the water gas process.

Q. Now then what plants in actual operation have you ever been connected with, water gas plants, I don't mean simply experimental stations but plants that were actually operating.

A. I told you one in Fostoria during operation.

Q. How much did it cost you per thousand to make gas there?

A. If I remember rightly the best they could do was 65 cents in very large quantities although they had agreed to sell it at 50 cents.

Q. This is water gas or coal gas?

A. Water gas.

Q. What did they pay for oil then?

A. About 4 cents if I remember rightly. That was gas

2378 oil you know a distillate.

COURT: Natural oil as produced right there?

A. They were not allowed to use the natural oil.

COURT: It is produced there?

A. It is produced right around there but they were not allowed to use the natural oil, the cheap oil, they had to use a distillate.

Q. Do you know why it was they used this distillate at that time?

A. Because the oil well people didn't dare to sell them natural oil.

Q. As a matter of fact the reason was, wasn't it that the apparatus at that time was not adapted to the use of the crude oil?

A. It could use crude oil.

Q. Where was it used in the apparatus at that time?

A. In the carburetter.

Q. At what place, what city or what gas works?

A. They were using it at a little town just east of them.

Q. What is the name of the town?

A. I forgot the name of the town.

Q. Anywhere else as far as you know?

A. I didn't look for it anywhere else.

Q. I didn't ask you that.

A. I don't know.

Q. You don't know of any other place?

A. No.

Q. Are you an expert in the manufacture of water gas?

A. Do you mean by that have I practical- personally operated?

Q. No you have said you had not, but I want to know whether you know how to operate and can operate a works.

A. I had to operate them for many days in Fostoria, Ohio.

Q. I didn't ask you that.

A. I do.

Q. Are you now competent to take hold of and operate
2379 a water gas plant?

A. That is a very broad question, I should feel perfectly competent with a little indulgence for what possibly might be awkwardness the first week or two.

Q. Now then what temperatures do you use in your generators?

A. You judge of those by the eye.

Q. I didn't ask you that*m* what temperatures do you use?

A. Oh I could not give them to you.

Q. Between what extreme may the temperature vary for efficient results?

A. Well as near as I could tell you by sighting through the sight hole it would have to be a white almost liquid looking heat that is acquired in the disassociation of steam in contact with incandescent carbon.

Q. I didn't ask you that. I asked you between what limits of temperature in the generator may vary and still give you efficient results in manufacturing?

A. That has all been worked out, I can't recall it at the present moment. The data is all given in most of the——

Q. I know, but do you know yourself?

A. I have not sufficient memory to recall these things.

Q. At what pressure do you put blast into a ten foot six generator what is the air pressure there?

A. Be very difficult to say, you would have to put it in until you got the result of getting the gas through and that is a thing you could see. Depend on the depth of your fire.

Q. Do you know what limits the pressure varies in actual operation?

A. I don't know now, I can't recall.

Q. Did you ever know?

A. Yes, sir.

Q. Read it in a book somewhere?

2380 A. No, had to hunt it up by actual practice.

Q. That was how long ago?

A. A long time ago, I should say eight or ten years ago.

Q. What is the difference between the pressure you used with your blast in an eight foot six set and a ten foot six set?

A. The largest set I ever operated was I think a six or six and a half foot set and I don't even recall what the pressure was there. Although we had it on the g*uage* and marked with a string.

Q. What steps would you take if you were operating one of these sets to determine whether the pressure was too high or too low or right?

A. I would ask the United Gas Improvement Co. to send one of their regular operators, a man probably of no scientific acquirement at all but used and accustomed to handling these various plants and wit*n* it their instructions how to do this, just what every one of them does when they start a plant up, rely on the guarantee of the United Gas Improvement Co.

Q. You would not rely on your own knowledge as a nexpert in the business?

A. That is out of the question.

Q. Now then did you ever buy a water gas set?

A. Personally?

Q. I don't mean for your own use, but did you ever make a purchase of any for anybody?

A. I settled for a purchase which was made by other parties in Fostoria, Ohio.

Q. That is your o*b*ly experience along that line?

A. The only time I ever had any cash dealings with the United Gas Improvement Co.

Q. Have you bought any cast iron pipe for gas mains

2381 within the last ten years.

A. Yes, I bought a lot at Durham, North Carolina.

Q. That is where you had about five miles?

A. Five or six or seven.

Q. That is all you ever bought in your life isn't it as far as you can remember?

A. No, I had a great deal to do with the contracts that were made in St. Louis and there was a very large amount went in there if I remember rightly. That is a long time back.

Q. Did you negotiate these contracts?

A. That would be very difficult to say because the whole matter was put through me as a resident there and decided finally by the

contractors in conclave. The average man would tell you he did it all. I will tell you frankly what I did was to get everything going and they finally made up thrit minds what they would do and told me to go and do it.

Q. Have you laid any gas mains since you were at Durham?

A. Not that I can recall.

Q. Have you bought any meters since you were in Durham?

A. No.

Q. Have you bought any gas apparatus of any kind since you were in Durham?

A. I have not.

Q. Do you remember definitely when it was you were in Durham, when you finished there?

A. I could not tell without referring to papers but I know it has been since 1900.

Q. Now you said you were employed in the Wilcox case in New York as technical expert in gas matters more particularly appraising and accounts so far as operating expenses were concerned.

2382 Did you make an appraisement in the Wilcox case of the property of the company?

A. Yes, sir.

Q. Did you testify in the Wilcox case you were not permitted by the company to examine its property?

A. Yes, sir.

Q. That was correct of course.

A. Yes, sir.

Q. Did you ever examine its property?

A. Yes, sir.

Q. Without the company's permission then?

A. By special order of the court.

Q. Now then was an inventory made of that property?

A. I was the only one that made a written inventory.

Q. Was there a detailed inventory made of that property?

A. The company stated——

Q. I didn't ask you that.

A. Yes. I was the only one that made a detailed inventory.

Q. You did make a detailed inventory?

A. Yes, sir.

Q. Have you a copy of that inventory?

A. Yes, sir.

Q. Will you let us see it?

A. I have it among my papers at the hotel, I will be glad to bring it around.

Q. In that did you take the property up item by item to get at either its original cost or the cost to reproduce it in that valuation?

A. I endeavored to do so.

Q. And made a report at that time?

2383 A. Made a report at that time.

Q. You have a copy of that I suppose with you?

A. Yes, sir.

Q. You will let us see that?

A. Yes, sir.

Q. Now then in Buffalo you said you were called upon to appraise the gas works. Was there an inventory taken there?

A. By myself, yes.

Q. How much time did you put in in Buffalo in making this appraisement, in making the inventory?

A. Something in the neighborhood I think of two months.

Q. About two months?

A. Yes, I can't recall that, I would like to leave that open if you would like to have it exactly.

Q. Was there a detailed inventory made there such as has been made here either by you or anybody else?

A. You mean before I got there?

Q. No, in connection with that hearing.

A. I don't recall anybody else making a detailed inventory except myself.

Q. Was that inventory introduced in evidence?

A. I think not. It was used merely as far as results was concerned.

Q. It was not produced on the trial was it?

A. I think not.

Q. And there was no testimony there as to any detailed valuation of buildings and things of that kind?

A. Yes, there was considerable testimony.

Q. As to details there?

A. As to details of buildings.

2384 Q. Now in Jersey City did you make an inventory, you say "-was called upon to appraise gas works there"? Did you make an inventory there?

A. There I made an appraisal for the purpose of taxation, going *arou* around and getting the various buildings, locating them and using the standard units of quantity and working it out in that way, but not going into details as for instance I have *g*one here.

Q. Was there an inventory made there?

A. You mean by me?

Q. Anybody?

A. Well of course I can't tell outside of myself.

Q. Was there one made to your knowledge?

A. I saw nothing of the sort.

Q. How long were you appraising this plant at Jersey City?

A. I spent about three or four days.

Q. And what was the size of the plant, how many miles of mains or what was the capacity?

A. I could not reco-lect that, I can dig it up if you like. It was up in the hundreds of miles.

Q. A larger plant than this one here?

A. Even that I can't recall on the spur of the moment I should think it was considerably larger.

Q. So it would have been impossible to have made a detailed inventory in three or four days?

A. Yes, sir.

Q. Now in the Buffalo case that was a hearing before a commission wasn't it?

A. Before the old and extinct gas commission of the state of New York.

Q. You appeared for the city?

2385 A. Yes, sir.

Q. The New Jersey case was a hearing before the Tax Commission?

A. Yes, sir.

Q. There was a question as to valuation of the plant for purposes of taxation?

A. Yes, sir.

Q. Also appeared for the city?

A. For the Mayor of the city. He had a German name, I have forgotten that too.

Q. Now you say an appraisement was made in Cleveland?

A. Yes, sir.

Q. Was that a detailed appraisement such as has been made here, was there an inventory such as here?

A. A much more detailed appraisement so far as I was concerned than I found it necessary to make here.

Q. That don't answer my question exactly. Was there an inventory prepared in detail showing the plant as prepared here?

A. Not only an inventory such — we have here, but complete drawings of the plant and all plans were made by myself and my assistant.

Q. You made the inventory there?

A. Yes, sir.

Q. Was it as complete as the inventory we have here?

A. So far as drawings are concerned it was much more complete.

Q. Then you don't criticize this inventory as too complete?

A. I admire it very much for its extraordinary completeness.

Q. Then this Bronx case, gas and electric works, was there a detailed appraisement made there?

A. If I remember rightly there was a d-tailed appraisement given in the form of evidence before the street opening board, I don't know whether that is the proper name for it or not, but at

2386 any rate it was the men who had the right to assess damages resulting from opening streets through property and I gave a detailed estimate there, the time occupied, if I remember rightly was a couple of months or more.

Q. There you also appeared for the city?

A. For the corporation counsel. It is difficult to say who I was appearing for.

Q. Who do you mean by corporation counsel?

A. Of the City of New York.

Q. In Cleveland did you appear for the city?

A. For the gas committee of the city council.

Q. Now in Minneapolis, was there a detailed appraisement made?

A. There was not.

Q. There you appeared for the city?

A. There I appeared for the city council.

Q. Does that cover the appraisals that you referred to on your direct examination?

A. Let's see, New York 11, Buffalo 4, Cleveland 3, Jersey City—yes I may have forgotten some, but I think that is all.

Q. There is one thing I want to get straightened out about your report Complainant's Exhibit 23, is that supposed to show the reproduction cost of the plant or not?

A. No.

Q. Is it supposed to show the original cost of the plant?

A. It is supposed to show——

Q. No please answer my question is it supposed to show the original cost of the plant?

A. Kindly before I answer that question explain to me what you mean by the original.

Q. The dollars actually spent in the plant.

A. The real money put into the plant, is that it?

2387 Q. Whether it was real or counterfeit, whatever was put in?

A. Yes, sir.

Q. Then it is not intended to show the value of the plant at this time is it?

A. At what time?

Q. This time.

A. Today?

Q. Yes.

A. Only in so far as the cost of the materials and labor correspond with the cost of materials and labor used in gas works at the time in which these structures were put in.

Q. You recognize a difference between cost and value do you not?

A. Very decidedly.

Q. And your report is intended to show the original cost of this plant?

A. Yes, sir. You forget and also the present value.

Q. How did you arrive at the present value in your report?

A. By a process of residual depreciation.

Q. Can you say it short, by deducting from what you call original cost what you estimate to be the depreciation?

A. The residual depreciation.

Q. So your definition of value is original cost less what you have termed residual depreciation?

A. Yes, sir.

Q. And so is that the sense in which you use the word value in your report and in your testimony?

A. The present value I mean by that. May I make a correction. Referring to the $147 on the bottom of page 14 it was a typographical error. It has no meaning whatever, was not used at all or referred to again. The whole matter touched upon here was

2388 treated by an entirely different method and is finally, *is* shown on page 80 under the head of residual depreciation for one year, computed for one year, life of works forty years.

COURT: I simply asked you that so I would understand the way

you had figured. It is perfectly evident to my mind that $147 was a mistake. By the bye, if I understand you, you allowed two per cent or figured two per cent as to depreciation of buildings and works both, is that correct?

A. On page 80.

COURT: No, generally is that true or not?

A. That is approximately true. In depreciation of these buildings I used something that I learned in Cleveland for the first time, the Summers' system of depreciation.

COURT: All I want to know is your rate.

A. The rate in the Summers' system, the depreciation, the rate per year grows less as the building grows older. It is not a uniform two per cent rate. This Summer's system is adopted in Cleveland and also in part in New York City and a great many other citiehave taken it up.

Q. Now the first thing that was called to your attention seems to be this matter of the quantity of brick. Of course these quantities, Professor, were something that any engineer with any experience could figure from the plans were they not?

A. If you will change that word to knowledge I will say yes.

Q. And the number of brick that is ordinarily taken for purposes of estimates in a cubic foot or in a square foot is a matter of common knowledge among engineers isn't it?

A. For estimates it is a matter of you might say common custom.

Q. So that there was nothing in the statements in the inventory assuming that they were erroneous that could have misled a
2389 competent man.

A. They are very misleading.

Q. That is a competent man accustomed to making estimates on brick work would be misled by the erroneous statement as to the number of brick per cubic foot for instance?

A. Unless very careful.

Q. He would not know how many brick ought to be figured per cubic foot if he was accustomed to making estimates?

A. For estimates I have stated the figures used are customary. But I wish to emphasize the wor- "estimates."

Q. And what are estimates.

A. The preliminary computations before a building comes into existence while it is not yet a concrete fact and exists only in the imagination of the engineer who is designing it.

Q. So that if a person were estimating what it would cost to reproduce this plant, to build an imaginary hypothetical plant, these figures would be proper figures to use wouldn't they?

A. To provide ample margin, yes.

Q. Now then what figures did you take?

A. The figures based on the actual facts.

Q. Now what provision did you make for brick that would be broken in hauling and things like that?

A. The grade of this work is such that it could all be used.

Q. So that you assumed that there would be no waste whatever in the brick that would *would* measure up the wall and pay for simply the brick that were in the wall and have no waste and no excess.

A. I assumed it being a fact that there are sixteen brick as shown by the first exhibit which I made in a cubic foot that if I take 18 *foot* to a cubic foot or seventeen and a half brick to a cubic foot that I was making an allowance of from one and a half to two
2390 bricks throughout the brick work for the purpose of taking care of just such matters as you could not very well avoid and also I have known a bricklayer in that sort of work to be reported to put in three thousand bricks, spalls and bats in one day.

Q. I know you told us that this morning, I didn't ask you about it, you testified to that on your direct this morning. Who built this exhibit for you out of these brick?

A. An unknown gentleman residing in Des Moines, a bricklayer, I don't know his name.

Q. Did you employ him?

A. I did not.

Q. Who did?

A. I think Mr. Dobson.

Q. Who is Mr. Dobson?

A. Mr. Dobson is ex-city engineer of the city of Des Moines and has very kindly assisted with such information and assistance as he could give.

Q. Has he been employed by you or the city in this matter?

A. I don't know, but I think he is in the city's pay now. I know that he has been city engineer.

Q. He is one of the people to whom you went for information you said I believe as to some of your unit prices.

A. Yes, sir.

Q. Now to get this a little more in the concrete, I want to turn to one of these buildings. We will take the first one, I see quite a radical difference between you and our people and I would like to find out where it is?

A. What page please?

Q. Page 18 of the inventory. Now what did you allow for the excavations there?

A. 189 cubic yards at 35 cents.

2391 Q. What did you allow for clearing site and staking out?

A. Nothing.

Q. Now then the foundation there is concrete I believe?

A. So stated.

Q. Well did you estimate it on that theory?

A. Yes, sir.

Q. What misture.

A. One, three, five. When I say 1-3-5 I mean one barrel of cement, three barrels of sand and five barrels of broken stone about two to two and a half inches in its largest dimensions.

Q. What price did you take for cement?

A. I don't recall what I took the cement at, I estimated it at $7.00 a cubic yard in place.

Q. How did you get $7.00?

A. By taking cement and stone and sand and working it up and the labor.

Q. What is cement worth here?

A. I don't recall that for the simple reason I relied on Mr. Dodson's statement at the time and with the interminable mass of figures I have had I can't recall every one of a thousand details.

Q. What is cement worth in Buffalo?

A. I could not hazard a guess now. I can get a paper at any time to tell me.

Q. I want to know if you had any knowledge except what anybody might have acquired?

A. No.

Q. Do you know anything about what cement has been selling for in Des Moines the last year or two?

A. I did know a week or two ago, but I have thoroughly
2392 forgotten it among the mass of materials I have been working on since.

Q. Have you the figures from which you figured out the $7.00?

A. I have figures somewhere but would have to dig it up again.

Q. Haven't you the book in which you make estimates?

A. Right here is the book and I say I estimated $7.00.

Q. What you have there is a copy of the inventory?

A. No, the inventory don't say $7.00.

Q. What you have before you there purports to be a copy of Exhibit 15 with some of your figures put on it?

A. It is.

Q. Where did you do your figuring by which you got your $7.00?

A. I did my figuring on a stray bit of paper in consultation with Mr. Dobson as to the cost of cement and stone and sand and I will do it again if you will give me time to hunt up the prices if you like?

Q. I would rather rely on what you know than what somebody else tells you. So you haven't kept the figures on which you based the computation?

A. The $7.00, no.

Q. Can you tell us what you put broken stone at?

A. No. As I say I will have *yo* work it up again if you want it.

Q. Can you tell us what you put sand at?

A. Have to work that up again.

Q. Can you tell us what you put labor at?

A. Have to work the whole thing up.

Q. Do you know whether you made an allowance for tools or not?

A. Made an allowance for everything.

Q. Do you know whether you made an allowance for tools or not?

A. Yes, sir.

Q. How much?

2393 A. I don't recollect.

Q. Can you tell us what would be a reasonable allowance for tools?

A. I can't now.

Q. Can you tell us what is a reasonable allowance for labor?

A. I can't now. I will work it up for you.

Q. Can you tell us what would be a reasonable allowance for stone per cubic yard, I mean?

A. I can't now.

Q. Can you tell what would be a reasonable allowance for any item going into a cubic yard of concrete in this foundation in place?

A. I can't at this moment.

Q. Did you get all your information about this subject from Mr. Dobson one of the city's engineers?

A. As to prices, yes.

Q. How much did you make that foundation at $7.00 a yard?

A. $266 at $7.00.

Q. Now then what did you put in for forms?

A. That $7.00 included forms.

Q. How much did you allow for forms?

A. I can't tell you now. I will get you the whole figure.

Q. I don't care for the figures unless I can have the originals. What is an ordinary allowance for forms per cubic yard for concrete work in Des Moines?

A. Depends on the size and volume of the concrete work in contemplation.

Q. Take foundations. What is the proper allowance?

A. Even that would be a guess.

Q. What would be the proper allowance in the case of this building?

A. I will have to go into details on that again by hunting up my papers, I have the allowance.

2394 Q. What is the maximum amount that would be a proper allowance for forms for concrete work in a foundation in Des Moines?

A. Oh you are going into—you are verging on the infinite a question like that, because there is an infinite variety and detail of conditions in which forms might be used. It is quite possible that they would drop and I am quite sure I would drop rough concrete in a foundation into a ditch with a few loose boards along side and sticks simply to hold it in place until it set. The work and the value of what is called the forms or moulds here would be next to nothing for these boards could be used again and again pulled out and it is done that way all the time.

Q. Is that as close as you can come to an answer to the question?

A. At present unless you will specify.

Q. Take ordinary foundation work where you have excavated for a cellar how much would you allow per cubic yard for forms for concrete foundation?

A. You mean for forms for what, for the walls?

Q. Forms for the concrete foundation under those circumstances

A. Do you mean a foundation that just comes—take this build-

ing right out here just north of the gas works, they are excavating there I can tell you just what would be done over there. The fottings as they are called, in the ditch that goes around the cellar these footings are pitched in loose in concrete and hammered home.

Q. Is that as close as you can get to answering the question?

A. If you want to make foundation walls you might want to build them of rub-le stone or might want to build of brick or might want ro build of concrete in which case you would have to make what you call forms. That form is a board fence of the cheapest and rudest description.

2395 Q. Does one inch stuff hold concrete very well, usually one inch stuff where you have a heavy concrete wall?

A. In a case of that sort it is a question of your studding and not of your boards.

Q. You spoks of a stick occasionally?

A. Oh no. I am speaking now about going on up. I was speaking formerly of the occasional stick at the bottom of this trench around. Now that is very cheap work and the cost depends upon how often you use these boards and uprights, the studding and bracing that goes with it.

Q. Is that as closely as you can tell us?

A. Oh yes, I can generalize about it.

Q. Did you ever figure what it would cost for forms in a concrete job in your life?

A. Yes, sir.

Q. What job was it?

A. It was a job of building.

Q. Where?

A. It was a job of a building conceived by Thomas A. Edison, the inventor.

Q. Where was it and when?

A. It was when I was located in Philadelphia and when the matter was brought up of building houses and the question of——

—. What year was it, can you tell us what year?

A. All I could tell you it was anterior to the end of 1905 and I know the cost was very great for building complete houses just as I told you that the cost would be very small for foundations.

Q. Did you ever figure it in any other specific case except the one you have mentioned?

A. Not carefully. I would not do it in most cases.

Q. So you can't give us any idea of what would be the

2396 reasonable amount to put in?

A. To a definite statement, yes.

Q. To this specific proposition?

A. That I will work up if you wish it.

Q. I want you to give it basing it on your general knowledge that my friend referred to so often this morning. What would be the proper allowance on account of forms in that $7.00 if you know.

A. Usually for the purpose of foundations 38 cubic yards if you ask me of my general knowledge I will tell you nothing at all for if I had the foundations to put in I would not think of such

a thing as bothering with boards, throw that in loose, have the ditch dug properly and filled.

Q. How high above the ground does the foundation grow?

A. I think four or five feet above the ground, a mere box on the top made out of two inch stuff and moved up after it was put in there. That is the practical way to get at it.

Q. This same foundation would be dug in the ground you referred to this morning as sand, so sandy that the sand would not cost you anything?

A. I didn't say anything of that sort.

Q. Then I misunderstood you when I understood you to say this morning that all over this territory was sand so they could — sand out of the excavation and would not have to buy any?

A. No, I told you sand was very cheap.

Q. You referred to this ground here as sandy ground?

A. This is not the place. This is the part around the edges of the river.

Q. And this building is on the west side of the property isn't it that we are talking about?

A. Well don't you mean the river and not the property?

2397 Q. No it is on the east side of the river and it is on the west of Block C I think is the block?

A. This is close to the river?

Q. Well now then let's go on and see what you know about the next item. There are brick foundations here. How many brick did you take for the foundation?

A. 3,370 brick in the place of 3,990 brick.

Q. Well you knew didn't you that we afterwards corrected that 3,990 to 3,056 so you run about 325 over us or haven't you been advised of that?

A. You have not so advised me. I wondered if you would catch on.

Q. You take 3370 brick?

A. Yes, sir.

Q. Now what price did you put on the brick delivered?

A. $16.00.

Q. On the brick delivered?

A. On the brick laid.

Q. I didn't ask you that, what price do you put on the brick delivered?

A. On the average of what would be about $8.00.

Q. You mean all through the entire job, or all through this building.

A. Be through the entire job.

Q. You put this brick at $8.00 delivered?

A. Yes, $8.00.

Q. $8.00 a thousand?

A. I beg your pardon I assumed they were, that the brick probably cost considerably less, mud brick, but I let it go at that.

Q. Who told you about the price of mud brick, Mr. Dobson?

A. Mr. Dobson. Had a great deal to say about it too.

Q. I know all about it because Mr. Dobson is fortunate
2398 to be an aggressive young man, he is for his side. I am not criticising him for it. Did you ask anybody else about the price of this mud brick?

A. It was said in the presence of the gentleman whose name I am continually forgetting. I think it is Wheeler you said isn't it, the contractor, down here?

Q. He you said was a non-resident?

A. Non-resident, yes impartial in his views I think too.

Q. Who took you down to see him by the way?

A. Mr. Dobson.

Q. This contractor is now working on a job for the city?

A. Yes, sir.

Q. Did you see anybody else?

A. I saw Mr. King who dug up the streets of this town somewhat.

Q. By that you mean George King?

A. I think the name is George.

Q. Used to be a member of the council?

A. Oh, I don't know.

Q. Is he now engaged in any city work?

A. I don't know.

Q. Mr. Dobson also took you to see him?

A. No, I met him through somebody else, I think either the corporation council or city solicitor, one or the other introduced me.

Q. You figure this brick at $16.00 in the wall?

A. Yes, sir.

Q. That gave you what?

A. $53.92.

Q. How much of that $16.00 was labor?

A. Figure it this way, $8.00 for brick, $4.00 for labor in laying a thousand of brick in a common factory style of work or foundation used here, a dollar for lime and sand, $3.00 for a con-
2399 tractor's profit and if a scaffolding appears to be necessary an allowance for a dollar for that and for a pilaster or bridging work across a wall, $1.50 per thousand for that. That will give you the way in which I worked out the brick work.

Q. How much do brick layers get an hour?

A. 70 cents an hour. At least that is what the bricklayer's union claim. I fancy there are a good many contracts below that price.

Q. What makes you fancy that?

A. Just a hint that was dropped to me by the man that gave me the figures that they did not all stick to rates.

Q. So about five hours and a half you have allowed for laying a thousand brick?

A. I have figured very low on the brick work for the class of work that is here, I have put it about 1400 brick a day, a thousand to 1400 brick along about there when I think that a very much larger amount could be and would be done in this common factory and warehouse work which is used in building the gas works.

Q. Now to get back to the question, you figured about five and a half hours for laying a thousand brick, $4.00 at seventy cents an

hour. Five hours would be $3.50, call it five hours and two thirds, for a thousand brick is that right?

A. I figured that a brick layer in this case drawing seventy cents a hour would get where a thousand brick are laid somewhere between $2.50 or $3.00 out of that $4.00 and the balance of that would go to the man that was stirring the mortar and assisting him as a laborer.

Q. Well didn't you figure any closer than somewhere between $2.50 and $3.00?

2400 A. Oh no you can't.

Q. Can't?

A. No.

Q. So on a $2.50 basis your man would lay a thousand brick in between three and four hours. Just about three hours and a half, seventy cents goes into $3.50 three times—four times would be $2.80.

A. About 4.3 or less in about three. Men vary so much in their working that it is absurd to attempt anything less than rough figures on what a brick layer will do.

Q. And the balance goes to the hod carriers and mixers and so on?

A. Yes, people that have to be on hand and helping.

Q. Now what did you figure the back filling?

A. At fifteen cents a cubic yard.

Q. 49 yards?

A. 49 yards, $7.35.

Q. How did you figure the walls, did you figure them separately.

A. Referring to what walls?

Q. Well it is the next item in the inventory in this same building. For instance you take this wall here four inches thick the company takes seven and a half brick per square foot of wall area?

A. I take five and two third brick per square foot of wall area. Thirteen inches thick the company takes twenty and a half brick per square foot of wall area, and I take 18.4, that is about 18 and a half bricks although I knew there were but sixteen bricks in a cubic foot at the time. A seventeen inch wall the company takes 30 bricks to the cubic foot and I have taken 24.1 bricks to the cubic foot again allowing an excess of about two bricks in a cubic foot.

Q. Have you gone through the total number of brick in

2401 these walls, or did you figure the walls separately?

A. We had to figure them one after another and carry them on down.

Q. Have you got this north wall?

A. What page?

Q. Page 19?

A. North wall 13 inches thick 30 feet one inch and 13 feet six inches by 22 and one half brick gives the company's figures 21,319 corrected figures 17,446.

Q. Now at how much did you figure that a thousand?

A. Will you go on down, if you will notice here until you get brick enough you would not want to figure it out in detail.

Q. I want to get the way you figure it.

A. We just corrected your brick figures following them as carefully as we could on down.
Q. You say we. Who helped you do it?
A. Both Mr. Hasek and Mr. Dobson.
Q. Who made the figures as a matter of fact?
A. Who worked these figures out?
Q. Yes.
A. You mean the fundamental figures or details?
Q. Details?
A. The details were elaborated either by Mr. Hasek or Mr. Dobson. And I judge by the figures that these figures were worked out by Mr. Hasek.
Q. What you know about it is what you infer from the figures?
A. How else could I know anything about it?
Q. You might have directed somebody to do it or have seen it, but I infer you did not.
A. Directed them?
Q. Yes.
A. They did it under my sonstant personal supervision.
2402 Q. Then do you know who did it?
A. Mr. Hasek I just told you.
Q. Have you any knowledge of it except from your recognition of the figures?
A. Of his figures?
Q. Yes.
A. I am certain as I can be that I know his figures.
Q. I don't deny that, I didn't ask you that. What is next.
A. Water table four inches thick.
Q. Number of brick?
A. Number of brick is not exactly given for the company but I figure it 180 brick.
Q. What was the next item?
A. Then comes the gable, take the company figures——
Q. I don't care for the company figure, just give me yours.
A. 2,812.
Q. Now the water table?
A. 4,418.
Q. Cornice what did you take?
A. Cornice 407, 232, 272. Pilasters 468, 199.
Q. What did you deduct for openings?
A. 4284.
Q. That is the figure that we have deducted for openings.
A. Yes, that is the figure you have deducted for openings.
Q. Now why didn't you figure deductions on the same basis you figured wall?
A. Because they are relatively very small indeed the brick go up into many thousands.
Q. Are they smaller than the item of 540 brick or 308, or 360?
A. No, but I am talking in aggregate figures now.
2403 Q. So when you come to deduction of the openings you take the company's basis of brick and deduct more than you really thought ought to have been deducted?

A. No, not to make any difference, it is to small a matter.

Q. Well the whole thing is not a very enormous matter is it?

A. No, but where you run up into millions of brick and the openings amount in the total to only about 26,000 it doesn't make very much difference.

Q. Now then on the south wall how many brick did you take?

A. 26,434.

Q. And what did you deduct for openings there?

A. 4,532.

Q. So that we have about 9000 brick there in those two items where you took the company's figures instead of what you claim are the correct figures?

A. Yes, for the reasons stated.

Q. Now then take the east wall, 69,345, what did you take instead of that?

A. 56,710.

Q. Now take the water table, the same item, 734 did you think that worth while to make a deduction?

A. The water table is given by you 734 but it turns out to be 997 bricks.

Q. Yes, I knew that was one we were wrong on.

A. So you have been given credit for the extras right there?

Q. This is 1860?

A. That is 1442.

Q. Take the next one, cornice, 1710, what do you take there?

A. 1294 and 739.

Q. And the next item, pilasters?

2404 A. 1156 and 129.

Q. Now less openings, 9821, was that worth while to figure that?

A. No. Just let it go at that.

Q. The west wall 93111, what did you take?

A. 75067.

Q. Less openings 6960, did you take that?

A. Left that as it is.

Q. Now then walls division B in lieu of 4,546 what did you take?

A. 3434.

Q. And the next instead of 1733?

A. 1309.

Q. And instead of 1530?

A. 1178.

Q. And instead of 563?

A. 456.

Q. And instead of less openings 615?

A. Let me explain about those openings——

Q. First answer my question.

A. Yes, with this explanation that the phrase less openings a certain number of bricks conveys no dimensions, length, breadth or thickness by which you can compute the amount of the openings nor are the drawings large enough to enable you to scale off the openings so that assuming that these people always over estimated the amount of their brick for these openings and to be on the safe

side by allowing them their over estimate I took out more brick than I would have computed for myself, gave it to them and subtracted it at the end here so leaving less openings I have been more generous to the company.

Q. Now I will call your attention to Exhibit 16, building 1, the sketches and ask you to point out a single opening in that
2405 building where the dimensions are not given?

A. This is the building we are talking about isn't it?

Mr BRENNAN: I don't think we ever had that Mr. Guernsey:

Mr. GUERNSEY: You had a blue print of the same thing

A. They have here a very complete drawing, but the openings are not specified less openings does not specify what the openings are. But that is a matter of no consequence because I have allowed you a great deal more opening in brick than you have claimed.

Q. These are deducted aren't they and your generosity to deduct from the total brick isn't it, you understand that don't you.

A. Well you see what I mean——

Q. No answer my question.

A. I have taken the statement here——

Q. You understand this Exhibit 16 don't you?

A. Yes, sir.

Q. You understand that these things you say you have been generous and given more than entitled to are deducted?

A. I have not disputed it.

Q. So the result of giving us your generosity is to make smaller walls relatively?

A. That will make hardly a particle of difference, the amount was so small it does not affect it practically.

Q. You said a few minutes ago these drawings were so small you could not scale the openings?

A. That is true.

Q. It was not necessary to scale them because there it showed the size of them didn't it?

A. No, I didn't say that.

Q. That is the fact isn't it?

A. Not entirely. They don't describe the openings.

2406 Q. Point out an opening where the drawing don't show the size of them. Let's get dow*j* to brass tacks and if there is an opening in that building where the drawing don't show the size of it, where is it?

A. That may be true, but if those shows the openings you have got anothe- things——

Q. You said a moment ago that this Exhibit 16, did not indicate where the openings were, aren't the openings up and down opposite each wall?

A. Some openings.

Q. Such openings in connection with the brick in each wall isn't that it?

A. For instance the walls in division B four inches thick, then it goes on here and speaks of the west wall thirteen inches thick the

same as the east wall and then ends up finally by saying less openings 615 brick.

Q. Oh I beg your pardon, you are not familiar with this.

A. The mere phrase openings don't convey amounts.

Q. Under west wall you have less openings don't you, the second line below the west wall? The same as the east wall then less openings?

A. Yes, sir.

Q. When we get down to division B there is less openings?

A. What are the walls in division B?

Q. If you turn to Exhibit 16 there you will find division B won't you on the sketch or are you familiar with these drawings?

A. I have been over them.

Q. Carefully?

A. As carefully as a man could who is furnished with several hundred drawings and requested to examine them within a week or two.

2407 Q. Have you only given a week or two to the making of this appraisement?

A. I have been busy with this appraisal now for five or six weeks, but in that time I certainly could not give a lot to study of these minute drawings.

Q. Then do you mean to have it inferred you are not familiar with them?

A. I do not.

Q. Are you familiar with them?

A. To a certain extent, yes, sufficient to get a general idea of the buildings.

Q. Now turning to these sketches of building No. 1, can you find there division B.

A. Division B is shown here as the walls surrounding the elevator.

Q. Do you find both a plan of that and a profile and in addition to that some longitudinal sections?

A. I find a plan of the four inch wall, I find a longitudinal section AA showing the foundation of Division B and in addition to that I find the following statement on page 20 of the inventory giving me the amount of brick claimed to be in the four inch walls which go up around the elevator.

Q. Now is it at all difficult for anyone who is familiar with plans to take these sketches and find out the dimensions of the openings in the walls in division B or in any other wall referred to?

A. If you will take a look at this you will find there is shown a window and a door in the elevation there, I presume this omitted, there is the slant of the roof here. I am not able to tell whether there are any side windows in this or not from the side view as a blank wall is presented I presume it is intended there should not be any side windows.

2408 Q. You just pointed to a blank wall here.

A. Yes, sir.

Q. Turn to sketch No. 5, is an elevation given there that shows this outside wall of this division B of this building?

A. There is a sketch given there that shows the east face to the window and door of division B.

Q. Is there a sketch here that shows this looking at it from the north, looking at the whole building?

A. The sketch looking at it from the north is interfered with and not complete because of the oxide elevator, but you find a sketch on the next page sketch No. 4 which gives you a blank wall there showing clearly a blank wall there.

Q. Now then to go back do you mean to say that it is true that you did not correct these deductions because you could not tell from these plans what the size of these openings were?

A. For that reason in some cases, but not as the controlling reason. The controlling reason was the relative smallness of them.

Q. You failed to make the corrections there decreasing the amount of brick which you put into the building don't it?

A. Somewhat, very slightly.

Q. Now what was the total amount of brick you figured in that building here?

A. You refer to building 1, A and B?

Q. The one we have been talking about all the time, page 20, Exhibit 15?

A. You must recall that I have always been giving you 18 brick instead of 16 which is all you are entitled to.

Q. It may be admitted that the witness claims that. I think this is about the fifth time he has volunteered it during his cross-examination and he seems to think we won't appreciate his gen-

2409 erosity?

A. On page 20 the bulk of the brick in this building are given as being 183,167 at $16, per thousand making a total of $2,930.67 but I think there are a few brick later on.

Q. Well let's take the total of this batch here, we will find the others when we get to them. 183,167 was the net after making your deductions?

A. Yes, sir.

Q. What was the gross amount?

A. 209,379.

Q. And the item of deductions which was too insignificant to pay attention to amounted to as much as one eighth of your total didn't it, 209,379 and your deductions 26,212.

A. I took 26,212.

Q. So this insignificant item aggregated one eighth of your aggregate?

A. That would be about 20,000 to take out instead of 26 if we would reduce it by 30 per cent.

Q. So this insignificant -- was about 6000 brick, is that correct?

A. Yes. I may be wrong about that. I will figure it over and bring it in in the morning.

Q. You put this brick in at $16.00?

A. Yes, sir. Scaffolding was in at $1.00.

Q. That $16.00 was made up as you made it up for the foundation?

A. For the foundation brick, yes.
Q. And you made the cost no more for laying the walls and pilasters and things like that than the cost of laying brick in foundations
A. For pilasters I added $1.50 a thousand for the extra trouble of turning corners.
Q. How much did you add on that account in dollars?
2410 A. How much.
Q. Is that in your $2,930.67?
A. Those are bricks.
Q. They -re, look again.
A. $2,930.67.
Q. Are those bricks?
A. Those are brick, common brick at $16.00.
Q. What is the 2,930.67, bricks or dollars?
A. This is for common brick.
Q. What do you add on account of pilasters in dollars?
A. $1.50 a thousand.
Q. How much in dollars?
A. It amounts to $14.65 extra labor.
Q. Did you add anything else there?
A. Scaffolding.
Q. That is a separate item below this brick work?
A. Yes, sir.
Q. You have given us everything on account of that brick work, $2,930.67 and $14.69, I mean brick as far as we have gone?
A. Yes, that is what I think.
Q. If there are any further we will come to that farther along.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

2411 Thursday Forenoon Session.

AUGUST 17, 1911—at 9:30 a. m.

Counsel for respective parties all present.
Testimony on part of defendants resumed as follows:

WILLIAM D. MARKS, continuing his cross examination, examined by Mr. Guernsey, testified:
Q. Professor, did you bring this New York inventory and appraisement?
A. I did, yes sir. I would say this is very valuable to me; I use it all the time as a matter of comparison, if you will return it to me.
Q. I don't want to deprive you of it. Now this book you handed me is not the inventory you prepared?
A. That is the details of the inventory which I prepared. I brought it down because of the fact that you asked if it was an inventory in detail.
Q. I asked you yesterday whether you made an inventory and whether you had it here and I understood you to say yes to both questions?

A. You are right.

Q. Now where is that inventory?

A. In your hands.

Q. This first page is headed "City's Exhibit 126" and the various columns printed here give Meyer, 1906, actual cost; Meyer depreciation value—who was Meyer?

A. Meyer was an expert from Baltimore, from a maker of apparatus in that city—I cannot recall the name, but he was the selling agent of this apparatus—and he came on and in response to a series of questions orally gave the values as he estimated them of the various pieces of apparatus. He did not furnish anything more than oral evidence and a few exhibits, no completed inventory.

2412 Q. He testified—was he called as a witness by the City or the Company?

A. By the company.

Q. Then these columns here under his head are not any appraisement or inventory made by you?

A. They were picked out from his testimony for the purpose of comparison with my own values.

Q. Take the first number here, Valve House and Vault Under Yard, Date, Inst. or Erect, 1863. Then comes Meyer's Cost and Depreciation value, ground area 395.04, cubical contents superstructure only 5,818.94. Now are there any more details in this inventory with reference to that building, not the cost of it but the structure itself than I have read?

A. None that I recollect; you must recollect this is five years ago.

Q. Will you look at it and see if you can refresh your memory and tell us whether there is anything in this so-called inventory any more in detail than what I have just read—I don't mean the price and values and that sort of thing, but the description of the building itself?

A. My assistant at that time, or assistants—I had eight of them—were——

Q. I don't want to interrupt you, Professor, but the question is whether there is anything further in this inventory any more in detail than I have just read here?

A. Not that I know of in this inventory. There was a good deal before the inventory was reached ——

Q. I know, but I am talking about the inventory and do not care about the other. Now are each of the other buildings re-

2413 ferred to in the inventory described in the same way?

A. Very much.

Q. Does the inventory show any greater detail as to any building covered by it than was shown as I read as to building number 1?

A. I wish that my memory was better, but if there was any greater detail given it was cut down to about the same thing as that for the other buildings.

Q. I am talking about this so-called inventory?

A. It was all on that basis, that inventory.

Q. It does not even show whether the building is brick, stone, concrete, frame or what style?

A. I think it does.

Q. Where?

A. I think the statement is made——

Q. Find it for us then?

A. The statement must have been made early that all of the buildings were brick unless specially specified otherwise. It does not show—is that what you want?

Q. I asked you to point it out if it did—it does not show there, does it?

A. No, it does not show.

Q. Now did you yourself make these measurements—the only thing that appears about the building here is the date of its erection, the ground area, the cubical contents of the superstructure?

A. For those ten gas works?

Q. In this inventory here?

A. No, sir; I did not.

Q. On this first sheet here marked "City's Exhibit 126," was that a comparison of your valuations with those of some other witnesses?

A. If you will allow me I will explain to you what it is.

2414 Q. Please answer the question.

A. In part.

Q. Now that was Exhibit 126. Now you have bound with it "City's Exhibit 126 Continued." Now passing houses, we will take up some of the apparatus. First I notice item number 38 here, four purifiers, 16 feet by 27 feet by 3 feet 6 inches. Date of installation 1863. Is that all the inventory shows about them as to their character?

A. Yes.

Q. Next I note another item here, three meters, 1882 is the date of installation or erection. Nothing else whatever in the way of description of them, is there?

A. If you can't find it there.

Q. I don't find it—of course I am not as familiar with it as you are. Now I notice here item 70, two small boiler pumps; no descriptive matter whatever. Are those things I have been reading to you fairly indicative of the way in which this exhibit that you have been referring to is made up so far as the description of the property is concerned?

A. Yes.

Q. And as to each piece of property there follow columns showing the Meyer valuations and your valuations?

A. Isn't there Rowland valuations in there?

Q. Maybe Rowland as to some of them, actual cost.

A. And isn't there some of Lacombe's valuations there, chief engineer of New York City—in order to be perfectly fair, the chief engineer was asked to go out independently——

Q. We don't care anything about your fairness in that case——

Mr. Byers: It is your fairness——

Q. Did you say in order to make me perfectly fair the

2415 chief engineer was asked to go out independently——

A. That would be the result if you read that carefully.

Q. Do you wish to stand by your answer to that, that in order to make me fair——

CHARTS

TOO LARGE FOR FILMING

A. Allow me to correct this and give independently valuations——

Q. I want to know whether you stand by your answer made to the last question.

(Question repeated.)

A. I don't think it is worth——

Q. Well, pass that; I don't think it amounts to anything. The next thing shown here is "City's Exhibit 127." That was an independent exhibit—these were not bound together in this way when offered in that case?

A. They were offered in typewritten form.

Q. They were not bound together, were they?

A. I cannot recall that. They were offered in typewritten form, large sheets; whether they were bound together I can't recall, that was a matter for the assistants in my office.

Q. Here again, as to buildings you show nothing but the ground area contained and date of installation or erection; that is true, is it not?

A. Yes.

Q. And that work was not done by you yourself?

A. Every building was inspected personally.

(Question repeated.)

A. What work do you refer to particularly?

Q. The work covered by the last question, the work of giving the ground area and cubical contents?

A. I did not compute the cubical contents. If I remember rightly I did compute the ground areas, preferring those as a
2416 check. I am not certain even on that point.

Q. Did you make the measurements?

A. I did not.

Q. And this Exhibit 127 shows apparatus in the same way it is shown in the earlier exhibit as to another station?

A. Yes.

Q. Now next comes Exhibit 128, Forty-Fourth Street, that lists the property as the previous exhibits have as to other stations?

A. It does.

Q. Will you permit the reporter to take this and copy Exhibit 126, Professor Marks?

A Certainly.

Q. Is that Exhibit 126 typical of the other exhibits in this bundle which you call your New York inventory?

A. I should think so; part of it.

Q. This includes separate exhibits up to and including 135, does it not?

A. I think it does.

Mr. GUERNSEY: We will offer this Exhibit 126 to illustrate the character of this so-called inventory in connection with this cross-examination and ask that the reporter copy it into the record.

Said exhibit is as follows:

(Here follows Complainant's Exhibit 39, marked pages 2417, 2418, 2419.)

2420 Q. This valuable document you speak of is a printed record of that case?

A. It is.

Q. And where is the valuation of the New York property?

A. In Wilcox vs. the Consolidated Gas Company, in my early testimony incorporated there as a succession of brief summaries.

Q. Have you here a copy of your Cleveland inventory or the Buffalo inventory?

A. I have, but it is in my room; I can bring it to you.

Q. Will you bring the Buffalo as well?

A. I am not certain I have the Buffalo.

Q. Are you certain you have made one in Buffalo?

A. I think so.

Q. You are confident of that?

A. I am quite confident on that point.

Q. Have you a copy of the Jersey City inventory?

A. No, I haven't.

Q. You didn't make one there?

A. Yes, I reported to the tax commissioners.

Q. Did you make a formal inventory of the property?

A. In Jersey City, to the extent of the capacities, yes and using units.

Q. What do you mean by the extent of the capacities?

A. Unit capacities and average prices per unit.

Q. I am talking about an inventory and list of the property value.

A. An appraisement of Jersey City, including much detail, was not *not* made and could not have been made in the time I had. But appraisement was made on the basis of averages, and the units and such pieces of apparatus as happen to differ from the usual run of gas works.

2421 Q. I want to get back to the question I asked you, whether there was a detailed formal list of the property in Jersey City made?

A. Not by me; there was one handed to me there, just as here, if I remember rightly, but even that I did not use.

Q. What you did down there, as a matter of fact, was to estimate the value of some other plant, not the plant they had there, you didn't estimate or attempt to confine yourself to the apparatus they had there in Jersey City?

A. In addition to the gas works—I did not mention that to you—I estimated the value of the Marion Electric Power House——

Q. I don't care about anything except gas works and the gas works in Jersey City, you did not attempt to estimate the actual plant that was there, but you substituted another plant for it?

A. An equivalent capacity; you may put it that way.

Q. Returning to Exhibit 15, your scaffolding, you say was included in the $16 a thousand for the brick in the walls?

A. No.

Q. How much did you allow from the item of scaffolding?

A. $1.

Q. What was the aggregate of it?
A. $17 a thousand—you mean of the scaffolding itself?
Q. Yes.
A. If I remember rightly $200; just even $200.
Q. Now the next item, roof slate, how many squares did you allow for there on page 21, I see it is given?
A. 33.96 squares. And also the roof on slate on division B 1.66 total 35.6 square-, at $10 a square $356.20.
Q. Now what are the factors that you took into account in getting this $10 a square?
A. Slate and labor.
2422 Q. What else?
A. The quality of slate has a good deal to do with it.
Q. What else besides slate and labor?
A. I don't know that there is anything else in the matter of slating.
Q. How do you attach the slate to the roof?
A. Well, there are a number of ways.
Q. What did you figure on here?
A. Ordinary nails and wood. I did not examine to see what kind of nails they used, I will tell you that right to begin with.
Q. I am interested in having the information, but I haven't inquired about that; I assume though that if you made an intelligent or careful estimate you took into account the fact that the slate was to be attached to the roof, is that true?
A. Yes.
Q. Did you take into account anything for materials?
A. Slate.
Q. In attaching it to the roof?
A. The average number of nails.
Q. Now, then, how much of this $10 was labor? Can you give me this information without referring to a book?
A. I am not an encyclopedia of facts of this sort; I am not a carpenter or roofer; I haven't an infallible memory; anybody knows perfectly well that this sort of thing is never expected of an engineer, that you are talking about.
Q. Will you answer my question. Can you give me the amount of labor that would go into that estimate of $10 a square?
A. Yes.
Q. Without referring to a book?
A. No.
2423 Q. What would the labor that went into that $10 a square be worth per day?
A. I have already stated to you I cannot answer that without a memorandum.
Q. How long is it since you have had something personally to do with the construction of a building that had a slate roof on?
A. Last summer.
Q. Where was it?
A. In New York state.
Q. Where?

A. At my home.
Q. Your residence?
A. No, it is nothing so dignified as that.
Q. What was the building?
A. It was an estimate for slating.
Q. An estimate for slating, where was the building?
A. The building was located in West Port, my home.
Q. Now, aside from that, have you had any experience in connection with slate roofs for the last forty years?
A. Oh, yes.
Q. What was the last one?
A. Do you mean that I did any slating myself?
Q. Aside from that, have you had any experience in connection with slate roofs for the last forty years?
A. The last that amounted to anything was a series of estimates for the roofs of the Inland Empire system going south from Spokane in an electric railway; I do not think they were used or carried out.
Q. I want to know one that was built.
A. I do not recall any. I probably had a lot of them but
2424 I wouldn't pay any attention to it.
Q. Can you tell me the actual cost of any piece of slate roofing that has been done anywhere within the last ten years?
A. I never took the trouble to look up the details. About $10 is considered all right for the common variety of slate.
Q. So that you have neither done any of this work nor do you know the actual cost of any job that has been done within ten years?
A. I am not a slater, consequently can not tell you those facts.
Q. Is it your idea that slaters are the only people who have a practical knowledge with reference to those matters?
A. That is true, unless you have U. G. I. pamphlet sent to you giving you facts and figures.
Q. How did you get that $10?
A. I took it as a standard rate.
Q. Where did you get it, in one of these books?
A. Yes, shall I give it to you?
Q. No.
A. I have a number of rates here.
Q. It is not then predicated upon any actual experience or observation of your own?
A. As a roofer, no.
Q. I didn't put it as a roofer in the question, please answer the question.
A. Yes, it is predicated on my general knowledge of the cost of roofing.
Q. Will you give us the actual experience of your own in constructing or supervising the construction of roofing of this character from which you say you predicate this estimate?
A. As I explained to you, of course there is a very large amount of work that an engineer, a busy one has to do in which he
2425 takes the values in a large way of standard rates. The last case of slating I remember that I prescribed was for the Dur-

ham Coal Gas Retort House in which slate was used for the roof as it is, I think in all retort houses. I think I prescribed lead nails bent around wrought iron purlings and the man in charge of that work got some arrangement by which he used the ordinary sheathing and galvanized wire nails and nailed his slate to the roof; that is as near as I recall it; I recall we had an immense amount of slate roofing under the specifications of William Pharmer in the Laclede gas works and there have been a number of other cases I cannot recall in regard to electric light stations. At one time I was engineer in chief for the old Edison General and looked over the specifications of all their roofs but in every case of that sort, beyond general values I have been obliged, as a busy man, to relegate it to some man specially skilled in the details or some inspector.

Q. So that in this case you simply referred to some book and got the $10 and took the number of squares here and multiplied it?

A. No, it is not the case at all. I happen to recall it was about $10 that most of these stations cost.

Q. Anybody, whether he was an engineer or not, could go to this same book and take this inventory and multiply it out?

A. Just as you did for bricks.

Q. Do you regard a valuation made that way as equally trustworthy with one that is made by a man who has had practical experience and can check these things by his experience?

A. I should certainly not.

Q. Now then, what are these roof supports, the next item?

A. I presume they mean roof trusses.

Q. Don't you know?

2426 A. I thought that meant roof trusses.

Q. Could you intelligently estimate their cost in place without knowing what they were?

A. I looked at them and I thought they meant roof trusses.

Q. Are you satisfied that is right?

A. I so corrected the reading in my mind and assumed they were roof trusses that held the roof up.

Q. What was the 2090 feet board measure roof trusses?

A. I saw it stated in this book and I so accepted it.

Q. Where is it stated in the book?

A. Roof support, 2090 feet board measure, $27 per M.

Q. The $27 is your figure?

A. Yes, sir.

Q. 5061 board measure, what sort of stuff is that, is that roof supports also?

A. It is so stated.

Q. I am asking what it is as a matter of fact?

A. It does not go into details there, it looks like wooden material timber in there.

Q. What was it as a matter of fact?

A. The upper half the 2090 appears from what you stated——

Q. I beg your pardon, will you allow me to distinguish between

the teo; I don't want you to base your answer on what I stated, base it on your own knewledge.

A. I base it on statements furnished to me by the company or by yourself.

Q. What statement have I furnished you with?

A. In regard to the roof support, exhibit 15.

Q. You don't mean that I personally furnished it to you?

A. No, the company did.

2427 Q. Go on and tell us just what that 2090 feet is used for?

A. That is supposed to represent the long timbers, assumed by myself, immediately adjacent to the roof sheathing.

Q. That is the rafters?

A. Yes. And the 5061 feet below is assumed to represent the ordinary length, not the great length, there is a distinction in the prices here, giving an additional $2 per thousand for the long timber.

Q. Let us stick to the question now. 5061 is the ordinary length of these same rafters?

A. Taken as such at $29.

Q. What did you nail your slate to?

A. The Sheathing there.

Q. Where is it—you haven't got anything but rafters.

A. The lower half you have here 5061 is ordinary board measure.

Q. You just told us that was rafters.

A. No, I did not; you told me it was rafters.

Q. Didn't you in response to a question of mine a few moments ago assent to the proposition that was the rafters?

A. I told you this 2090 feet had $2 added to it on account of extra length. You notice the statement is made here that there is extra length here at—per thousand per length over 16 feet; isn't that there?

Q. No.

A. This is what was given me; this is what I go by.

Q. Oh, no; don't the plans show something about this building?

A. Let Mr. Hazard here bring the blue prints. The plans show nothing a man could take quantities from.

Q. Did you hear the testimony of Mr. Randolph who took all his quantities from the plans?

2428 A. I wasn't here most of the time, only at the finish of Mr. Randolph's testimony.

Q. Then you didn't hear his testimony that he accepted the quantities here?

A. No.

Q. What is your conclusion now as to what that 2090 feet was?

A. At the top?

Q. Yes, what it was as a matter of fact.

A. I accepted it, as I told you, examining it, that this was their

long timber nearest to the roof and the balance below is timber used for all other purposes and of ordinary length.

Q. The balance below that is sheathing?

A. Not necessarily; there may be cross pieces in it; there probably are cross pieces in it. I didn't go into the details in this way or I would have been here six months if I had.

Q. What were the 451 pounds of iron?

A. There were a lot of iron rods that you see in these wooden trusses; I took it for granted that was the stuff.

Q. Now what did you estimate this 2090 feet board measure at?

A. $27. plus $2 making $29. common timber. Do you want the amount of it?

Q. Yes.

A. $56.43. That happens to coincide with your own figures, I think, the Company's figures.

Q. Where did you get your $27.

A. From the firm of Queal & Company here who sell lumber.

Q. That then was not based on your own experience but on what somebody told you, isn't that right?

A. As in every case, I have been obliged to learn prices from dealers.

2429 Q. You have not your own experience in the purchase of things like that to help you?

A. Not in Des Moines.

Q. Nor elsewhere as a matter of fact, have you?

A. I have been accustomed to purchasing lumber and other matters in a large way.

Q. Now, then, what did you allow for your 5061 feet B. M.?

A. I allowed a rate of $29 for that board measure, which included nails and that sort of thing.

Q. Did your $29 on the other include nails?

A. Well, there is very few nails in these big timbers you know.

Q. How much of the nails was there in the $29.

A. I have to acknowledge squarely I don't know enough about buying nails, my experience as a nailer is not sufficient to tell you how many were used.

Q. Your experience in building operations is not sufficient to tell us how many nails were used there, is it?

A. No, I should think not, although my experience has been very large in building operations involving nails.

Q. How do you ordinarily figure the cost of such things as that in estimating buildings; do you figure it as a percentage on the day labor or lumber or what?

A. I generally ask the carpenter about how many nails he will need and send around and get it in that kind of work.

Q. That is the way you estimate it?

A. That is the only way you get any practical results.

Q. Did you ever hear of it being the practice among people actually engaged in such work who keep the details of the costs on various jobs so as to get a basis for estimates?

A. Oh, yes.

2430 Q. How do contractors and estimators usually get at these items, such as nails and things like that?

A. They usually allow what they think that particular class of work will require.

Q. Do they base it on the thousand feet of lumber or on the labor?

A. Well in lathing, for instance, they base it on the number of laths, and in sheathing they base it on about so many nails to a board judging about the boards; the way the timber lays has a good deal to do with it.

Q. Tell us what would be the ordinary allowance per thousand feet sheathing for nails?

A. I never made it in that shape. I have almost built a small village with the use of nails, personally belongs to me, so I know a great deal about that sort of thing.

Q. How much would be the allowance for carpenter work for a thousand feet of sheathing?

A. That all depends—from cabinet work——

Q. I am asking about roof sheathing such as we have here?

A. I have allowed you $2 a thousand right along for nailing on the sheathing.

Q. How much for the lumber delivered?

A. About $27.

Q. Do you know whether that is exactly or not?

A. It is only what Queal & Company told me.

Q. Don't you know whether you put that in your estimate or not?

A. Oh, yes.

Q. $27 for lumber, and $2 covered the other items?

A. Yes, sir; all the rest, makes a total of $146.77.

Q. What are your carpenters earning a day, do you remember?

A. No.

Q. All right. That is all I care for. I can look it up just

2431 as well as you can. How much do you allow on account of iron?

A. Three cents.

Q. Three cents a pound in place, that gives you what?

A. $113.53.

Q. Now, then the next item is sheathing 3562 square feet, where did that go?

A. When that blueprint series comes here I may be able to find it for you.

Q. Didn't you check those things up on the plans at all to get some idea what it would cost to do this work?

A. Certainly not.

Q. You just took this list of so much material and asked somebody what it was worth and multiplied it out?

A. No, I went to work and looked it over, located it as well as I could, and by the time I get through with the building I checked

it out by finding out about what its area was and looked at its condition and gave an estimate of it.

Q. While waiting for these blue prints, what would be a fair estimate of the cost of such building as this, per cubic foot, taking the cubical contents down to the lowest floor? Don't figure it from your book cost; tell us whether you know?

Mr. BRENNAN: I submit that the witness may have the privilege of answering in his own way.

Mr. GUERNSEY: All I want to get at is to find out whether the witness has that knowledge.

The MASTER: If you know, say so, and if you don't say so.

A. I have not figured it by the cubic foot.

Q. Please answer the question. Do you know what would
2432 be a fair estimate per cubic foot down to the first floor, not including foundations, of the cost of a building such as this, if so, what is it?

A. I wish you would be a little more clear in your question.

Q. Question repeated.

A. Do you mean I should give you the cubic foot value on that or do you want to know whether I did estimate the cubic foot value?

The MASTER: All he wants to know is whether you know?

A. I don't know for I didn't figure it.

Q. You have no general information on that subject?

A. Certainly not.

Q. That is a very common way to make rough estimates of values for cost?

A. A very misleading way, although a very common way.

Q. Now, then, where was this 3562 square feet of sheathing used?

A. I presume either in the roof or monitor, I don't know which.

Q. What did you estimate that as worth in place?

A. Four cents a square foot, $142.48.

Q. Four cents a square foot?

A. Yes.

Q. Four cents a square foot would be how much a thousand, can you do that in your head?

A. Looks to me like $40.

Q. You got 3562 square feet and you say you estimated it at how much?

A. Four cents a square foot.

Q. But your aggregate?

A. $142.48.

Q. Doesn't it occur to you that three and a half thousand at $40 a thousand would amount to more than that?

A. It makes about $140.

2433 Q. You gave me $40.

A. $40.

Q. It ought to be $140?

A. There are 3562 square feet at $40 a thousand which comes pretty nearly making $142.48.

Q. Now, why did you make that sheathing $40 a thousand and the roof supports only $29 a thousand?

A. There is a lot of hauling around, sawing and nailing and that sort of thing.

Q. Do you mean to say there is a lot of labor or less labor in putting on sheathing than there is in framing and putting in place rafters?

A. Yes, sir; when you use big timbers the amount of labor that you have, gin pole swinging them up don't amount to very much.

Q. Did you figure a gin pole in swinging these things up?

A. I would use one if I was there all the time. I will tell you how to put these roof trusses up.

Q. Let me ask the question. You say it cost more for labor?

A. Per thousand.

Q. How much labor is there in that $40 per thousand?

A. Well, I should judge—I have been pretty liberal there—about ten dollars' worth of labor.

Q. How much did the sheathing cost?

A. Oh, here—you get it down, if you get it down on the Misissippi river where the prices are right——

Q. I mean what figures you took?

A. Anywhere between $27 and $30.

Q. Didn't you figure closer than between $27 and $30?

A. I wouldn't here.

Q. I want to know just what you did to get this specific
2434 $40 to know what you would do?

A. Put it down this way: About $27 for the stuff delivered; about $8 or $10 for labor, call it $8 for labor, and $5 for the nailing and troubles and general margin, and that would give you about $40. I can see at once that this of course can only be a rough estimate.

Q. Didn't you say on your direct examination that this was such a close estimate that you did not need to figure the ordinary percentage for omissions and things like that, justifying your refusal to do it on that ground?

A. No, I said it was such an elaborate list carried to such extremes that there was no necessity of figuring any omissions.

Q. Now what did you figure that sheathing is worth, such ordinary roof sheathing, per thousand, take the lumber itself?

A. Around here, those are the figures. I am simply accepting your local figures. I would not stand for over $22 a thousand for lumber of that quality in the east for a minute.

Q. We are in the wild and woolly west—so let us take the local conditions and will you tell us that ordinary roof sheathing in Des Moines costs as much per thousand as roof joists?

A. I don't know. When you include labor it may cost more.

Q. I am talking about lumber.

A. That $40 includes labor.

Q. I am asking you whether you mean to say that the ordinary roof, the ordinary common lumber that you use for sheathing—if I remember rightly that is what you used for sheathing?

A. If I remember rightly there was one side of that roof was better than the average and was painted.

Q. The painting is here as a separate item.

A. I don't know, I will look and see if you like.

2435 Q. We will get to that. To get back, I want you to state definitely and certainly, if you will, whether you mean to say that the price of sheathing, taking the price of lumber itself delivered, but not in place, is the same per thousand feet as of roof joists in the city of Des Moines?

A. I do not.

Q. Which is the more expensive?

A. You mean plain stuff; what are you talking about—in the lumber yard or in position where it is?

Q. The question stated, delivered, but not in place?

A. Delivered along side and not in place?

Q. Yes.

A. Well, I should think delivered along side but not in place it would come pretty near about the same here in Des Moines, pretty close, one as close as the other, unless you had some very long timbers, I wouldn't make any practical difference.

Q. Why do you put sheathing at $40 and roof support at $24; why didn't you give us the $5 on roof supports?

A. Because I told you I would swing them on a gin pole. I think if I remember rightly—of course I can't recall—you had rather a good quality of sheathing here, something rather fine as compared with barn roof structures we had in some of the other buildings.

Q. You told us a few moments ago that you estimated it at the same price per thousand?

A. Isn't that a rather finer quality of sheathing than is used generally?

Q. I don't know myself; I supposed you were familiar with those things, you are an engineer.

A. I haven't got a cast iron memory.

2436 Q. You still adhere to the proposition that the labor and iron should be greater in the cost of sheathing, roof sheathing in place, than it should be in framing the rafters forming the roof?

A. If it is a finer quality, I think that is a pretty safe thing to say.

Q. Take the situation as it was here?

A. To the best of my memory, in that case.

Q. How would the quality of the sheathing effect the amount of labor necessary to saw it and nail it on and lift it up?

A. It would not affect it except that the men would do finer work; the men work according to the quality of the stuff handed to them. You give them seconds and thirds, common rough lumber and they will shove the boards two or three inches apart. They know a good deal more about it than the engineers. A jack legged carpenter generally knows more about building a roof. If you give them fine stuff they take more time and work hard at it and it costs more to get it up.

Q. Now we get to the roof slate for the monitor. I suppose you figured that in the same way you did the roof slate before, at $10?
A. I see it is $2.20 total.
Q. The next thing, roof supports, for what?
A. I suppose they meant monitor supports. What do they mean by these phrases?
Q. Can you estimate intelligently the cost without knowing what they *they* meant, where and what use was being made of these roof supports?
A. I know they meant so many thousand feet of timber. You have got 892 feet of board measure there, called roof support, which I supposeed meant trusses for the monitor, and I accepted it
2437 as such, there being no other reasonable explanation, and the stuff is short and all sawed up, and there is a good deal of labor in that little work, and so I added rather an extra allowance.

(Question repeated)

A. Well, no, I suppose nobody could, if there was not an inference to be drawn.
Q. At what rate did you estimate these roof supports?
A. At the rate of $27 for the stuff, $10 for the cost and amount of sawing and fitting that comes in.
Q. $37, then?
A. Yes.
Q. What is your total?
A. About $33.
Q. Can't you give it to me exactly?
A. That is exact.
Q. That $10 item in the $37 is labor?
A. Yes; putting in a monitor is one of those troublesome jobs.
Q. You estimate your iron at what?
A. Three cents again.
Q. What is the total?
A. $4.02.
Q. What is it used for?
A. In that case for holding the timbers together.
Q. In what way, be a little more specific?
A. For drawing up the framing.
Q. Does it run horizontally or perpendicular?
A. I don't recall how that iron came in. It is worth about three cents a pound and I let it go at that.
Q. What was that sheathing for?
A. The same old thing.
2438 Q. Who gave you that $40 figure?
A. I worked that our myself.
Q. From $27 as a basis?
A. From what I was told is the price.
Q. You took $27 price of lumber delivered on the job?
A. That was given to me.
Q. What I want to get at is whether you took it or not?
A. I accepted it, although as I told you before, I thought it was an outrage.

Q. You did tell us that, I don't care about that. Your next thing is flashing, 144 square feet; that is for what?

A. I suppose to prevent roof leaks.

Q. You know, don't you, it is to be used where there are angles to cover those angles to prevent leakage?

A. Yes.

Q. At what rate do you figure that?

A. That is worth about——

Q. I asked you what rate you figured it at?

A. Ten cents.

Q. What?

A. Square foot.

Q. And that makes what?

A. $14.40.

Q. Who gave you the figures on that?

A. I think I brought those from some other jobs.

Q. Now your concrete floor, did you figure that on the basis of square feet or square yards?

A. Thirteen cents a square foot has become almost a standard all over the United States for six inch concrete.

Q. And your wood floor you figured at what rate there—
2439 first will you give me the total for your concrete floor?

A. $357.89.

Q. Now your wood floor, what did you figure the lumber at?

A. I figured that a little too high, about three and a half cents a square foot; it should have been about three, about $40.92 total.

Q. I asked you what you put the lumber in at?

A. I said I estimated it per square foot.

Q. You have to get so much a square foot; you don't figure backwards and take so much a square foot, and then ascertain what the lumber costs; you have to take the cost of the various items and divide by the square feet?

A. No, I didn't do that.

Q. Did you take your lumber at $35 a thousand?

A. Yes, in place.

Q. You certainly understood my question?

A. Will you specify; do you mean in the lumber yard; do you mean along side or do you mean it laid in place?

Q. Give it in each way, in the lumber yard, along side, and laid in place.

A. I should say it is about $25 to $27 in the lumber yard; no $25 in the lumber yard; $27 along side; and $35 in the floor would be the way I would put it.

Q. You have this lumber then at $27 delivered?

A. Yes, and $8 added for getting it in place.

Q. What kind of lumber is this, how does it compare with sheathing?

A. Pretty good stuff; that floor, if I remember rightly, as near as I could locate, it was a floor put around the purifiers.

Q. How does it compare with the sheathing?

A. It is better.

2440 Q. You put your sheathing at $27 a thousand delivered, didn't you?

A. Yes.

Q. You ought to put this higher, ough-n't you, if it is better lumber?

A. Perhaps I ought to run a little higher, but by throwing $35 I am on the safe side for you anyhow.

Q. Do you want the court to understand there is more care and labor required in nailing on roof sheathing than there is in putting down flooring?

A. That is a general question. If you look at the flooring around these purifiers you will make up your mind it is about six of one and a half a dozen of the other in case of that house.

Q. Just tell us what there is about that flooring that indicates to you, if I correctly draw the inference from your last answer, that that work was not done well?

A. I didn't say that, I said it was rough work.

Q. Was the work done well?

A. For the purpose, well enough, just as roof sheathing for the purpose seemed to me a little too well.

Q. You allowed us $10 a thousand in addition to the cost of lumber?

A. $8.

Q. You allowed $10 a thousand in addition to the cost of lumber for the work of the roof sheathing, didn't you?

A. I think that was it; I will look it up—yes I think that is right.

Q. In your judgment, should the amount allowed for labor in laying a floor be 20 per cent less than laying the roof sheathing?

A. Well, if you look at that floor, you will agree with me that I am right in saying yes.

Q. As a general proposition, would it be true?

A. That is something I can't answer; nobody can.

Q. Your experience is not broad enough to cover that, is that right?

2441 A. You are exactly right.

Q. Now we will pass to the next thing there, the partition holding the oxide, describe that.

A. There is a hump which runs the length of the building put in concrete, to prevent the water from being squirted on the oxide and from running over the path through from door to door, giving you a dry walking place, about six inches thick and stands up I should judge about a foot.

Q. This says here 99 feet 2 inches by 8 inches?

A. 99 feet in length from end to end.

Q. 9 inches is the height and 8 inches the width?

A. I should say about 8 inches wide and 9 inches high, looks like a curbstone.

Q. And then the other piec-, 22 feet by 2 feet by 8 inches is a cross partition?

A. Running across the building, yes.

Q. That is two feet high and 8 inches wide or thick?

A. Yes.

Q. Now, you estimated that $10 a cubic yard?
A. Because it had a smooth finish on the outside, an attempted smooth finish.
Q. And that amounted in the aggregate to how much?
A. About 3 cubic yards, at $10, $30.
Q. Can you give us the figures by which you arrived at this $10?
A. In the case of 1-3-5 concrete the following are the figures——
Q. I want to limit you to this $10 for this specific piece of work, Professor?
A. I am working up to it.
Q. Let us start with it?
A. I can't work backwards.
2442 Q. Start with this piece of work and leave out your generalities.

Mr. Byers: I submit the witness is answering the question.

A. I have the figures here for concrete——
Q. Can't you answer the question and tell me what figures you used in arriving at your basis of $10 per cubic yard for this piece of work?
A. Yes.
Q. What figures did you use in arriving at that basis?
A. In the case of 1-3-5 concrete the following is the local cost of the materials in a cubic yard: for broken stone $1.75; for sand $1.25; the total of these two $3. For shrinkage $1, total $4. For cement $1.25, total $5.25. For machine labor, mixing 60c., total per cubic yard $5.85. For extra for smoothing or finishing surface in this case about $2. Total $7.85; for profit $2.15, total $10.
Q. Where were those figures made up?
A. Originally?
Q. No, this particular set of figures you just read?
A. Shortly after I came here the last time; I should say about three or four weeks ago.
Q. The set of figures that you have just read was made up at that time?
A. As far as the $5.85 is concerned. I can locate it better by locating the time I met Mr. Dobson and through him got the prices for material here.
Q. Who gave you these figures?
A. Mr. Dobson. Mr. John Wheeler is the man from whom these figures were obtained first and verified again and again.
Q. How many yards of broken stone are there in a cubic yard of concrete—can't you tell without looking at your memorandum?
2443 A. You might say there is a full yard of broken stone in a cubic yard, because the sand and cement fill the interstices.
Q. Have you figured a full yard, can you tell without looking at your memorandum?
A. I have told you there is a full yard practically.
Q. I asked you whether you could tell without looking at that

memorandum, whether you figured a full yard of broken stone for each yard of that concrete?

A. Certainly.

Q. Did you?

A. Practically, and practically not; getting these figures from Mr. John Wheeler——

Q. Can you tell me now while I have your memorandum what part of broken stone you figured in a yard of concrete?

A. I told you then, practically a full yard.

Q. Can you tell me whether it was a full yard or not?

A. A full yard practically so.

Q. What do you mean by the word practically; do you mean to say a full yard, or don't you?

A. I will try and make it clear to you——

Q. Please try and answer my question.

A. I can't answer your questions because they are questions no engineer would put.

Q. Do you know whether in making up your estimate of what a cubic yard of this concrete we are now talking about would cost, in place, you took a full yard of stone as going into a yard of concrete?

A. Very nearly, not always; you shake it down——

Q. Did you shake it down in making this estimate?

A. I did not.

2444 Q. Can you tell me in making up this estimate of $10 for this specific piece of work you took a full cubic yard of broken stone or not?

A. I will tell you, if I made that estimate, which I do not claim, I would take a full yard of broken stone.

Q. Then you didn't make this estimate of $10 as the cost of a yard of concrete in place, referring to the specific concrete you now have under consideration?

A. Not before you reach $5.85 as the actual cost of the average concrete in the bridge out here.

Q. You took then Mr. Wheeler's cost of concrete in the bridge?

A. Every time.

Q. I am glad to know that. You don't know as a matter of fact then whether there is a full yard of broken stone for each yard of concrete in this estimate of $10 or not?

A. I don't know what Mr. Wheeler did, I told you I would take it myself.

Q. I am talking about this particular estimate, I am trying to get at what you did do; you don't know whether in making this estimate which you used there was taken a full cubic yard of stone for each cubic yard of concrete in place?

Mr. Byers: I submit that has been fully answered and gone over.

The Master: I think it is fully answered.

Q. How many yards of sand did you figure in this estimate for each yard of concrete, can you tell without referring to this memorandum?

A. About one third of a cubic yard is what I computed for inter

stices and the sand and cement, in relation of 1 to 3 that are in there.

Q. Well, that don't answer my question directly; how
2445 many cubic yards of sand are there in the estimate?

A. I will figure it out for you.

Q. Can you tell me from your experience approximately how many cubic yards of sand were figured in this particular matter we are talking about for each cubic yard of concrete?

A. I submit this is getting to be absurd; the suggestion of yards of sand in a cubic yard.

The MASTER: Figure it if you can.

A. Assuming the interstices to be one third cubic yard and that the sand and cement would be in the volumetric proportion of one to three, you would have for the sand three-fourths of one-third of a cubic yard or about one-quarter cubic yard; you would have for the cement about one-fourth of a third cubic yard or about one-twelfth.

Q. You figured for each cubic yard your sand at $1.25, as you gave it a moment ago, in each cubic yard of cement?

A. No, Mr. Wheeler did.

Q. That would make the sand, if it takes one-fourth cubic yard, about $5, a cubic yard in Des Moines, wouldn't it?

A. I don't know on what basis Mr. Wheeler figured this.

Q. You do know, don't you, that the computation up to $5.85 carries $1.25 for sand?

A. That is what Mr. Wheeler's aggregate is.

Q. That is what you gave us a few moments ago?

A. No, Mr. Wheeler did.

Q. I want to get at what you did do; you did tell us a few moments ago, you accepted these figures, didn't you?

A. Certainly.

Q. And you did in answer to my question a few moments ago say that you figured in getting at this base price, that he
2446 figured for you, getting at this base price, was $5.25 and $1.25 for sand?

A. I didn't say anything of the sort.

Mr. BYERS: We object to this for the reason that so far as test questions are concerned they have not only approached the limit but have gone clear beyond, and the price fixed by this witness for this item of $10 a cubic yard is exactly the same price shown by complainant's witnesses, and the controversy with the witness now is whether or not he is giving the company more for sand than he ought, and it is wholly a waste of time.

Q. Now, then, will you hand that memorandum to the reporter and let him mark it as an exhibit?

A. No.

Mr. GUERNSEY: I ask that the witness hand this to the reporter to mark it for the purpose of identification.

The MASTER: It can be read into the record.

Q. In whose handwriting is that memorandum in your hand?

A. I had Mr. Hazard go and verify the figures previously given as far as $5.85.

Q. In whose handwriting is that memorandum?

A. That is Mr. Hazard's handwriting. I don't know what he has written on it beyond what I have mentioned; that is the reason why I would prefer not having it considered an authoritative document.

Q. Is it all in the same handwriting?

A. You would have to get the handwriting of an expert on that.

Q. How long has this gentleman, Mr. Hazard, been in your employ?

A. Six or seven weeks.

Q. Is that the extent of his employment by you?

A. Yes.

2447 Q. Are you familiar with his handwriting?

Objected to on part of defendants as being immaterial.

A. Well, no; I should say not.

Q. Have you any judgment as to whether or not this paper is all in one handwriting?

A. I have not even read the whole of it.

Q. Is it, any of it, in your handwriting?

A. None that I know of.

Q. When did you first see it?

A. About when you first asked the question, about ten or fifteen minutes ago, the first time I saw that paper.

Q. Now, then, you have testified that you could not from memory give us the contents of this paper while I had it in my hand. How can you tell if you only saw that ten or fifteen minutes ago that it gives the basis you took for this $10?

A. Because I stated to you before, my recollection was that my first figures ran to about $5.80 or $5.85 and I saw the line of your examination, and I thought the best plan was to get the figures direct from the fountain head; so I sent Mr. Hazard around to find them.

Q. Mr. Hazard went to Mr. Wheeler to get these figures since I cross examined you yesterday?

A. I think he did it last night.

Q. I cross examined you yesterday as to the cost of concrete?

A. Yes, and I said it was $7, I think, I figured it to the company.

Q. In order to verify those figures for to-day, instead of relying on your own knowledge you sent Mr. Hazard to Mr. Wheeler to get a memorandum showing the cost?

A. Yes, sir.

Q. And Mr. Hazard presented you this memorandum?

2448 A. He did.

Mr. GUERNSEY: I would like to read it into the record.

Mr. BYERS: We have no objection.

Mr. GUERNSEY: I will read it into the record and will ask you to state whether I read it correctly, as follows:

"Price of broken stone is $1.35 for X 2250#.

Locally $1.75.
Sand is worth $1.00 Cu. Yd. Locally $1.25.
Cement is worth $1.08 bbl. Locally $1.25.
Mixing by machine is 60¢ cu. yd.
Mixing by hand is $1.25 cu. yd.

$1.75 stone in cu. yd.
$1.25 sand " " "

$3.00
1. additional for shrinkage.

$4.00
1.25 cement in cubic yards.

$5.25
.60 labor machine.

$5.85 price cubic yard.

By hand:

$5.25
$1.25 labor by hand.

$6.45 cubic yard.

In a retaining wall being built in this vicinity of concrete proportion 1-3-5 and where it happens that a running foot measures a cubic yard of concrete with 57 pounds steel reinforcement a foot, and one pile to every ten fet with excavation down to 3 or 3½ feet below the surface of the water, the contract price is 10.23 per running foot."

Q. Now, referring to that memorandum do you think your computation as to the amount of sand in the amount of concrete as one-fourt yard is correct?

A. I know it is for my purpose.

Q. I want to know whether it is as a matter of fact?

2449 A. I don't think it agrees with what Wheeler had there at all.

Q. I want to know whether you think it is correct as a matter of fact?

A. It is probably about the best form of concrete you can get, because it has the most stone in it and just enough to fill it in with sand *a* cement.

Q. Do you think it is correct as a matter of fact?

A. I would make it correct as a matter of fact if I was working with it.

Q. Did you ever do concrete work?

A. I was the first man to do concrete on a large scale in this country. I built concrete work on the largest scale in 1887 and

1888 before this concrete furor that is going on now was ever dreamed of by existing engineers.

Q. You are familiar with concrete work?

A. From the beginning.

Q. Have been for forty years?

A. I won't say forty years; since 1887; I used concrete forty years ago under the specifications of William Farmer.

Q. You use now a 1-3-5 mixture?

A. I do not.

Q. That is what we are talking about?

A. Mr. Wheeler.

Q. What mixture did you take in this concrete we are talking about for this purifying house?

A. Just Wheeler's mixture.

Q. 1-3-5?

A. I don't know whether it is 1-3-5.

Q. So you don't know what mixture you took?

A. In a rough way it is about 1-3-5. I have not seen the
2450 specifications. You can get Mr. Dobson, the engineer in charge, to give you all the details.

Q. Does the cost of concrete depend anything on the mixture?

A. Somewhat.

Q. Is it usual to specify different proportions?

A. They do not often get away from 1-3-5.

Q. Would you have the same proportion of concrete mixture in the building on the corner here as you would have in a foundation for the pavement?

A. Whatever happened to be the cheapest would probably be sand or stone, would probably be predominant in the foundation for the pavement. The cheapest and meanest form is what is put in the foundation for buildings.

Q. That is what you said you figured in this foundation for this same building in your testimony yesterday?

A. Yes.

Q. Now, can you tell us whether in this 1-3-5 mixture which you have referred to, one fourth yard of sand is used to each yard of concrete?

A. It would be if I were mixing it for certain special purposes.

Q. Do you know anything about the ordinary practice?

A. I have practiced for years and years myself.

Q. Then what is the ordinary practice?

A. The ordinary practice I told you was about 1-3-5.

Q. How many yards of sand does that take for each yard of concrete?

A. The 1-3-5 mixture measured in yards, gives nine cubic yards, but there is a shrinkage there, stated by Mr. Wheeler, to be about $1. in $3.; that is, about one-third apparently; so that Mr. Wheeler expects to get about 6 cubic yards of concrete virtually out of nine cubic yards of material, I should judge. You can get all
2451 these figures from my assistant, Mr. Dobson.

Q. I want to get at what you know about it. Let me ask

you this: take your 1-3-5 mixture, one part cement, three parts sand and five of stone, put it in yards, one yard cement, three yards sand and five yards stone; is it the result of your experience if you mix one yard of cement, three yards of sand and five yards of stone you will get six cubic yards of concrete?

A. If I remember rightly, it was nearer seven. I can't tell without referring to my figures, and the specific figures on foundation work I have in New York City now in my office.

Q. You say then it would be six or seven yards?

A. No, I think it is nearer seven yards.

Q. What sort of a job is this Mr. Wheeler bases these figures on; what is the amount of concrete he is mixing?

A. I don't know, except that it is very large.

Q. He is mixing it in large quantities and putting it in *in* large quantities?

A. Yes.

Q. And is doing mixing by machine, is he not?

A. I presume in part; I am not certain on that, possibly the whole and possibly only in part.

Q. Do you know from your experience whether concrete costs more when it is mixed in small quantities put in place in small quantities, like 3-1/3 cubic yard-, than it does making a bridge as large as Mr. Wheeler is making?

A. The $5.85 given by Mr. Wheeler as the cost of concrete appears to me to be machine work.

Q. He says that on his memorandum, don't he?

A. Yes.

Q. Well, now, let us get to the question.

2452 A. The labor would cost probably as much more—60¢ more.

Q. He puts it at $1.25 for labor in hand work?

A. Yes, I see, by hand.

Q. Now, then, to go back to my question, in your judgment does concrete work in large quantities such as Mr. Wheeler is doing on the bridge here, cost as much as concrete work in small quantities such as we are estimating here?

A. Well, the concrete that is dumped in a ditch for a foundation probably costs less than carefully inspected work which Wheeler is bound to do on the bridge, even on a large scale.

Q. They use the same kind of cement?

A. Not always; there are certain natural cements.

Q. Have you used natural cement in this case?

A. No, in this case first class Portland cement.

Q. Let us go back to our question, which was whether in your judgment concrete in large quantities such as Mr. Wheeler is using in this bridge, costs as much in place as concrete in small quantities such as we are estimating here?

A. If of the same quality concrete in large quantities can be produced at a lesser cost for labor.

Q. Is that the only thing where the cost is less?

A. Sometimes buying in larger quantities, cement, sand and stone will give you a concession in the price.

Q. Now if you have taken *taken* for your estimate here Mr. Wheeler's hand mixing your base fixture would have been instead of $5.85 $6.50, wouldn't it?

A. $6.45.

Q. You took labor at 60¢?

A. Machine work at 60¢.

Q. If you deduct that from $1.25 you will have 65¢?

2453 A. Yes.

Q. If you add to that the $5.85 you get $6.50?

A. I think $6.50 would be near enough.

Q. That would bring you up to $8.50; by adding your profit of $2.15?

A. Well, there is a very large margin of profit there anyhow.

Q. When you made your estimate on this particular three cubic yards, how much of anything did you allow us for forms?

A. I will tell you, that the forms in that case would be two boards propped along side of each other——

Q. I understand that. I asked you how much you allowed for them?

A. Will you allow me to finish?

Q. Yes.

A. The forms in this case, for a standing up curb, would be a couple of two inch plank standing up along side of each other and held together and braced so as to keep them steady. These would be moved along as the curb was built after the matter had been rammed, and when the work was done, if the lumber was all worn out the cost for material for the whole business would probably be a dollar or a dollar and a half.

Q. That don't answer my question. I asked you how much you allowed?

A. $1 or $1.50.

Q. Do you know how much?

A. No, because it is in a lump sum here.

Q. It is in $10?

A. No, it is in the total.

Q. What?

A. Of $30.

Q. That is made up of three yards at $10 a yard?

A. About.

Q. Now, then, you take two planks how long?

2454 A. Well, I don't know what your standard lengths is out here. In New York state, the upper end of the state, 13 feet long that would be the length I would like best for a two inch plank for that sort of work.

Q. Then for your 90 feet you would have to start and stop about seven times in that 90 foot partition?

A. Oh, no; it is practically moving a trough on the bottom.

Q. I know, but you have to pour your concrete and you testified

of ramming it, and then you have to let the concrete set before you can move the planks?

A. No, not in this case; this kind of a job, the finishers will follow right along; you wouldn't have any trouble with this at all; you could pick up your planks and go along in a few minutes.

Q. How long does it take concrete to set so that you can remove the forms?

A. Well, where it is rammed in this way, by the time you get done with your ramming it will stick together in a loose sort of a way.

Q. Did you ever see them take the forms away as soon as they got through ramming?

A. Yes.

Q. How long after your concrete is mixed do you have to pour it to get good results?

A. Generally at once.

Q. So you would have to mix a batch and pour it 13 feet and then you would have to ram it and remove the boards, and what would your concrete mixers be doing in the meantime?

A. Standing around.

Q. You have estimated a job that way on the basis of continuous machine work?

2455 A. No, I was giving you $10 instead of seven.

Q. You would have to mix this concrete by wheel barrow fulls wouldn't you, to do it your way?

A. I would try to get it mixed about 13 foot, the length of the boards. While I haven't taken the trouble to figure that up, because of no possibility of being obliged to build the thing.

Q. That would run your labor cost up very materially, double that at least?

A. I wouldn't say that; I know the labor would cost a good $1.25; you are perfectly right in sticking to a $1.25 or something more perhaps. That's the reason I let it go at $10.

Q. Now take the next item, floor supports, what are they?

A. They are given here 26932 feet, board measure.

Q. What were they, joists?

A. Timbers.

Q. Were they joists under the floor, ordinary floor joists?

A. I do not recall whether these are iron or not shown here. They are timber used in the floor, accepted as such, I think all together intended to be joists or supporting beams perhaps, running from iron column to iron column longitudinally. At any rate I accepted it at $27 then the labor put in at $10 giving a total of $37, or about $996.48 for the floor supports in place.

Q. You figured here the labor of putting the floor supports in place, five times what the labor is in framing the roof then?

A. There was something about that—I think they were twisting in and around four purifiers and did it very awkwardly, or had to do it very awkwardly.

Q. Now, your doors, how did you figure these doors?

A. All these doors, the prices for them were gotten by Mr.
2456 Dobson or Mr. Hazard and I think by both, worked out by them. I notice four Batten doors $24, one panel door $16; and 70 plain windows——

Q. We will stick to the doors for a minute. You don't know how they got those figures $24 and $16?

A. Well, I know in a general way, because they talked them over with me.

Q. Well, how was it, don't you remember?

A. I made inquiry of some of the planing mill men and lumber dealers. I remember getting the following figures in regard to doors, a certain three panel door about $12, a sliding door about $18, and there were windows——

Q. We will stick to the doors?

A. Then there was a sliding barn door—Will you allow me to explain.

Q. I have no objection myself, except I don't want to be charged up with this time.

Mr. BYERS: I submit counsel has been badgering this witness long enough.

A. I also found a double hinge front door, $16, and then I put these young men, as these are trivial matters, to go around and look at the doors and the shingles out around there—most of them are rotten anyhow—and then I got the price new from the planing mills and allowed them about the new price and I gave them the batten doors $24 and the panel door at $16. I think they submitted them to me and I said, let it go at that; don't waste any more time at it.

The MASTER: $16 a piece?

A. $16 for one panel door and $24 for four batten doors, and I let it go at that, making a total of about $40 for the five doors.

2457 Q. Now, you stated in the last answer that you gave that most of them are rotten anyway. Please specify just what that referred to?

A. I used the word rotten in rather a slang sense. I mean by that they have that peculiar ancient, antiquated appearance; they appeared to me a little out of line, and rather rough things to begin with.

Q. They appeared to you about normal in view of their age?

A. It looks as though there had been a very large amount of paint put on them.

Q. Did you yourself get those figures you just referred to?

A. The figures I gave you I went out personally—the figures finally used—I think Mr. Dobson more particularly was the man that got them, being locally informed.

Q. Now on the windows, how much did you give us here for $70 windows?

A. Again the windows were looked up by Mr. Dobson and Mr. Hazard and given at $140.

Q. They got these figures as they did on the doors?

A. They got them.
Q. And the box windows, did they attent to that too?
A. Yes.
Q. How much was that amount?
A. $306.
Q. For the five box windows $306, isn't that a little off?
A. There is probably some typographical error there, though I find these gentlemen paid a good deal of attention to it. Finally your list speaks of 510 square feet and five box windows, which would mean your windows must be ten feet wide and ten feet high, in which case if your statements are correct, which of course is an absurdity—the probabilities are that the gentlemen looked
2458 and found the absurdity, but did not correct it here.
Q. You have no personal knowledge about that?
A. No, personal knowledge.
Q. Sills, cut stone, 34 cubic feet; who made the estimate on that?
A. I think Mr. Dobson is responsible for that.
Q. How much is it?
A. $1.50 cubic yard $51.
Q. Now lintels, cut stone?
A. The same thing, $1.50.
Q. Who made the estimate on that?
A. Dobson.
Q. How much did it amount to?
A. Mr. Dobson got the price and Mr. Hazard made the estimate.
Q. That is, Dobson furnished the price and Hazard did the figuring?
A. In this case, yes.
Q. Now, then, you got some iron there, 2555 pounds, what is that used for?
A. Personally, I don't know; it must have been identified for it was introduced as three cents.
Q. Who made the estimate on that?
A. Mr. Hazard, and I furnished the price, three cents.
Q. Furnished it without knowing what the iron was used for?
A. I did at the time; I don't remember now.
Q. How much is the total?
A. $76.65.
Q. Now, painting, who furnished the estimate on that or price?
A. It is difficult to say; both of my assistants were interested in that; it was a matter that bothered them a good deal in finding out.
2458½ Q. Did you furnish a price on it?
A. They worked it out between them. The total is $80.22. Painting brick work and wood work $39.80.
Q. Now, pit for piping, who furnished the figures on that?
A. I furnished the figure $16. and the computations were made by Mr. Hazard $2.88.
Q. What sort of mortar is used there?
A. I never examined it; I presume old fashioned mortar, maybe cement.

Q. Have you made any difference between the ordinary mortar and cement mortar in the estimate?

A. No—just — I made no difference between the hard red stock brick and your mud brick; I have taken an average.

Q. You figured the brick in place in this pit $16 a thousand?

A. Yes.

Q. Did you figure any other item of cost in that pit?

A. Not unless the form of excavation.

Q. Was it or wasn't it?

A. At the beginning of page 18 excavation is given 189 cubic yard-, 35c; if the pit was included in that excavation, of course it is included.

Q. Do you know whether it was or not?

A. I do not.

Q. Was anything else involved in the pit aside from the brick and excavation?

A. There is nothing computed.

Q. Now, the driveway; who got the figures on that?

A. I gave the figures $16. Of course it is vastly too much, because it is a lot of poor brick set on edge.

Q. Who made the figures?

A. They were made by Hazard, $9.39.

2459 Q. And were these poor brick as you stated paving brick?

A. Oh, just common brick, you know.

Q. You referred to them as a lot of poor brick set on edge?

A. Vitrified brick is the paving generally all over your works there is very poor; it is a collection of odds and ends stuck in.

Q. Can you tell us whether those were vitrified brick or not?

A. I do not; but I know $16 is way up.

Q. When you made the statement they were a lot of poor brick you didn't know whether they were vitrified or not?

A. No.

Q. Now, then, this next item here, who made the figures and gave the unit prices on that?

A. The unit price is $27 a thousand and $10 for labor, are my prices.

Q. $37?

A. Yes.

Q. What is your total?

A. One goes at 49c. and the other at 18c.

Q. What is your total?

A. 67c.

Q. For that other item of brick laid on edge?

A. 56 square feet, 12½, $6.95.

Q. Now, how did you compute the stairs?

A. These are the stairs at the north end of this building. I had occasion to walk up them to go on the purifying floor. They were very handsomely painted in red, but if you would run your hand underneath the rails at the time I was there, you will find it all rotted out, and the treads were very much of the same character,

and the price of three treads, 15c. 45c. and 16 treads at 40c. $6.40 computation was made by Mr. Hazard or Mr. Dobson.

2460 Q. What was the total for them?

A. $6.85—not worth anything to amount to anything, they are no good.

At this time an adjournment was taken until 1:30 p. m.

2461 1:30 P. M., THURSDAY, *August* 17, 1911.

WILLIAM D. MARKS being continued on cross-examination by N. T. Guernsey, Esq., testified as follows:

Q. Prof. Marks, do you recognize the photograph, Exhibit 40, as a photograph of this rotten stairway you have just referred to?

A. Yes, and recognize also the clever way in which the rottenness of the bannister has been covered up by paint, also some broken steps where the men are standing, or one broken step I should say.

Q. You can tell from the photograph that the ba*bb*ister has been painted and that that covers up some rottenness there?

A. I did it by personal inspection, by running my hand over.

Q. I was asking about the photograph?

A. I could not tell from the photograph.

Q. Was the bannister painted before or after this dry rot you refer to developed, or do you know?

A. It was I think painted anew immediately after my first visit to the works and a request on my part that I be given pieces of the bannister for use in the court room which was not granted?

Mr. GUERNSEY: We offer this Exhibit 40.

Objected to as not having been properly identified, irrelevant and immaterial.

Q. I suppose at a cost of a dollar or so that bannister could be replaced couldn't it?

A. I have not estimated it. It would not be very much.

Q. Now what did you put these brick steps in at?

A. 189 bricks at $16.00 per thousand, $3.02.

Q. And the platform?

2462 A. 162 feet board measure at $37.00 per thousand, $6.00.

Q. Now will the total of these items that you have given me in connection with this building equal $6,904.92 which you have given as the structural cost?

A. Yes, sir. I beg your pardon, it was not the structural cost, $6,904.92, the structural cost is $7,768.04 being the actual contract price plus 12 and one half per cent.

Q. What do you mean by contract price, the sum of these items which you have estimated?

A. The sum of these items on the assumption that on the average the work that was done by contractor, not necessarily the whole of it.

Q. And what profit did you estimate the contractor has in this $6,904.92?

A. I didn't estimate it in that way. I have tried to give the contractor about $3.00 profit on every thousand of brick and about

$1.25 and $1.50 on every cubic yard of concrete. It seems that perhaps a dollar would be nearer the actual practical facts.

Q. Now passing to the contents of this house you first take the steam hydraulic elevator.

A. What page please?

Q. Page 25 of Exhibit 15.

A. That is page 14 of my report Exhibit 23.

Q. Now you put that in at 500 and depreciate it $450?

A. Yes, sir.

Q. How long since that elevator has been used?

A. I don't know.

Q. Do you know whether it has been used in the last week or two weeks

A. I don't know.

Q. Was there anything to prevent its being used?

2463 A. It was not us-able at the time one of my assistants went out there and asked to see it move?

Q. Do you base that statement on what your assistants told you?

A. I do.

Mr. GUERNSEY: I move to strike out the statement as hearsay.

Q. What is there to prevent its being used?

A. The fact that its place has been filled by a bricket oxide conveyor, which is presumably put in for the purpose of reducing the cost of carrying up oxide.

Q. That would not prevent the use of this steam hydraulic elevator would it?

A. For economical purposes I presume it would.

Q. By that you mean it would be more economic to use the bricket oxide conveyor?

A. Certainly more convenient, yes.

Q. The steam hydraulic elevator is the only duplicate or reserve apparatus for use in the event that this oxide conveyor is either out of repair or for any other reason must be temporarily out of commission isn't it?

A. Yes, but then you know these oxide boxes are only occasionally filled.

Q. And what is the physical condition of this steam hydraulic elevator, good or bad?

A. As it was not necessary I did not examine it closely, it looked as if it had fairly decent use what I saw of it.

Q. And looked as if it could be used any day if it were not that they used the other which was more convenient and more economic?

A. No, it did not to me.

Q. What was in it as it appears there that you observed there that would interfere with its use?

2464 A. The fact that I thought it had been practically abandoned as an active operative business machine caused me to ask my assistant to go out and investigate it.

Q. Take your oxide conveyors, where are these produced?

A. My memory is bad on that subject, there is a firm of three young men in Philadelphia what started all sorts of link belts. I

think they started under the name Link Belt Engineering Company and while I did not examine this closely it looked to me something like their work and I thought that probably it came from there.

Q. Is that the only place where such conveyors are purchaseable, only reasonably convenient place?

A. Well it is one I would naturally turn to for that sort of thing.

Q. What others are there to which you could turn?

A. Be impossible to make the effort of memory. I would find some trad- paper and look it over if I wanted to get away from the Link Belt Engineering Company.

Q. When did you purchase the last one of these conveyors you purchased?

A. Never bought one in my life.

Q. Do you know what one ever sold for?

A. I do not.

Q. Did you ever make one?

A. Never made one.

Q. Eve- use one?

A. You mean the bricket?

Q. Yes.

A. No never used one.

Q. I see you take 5 per cent annual depreciation on these conveyors?

A. Yes, sir.

Q. Where did you get that?

2465 A. From the date of erection given on them— -

Q. That would not give you your annual depreciation would it?

A. On Exhibit 15 on page 25 at the end, one bricket oxide conveyor manufactured by the Link Belt Engineering Company, *n*I had forgotten that, with one five horse power engine installed in 1905—it was just as I guessed it is a link belt outfit.

Q. But my question was how you hit on five per cent annual straight line depreciation?

A. For these?

Q. Yes.

A. Because wherever you have any of these conveyors the practical engineer will tell you that they are peculiarly subject to wear and tear owing to the nature, the grinding nature of the material which they have to handle and five per cent covering as it did a 40 foot frame work leading up above the top of the eaves having this series of buckets, having an engine having the counter shaft, having a *b*belt, if I remember rightly, struck me as being a very moderate rate. It gives about 20 years' life to the thing which is quite a life for any apparatus of that sort.

Q. Now the purifying boxes are what?

A. They are cast iron boxes held up on iron posts, four of them in a row, and they are used for the purpose of allowing the gas to pass through a mixture of iron oxide usually with chips, some thing of that sort to render the mixture somewhat porous.

Q. Why do you pass it through this mixture?

A. On the assumption that the sulp-urated hyd*or*gen which is

disagreeable in its odor will be absorbed by the iron and that the gas in its purified state ready to burn will be passed on to the holders.

Q. Where can these boxes be purchased?

2466 A. Almost anywhere where man build gas works. They are heavy castings cheap on account of their size.

Q. What does one of these boxes weigh?

A. I don't think I have figured it at all, I am sure I did not. I put it at about four thousand dollars apiece.

Q. Who manufactures them?

A. Well there is R. D. Wood & Co. of Philadelphia. Then there is this tremendous gas manufacturing concern in Baltimore, then there is a Pittsburgh concern whose name I cannot recall. Then there is Stacy of Cincinnati, or Louisville, I forget which. Then there is the old firm, I don't know whether in existence or not now in St. Louis—well no trouble anywhere you go you could get anybody to take the job and do it — very low rates because there is a lot of *iforn* in it.

Q. When did you last buy some of them?

A. I think the last one I bought was a little one for North Carolina, I have told you the name of the town.

Q. Durham?

A. Dur'am, North Carolina.

Q. What size was it?

A. I have forgotten it and the price, haven't the faintest recollection of anything except the fact.

Q. Do you know of the price on any of these boxes for which they have actually sold since that time?

A. Since Durham?

Q. Yes.

A. I can't recall at this moment that I do.

Q. You never bought but one in your experience?

A. Oh, yes.

Q. What others have you bought except the one at

2467 Durham?

A. I could hardly say—for instance I think it was Stacy & Co. that did the work in St. Louis, they did a lot of it, taking care of a million cubic feet or more a day out there and I have forgotten as well about the price there.

Q. Been any variation in price in forty years?

A. Very little. That is the odd part of it.

Q. You are confident of that without knowing any prices at which things sold with one exception in the last forty years?

A. Oh I have had occasion on account of estimates to ask prices again and again and have them furnished to me.

Q. What do these center seal valves cost?

A. I didn't figure it at all, I threw it along with the four purifying boxes.

Q. Do you know what would be a fair charge for that?

A. Not without weighing it and putting a price at about three and

a half cents a pound I should say. If I knew the weight I would tell you what the thing cost. Three and a half, perhaps four cents.

Q. What is this 16 inch cast iron pipe, that is the next item?

A. Is a pipe that connects up underneath these purifiers.

Q. You put that in at what?

A. At $2.10 a foot.

Q. That is the same rate you put cast iron mains in the street isn't it?

A. Yes, sir. I allowed for the setting of this up on its piers and making its joints there just as much as I would have allowed for digging a ditch and sticking it under ground in the street.

Q. As a matter of fact that would not come anywhere near covering the cost of it would it or have you had any experience in doing that kind of work?

2468 Q. You think then that cast iron pipe around these boxes could be put in at a lower rate per foot than you could the cast iron pipe in the streets if run a long distance?

A. I am talking about straight pipe, not talking about bends and such things, talking about straight pipe.

Q. I am talking about the pipe that was there, you estimated there.

A. 327 feet of straight pipe.

Q. Where are the bends and the other things estimated?

A. Along with the boxes at $4000.

Q. Do you buy them from the people from whom you get the boxes?

A. Usually the whole thing comes ready to set up, ought to.

Q. You say usually, tell us one case where you know that happened within the last thirty five years?

A. In Durham.

Q. Tell us another one?

A. I think Stacy & Co. sent out to Fostoria the same year. That was ten years ago.

Q. All set up?

A. No it was not set up, it was already to set up. It would not make any difference really though.

Q. Will you please turn to sketch No. 7 in Exhibit No. 16. Does that represent some of this piping?

A. That is it.

Q. Now looking at the connections or specials do you still say that that piping can be put in place at the same price as sixteen inch pipe in the ground?

A. The straight pipe can be.

Q. I am not talking about straight pipe, you didn't separate the straight pipe from the other pipe?

A. Yes, I did, I excepted that.

2469 Q. This is 327 feet you have here?

A. Let it go as straight pipe.

Q. That as a matter of fact includes all of the piping doesn't it?

A. That I don't know. It was put in here by the building and

I just simply let it go at that, accepted it without dispute as they seemed to be very careful and very accurate in their work.

Q. Does the inventory show whether it is straight pipe or whether pipe that was actually there?

A. It reads this way, 327 feet six inches of 16 inch pipe at, and 2 sixteen inch valves at, and I accepted it as straight pipe and I had included probably the bends and center seal in my prices for the purifiers the $4000 estimate.

Q. What did you include then in your—you just included straight pipe in your estimate on the pipe?

A. I regarded it as straight pipe and let it go at that.

Q. You didn't take a practical estimate of what it would actually cost to do this kind of work?

A. Yes, I did.

Q. Where did you do it, what figure?

A. In allowing for all that kind of work for $4000.

Q. How much did you allow for it?

A. $4000 for each one put in.

Q. How much did you allow for doing the work?

A. I lumped it.

Q. Made a running guess at it?

A. No.

Q. What did you base it on?

A. Looked up purifying boxes of about the same capacity and general size elsewhere.

2470 Q. Where? *Q.* Some catalogue?

A. No, appraisement from New York. I don't recall where I got it, it is my opinion let it go at that.

Q. It is some inventory you got in New York you used this morning where you got this information?

A. No, I think not, probably I think I looked there. It was the Cleveland inventory. By the way, did you want me to bring that around?

Q. I believe I asked you for it if you have it here.

A. I will bring it around if you want it.

Q. Where did you get the information in the New York Inventory, get that from somebody's else inventory?

A. If I remember rightly I got it from Tom Rowland's inventory. I knew him very well when he was alive, got figures of most the different sizes there.

Q. When did he die?

A. He died long before 1905.

Q. Is there any difference between purifier boxes set up in Des Moines and one set up in New York?

A. Yes, I suppose there is some.

Q. What is the difference in freight?

A. Well you would not very probably get any purifier box, you would get what you wanted here through some concern in St. Louis, big iron foundry establishment or in Minneapolis or St. Paul, so I could not tell what the difference in amount would be.

Q. Do you know any foundry from which you could buy them in St. Louis or Minneapolis or St. Paul?

A. No, but if I wanted one I would know in about a week.

Q. You would have to find that out before and something about prices before you know what they were worth in Des Moines?

2471 A. No, I would know pretty well about what I ought to get them for.

Q. As a matter of fact as near as you can tell this traces back to some estimates Tom Rowland made in New York or somewhere?

A. No, it traces back, I have been thin-ing since you began talking about it, I think it traces back to Cleveland to an estimate which I made there and in which one of my assistants very carefully computed all the weights.

Q. Was he city engineer there in Cleveland?

A. No, I was trying to think, he was an Englishman, I was trying to think of his name but I can't recall it.

Q. Did his computation include something on account of pipe?

A. He computed everything all through and took a lot of trouble with it.

Q. Out that into the box instead of the cost of the pipe?

A. I think yes, I could only guess about it, my memory is not good. I think those boxes in Cleveland came to about $6000 apiece.

Q. What was the size of them?

A. The boxes in Cleveland?

Q. Yes.

A. Just speaking from memory I think they were about either 25 by 30 or 25 by 25 or 30 by 30, I can't recollect which.

Q. And how deep?

A. They were unusually deep, that is compared with the old fashioned, they were six or seven feet deep and used for oxide and if I remember rightly the oxide was on two trays one above the other.

Q. I see you have depreciated these things about $6.440. These boxes are made of cast iron aren't they?

A. Yes, sir.

Q. The pipes are made of what, cast iron?

A. Cast iron.

2472 Q. Are the boxes worn out?

A. No.

Q. How thick are they?

A. They will not wear out. I should judge, I am only trying to remember to oblige you, it is a matter of no importance, about three quarters of an inch cast iron.

Q. How much is that hoisting apparatus worth that is in there?

A. I will give you how I figure it if you like.

Q. All right.

A. I figured it at $1,500.

Q. Does it appear here on page 14?

A. On page 14.

Q. I mean the apparatus for hoisting the covers of these boxes?

A. Oh that was included along with the boxes.

Q. Well but how much was it?

A. I have not a very distinct recollection of it. It is a very crude piece of apparatus and rolled along on rollers if I remember rightly.

Q. How much is it worth, what did you put it in at?

A. I didn't put — in separately. I as I told you lumped the whole business at $4,000 to the box and I think these boxes were seven feet deep too weren't they?

Q. Yes, that is what your report says, I assume that is correct. So you can't tell us what it would be worth to do this piping, you can't tell us what this hoisting apparatus is wirth and you only have on the purifying boxes a sort of an estimate based on some other man's estimate in some other case?

A. Well I ought to say you know that I supervised the other man's work and that he did the mechanical figuring in the matter.

2473 It was not his estimate, it was mine except as he acted as an adding, subtracting and multiplying machine.

Q. And that is what you took as a basis for your figures here?

A. Yes, exactly.

Q. And what you have there in the Cleveland case which I suppose is what you refer to, am I right?

A. Yes, sir.

Q. Was not the result of any transaction but an estimate you were making there for use in the appraisement where you were to be a witness?

A. Yes, sir.

Q. So that this is not at all based on any actual transaction?

A. Well I didn't try it of course. The books are the best evidence as you know in all of these cases and would be very easy for you to tell me at once and the court too all that is necessary to know about this matter if the books are properly kept.

Q. I presume we could inform you about most everything, but I am trying to get at the information you had.

A. Well the books are the best evidence if properly kept and properly interpreted and are the only evidence, the rest is almost waste of time.

Q. Aside from the books?

A. Almost all through the whole trial has been a waste of time if you have the records.

Q. So you regard your estimates where they are not based on the books as almost a waste of time?

A. Not any more than I do others.

Q. But you regard them in the same way in which you regard others as practically a waste of time is that right?

A. If the books were here and produced it would be a most de-

2474 cided waste of time on my part and the part of everybody else estimating on it to put in an estimate.

Q. Why do you say you regard it as a waste of time, because in your judgment you can't tell what these things are worth without going to the books?

A. Oh I don't mean to quibble about the thing. The books are actual records as anybody knows. An extimater can make an aver-

age if he has had experience but there may be possibly some peculiar circumstance affecting the purchase of each piece of apparatus which would make it differ from the average, might get a series of averages and not be any particular one right, the average be pretty near right and yet be wrong on every detail.

Q. That don't answer my question. Do you mean your estimate is of practically no value if you cannot get hold of the books or what do you mean? Do you mean it is not possible for a man who is an expert and who kno-s this business without the books to determine the value of this property?

A. I certainly do not.

Q. It ought to be possible for a man who knew the business, who knew what this sort of machinery cost and has been buying it and selling it to tell what it was worth without referring to the books ought it not?

A. Not exactly and precisely as he would if he had access to the books.

Q. This was bought seventeen years ago. You have depreciated it 34 per cent haven't you?

A. Yes, sir.

Q. In what respect has it failed to be just as good as it was the day it was bought for the use to which it was put?

A. Do you mean will it purify gas just as well today as the day it was bought?

2475 Q. I want to know whether in any respect this property is not as useful today for the purpose for which it was bought as it was on the day it was bought?

A. It is not as useful today as the day it was bought because it is approaching inadequacy.

Q. Then this depreciation is solely on account of inadequacy?

A. I didn't say so.

Q. Well is that true or not?

A. It is also becoming obsolete as I think that other materials than cast iron will probably be used for purifiers on a vast scale in which case I think will be maybe not very far away.

Q. What other materials are used today?

A. They are building purifiers nowadays out of doors and out of concrete and some of them seem to be doing very well. There is still a dispute which would make an engineer hesitate somewhat before building a concrete purifier but some of them have begun today to build them.

Q. Did you know that the largest purifiers of this kind which were built in New Orleans are now being torn down and abandoned?

A. Of what kind?

Q. The ones you just referred to, concrete.

A. No.

Q. Would that modify your judgment only as to whether this ought to be condemned because probably we will some time use concrete?

A. I would like to know who the engineer or alleged engineer was that put that up before I expressed any opinion.

Q. Now so far as physical condition of these boxes is concerned they are just as good as they ever were?

A. Physical decay is apparently non-existent, I looked them over.

Q. Would there be any trouble in adding another set of
2476 boxes if the capacity of the plant required it?

A. No. But the chances all are that you would have to get at that work there pretty soon putting in more purifying surface, you are close to the edge of it there and if you do go about it you have got to build new buildings there, larger buildings and probably put in larger purifiers and larger surface and you might in my opinion be glad to dispose of these if you could and build the whole thing up on a larger finer scale than you have there.

Q. Is that the basis of your taking off 34 per cent?

A. On which I give it fifty years life, it is the same thing.

Q. Then you take straight line depreciation?

A. Oh yes. Straight line depreciation is purely a commercial matter. I don't say because I put in straight line depreciation for commercial payments that the depreciation that actually occurs in a straight line? It is only a question of getting uniform payment you know.

Q. So to sum this thing up these boxes are just as good physically as they ever were.

A. Yes, sir.

Q. They may be used indefinitely?

A. Yes, sir.

Q. Indefinitely because if additional capacity is required it may be obtained by getting additional boxes without abandoning those.

A. Not very well because they are not deep enough. If you get in new boxes you will probably put in deeper boxes.

Q. These are what you characterize very deep in Cleveland?

A. I mean as compared with the old style.

Q. What depth boxes are being used now, would you recommend here?

A. I have not given the subject any thought at all.

Q. Then are you sure that you would want to put in deeper boxes?

2477 A. I have only a general impression were I paid for taking the trouble to think about your concern I would be likely——

Q. To evolve some thoughts?

A. Suggest deeper boxes.

Q. And you did not know that the eleven foot boxes are now being abandoned?

A. I would attach no importance to it until I knew who the engineer was that was abandoning them.

Q. In other words, you haven't any judgment of your own about it, you would want to know whether the engineer was a man in whom you had confidence and would attach importance to it or not accordingly?

A. No I on the contrary have very decided judgment as regards some of the so called engineers of this country. I have most emphatic opinions on that subject?

Q. I didn't ask you for your judgment of engineers.

A. And that would assist me in deciding whether I would attach any importance at all to any move they might make.

Q. That covers the contents of the building I believe. I don't want to run through all of these things if I can avoid it. Can you tel- us, take the firebrick shed for instance how many brick you gave us credit for there, page 27, Exhibit 15?

A. Page 27, building 1-C?

Q. Yes.

A. Where you have bricks 389 I have brick 315. I don't see anything else.

Q. I see a new item in here, corrugated iron walls. What did you take on that, the unit price?

A. No. 20 corrugated iron?

Q. Yes.

A. 1.2 squares at $7.50 a square.

2478 Q. Where did you get your figures on that?

A. Mr. Hasek and Mr. Dobson went out and interviewed the iron men of this town and got their prices.

Q. And the same thing with regard to the roof, corrugated iron?

A. The same thing with the corrugated iron. I know that they went out and found local prices and local prices in small quantities too.

Q. I see this is brick in cement mortar, did you take the same old price, $16 a thousand?

A. $16.00 a thousand, $5.04.

Q. Who got figures on the roof supports in this building, these young gentlemen?

A. The roof supports?

Q. Yes.

A. There was an old column that would probably have gone to the scrap heap they had used for one corner, cast iron, 1311 pounds, I think it was cast iron I don't know, put in at three cents by my order giving $39.00. Then there was wood there which was taken at $37, labor and wood.

Q. This column held the shed all right?

A. It was a good deal of a column for a thin iron roof, put in there because handy and apparently no use for any other purpose, looked like it anyhow.

Q. Doing the work all right?

A. Oh yes, carry the whole building on top of it.

Q. In any of the buildings did you allow anything for clearing site and staking out?

A. Never.

Q. I notice in this next building here there is cellar excavation, what did you put that at?

2479 A. Kindly give me the page.

Q. Page 30.

A. Excavating foundations 161.28 cubic yards at 35 cents, cellar 945.86 cubic yards at 35 cents. That could probably be done with horse work at about 15 or 20 cents a cubic yard, but trying to be on the safe side I instructed Mr. Hasek who did this to put it in at

35 cents. You can take a horse and scoop and get most of it out at 15.

Q. I may as well refer to it now, this building you have used the so called Summer's method in getting at your depreciation. What account does that take of the actual condition of the building?

A. It takes into account three divisions, good fair and bad. And gives a different ratio of depreciation, percentage of depreciation for each one of these three. It also gives a different percentage of depreciation as the number of years increase. In other words the depreciation does not appear to increase uniformly.

Q. Now take your first proposition and stick to that for a minute. Take the purifier house, did you take this man's rule for good, fair or bad conditions?

A. It is either good or fair.

Q. Can't you tell us which?

A. No, I can get the copy I used if you wish me to bring it here.

Q. That won't tell us which condition you took there?

A. Yes it will give my percentage, 25 per cent in eighteen years for a brick building, then I can tell you what it was

Q. How does Mr. Summers make *yp* this 25*v* per cent for eighteen years?

2480 A. As I understand, and in this I may be at fault, that it is a matter of the judgment of men experienced in taxing and assessing buildings and that sort of thing that he has availed himself of. Mr. Summers himself explains at a great deal of length.

Q. Who is Mr. Summers, what is his business?

A. Mr. Summers is a gentleman who devised a system of taxation in which the land and the buildings are separated and this system of taxation has become the officially recognized system in Cleveland where it first came to my notice and has also been adopted in New York City at least insofar as separating the assessment on the land and on the buildings. It has also been taken up in a number of other places which I can possibly find for you but cannot recall now and I recall now the matter was discussed at great length in Cleveland and it was decided that the Summers' system was official at least the proper system to use in depreciating buildings.

Q. Now to go back again who is Summers and what is his business?

A. He is an expert on taxation and on depreciation.

Q. Is that his profession or avocation?

A. That is his profession and avocation. He goes from city to city superintending all this assessment and taxation.

Q. How long has he been doing this?

A. I never asked but the first I heard of him, the first mention I heard of him was along about 1905 or 1906 along about that time I think. How much earlier he has been at it I don't know.

Q. Do you know whether he has ever had practical experience in buildings or anything which related to buildings?

A. Well I only know—I don't know his life at all, I don't even know the man. I know the approval of his methods by these bodies engaged in taxation.

Q. You don't know the source from which he took his figures?

2481 A. I do not.

Q. Now then these figures of course give a big depreciation in the early years as you said?

A. Well I won't say that, but it is not a regular depreciation going on down.

Q. You say you take off more earlier years than later years relatively?

A. It so appeared to me.

Q. So it would give less valuation in this case, lower than your methods?

A. Will you allow me to bring that pamphlet in for the benefit of the Master?

A. I don't suppose I have any control over your actions and you can take it up and discuss it all you please.

A. I confess frankly while using it my memory is not good for all things and this Summers' method, the figures of it.

Q. Your memory is good for the adoption of this method which will give you lower valuati-ns than ordinary methods give you?

A. You mean lower depreciation?

Q. A bigger depreciation.

A. Why no I think the reverse is true, for instance here eighteen years at two per cent or two and a half per cent would give you from 36 per cent upwards depreciation while Summers give you only 25 per cent.

Q. And still he takes off more in the earlier years as you have told us relatively than he does in the later years.

A. Irregular. He assumes his depreciation to be due to a peculiar physical law which seems to peter out along towards the end.

Q. And the big depreciation comes first?

A. I won't say the big depreciation, the larger depreciation.

2482 Q. So if his larger depreciation is not as much as this two or two and a half per cent, what do you think of the two or two and a half per cent as depreciation if Summers is right?

A. If I knew nothing of Summers' system, if I did not know the respect and credence which it has gained for instance in Cleveland I would be likely to take two per cent annual depreciation being 36 per cent instead of 25.

Q. And take it off two per cent straight line?

A. Straight line, yes.

Q. Not on a sinking fund basis?

A. Oh no.

—. So that your opinion is that Summers is really a little too low?

A. Not a bit. It is that I don't know enough about that particular matter of depreciation to dispute Summers if it meets with public approval although I don't believe the building will live over fifty years.

Q. What is the method adopted by the public service commission in New York?

A. Well I don't think they themselves have established any definite system.

Q. Do you — of any commission which has adopted the Summers' system?

A. I do not.

Q. What is the method adopted by the Wisconsin commission?

A. Of depreciation?

Q. Yes?

A. I was not aware that they have established a regular system. If they had the- undoubtedly find it would not work.

Q. Then you don't know what their method is if they have one?

A. I have read a good many of their papers and have watched their depreciation I have not had from their statements of depreciation anything more than a general idea than they use the
2483 very best judgment of their assistants, their engineers and of the commission themselves and I have felt that they were exceedingly wise in the matter of depreciation because of the fact of not trying to create any hard and fast law, because you can't do it.

Q. Can Mr. Summer do it?

A. I don't think he can. But when he falls below me in depreciation I give you the benefit of it.

Q. How many brick do you charge us up with in this building No. 3?

A. The page if you please.

Q. The total is on page 32.

A. In place of 117,282 bricks you have I have 93,292 bricks and in the place of 6,194 bricks I have 4,682 bricks.

Q. On what page is the 6,194?

A. Page 32 at the bottom.

Q. I don't see it here.

A. There are a great many changes apparently between what you have and what was given me earlier in the year.

Q. Now did you make any deductions there from the 12,306 which is deducted for openings?

A. No.

Q. Uniformly did not do that did you?

A. Well I won't say that, I will say it is true in this case.

Q. Don't remember about that?

A. No.

Q. Now one or two other items in that building I want to ask you about. Did you charge all the brick work at $16.00?

A. $16.00 and scaffolding that was put in.

Q. How many did you add for scaffolding?

A. $1.00 a thousand I think.

2484 Q. Right straight through?

A. If it was put in in your list. I know my instructions were to give a dollar a thousand for scaffolding and let it go at that.

Q. Instructions to whom?
A. Instructions to Mr. Hasek and Mr. Dobson.
Q. Did they make all the figures then?
A. Oh they had to do the computing. One man could not go over this work following 15 or 20 computers engaged in originating it.
Q. What did you add for pilasters and cornice?
A. $1.50 per thousand and my instructions——
Q. Where did you get that figure?
A. My own opinion in regard to the matter that going around the corner that way added about $1.50 per thousand to the cost of adjusting and laying it in factory work.
Q. Anything extra for the gables?
A. That is too general a question, have you got any figures here——
Q. I mean the gables in this building.
A. What page, what number of brick have you got?
Q. There is one on page 32.
A. You have added 2,287 for the gables, I have added 1,870 for the gables in the first case. In the second case it is the same thing, the company 2,287, myself 1,870.
Q. Take the emplacements, page 33, have you added anything extra there?
A. Running down to the emplacements where the company gives 295 I have 236, the company 259, I have 203.
Q. I don't care for tho-e figures, all the way through you have put those all in $16.00 a thousand on that page or do you know what figures the people did take?
A. Referring to page 34.
2485 Q. No, 33.
A. Well you see this is carried over here.
Q. I didn't ask about that, I asked about 33. There is an item of the same kind on page 34 but I didn't ask you about it.
A. I had to look to see what prices I had fixed here. $16.00 per thousand shown on page 34.
Q. The next thing is water table dressed stone. Mr. Dobson gave you these figures?
A. Yes, $1.50.
Q. Window sills, cut stone he gave you the figures there?
A. Yes, sir.
Q. Lintels, he gave you the figures on that?
A. Yes, sir. $1.50 a cubic foot.
Q. Floors two inch of concrete on two inch planks did he give you the figures on that?
A. No. I think they came to be about that and I told them—there was a hitch about that somewhere there, I think it was about seven cents a square foot.
Q. I know, but where did you get the information did they work it out or did you work it out?
A. I think I worked it out in this case.

Q. Any definite recollection about it?

A. Not very much no. There is an immense number of these details that came up.

Q. Then you don't know whether they worked it out or you did?

A. I know that I approved the figure in the end as being about right.

Q. You approved of all of it did you?

A. Yes, as about right. Of course some things would get by me once in awhile as they would get by anybody because it was necessary for me to be busy ... machinery and apparatus sometimes and they were working on this.

2486 Q. When did they begin to work on this, Mr. Dobson and Mr. Hasek?

A. About the time I came here which I think was six or seven weeks ago. I know they haven't had time enough any more than I have had myself.

Q. About the time we began taking testimony here then that they began working on this ?

A. I think it was a little ahead of it, a week or so ahead of it perhaps.

Q. Are your assistants staying at the Chamberlain?

A. One of them was, the other is a resident of the city.

Q. Mr. Dobson you mean was a resident of this city?

A. I presume so, yes.

Q. He is the man you have already referred to as a member of the city engineering department?

A. Former member of the city engineering department, I think a present member.

Q. Is your assistant who came from out of the city, has he been staying at the Chamberlain?

A. Yes, sir.

Q. So you can tell us when he came here by checking up there can't you?

A. Yes, sir. I think I have paid seven weeks' board there, so it must be about seven weeks ago he came here.

Q. Have you been furnished copies of the appraisements made by the witnesses for the complainant?

A. As they came out, the exhibits were all submitted to me.

Q. You were furnished copies of them?

A. Well do you mean furnished——

Q. Were copies made for you from the copies that were furnished to the city?

2487 A. Well if I remember rightly there was a copy of a portion of Mr. Lea's work I don't think any other copy was made.

Q. What part of Mr. Lea's work was that?

A. The early part of it.

Q. Have you that copy with you?

A. No.

Q. Where is it?

A. Ithink it is at the hotel. I don't think I ever bothered with his copy.

Q. Were these copies also furnished to Mr. Dobson and your other assistant?

A. They were laying there on my desk and at their service as they wanted them.

Q. Now when was this work completed by your two assistants?

A. It was completed along about I should say about two weeks ago practically completed. They were picking up a good many things afterwards as they came up, getting them together, but I think the detail of the work was completed about that time.

Q. And when was your report complete?

A. On the 14th of this month if I remember rightly I signed my report. I think you will find the date in Exhibit 23.

Q. And that was the day when this work was finally completed?

A. When the typewriter finished it.

Q. When did the typewriter begin it?

A. Well you have got me.

Q. And what part of your report was furnished by Professor Bemis?

A. I don't think Professor Bemis has ever seen any part or parcel of that report even up to today. I don't know unless he may have picked it up by accident.

Q. You haven't conferred with him about it then?

2488 A. Why yes, I have been very glad indeed to discuss the matter with him and whenever any line of thought came up or any reasoning to avail myself of his ability.

Q. Have you discussed these unit prices with him?

A. Not at all.

Q. Simply been the theoretical part of the report?

A. Not even that so much as the line of thought. The question we will say, took up the question of depreciation for instance, I think it was after a discussion with Professor Bemis that I liked very much indeed what he had to say and I decided to distinguish between depreciation and residual depreciation after all repaurs had been done.

Q. That is a new thing in this case is it?

A. It is to me original.

Q. And what else did he suggest?

A. I don't recollect anything else except this matter of depreciation which is a subject that has always been an argument amongst all people connected with engineering.

Q. I don't think it need be limited to engineering. Well let's get back to this thing. Did Mr. Hasek and Mr. Dobson go and get the prices for this concrete floor in the basement and the floor timbers and this other concrete floor plank and so on through this building?

A. Referring to what building?

Q. The one we were talking about page 34 and 35 of Exhibit at these two pages.

A. Yes, sir.

Q. And then they worked out the amounts?

A. Yes, sir.

Q. And they did the same thing with the roof supports?

2489 A. Yes, sir. I can explain to you that all these unit figures were brought to me working in a room by myself and submitted to me and if they appeared about right after a little discussion with Mr. Dobson and Mr. Hasek or one of them I would approve of them and they would go ahead and make the computations. They were working elsewhere and away from me.

Q. Take the building then as a matter of fact the way these unit prices were arrived at was Mr. Dobson or Mr. Hasek went to work and figured them out and came in and talked it over with you and you said all right and they took them and went ahead and work-out the appraisements?

A. They got unit values and discussed them with me. Then if they were approved and after they were approved they took what had been furnished by the company as quantities except in the matter of brick where the error was too obvious and made up the computation using the company's quantities and the approved units of value whatever they might be that they had found in any way that they could for the locality.

Q. How much experience has Mr. Hasek had in estimating?

A. I understood Mr. Hasek has had considerable experience in estimating and I know that he is capable as a computer.

Q. Is he a graduate of some school of engineering?

A. Well you will have to ask Mr. Hasek I am not very well acquainted with the gentleman's biography.

Q. What is his age?

A. I should judge about 26 or 27.

Q. And what experience has he had with gas works?

A. None whatever I imagine. It is simply as a computer I asked Mr. Hasek's services.

Q. Tell us what unit prices brought to you by Mr. Dobson

2490 or Mr. Hasek you used?

A. That is a very difficult question to answer because it requires an effort of memory. I know I did not always agree with them. I know where Mr. Dobson brought local figures to me I was inclined after finding out the source from which he got them to accept them without change.

Q. I will put the question in another way. Can you give us any unit prices brought to you by Mr. Dobson or Mr. Hasek which did not use?

A. If I remember rightly I insisted on an addition of something like $10 a thousand for the work of handling lumber, that was one change and I think I probably changed more or less all of the smaller units, I don't know.

Q. Can you recall one that you changed?

A. Well yes, this happens to occur to me. Mr. Dobson told me that the iron used for reinforcement over here on this bridge which is rolled iron corrugations in it, cost about two cents or two and a half a pound and I rather insisted that the wrought iron should be

from three to three and a half or even four cents a pound which was used in the works.

Q. Do you recall any other unit prices you took?

Objected to as incompetent and immaterial.

A. All brick work I think in the case of the brick work that I made Mr. Hasek work out the cost of scaffolding and after he had worked it out added $1.00 to the thousand making the cost of the brick work where the scaffolding was used $17.00 a thousand.

Q. I think I also was the one who directed the addition of $1.50 to every thousand brick in this rough factory and warehouse work where pilasters were put in making the cost of the brick work in the pilasters about $18.50 per thousand where scaffolding was
2491 used. I don't know, I had a pretty active hand—of course I was busy all the time with the machinery and Mr. Dobson and Mr. Hasek worked along on the building for me and I grew to have a great deal of confidence in them.

Q. It was your first experience with either one of them wasn't it?

A. Yes, sir.

Q. Now take the apparatus in this building, what did you include under the head of laboratory apparatus, page 16 in your report? Turn to the inventory page 41, and tell us what items were included in that as laboratory apparatus. Before we go to that I want to ask you something else. You have given foundation excavation there $10 then brick and concrete—page 16 of your report brick and concrete 162 cubic yards at $7.00.

A. That is it.

Q. You lumped that by the cubic yard?

A. Yes, sir.

Q. How many cubic yards of brick there did you get?

A. About two and one sixth cubic yards in a thousand of brick or round figures a couple of cubic yards. Yes, I think that is about it. That would give you about $7.00 a cubic yard for brick work which is about in the neighborhood of the same as concrete as this was for the rough laid pitching work of a brick layer pitching brick into a foundation I just called it all concrete and let it go. He can pitch about three thousand bricks in *in* a day if he knows his business.

Q. That would make your brick in the foundation there, how much a thousand?

A. About fifteen or sixteen dollars along about there.

Q. Now how many brick did you tell us you figured to a cubic foot?

A. I think I gave you eighteen.

Q. How many cubic feet are there in a cubic yard?

2492 A. Twenty seven.

Q. That would — just about 500?

A. Yes, sir.

Q. 486?

A. So for a thousand it would be about two and one sixth, along

about there. It is an easy way of getting at it often used by engineers.

Q. Now then tell us what you included in your item laboratory apparatus?

A. I can tell you how I got at it.

Q. No please tell me what items you included, I didn't ask you hot you got at it?

A. On page 41 Goodwin Bar Photometer, American Meter Bar Photometer, Pentain Lamp, *Pentain Lamp,* Carbonic Acid Apparatus, Freezing Coil in box, stop watches, five foot wet meter, Hydrometer, Barometer, Transit, two T-squares, case of test tools, medicine chest, sulpahte test, C Sulphate test, one Orsat test apparatus 1 Still for tar or oil, 2 Double metal records, one 8 inch U *guage,* one 12 inch U *guage,* four 16 inch U *guages,* four 18 inch U *guages.* One steam *guage,* two steam *guages,* five 20 inch U-*guages,* all lumped at $2,000.

Q. Now did you put a price on each one of these things?

A. I did not.

Q. Take these two steam *guages* on page 57, where are they?

A. I didn't look them up, I accepted them.

Q. They appear in the inventory to be installed and operated, are they laboratory apparatus?

A. No part of the general apparatus around the works. Required I suppose a couple of thousand dollars to take care of them, that is what I took them at.

Q. Did you ever buy a Goodwin Bar Photometer?

2493 A. Yes, sir.

Q. When?

A. Franklin Institute I think in 1884 and subsequently for the University of Pennsylvania. I made some thirty thousand observations on one.

Q. I was asking about buying. When was the last one you bought?

A. I think it was along close to 1887. No it was not, I bought a lot for the Edison Company, a very small matter of 500 or a thousand a piece and I didn't pay much attention to them.

Q. Did you ever buy an American Meter Company Bar Photometer?

A. No, I never did. Goodwin was the fellow that got the orders.

Q. Do you know what they sell for?

A. I told you somewhere between 500 and a thousand. He has a short bar—I remember about $650, a long one run up fixed out about $1,000 complete. Then the rest of the stuff I could not tell what it cost no use trying to recall it.

Q. This first bar photometer is a 60 inch i*ns*'t it?

A. Yes, I should say that was in the neighborhood of four or $500.

Q. About how long are the long ones?

A. About a hundred inches.

Q. Now then did you ever buy these lamps, pentain lamps?

A. I don't know whether you would say I bought them or not. The last time I was at Minneapolis I asked the buying of one,

the city paid for it, and the inspector I believe did the ordering, that was a short time ago.

Q. What did it cost?

A. I don't recall, I didn't pay any attention to it, even if I knew I would not recall it, a small matter.

Q. You don't know what they cost do you?

A. Not now no, I could find out if I wanted to.

2494 Q. The C. O. 2 apparatus you don't know what that cost, do you?

A. I will say once and for all I don't know the details of a single item of that $2,000 mentioned, nor would I take the trouble to find it out unless I wanted to buy one of them.

Q. More than that there are no matters which you have bought or which have been bought under your supervision generally are there?

A. Directly the reverse is true.

Q. The next thing I see here is Connolly Automatic Governor. Are you familiar with the price on that?

A. Yes, sir.

Q. Where can they be bought?

A. I have their letters at home, I think it is some where in Indiana. I can bring their letters around if you like giving their prices if I remember rightly.

Q. How many makers are there of this governor?

A. Connolly?

Q. Yes.

A. I don't know. I would write directly to them in Indiana, look up my memoranda if I wanted them.

Q. They are in New York as a matter of fact aren't they?

A. Well that I don't know.

Q. Did you ever buy one?

A. Yes, sir.

Q. When?

A. If I remember rightly the last one I bought for Durham, one for Fostoria. I may not have bought one for Fostoria. I recall paying for it.

Q. Where did you get your price you put on this one that you have in here?

2495 A. I think I got that from Cleveland, I don't know.

Q. From Cleveland?

A. Yes, sir. I know it is an outside price, more than they would charge a good deal.

Q. By saying you got it from Cleveland you mean you took it from the estimate of somebody an estimate of the Cleveland——

A. No from my own work.

Q. Your own work on the Cleveland plant.

A. I think it was Cleveland, might have been Buffalo, I don't recall.

Q. Where did you get the Cleveland or Buffalo?

A. In the usual way by inquiry of the makers.

Q. Did you inventory this stationary washstand and if so under what head?

Mr. Byers: I submit it seems to me in interest of justice if nothing else, and the treasury of the city and of this gas company that this test examination has gone clear to the limit. Here is a gentleman apparently, it is apparent to everybody way past middle age and he has been bully ragged and nagged ever since early this morning upon matters that are not important and upon questions that will not assist this Master in arriving at a final conclusion. We object to it for that reason, if there — any items here of importance that the witness ought to be interrogated about, that is entirely proper, but the idea of badgering an old man for six hours is to me not only cruel, but inhuman.

Q. Did you list this stationary washstand, bath, flush closet and so on?

A. What else?

Q. Just take those three items, that hundred dollar item down here below fixtures?

A. What page?

2496 Q. The same page 16 and 42 in the inventory. I can put it another way, what does toilet fixtures at the bottom of page 16 cover.

A. Covers the water closet in the corner there.

Q. Is that all?

A. That is all that the toilet fixtures covered there. I don't suppose the water closet is worth a hundred dollars. The rest of them are covered if you want to know about it, bath tub and *laboratory* furnishings on the middle of page 17.

Q. The next two items safety blow back and drip pump*t*. You put them together?

A. Yes, sir, about four hundred. The drip pump is nothing.

Q. Nothing?

A. Oh a few dollars that is all.

Q. Are you familiar with the prices of these blow backs, have you bought them?

A. Oh I don't know. No, I don't recall buying what you call a blow back.

Q. Do you know what is being paid for them by people who are buying them?

A. I know about what they look like, make a pretty good figure on them just as I could what a horse is worth by looking at it probably unless there was something unusual about the brute.

Q. Do you know what people are paying for these as a matter of fact.

A. Yes, for that I should say about $400 of that size. I think a weight was given. No, it was not given here, it was given in another case somewhere.

Q. These are not standard articles are they?

A. I didn't understand it to be a standard article.

Q. You don't know what they cost as a matter of fact?

A. Well I should judge that thing was worth about $400.

2497 Q. But do you know what one was ever bought for or sold for?

A. Why certainly not.

Q. Take these exhausters with the connections, have you had any experience in buying those things?

A. Yes, sir.

Q. Where and when? Take this first one, this Green exhauster?

A. I think I have quotations on my desk now giving the prices of it. I will bring it down if you like.

Q. You did *right* then to ask somebody what it cost?

A. I wrote I suppose to the Green concern to find out the price of the Green Exhauster.

Q. Did they give the price f. o. b. Des Moines or f. o. b. New York?

A. If I remember rightly it was f. o. b. New York. At any rate I made a very ample allowance on them.

Q. Sort of a running guess for putting it in place?

Objected to as being improper question, the witness has not given any answer that counsel might infer it was a running guess.

Mr. GUERNSEY: I will withdraw the question.

Q. Did you make a detailed estimate of what it would cost to bring this exhauster here and install it?

A. No, I did not. I added sufficient to it to more than cover in every possible way the furnishing and installation.

Q. Then did you just make a sort of running guess on that what the cost would be?

A. No, I did not.

Q. Did you make any computation to get at it?

A. Yes, made up my mind about what would be more than the possible cost to land it here and land it on its foundation, then I added a lot to that and gave it all to you?

2498 Q. This page here covers quite a number of pieces of apparatus. Do you know the actual price at which any of this apparatus on page 42 is now selling?

A. You refer to the Wilberhham-Green High pressure pusher and that sort of things?

Q. All items on that page?

A. Yes, I can bring you a dozen letters lying on my desk if you wish.

Q. These letters written to you in response to inquiries from you as to prices?

A. I think so. Or might be written to my assistant in New York, I don't know.

Q. Inquiries made up recently for the purpose of getting information to make up this so called appraisement?

A. In the last month or two for the purpose of geting this information.

Q. If that the general plan you have pursued in getting at these prices to write to somebody and ask him what the price would be?

A. How else would you do it if a man manufactured anything, but ask him what he would sell it for?

Q. I should ask him if I hadn't any information on the subject. Has that been the *court* which you have adopted to write to these various manufacturers asking them for prices?

A. Wherever necessary, yes sir. Anything that was necessary to get a square deal I got and just put it down for a fact.

Q. Take this page 42, you wrote to the Wilberham-Green people?

A. My assistant did, I did not.

Q. At your direction?

A. My direction.

Q. And then you wrote to the people that make the roof exhauster?

A. Either he or I did.

2499 Q. How about tar extractor?

A. Well now if I remember rightly he wrote over to Newark and saw the man and the man told him a tar extractor like this was worth about $600 so I gave you about seven or eight hundred on it landed here.

Q. And in place?

A. In place.

Q. Take the Buffalo Duplex Pump, what did you do on that, write to those people?

A. What page?

Q. The same page 42, down near the bottom.

A. You will find on page 17 given to you at $200 which was its price set up.

Q. Did you write the manufacturers and ask them what it was worth?

A. I did not.

Q. You have estimated it yourself?

A. I gave you all that was coming to you in that and more too.

Q. Ever buy one of these pumps.

A. No, I don't think I did. I don't know, so many different kinds of pumps, I have bought a great many pumps.

Q. Take the Warren pump, and vertical pump, did you write either of these people?

A. No, I didn't write either of them.

Q. Use your judgment on them?

A. Used my judgment on them.

Q. Did you make an estimate on piping in this building or did your assistant make it?

A. Piping in building.

Q. Building contents, apparatus just referred to, referring to the bottom of page 42.

A. Referring to the bottom of page 42 and given on my

2500 report on page 17. I made that estimate myself.

Q. You put 16 inch pipe in this building $4.20 as against $2.10 in the purifying house didn't you? I notice below that double rates covering valves, etc.

A. Quite a lot of valves in here, I would not say an immense number. In other words I wanted to allow you thirteen or fourteen hundred dollars for your valves in there.

Q. The valves excepted you put this pipe in then at the same rate you paid for laying pipe in the street?

A. Yes, sir.

COURT: If I understand correctly this $13,750 includes the other figures there?

A. Yes, it is included in the figures above and the sum of these figures above is also about $2,750, the sum of all the figures beginning at 8 inch and going down to 24 inch inclusive, about $750, twice 1375.

Q. Now turn to the apparatus in the next building. I notice Payne Horizontal engine here page 52, 2 Payne horizontal engines for that matter. Are they indicated here for two engines for blowers in your report on page 19?

A. On page 32 you have one Payne Horizontal engine in building 4, A. B. and C haven't you? You also have one Payne Horizontal Engine six by eight, installed 1887 one 1889. They are these things that are in that shed covered with canvas and covered with rust.

Q. I didn't ask you about that, I asked you where they were if they are in your report?

A. Yes, sir; in the report.

2501 Q. Is it the item I called attention to, 2 engines for blowers page 19?

A. They are included in the six foot water gas apparatus in the estimate for that.

Q. Then I was right, it was two engines for blowers page 19 of your report.

A. My report two generators, two carburetters, two heaters, two washers, one scrubber, one condenser, two engines for blowers.

Q. That is the item which we refer to?

A. Yes, sir.

Q. You just lumped these sets?

A. Yes, sir.

Q. Without any particular information as to what they sell for?

A. Well as I happened to be concerned in paying for a set just about like it in Fostoria, Ohio, I consider I have very precise and exact information as to what they sell for.

Q. And that was ten or a dozen years ago?

A. I think it was long since 1900. I don't know when the people that owned the place bought them. I know it has not been very long since I had to go out there to run them.

Q. What does this note mean, annual depreciation water gas set only $461.00? How do you get at that? Bottom of page 19 of your report?

A. Annual depreciation of water gas set, I declare that is where that stenographer got into that again. At any rate it does not mean anything for it is never used afterwards.

Q. You find also on page 21 at the end of section 15 reference to annual depreciation do you not?

A. That too is a memorandum, that is true, but not used afterwards.

Q. The theory was changed while this was in course of construction?

A. Became such a vast number of items if I went on
2502 taking them item by item I would not have been able to complete my work so I changed the method or used the method used on page 80 which simply took three items instead of a very large number.

Q. Here you resort to another method to get the depreciation, you say depreciation by inspection 50 per cent. You took the actual condition as shown by inspection here.

A. What I thought it was, about half worn out.

Q. I am asking about the method?.

A. Yes, sir.

Q. You resort in this case to the actual conditions shown by inspection?

A. As I look at it you know.

Q. In your next building, this boiler house, that was erected in 1902 wasn't it?

A. It so shows, yes.

Q. And there you go back to Summers again and didn't use inspection for your depreciation?

A. Yes, sir.

Q. Boiler house in pretty good condition isn't it?

A. I don't think I use the depreciation b- inspection except on apparatus, I may have used it, I think I used the Summers system wherever I could uniformly on the houses. 17 per cent eight years, that gives it nearly 50 years which is a great deal longer than it could possibly last I think.

Q. Did you know the character of the building, brick and steel one story high foundations concrete and brick, walls of brick in lime mortar? Floors concrete on earth, roof of slate on steel purlins and trusses, do you think a building like that in eight years is seventeen per cent gone as a matter of fact?

A. Well if I had estimated it myself I should have said
2503 about 16 per cent gone, but Summers said 17 per cent. I should have said 16 per cent certainly.

Q. That is based on the present puer cent condition or is that obsolescence and that sort of thing?

A. The place is good for about 50 years and 50 years means two per cent depreciation.

Q. Straight line?

A. Straight line.

Q. You charge off the same rate two per cent and put it into your operating, do you think the same method should be adopted?

A. Charge it into operating expenses?

Q. Yes.

A. Well as you know I have taken it up as residual depreciation.

Q. I know that, but if you are going to charge off two per cent straight line depreciation don't you think if you follow the plan why shouldn't you continue it afterwards?

A. You mean later on?

Q. Yes.

A. Of course you ought to until the thing runs out.

Q. So that you would have on your method of charging off depreciation here you would have at the expiration of the life of the plant or any part of it a hundred per cent of what that part of the plant cost plus interest earned during the meantime?

A. No.

Q. That is you hadn't used your depreciation fund?

A. That would not be the way I would handle it at all. First of all I would like to charge off if I were allowed to do so by the board of directors the residual depreciation at the end of each year after making every repair I could make, charge off residual depreciation and just make a charge to profit and loss a deduc-
2504 tion or credit to the depreciative investment, whatever it might be, buildings, machinery or anything of that sort cutting down its value. I would then like to make extensions of plant out of that charge, depreciation of building being put into the plant if it was a good plant that you would earn more profit in that way than you could by investment and besides that you would have a surplus which would take the place of your depreciation fund if that were invested outside and as a consequence the value of your plant would be kept up. Your plant would not depreciate in value if your capitalization held even you would go right along and at the end of the term you would have say a million dollars in stock and a million dollar plant which you started out with, that is my idea. In the meantime you would be earning a lot of money and making dividends and nobody would be hurt.

Q. You would charge off for depreciation——

A. Residual depreciation.

Q. On a 2 per cent basis here estimating this building in your fifty year life 100 per cent of the value or cost of the building without taking into account interest?

A. Yes, and in the meantime I would keep the building in the best possible repair if I could.

Q. And in the same way with reference to each piece of apparatus during its life on the theory with which you have estimated depreciation in getting at your valuation here you would charge against that piece of apparatus or that piece of property 100 per cent of its cost without taking into account interest.

A. And at the same time, you follow me do you not, I put it back into plant.

Q. I am not asking you about that. You have got one
2505 idea in your mind and I have another. I — interested in mine.

A. Well I would not agree with you at all.

Q. Let me put the question again. On your theory on which you have charged depreciation here, you will charge against each piece of property during its life as depreciation its entire cost without taking into account interest?

A. Yes, but I would not do that unless I put that amount right back into the works and kept the works up.

Q. Does the amount that you have charged off on account of depreciа- depend upon what you do with the money after you make the charge?

A. As a practical matter it is very important. If you undertake any of these winking fund schemes you wo-ld find yourself with a trust fund you could not touch and a broken down works in a mighty short time.

Q. Now I notice in several of these buildings including this one you have figured the cost there as to the square foot or cubic foot. Did you make the figures or did somebody else?

A. That is you mean the area?

Q. You have given the area 2831 square feet, structural cost per square foot $1.958.

A. What page?

Q. 21.

A. I think these figures for section 16, boiler and engine room Buildings 6 A and B $1.958 per square foot were made by Mr. Dobson, I see his handwriting. I should say to you that the checking out of the structural cost per square foot was for the purpose of assuring myself that there was no abnormal results or values obtained. Costs about $2.00 a square foot and about right for a one story building like that.

Q. What would be about right per square foot in the purifying house?

2506 A. I could tell by looking at it.

Q. You said these figures were about right, I assumed that you have some judgment as to what was about right, if it is simply referring to the record I don't care for it.

A. You are always asking me for an effort of memory, which I don't see has anything to do with engineering or judgment either.

Q. Passing that I will withdraw that question. Now I want to call your attention to page 22 of your report referring to the boiler house extension. That building is brick and steel, one story, ıoundation concrete and brick in cement mortar, the north and east walls, brick and cement mortar, east wall structura- steel covered with corrugated iron, floor or brick cement grouted, roof corrugated iron with steel purlins and trusses one year old. What depreciation does Mr. Summers charge for a building like that?

A. In my report on page 22 near the top of the page there depreciation three per cent, one year, Summers, $30.14.

Q. So that on a building like that this theory you have adopted charges three per cent depreciation the first year.

A. That is it.

Q. And does that refresh your recollection so that you can say whether Mr. Summers begin- with a high rate of depreciation?

A. It does not. May I bring that book in if you would like to look it over.

Q. I said before I have no objections and no control over you.

A. Well I can't recall.

Q. Now turning to the next building you find that for four years Summers has given only 8 per cent don't you?

A. That is so.

Q. Are you still unable to recall enough to tell us wh-th-
2507 his metho- of depreciation results in a lower valuation than the ordinary method would?

A. I am not able as some are to generalize from two instances.

Q. Can you answer the question?

A. I cannot.

Q. Now take this boiler house extension where it is a new building brick in cement mortar and all that did you allow us any more for that construction than on these old buildings for brick work?

A. What page?

Q. Page 21 of your report it begins.

A. Section 16 boiler and engine rooms buildings 6 A and B.

Q. Boiler house extension is the one I had in mind, inventory page 68, building 6-C the last paragraph page 21 of your report, erected 1909, brick and steel construction?

A. I took for all brick work $16.00 plus $1.00 for scaffolding a thousand, plus $1.50 for pilasters making no difference, it was an average all through. I did so here.

Q. On the next building there is something I don't understand, page 74 of the inventory, page 22 of your report, you begin contract price as per company's inventory, $8,449.78. What does that mean?

A. Generator house?

Q. What I don't understand is this contract price as per company's inventory, what does that mean?

A. That assumption was made—it was worked up in detail and the assumption made that a building of that importance would be let to a contractor and that contractor must have his cash before the general expenses in the way of o-erhead charges come in.

Q. How did you get $8,449.78. Our inventory don't show any contract price?

2508 A. Where?

Q. This says contract price as per company's inventory, that is what I don't understand.

A. I will look up the way in which we got that.

Q. Do you know how it was obtained?

A. Oh yes, it was worked out in the ordinary way.

Q. How did you ordinarily work it out, from the company's inventory if the inventory don't give the price?

A. That contract price of $8,449.78 given there is the result of working it out just as the other houses were worked out and had in it cast iron floor which went under the generator making 11,718 which I directed should be subtracted from it leaving a corrected contract price of $6,731.56 the assumption being that the whole building would naturally be given to a contractor it being of that

size and in working it out as I have subsequently learned it was worked out under a sort of inside special arrangement by which the company furnished part and the contractor another part of the work.

Q. Then the words "As per company's inventory" don't refer to prices shown by the inventory, but the building as shown in the inventory.

A. The building as shown by the inventory

Q. You deducted cost of cast iron floors, stairs, etc., for generato-r, what does "and so forth" cover?

A. I was looking back for each of these details and I don't see how I can tell without checking for them and I don't see how we can check without knowing.

Q. Can you look that up this evening and let me know?

A. I will look it up for you.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

2509 Friday Forenoon Session.

AUGUST 18, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

WILLIAM D. MARKS, continuing his cross-examination, examined by Mr. Guernsey, testified.

Q. Digressing for a minute, Professor Marks, I notice on page 24 of your report that in the fourth line you take from Somers 31 per cent depreciation for 14 years, and in the—I can't give you the number of the line—but about a third from the bottom you take 23 per cent for only 9 years. Do these percentages indicate fairly the way he piles percentages for depreciation for the early years?

A. On page 24, depreciation 14 years 31 per cent, Somers, is the depreciation of a frame building in fair condition at the end of 14 years as given by Somers. On page 24, depreciation 9 years, 23 per cent, Somers, is the depreciation of a frame building in fair condition for the period of 9 years. I can give you the depreciation for each year in the frame building, if you like, running down the list.

The MASTER: You didn't say what the per cent was.

A. 23 per cent.

Q. Well, now, for the first nine years then Somers takes off 23 per cent?

A. Yes.

Q. And for the next five years he takes off 8 per cent?

A. Yes, additional 8 per cent.

Mr. BRENNAN:

Q. Professor Marks, is there any difference in the buildings upon which the depreciation is computed; that is, the character
2510 of the buildings?

A. No they are both frame buildings, and the only differ-

ence in the buildings is the difference of age; they are both assumed to be in fair condition. I would say that according to the system of Somers that for 9 years a good condition is a depreciation of 20 per cent, a fair condition is a depreciation of 23 per cent and bad condition is a depreciation of 42 per cent; and for 14 years good condition is 28 per cent depreciation, fair condition 31 per cent, bad condition is 53 per cent.

Q. Now these are not both frame buildings, are they?

A. The coke shed building, 8-A, consists of a foundation under the ground, and cellar under the ground, as I recall it, excavated to a depth of 8 feet below the ground level; above it it has timber spaced so that it looks somewhat like open work, and it would be difficult to say—if you wanted to you might say a frame building and a brick cellar. At any rate, I took it as a frame building and let it go at that.

Q. I asked you whether these were both frame buildings?

A. Yes.

Q. Well, take the other building, you will find it frame construction on steel, wood braces, walls corrugated iron and corrugated iron roof—now what per cent of depreciation does Somers give for a building like that?

A. Somers gives depreciation for only two types of building, one is a brick building and the other a frame building.

Q. So that he does not give any depreciation for a building of the construction I have just mentioned?

A. Not going into details that way—it is not necessary.

Q. Now let us turn back a little—now take this first building A-B, you- page 13, section 7. You take Somers there for what con-
2511 dition and what kind of a building?

A. Somers' depreciation is used on page 13 for the purifying house in good condition, 18 years, 25 per cent.

Q. Now what does he give for the brick building with steel roof?

A. He does not specify about the roof.

Q. Well, wouldn't there be a decided difference in the amount of depreciation in 18 years between a steel roof, a tar roof or a tin roof or shingle roof?

A. That would depend, if it is a question of residual depreciation, I presume, on the amount of care given to the roof and the way in which it is kept up. At any rate, in this case, the purifying house was put in the highest class, the good; there are three classes, good, fair and bad.

Q. And it was classified as an ordinary brick building?

A. From the table for the depreciation of buildings, store buildings, dwellings, brick.

Q. Yes, now is it your idea that the depreciation on a building such as this which has practically no finish, no plaster, has it—nothing of that kind—would be as rapid as the depreciation on a dwelling, take a dwelling with a shingle roof?

A. The action of the gases, I should say depreciation would be greater because of the action of the gases which are continually more or less in the atmosphere of that room and floating up and attacking

the roof and perhaps even having some effect on the mortar in the walls.

Q. And is that the reason why there is a monitor on this building with an air space there to ventilate it and let the gas out?

A. No that is to avoid, by having the ventilation as good as they can possibly have it, the possibility of an explosion more than anything else.

2512 Q. Now, it is obvious though that this building does not come within the class of buildings that Somers had in mind when he said store buildings, dwellings—and what else did he say there?

A. Table for the depreciation of buildings, store buildings and dwellings, brick.

Q. Yes, and it is neither store building nor dwelling and it lacks many characteristics of each of them?

A. No, I should judge it was, if anything, rather good as compared with what the same type the old type of store in this town and I was inclined to place it in good condition in the classification.

Q. Isn't this the building that had this old brick in it, and things like that, the rotten stairway and other things you talked about, and the floor you said we hadn't seen, that if we had seen it we might think different?

A. The way it was put together——

Q. Yes, the building you made all this reference to?

A. As far as the rotten brick is concerned——

Q. Can't you answer the question directly?

A. No——

Q. Why can't you answer directly whether or not this is the building to which you made this reference?

A. Because you put two or three statements in one question.

Q. I asked you whether these statements were not made with reference to this building. Can't you tell me whether each one of these statements was not made with reference to that building?

A. Let me make each statement separately——

Q. Can't you tell me whether each one of these statements wasn't made with reference to this building?

A. I answer that no.

2513 Q. That is all I care to ask you about then. Now, then, the ordinary store building is how many stories?

A. I couldn't answer that.

Q. At least two, isn't it—you wouldn't say that was intended to apply generally to one story buildings that Somers has there?

A. Apply to buildings of average height, I should judge.

Q. The ordinary store building is plastered, isn't it?

A. Depends entirely on whether it is a warehouse or high class store building; warehouse wouldn't be plastered; this comes in in the warehouse class.

Q. Do you assume that warehouse, or rather store buildings include warehouses?

A. I assume in this case, they are practically in this same class.

Q. The ordinary dwelling has several stories in it?

A. Yes.

Q. Both store buildings and dwellings have large items of expense in the way of finish and fixtures and things of that kind?

A. Not the store buildings.

Q. Now let us take up the next one and see what sort of a building that was—this building #1-C 9: brick foundation, corrugated iron walls and roof, steel braces, dirt floor; what did you take as the classification of Somers to apply to that?

A. That is the building I have given the present value of $82.09.

Q. What classification of Somers did you take to apply to this building—that is what I asked you?

A. I did not take the trouble; it is a lean-to against the wall of the purifying house.

Q. Now take the next building in section 10; how did you classify that?

A. Store building, brick, in bad condition?

Q. Yes.

A. 63 per cent.

2514 Q. Does the ordinary store building have a slate roof?

A. That is a generalization I could not answer.

Q. You never observed enough to tell us?

A. Oh, it is too broad altogether, it would be absurd for anybody to answer——

Q. I don't care about anybody, I want to know whether you noticed it. Now take the next building, section 12 here, did you classify that—this is the building to which you referred, the roof of which you referred to as a sieve, isn't it?

A. That building has a depreciation according to Somers of 63 per cent, as you will notice.

Q. What did you take as the depreciation?

A. I looked the building over and thought that in putting it at 67, about two-thirds of its value gone, that I was dealing very liberally with that building.

Q. So that where Somers run over you inspected it?

A. Such an outrageous case as that where the roof was like a sieve, part of it gone, it was a question whether to give it any value at all or not.

Q. Now, then, Somers you say gives it 63—how did you classify it, in what class of buildings, stores and residences?

A. Brick store.

Q. Do you think that is a proper way of classifying it for the purpose of ascertaining the depreciation?

A. It was the most liberal thing I could do; it ought not to be classified at all; Somers assumes there was a roof at least on the building; in this case there wasn't.

Q. And you think a building with brick floors, dirt floor and operating floor of cast iron plates, with no plastering, nothing of that kind, and with what roof it has corrugated iron on steel

2515 pipes comes within the classification of ordinary brick stores or residences?

A. I do not. It falls far below it.

Q. A building of that character would depreciate in your judgment more rapidly than an ordinary residence or store?

A. It was long past the period of depreciation.

Q. I didn't ask you that. A building of that class would depreciate more readily than an ordinary brick residence or store?

A. Why, yes.

Q. How did you classify the coal shed in section 14 of your report?

A. Store building, brick, depreciation fair, 34 years, 38 per cent.

Q. You said depreciation fair, you meant condition fair?

A. Well, you might put it that way.

Q. That is what you meant?

A. Fair condition, yes.

Q. And then this you classification notwithstanding the fact that it has a corrugated iron roof, on part of it tin, and a brick floor, a part of it, with an ordinary dwelling house, with an ordinary brick dwelling house or brick store for depreciation purposes?

A. I noticed the north wall of that had fallen down recently and was replaced by a new wall, and I put it in a good, fair condition.

Q. Did you notice this wall fall down?

A. I wasn't present.

Q. What you noticed as a matter of fact was that the north wall was a new wall?

A. Somebody, I don't know who it was, told me the thing was falling down, somebody standing on the track.

Q. Was it Mr. Dobson?

A. No, sir; nobody connected with the city.

2516 Q. What you know yourself about it is that you saw a new wall there?

A. Yes.

Q. The reast you volunteered?

A. I think it was a brakeman, somebody connected with the railroad told me.

Q. Notwithstanding the fact that one wall was new you have treated that wall as old?

A. No; on the contrary, I put it in fair condition, raising it out of its class.

Q. You thought that justice required that it should be bad, I suppose. Now, then, take the next building, section 16. That is brick and steel construction, one story high, the walls of brick and lime mortar, floors of concrete on earth, the roof slate, steel purlins and trusses; how did you classify that?

A. Depreciation, store building, 8 years, fair condition, 17 per cent.

Q. Do you think that a building of this kind would depreciate as rapidly as an ordinary brick store or residence?

A. Wherever there is any reason to believe that the foundations have the slightest vibration from the movements of the machinery and wherever there is high speed machinery, the question of depreciation at once becomes a very serious one. There might be, if I had the time to observe a larger depreciation; as it was, I could do nothing more than what I saw as I walked through the place, to call it in fair condition.

The complainant moves to strike the answer as not responsive and asks that the question be read to the witness.

(Question read.)

2517 A. More rapidly.

Q. Now take the boiler house extension, that is brick and steel construction, one story high, foundations of concrete and brick, cement mortar, the north and west wall of brick and cement mortar and the east wall of structural steel, covered with corrugated iron, floor brick, cement grouted, roof corrugated iron steel purlins and trusses; did you classify that as an ordinary brick store or dwelling in giving it your depreciation?

A. I should call that below the grade of store buildings, but have classified it as a store building, brick, fair condition, one year depreciation, 3 per cent.

Q. What machinery is there in the last two buildings we have mentioned, building 6 A & B?

A. To what page do you refer?

Q. I refer to the buildings I just mentioned 6-A & B?

A. On page 66, Exhibit 15, furnished by the company, all of the machinery reported by them is enumerated under the head of contents of boiler and engine room, building 6-A & B.

Q. What there is in these two buildings is some boilers and engines and their appurtenances?

A. Yes.

Q. That constitutes all of the machinery in these buildings, does it not?

A. Speaking of cast iron piping erected also.

Q. Do you classify that as machinery?

A. Well, it is a part of the machinery of the gas works segregated here.

Q. It is put under the head of piping in the inventory, is it not, not under the head of apparatus?

A. Yes, it is put here under the head of piping.

2518 Q. You classified it as machinery?

A. Under the head you call apparatus and foundations, do you notice it.

Q. Yes, you run on down and you call the whole thing apparatus, do you?

A. Just put it that way, beginning with the foundation.

Q. Now, then, are these boilers and engines on foundations of their own which are separate from the foundation of the building?

A. The floor was brought right up to them, so that I would be unable to say, although I assumed they were.

Q. Now, are these boilers set in brick?

A. Brick around them—a fire place.

Q. Is it your idea that these boilers and engines will jar sufficiently to weaken the foundation of these buildings in the absence of an explosion?

A. Yes, the slightest vibration will do this in almost any build-

ing, even a tremor, hardly perceptible to the senses, as a serious effect on the building.

Q. Would you anticipate that the effect on this building would be extraordinary or about the effect we have normally from the operation of boilers and engines on separate foundations in buildings?

A. I should say that would be about a normal result in this case and for that reason assumed the depreciation percentage of an ordinary warehouse or store given by Mr. Somers.

Q. Now, let us have the next building.

A. Building 6-C boiler house extension.

Q. Now that is also brick and steel construction, 2 years old, one story high, foundation of concrete and brick, cement mortar, the north and east walls of brick and cement mortar, the east wall of structural steel covered with corrugated iron, the floor brick,
2519 cement grouted, the roof corrugated iron and steel purlins and trusses. Did you classify that in the class covering brick stores and residences of Mr. Somers, and what condition did you give it?

A. Store building, brick, fair condition, depreciation one year, 3 per cent.

Q. Now let me ask you generally, did you find anything that was conditionally considered good?

A. Yes.

Q. What was it?

A. It was your new installation of generators.

Q. I mean in buildings whose condition you considered good?

A. Yes.

Q. What was it?

A. It was your new installation of generators, there is nothing really first class that I know of.

Q. I am not talking about the building itself, that is the way it is designed, but did you find any building that was in what you call good condition?

A. You mean first class material or good of its class?

Q. I am talking about the condition of the building; did you find any building over there that you classified as in good condition for the purposes of ascertaining your depreciation?

A. Will you allow me to explain in regard to the generator house?

The MASTER: Just answer the question.

A. I did not.

Q. All right; that is all I wanted to know. Now take the next building, generator house #7, brick and steel, two stories high, concrete foundation, the north, south and west wall brick, the east wall timber construction, corrugated iron wood frame in roof;
2520 first floor concrete and brick; second floor cast iron plate steel supports; stairs structural steel and wood. How did you classify that building?

A. Will you allow me to correct a mistake?

Q. Would be glad to have you do so.

A. I see in the case of this building I made a mistake classifying it, condition good, depreciation for 4 years, 8 per cent, and should

have on account of a possible vibration of that building put it in a lower class; I have, however, I see, classified it as good.

Q. If you are resolving doubts in favor of the company, as you state all the time, shouldn't you, if it is only a possible vibration, have done the reverse?

A. I have done so.

Q. You done what you ought to have done?

A. You may put it in that way if you wish; it is evident I was in a very generous frame of mind.

Q. That is what I want to emphasize. You know there is an old adage about the proof of the puddin- being the eatin- of it—now then take your next building, coal and coke shed, 8-A?

A. That is a frame building on brick foundation——

Q. I asked you about that once before.

A. Yes, you did.

Q. Now did you make any difference in your classification for depreciation purposes between the building that you referred to as being built with these old mud brick, and all of the other charming characteristics, and these buildings that were built within the last two or three years of brick and cement mortar, steel roofs, and so on, or did you apply the same rule to each class of buildings?

2521 A. No, it appears the result of the use of mud brick appears in the depreciation more particularly.

Q. I asked you whether you applied the same rule from Somers to each of the two classes of buildings I mentioned?

A. No, because you take the case of the building in the northwest corner which was away past any power of Somers to cover.

Q. You didn't apply Somers' rule to that one. Take the purifying house for instance, which I think you devoted considerable attention to, did you apply the same rule to that building, 18 or 20 years old, constructed as you have said, that you have applied to these buildings I have just referred to, of brick and steel construction?

A. I applied the same method, Somers method.

Q. And classified them the same?

A. I did not. I classified the new #7 building as good, and by a generous attitude of mind was able to classify the purifying house as fair.

The MASTER: What do you mean by fair?

A. Somewhere between being good and absolutely bad.

The MASTER: That means fair for the kind of a building?

A. Yes, didn't look as though it had been abused; didn't look as if the material was absolutely worthless to begin with.

The MASTER: Of course, if it was fair, it would not be absolutely worthless?

A. Bad to begin with.

Q. Let me follow that up a little. What characteristics must a building have to be classified as good?

A. Such as your generator house #7 has.

Q. That is a conclusion; name the characteristics?

A. I don't know your local brick here; if you will take
2522 one of those bricks you will find it is hard burnt and rings, and that it is liable to be very durable. There will be no disintegration under the action of gas which *are* peculiarly active around gas works. You will find also if you will examine——

The MASTER: Let me ask you a question there. You spoke about mud brick. What do you reckon the life of a brick building built with mud brick?

A. Of course mud brick is indigenous to the town of Des Moines, and of course my observation of it is limited. If you will take the trouble to examine the building on the northwest corner of th*the*ir property, you will find brick there where you can take out your pen-knife and it will run down——

The MASTER: What is the life of that building?

A. It is 34 years, I think; I should think it was a little past its natural life.

The MASTER: I know brick buildings of that character double that age now. I want to know what you rated it at?

A. I should say 34 years would be about the limit of the life of the quality of brick they have there.

The MASTER: It is the kind of brick all the buildings in Iowa were made of in an early day?

A. The same kind I presume.

Q. What do you mean by a mud brick that you say is indigenous to Des Moines?

A. It is like these 16 brick in a cubic foot I sho-ed you here. I can bring you one in.

Q. I wish you would describe it so that we can see whether we can get some definite idea as to what you have in mind?

A. It is a brick which is not pure clay. It is a brick which has either not been burned sufficiently or which they are unable
2523 to burn sufficiently to take it out of the class of salmon brick, or imperfectly burnt brick. It has the characteristic of having rounded corners, not sharp ones, and if you will examine it after being, for instance, up against the gases in the old generator room, you will find that it disintegrates, and you can take your pen-knife, and you will find the old-fashioned mortar harder than the brick itself.

Q. Brick, today are burned harder than fifty years ago?

A. I don't know.

Q. All over the country?

A. I don't know.

Q. You said a salmon brick, do you refer to the color?

A. That, and being imperfectly burnt; the trade name for bricks not fully burnt is salmon brick.

Q. The color of a brick depends on what?

A. On the amount of iron in it generally.

Q. On the amount of iron in the clay, don't it?

A. I wouldn't specify it should be in the clay; you frequently see spots in the brick of iron which you can hardly call anything more than a mechanical mixture in the clay.

Q. Are these so-called mud brick made of clay or not?
A. Not pure clay.
Q. By pure clay, do you mean technically pure clay, kaolin?
A. I mean free from sand and silt which comes from overflows.
Q. Your theory is these brick were made out of a substance not entirely clay, but contained this silt and that results in soft brick?
A. Impurities; I won't say what they are; certainly not pur- clay.
Q. You couldn't make brick out of pure clay, kaolin?
A. I don't know anything about the crockery business.
2524 Q. I am not asking you about the crockery business; but do you know anything about the brick business?
A. A little.
Q. Then we will stick to that—you couldn't make brick out of pure clay?
A. I think I could; I think you can make elegant brick out of pure clay.
Q. You couldn't make vitrified brick out of pure clay?
A. I should think you could come pretty near it, but you would need some glazing material in it.
Q. Pure clay will not fuse, will it?
A. Except at very high heat.
Q. At what temperature is it your notion kaolin will fuse?
A. I don't know anything about the crockery business.
Q. To make vitrified brick you must fuse this mass with something that will permeate the mass?
A. I should think on the surface you would do well enough, without permeating the mass. I don't know anything about the crockery business.
The MASTER: It takes a 3,000 temperature for vitrified brick?
A. I haven't the slightest knowledge of the crockery business.
Q. Now turn to section 20, did you use Somers on the depreciation there—runway coal and coke shed?
A. I think I have already answered that question, stating that I used 3 per cent for 9 years, Somers' system.
Q. I am talking about section 20 at the top of page 25?
Mr. BRENNAN: Section 20 has reference to the scales.
Q. Turn to the top of page 25, the second line on that page, did you use Somers on that?
A. That is a set of Fairbanks' Standard Scales, the depre-
2525 ciation was by inspection.
Q. All right, I was wrong. Now speaking generally in using your Somers table, have you classified the structures here either as brick stores and dwelling-, that is, taking the table he applies to brick stores and dwellings, or the table which he applies to frame dwellings?
A. Yes.
Q. What is the heading of the table he applies to frame buildings?
A. Store buildings and dwellings.
Q. Does Somers anywhere in this pamphlet you have there or whatever it is give rates of depreciation on factory construction?
A. So far as I am able to locate, he has confined himself and in-

cluded all buildings under store buildings, dwellings and office buildings, meaning by that the type of buildings known as sky-scrapers.

Mr. BRENNAN: Is that store buildings and dwellings?

A. Store buildings and dwellings and office buildings, meaning by the words office buildings the type familiarly known as sky scrapers.

Q. What is his language in describing what he means by office buildings?

A. The highest class of steel construction buildings.

Q. Now does Somers give any table there covering what we call slow burning factory construction?

A. No.

Q. That is given in the table there covering ordinary brick and steel construction?

A. No that comes under the head of store buildings and dwellings as I understand it.

Q. Now turn to page 25, 20-A.

A. I have it.

2526 Q. You have first a steam hydraulic elevator there. Where would that be purchased?

A. I don't know.

Q. Does your $1,500 mean the price of this apparatus in place?

A. $1,697 means my estimate of the price of the apparatus in place.

Q. Is this something that is kept in stock by manufacturers?

A. No, can't be; because there are different lifts of these hydraulic elevators. I don't know what their habits are——

Q. Then it would be necessary to design these first, would it?

A. To the extent of taking the top measure, getting the distance you want to lift your stuff; the manufacturer would furnish the rest.

Q. What would the apparatus cost, not in place, but f. o. b. cars at the place where it is manufactured?

A. I don't know.

Q. Do you know anything about it?

A. Yes.

Q. Then tell us approximately what it would cost f. o. b. cars at the place of manufacture?

A. Approximately, I cannot give you that. Of course I am not a sales agent. It is my estimate it would cost about $1,500 or $1,600 for the lift to be 16 feet which is there, and the necessary apparatus that goes with it, that is the amount in round figures I should judge it would cost. Of course the books are the best evidence. You have the records and you have the invoices and the bills.

Q. The books are not the best evidence of what you know about it, that is what we are trying to get at. Now, then, how can you get anything like an accurate estimate of what it will cost in place without knowing first what your manufacturer's cost would be?

2527 A. Just as I could tell you, being skilled in the art of the probable value of a horse, by looking at it, and what I think he is worth and what I would be willing to pay for it, the same process.

Q. Let us see if it is. You judge the value of a horse by comparing that horse in your mind with what other horses will sell for?

A. It is an intricate process of unconscious cerebration.

Q. How can you judge the value of this thing without knowing what something else just like it does cost by your horse process?

A. Well, such a statement is correct; I have no doubt I have in my mind the average cost of a number of those which I have seen elsewhere, but I did not take the trouble in this case to do so. As I said before, the true and exact cost can be obtained at once from your vouchers.

Q. Having these things in your mind, where you are looking at the horse, your mind unconsciously gives you the benefit of them. Let us look at this and you tell us what in your mind the manufacturing cost of this would be?

A. I shall have to decline to answer that question. I think it is worth about, nearly $1,700 in place there and refer you to your own books if you want to know the exact cost.

Q. I have already told you, what we are after is what you know.

The MASTER: I think the witness has explained what he knows now.

Q. Then what would it cost to install this apparatus, or rather what in your estimate did you take as the cost of its installation?

A. $1,697 was what I have given you here as the total structural cost installed, and somewhere about $1,500 as the price probably delivered.

Q. Delivered where?

2528 A. Here.

Q. And your $1,697 is obtained by adding to the $1,500 supervision, general management, interest and taxes?

A. About that, yes.

Q. So that it does not include the item of erection about which I asked you?

A. Yes, cost delivered here $1,500. I should perhaps add a rate for your contractor to put it in that way.

Q. I want to know what these things would cost or whether you know what it would cost?

A. I wish to say with the utmost emphasis and frankness that I told you repeatedly this is an estimate and if you want the exact facts you have them in your own books and vouchers and it *it* is futile piffle, to use the phrase, and at which you laughed a good deal yesterday.

Q. In other words, is that a brief way of stating that you don't know?

A. I know well enough to know that is the outside limit of value which I wish to place.

Q. If you know, will you tell me what it would cost to install it?

Mr. BYERS: I submit the witness has fully stated what his judgment is and how he got at it and all about it.

The MASTER: He has not stated a word about the cost of installation.

Mr. BYERS: He has twice stated it was included in this cost of $1,697.

Q. I want to know how much he included; if he don't know, let him say so.

A. I told you very frankly I didn't know anything more than what is in my general estimate.

The MASTER: Do you know what it would cost to put
2529 it up?

A. After it arrived here?

The MASTER: Yes, that is what he wants to know; if you don't know, just say so.

A. I can give you a rough estimate, if you want; if the Master wishes to know, I can do it.

The MASTER: That is the question. Answer it if you can.

A. I should think after it landed here, by the time they got the platform sunk and the hole bored for the plunger and the foundations for the engine and hoisting machinery, in the neighborhood of $200 or $250 would have been spent in addition to what they probably paid for the machinery to the factory. But of course, as I look at it, their own vouchers and books will give it exactly.

Q. Now, then, tell us the name of some available manufacturers of these apparatus.

A. I can't recall one.

Q. Tell us the last apparatus of this character which you installed or which was installed under your supervision, I mean as to date, the most recent.

A. In gas works?

Q. Or any other works?

A. I think somewhere about 1900, in Fostoria; I didn't pay very much attention to it.

Q. Do you know whether they put one in or not?

A. They did, to punch their coke up to the platform of the water gas process.

Q. That is the extent of your experience with reference to installation for the purchase of apparatus of this character?

A. As far as I can recall at present.

Q. Did you write any letters to anybody and ask them what this cost?

2530 A. I don't know what my assistants may have done; I certainly did not, because I didn't take the trouble.

Q. Now, turn to section 22; will you please without going into details, specify any apparatus covered in that section which you have recently bought or sold or as to which you have information as to recent actual prices?

A. I have been in the employ *for* the city of New York for the last five years as an estimator and consequently not actively engaged in the business, but I have had to buy a lot of grind stones, emery wheels, and I have paid for anvils, and a complete soldering outfit, counter-shafting, and I have rather a complete shop of my own. Of course the Buffalo forge drill press and screw cutting lathe are standard materials, so that I have not been forced, as your engineers

have been, like myself, to make inquiries of people who dealt in them.

Q. That I don't think answers my question exactly. Have you specified each of the things here which you have either bought or sold recently or of which you have recent information as to the actual prices paid?

A. Grind stones, emery wheels——

Q. I asked you whether you had specified it?

A. Yes.

Q. Now, digressing for a moment, on your direct examination you stated there were a number of these buildings that had been built out of scraps lying around and that were useless for any other purpose; will you tell us which buildings they were?

A. Particularly, what you call the oil barrel store house, is a sort of a bird cage arrangement where the men found it convenient to pile the barrels outside of instead of inside.

Q. What other buildings?

2531 A. Then you have what you call the fire brick store house which is also of the same general character, scrappy construction, for instance, you mentioned the old holder oil tank there which happens to be an old boiler turned up side down with the steam dome used for the purpose of drawing oil from it; and there happens to be another old boiler——

Q. I asked you about buildings built out of scraps—if you can just concentrate your mind on that I will appreciate it.

A. The coke shed for instance which is specified across the street is at the present moment a very old building and in scraps——

The complainant moves to strike the answer as not responsive.

Q. You stated certain buildings were apparently built out of scraps, boards, and I ask you to name them, and you talk about boilers and things like that, and you name two small buildings; were there any other buildings that in your judgment were built out of scraps of boards, if so, what were they?

A. You mean wooden buildings entirely?

Q. If you know any brick buildings built out of scraps and boards put them in?

Mr. Byers: Didn't you put in scraps of boards? The witness I think stated scraps.

A. For instance, you have what you call a rubbish kiln which is valued at a considerable amount of money; this is a brick building drawn with a great deal of care and built out of old brick.

Q. You say valued at a considerable amount of money, how much?

A. I forget, I will look it up.

Q. I wish you would.

A. The structural cost new $23.18; present value $11.59; which was built out of old brick and has no value at all except that

2532 it is useful for the purpose for which it is intended.

Q. Do you know anything that has much value that is not useful for the purpose for which it is intended?

Mr. BYERS: That is hardly a proper question.
(Question withdrawn)

Q. Can you identify any other building in addition to those you mentioned that you claim is over here and built out of odds and ends of lumber?

A. There is a lean-to against the purifying house, which is not built out of lumber but is made out of an old column of some corrugated iron.

Complainant moves to strike the answer as not responsive and asks that the question be read to the witness.
(Question read)

A. For instance, the dipping trough—I don't know whether you call that a building or a piece of machinery—looks as though it was built out of picked up lumber, and it is not in good condition.

Q. What is the dipping trough used for?

A. Dipping services in tar.

Q. And the tar trough is used for what?

A. Dip service pipes in tar.

Q. When you say dipping trough and tar trough, do you mean the same thing?

A. Yes. That is about all I can recollect at the present moment.

Q. If you think of anything else, let me know. Now take page 28, you have a Davidson pump 6 by 8 by 12; how recently have you bought a pump of this class, or has one been bought under your supervision so that you have some personal knowledge about it?

A. Are you referring to the oil pump there, are you not?

(Question reread.)

2533 A. It has been a good while since I bought a pump of that sort; that price is altogether too high; I don't know how much too high.

Q. Do you know what a pump like that is worth in the market?

A. Looking at that now I consider $250 a big price for it.

Q. Do you know what a pump like that is worth in the market?

A. No, I don't know; I should consider $250 a big price for it. I recall it, it is underneath the fence there in the brick house where you unload oil, if that is the one.

Q. I don't know whether it is or not; I supposed you were familiar with those things; do you know really what pump this is that is referred to?

A. That is the one I assumed used for pumping oil out of the tanks.

Q. Did you just guess at this $500?

A. It is evident I did; I overestimated it, I can see that now, since you called my attention to it; I probably over-estimated it double.

Q. You found, didn't you, when you checked with the reports of our engineers that $250 was about right, and you had not checked with those reports when you made your Exhibit 23?

A. As a matter of fact I have not used your engineer's reports in any manner to check my work; I wouldn't look at them.

Q. Who did tell you this was wrong?

A. Nobody until you brought it up.

Q. You just hadn't given it any consideration?

A. It was evident to me at once that it was one of those slips I and everybody else will make.

Q. Now, you have under section 29, station meter; how are they customarily bought, installed or not?

A. The maker of a large station meter is expected to
2534 deliver that in position and in perfect working order.

Q. Then if I understand what you mean is that they are customarily bought installed; that was the question, whether they were or not?

A. The word installed may mean a great deal. It may mean putting in the foundation, in fact almost a building around them; it may mean simply they will put the meter in.

Q. What is the customary method?

A. There is no customary method beyond what I have stated to you, to make the maker entirely reasonable for the accurate performance of the meter.

Q. Do you know who builds those meters?

A. You mean these big station meters?

A. Yes.

A. The Goodwin people, the American Meter Company; you can see it on the label.

Q. It is customary for them to sell them at a price which includes the foundation and the meter in place?

A. I do not think they put foundations in; I think they furnish a drawing and you do it and then they put it on top. The main point is to guarantee the accuracy of the performance of the meter itself.

Q. By the way, I forgot something a while ago. Tell us what gases generated in the making of water gas have deleterious effect on brick?

A. All the sulphurous gases have a deleterious influence straight through.

Q. What are all these sulphur-us gases that have this effect on brick?

A. It is impossible to say.

Q. Can you name any of them?

A. Well, more commonly known as sulphuretted hydro-
2535 gen, known by its smell.

Q. Do you know any other?

A. There are a lot of gases. You are asking me a question the best chemist of gas in existence couldn't answer; men who spend their lives working on gases, if they are the real stuff, will tell you flat-footedly there is lots of gases that they have not succeeded in separating.

Q. I asked you whether you could name any other?

A. No, I can't; I am not a chemist.

Q. Do you mean that the chemists who have devoted their lives to it could name but one, which you have named, the odorous gases?

A. You are asking me to speculate.

Q. You speculated a moment ago by telling us what these chemists couldn't do.

Mr. BYERS: This is all argument; it has cost too much money to fool with those things.

Mr. GUERNSEY: How long did you cross examine one of our experts?

Mr. BYERS: I was trying to get somewhere all the time.

Mr. GUERNSEY: A great deal depends on the point of view.

The MASTER: You claim it is satan rebuking sin.

Q. I notice a curious thing in this meter house to me; that is the brick you figured 1.6 cents, why was that?

A. Isn't that the same as $16 a thousand?

Q. I think it will give you the same result; how did you happen to figure them by the cents, or do you know?

A. No; I think I am responsible for that.

Q. Then why was it?

A. I had very little time and hustled along and put it in in that way. Remember we didn't begin this thing until a few weeks ago.

Q. When was it?

2536 A. The computation on this I should say began six or seven weeks ago.

Q. Did you look up that date I asked you about when Mr. Hazard came here?

A. No, I did not. But that was about the time the computation began. I forgot to say that I brought the Cleveland reports here.

Q. I thank you, I will look at them.

A. Also such correspondence as I had in regard to machinery of various manufacturers.

The MASTER: Will you turn to your report at page 83?

A. I have it.

The MASTER: The figures you get there are from the books?

A. From the books of the company.

The MASTER: They were furnished you?

A. By the city's accountants.

The MASTER: Now I notice here beginning with 1906, the last column gives the total cost of manufactured gas; how many months is that?

A. For two months.

The MASTER: At 67.14 cents; and then I find in 1907, 64.90. Is that correct?

A. Yes.

The MASTER: Then for 1908 it is 63.50 cents?

A. Yes.

The MASTER: Is that the total cost?

A. That is the total cost at consumer's meter.

The MASTER: Now I notice 59.72 cents for the whole year, is that it?

A. Yes.

The MASTER: What is the 63.50 cents for, for the same time?

2537 A. That is for the whole year ending February 1908.

The MASTER: 64.90 cents, what is that for?

A. For the year ending February 28, 1907, 64.90 cents.

The MASTER: Now the 62.56 cents, what is that for?

A. That is for the ten month- ending December 31, 1909, 62.66 cents.

The MASTER: What is 65.30 cents for?

A. That is for the whole year ending December 31, 1910.

The MASTER: What is the 62.74 for?

A. That is an average of four years ending December 31, 1909, 62.74.

The MASTER: Now, then, what is 63.33 cents for?

A. That is the average for five years ending December 31, 1910, 63.33.

The MASTER: That is not for the year, but the average for four years and the other an average for five years?

A. Yes.

The MASTER: That 65.30 cents for the year 1910 includes these attorneys' fees and that $10,000—$15,602?

A. Yes. About $16,000 or $17,000 over and above the preceding four years.

The MASTER: So that the average for the whole time including that is 63.33 cents?

A. Yes.

The MASTER:

Q. Separating that from the five years would make six cents difference?

Mr. GUERNSEY: That six cents was added on account of depreciation.

A. Residual depreciation being depreciation not able to be cured by thorough repairs, I added six cents on top of the 63.33 cents.

The MASTER: The actual cost of gas outside of that you figured and average of 63.33 cents?

A. Yes, sir; including——

The MASTER: You included 65.33 for the year ending 1910?

2538 A. Yes.

The MASTER: There is another matter here I want to understand. You will find it on page 76.

A. I have it.

The MASTER: Now what is that figured on here, for instance, is that figure on the whole amount of pavement?

A. Pavements claimed by the company $204,094.

The MASTER: Do you figure that on the whole length of the pavement that are now over or was, December 31, 1910, over mains?

A. I do.

The MASTER:

Q. Can you tell me by reference to the inventory the amount that you figured, the number of feet?

A. On page 66, section 86, I have the items as follows: Asphalt on concrete——

The MASTER: That is not answering my question. I want the whole number of feet that are figured as being over mains, don't make any difference what kind of pavement.

A. On page 68, section 87: Cost of lifting pavements on street gas mains the whole length of pavements claimed to be over street gas mains from the records of the company is 443,577 lineal feet.

The MASTER: That is what I wanted. Referring to the inventory, is that the number of feet you figured?

A. That is the number of feet I figured for lifting pavements; and then I had figured the cost of making pavements by the square yard

The MASTER: How much did you put that at?

A. On page 66 I gave each kind of pavement, the number of square yards of each kind of pavement, the price per square yard and the sum total of the various kinds of pavement, amounting to 112,045 square yards, $204,994. or about $205,000. in round figures.

2539 The MASTER: This $204,994. and $28,242. includes the cost of lifting the pavements and replacing them and laying the mains for the entire 443,577 feet?

A. It does.

The MASTER: Page 66 gives the items and amount you figured on the different kind of pavement?

A. Yes, sir.

The MASTER: How many lineal feet will make a square yard?

A. I can give you an average by taking 112,045 square yards and dividing it by the total length in feet, which will give you the fraction of the yard to each foot.

The MASTER: What is the width they have to replace pavements?

A. Well, about three feet, I should say; I have it liberally worked out in the blue print exhibit.

The MASTER: Three feet wide and three feet long would constitute a square yard?

A. Yes.

The MASTER: Every three feet there will be a square yard of pavement to lift and replace?

A. That is with the larger size mains.

The MASTER: The average will be about two and a half?

A. The smallest ditch to work in is about 18 inches. About as little pavement as you can cut is about two feet, and if you don't look out and give the men their way, they will have two feet and a half.

Mr. GUERNSEY:

Q. Will you turn to page 83 of the inventory and tell me what the reasonable value of the one vapor extractor as there specified is in place?

A. I lumped that whole apparatus at $60,000.

Q. I know you lumped it. Do you know what the reason-
2540 able value of one vapor extractor such as is described here is in place?

A. No; I didn't even know you had a vapor extractor there when I got to that.

Q. You didn't pay any attention to details of that kind?

A. I happen to have in my possession a contract for almost exactly the same outfit you have here at $45,000 and looking over the contract and finding it was equivalent capacity, nearly, I made such additions as I thought necessary and let it go at that.

Q. Where was that apparatus covered by that contract to be erected?

A. It was erected in Cleveland.

Q. When?

A. A few years ago.

Q. How long ago?

A. I don't recall; not more than seven or eight years at the outside.

Q. Look at the contract and give us the date?

A. I haven't it with me.

Q. What was the size of the water gas sets?

A. Three 8½-feet water gas generators.

Q. What did the contract specify to accompany them in the way of accessories?

A. Everything necessary excepting the buildings.

Q. Did it cover foundations?

A. Oh, foundations, no it didn't. I have added those separately for the apparatus in this case.

Q. That contract is the knowledge you have which is the basis of your estimate on what apparatus is covered by page 83 of the inventory?

A. It is authentic knowledge, second only of course to your books, which of course is the best evidence every time.

Q. I will reiterate as frequently as you do—the fact is
2541 what we desire to learn is not what the books show, but what you know; now to go back to the question, is that contract or copy of that Cleveland contract the only information you had as to the basis of your estimate of the apparatus described on page 83 of the inventory?

A. It was the only information I used.

Q. What other information did you have if any, that you could have used?

A. I can't answer that question; it is too broad.

Q. Did you ever buy a water gas set?

A. I think I told you yesterday that I settled for a little six foot set; I didn't buy it.

Q. Aside from that little set in Fostoria——

A. We went over it yesterday.

Q. All right. Will you produce this Cleveland contract for us this afternoon?

A. I think I have it; it is $45,000. I can tell you what it is.

Q. I want to know whether you will produce it here for us this afternoon?

A. I will if I have it complete. I have certainly a memorandum. If I have it complete I will be glad to produce it if the Master cares to see it.

Q. If you haven't it, will you send for it so that we may see it so that we may have your basis for your estimate to use in our cross examination?

A. I will look it up and bring it along.

Q. Who gave you that copy of the contract?

A. I shall have to decline to answer. I have it.

Q. Of course I don't want to ask you, if it will embarrass you at all to answer it, I won't press the question. It would embarrass you to answer, and I presume that is the reason for your re-
2542 fusal?

A. I shall have to decline to answer.

Q. Or is your reason purely because you are arbitrary?

Objected to on part of defendants as being immaterial.

The MASTER: I don't know that it is material.

Q. Now do you know the present value of any single item of apparatus mentioned on page 83 of the inventory?

A. I didn't figure out any of them, having the sum total near enough for the purpose.

Q. I don't think you understood the question?

(Question read.)

A. I make the same answer.

Q. Do you know the value of any single item of apparatus?

A. I did not estimate, consequently can not know.

Q. Turn to page 111 of the inventory.

A. Yes.

Q. Do you know the present value f. o. b. cars at the place where it is manufactured either of the pumps mentioned there, Benson or Warren?

A. No, I looked them over and calculated they were worth a couple hundred dollars a piece and let it go at that.

Q. Then you don't know the value of either of them at the place of manufacture f. o. b. cars?

A. I haven't the price list.

Q. Can you answer whether you know it?

A. I do know. I say about $200 the outside limit.

Q. How much variation is there in the size or capacity of these pumps?

A. The pumps you will notice in duplicate, 6 by 7 by 10, large size; then they go on down 4½ by 3½ by 6. They seem to be of about those two sizes.

2543 Q. What would be the minimum price f. o. b. cars at the place where it is manufactured of any pump mentioned on this page just referred to?

A. I thought as I look- in the door I thought some about $70 and others went up considerable higher.

Q. Do you know what the price of either of those pumps is f. o. b. cars at place of manufacture?

A. No, I didn't take the trouble to write for a price list; I presume you did.

The MASTER: I think that is a complete answer to that question.

Q. Do you know what it would cost to install either of those pumps?

A. Do you mean the foundation?

Q. I'll change the question. The total cost that you would have added to the price f. o. b. cars where it is manufactured, to get the pump in place in the works, ready for use, without any overhead charges in it?

A. I took it for granted looking the matter over, a matter of general judgment entirely, about $200 as about what these pumps would cost installed, foundations and piped up. I think I was right about the matter. I still think I am perfectly right about the matter. I know it is considerably over-estimated in favor of your company.

Q. All of your estimates have been made over-estimates?

A. If I have made any serious variation amounting to anything it has always been in favor of the company, you will find.

(Question repeated.)

(Answer repeated.)

(Question repeated.)

A. First of all, I don't know freight rates on pumps. I judge that the smaller pumps would be built at about $70 and $75
2544 net. The larger pumps about $200 to $250 net. That the average would fall somewhat below about $160, and that about $40 each on an average would cover the amount necessary to get them ready to go into action; that was all that I did.

Q. Can you tell me as to either of the pumps which we have been discussing what the additional cost would be taking the pump f. o. b. cars at the place where manufactured, and incurred thereafter until the pump is installed in the works without overhead charges?

A. I have already stated that as nearly as I can. I did not send for a price list.

Mr. GUERNSEY: It may be conceded that the witness did not send for a price list.

The MASTER: I think he stated everything necessary.

Q. Now, turn to section 44 of your report and take the relief holder at page 36?

A. Yes, I have it.

Q. Now that holder you estimated at so much per thousand cubic feet of gas?

A. $175. per thousand cubic feet of gas contents.

Q. Now how do you get at a figure like that $175.

A. Per thousand cubic feet gas contents—because in the case of the inventory in New York City there was a score or more of these old-fashioned gas holders with practically tanks just like it and about $175. per thousand cubic feet contents appeared to me to be a very liberal estimate of the cost of the construction of such a holder at the time when it was constructed.

Q. Now, boiling that down, you took it from a cost you put on the New York holders?

A. Yes.

Q. Did the Master in New York accept your valuation?

A. He did not.

2545 Q. Did the court accept your valuation?

Objected to as not the best evidence and immaterial.

The MASTER: I don't think so myself.

A. Do you refer to the Supreme Court of the United States?

Q. No, to the lower court.

Objected to as immaterial and not the best evidence.

A. It would be difficult to answer that question.

The MASTER: What has that to do with this case?

Mr. GUERNSEY: The only materiality I claim for it, the witness has testified he was accepting and using here valuations that had been to such an extent discredited in New York that they were not accepted by the Master or Court.

Q. Now, then, how did you get at the $175 in New York?

A. Because I and my assistants had to compute a very large number of small gas holders of the general appearance and size of the old relief gas holder you have here. As soon as I looked at it I recognized an ancient acquaintance and put it down $175 per thousand cubic feet.

Q. Have you any idea what the question was?

A. Yes; how did you get at it.

Q. Did you get at it in New York by coming out here and recognizing this holder?

A. I supposed you referred to the value per thousand cubic feet capacity.

Q. How did you compute in New York this value of $175 per thousand cibic feet capacity, what basis have you for that?

A. Please read my previous answer.

(Previous answer read) to which the witness added: which is the price I had found to be a good average in New York City.

Complainant moves to strike the answer as not responsive and asks that the question be reread.

2546 The MASTER: I think that is. He said in his judgment that was a pretty fair average.

Mr. GUERNSEY: The question is how he got at this computation in New York.

The MASTER: I don't know whether he explained it fully or not; if that is what he intended for it.

Mr. GUERNSEY: If that is the way the witness wishes to be understood; I didn't so understand it. I want to ask one or two other questions.

Q. When were those holders of this size in New York built?

A. I can't answer that question, but I can say that they are old holders, of course.

Q. Naturally.

A. Yes.

Q. And a holder of this size would naturally be older in New York than in Des Moines because New York outgrew this holder much sooner?

A. I beg your pardon—New York still has horse cars and small gas holders.

Q. Didn't New York generally outgrow the holders of this size sooner than Des Moines did?

A. No; it has got holders smaller than this and in use. So it has not outgrown them.

Q. What size holders are they building in New York now?

A. I think about five million cubic feet capacity, the smallest.

Q. What is the largest?

A. Fifteen million cubic feet.

Q. What are they building?

A. Fifteen million cubic feet.

Q. When, so far as you know, was the last holder built in New York with a capacity of about 175 thousand cubic feet?

2547 A. I should judge about the same time as this, 25 or 30 years ago, as the holder here I mean, about the same time.

Q. They were built of that size for use in New York at that time?

A. Yes.

Q. Now, then, did you ascertain in order to make the New York figures, what holders of this size were costing at the time you made your figures in New York?

A. I had some of the figures of Tom Rowland who was a big gas contractor in New York City. I had the figures of others as to the matter of cost, the results of some investigations of books, and for the time and when this type of holder was being built I carried in my memory as being just about as near right as you can get it, did actually cost then $175 per thousand cubic feet.

Q. Then as nearly as you could ascertain in New York the holders of this class cost when they were built in New York 25 or 30 years ago, $175 per thousand cubic feet?

A. Yes, meaning by that holders with brick tanks anchor columns and usually with one lift and sometimes with two lifts, but not over 200,000 cubic feet capacity.

Q. You took the cost of these holders in New York 25 or 30 years ago as your value on this holder in Des Moines as of January 1st, 1911, or November 31, 1910?

A. I did, it being the best I could do, without access to the books; but it turns out on comparison with the books, that the estimate made at that time subsequently proved very close as to the structural cost.

Q. Have you compared this with the books?
A. Personally no.

Complainant moves the witness' statement as to comparison as being incompetent, hearsay and secondary.

2548 The MASTER: So far as that question is concerned, I do not understand that he any more than meant to say in the absence of the books.

(Last answer read, to which the witness added): In other words, the accountants for the City were overhauling the books——

The MASTER: The books are the best evidence.

Q. Do you mean the accountants for the city of New York?
A. For the city of Des Moines were overhauling the books.

The MASTER: Do I understand you to say you computed this rate of $175. per thousand cubic feet of gas which they would hold?
A. Yes, capacity of gas.

The MASTER: Did you compute the larger holder at that rate?
A. No, the large holder I computed at about 100. per thousand cubic feet capacity, the million cubic feet holder. The smaller your holder gets the larger the cost per thousand cubic feet capacity.

Q. Did you ever buy one of those holders, or has one been bought under your supervision so that you know the actual price from your own knowledge, paid for one at any time?
A. Let us see—I forget the size of the holder at Fostoria. The holders at the Laclede Gas Works were quite good size for that day, but I forget their capacity.
Q. You mean the St. Louis Laclede Gas Works?
A. Yes. And the holder at Durham, North Carolina, was quite a small one and quite costly. My figures are placed on the New York results in this case, on numerous computations.

The MASTER: I notice you computed the 300 thousand cubic feet holder only at $150.
A. The 300 thousand is comparatively old-fashioned; they were expensive things in those days; they are getting cheaper now.

2549 Mr. BYERS: I would like to have brought down at the convening of court this afternoon the two record books containing the records of the meeting of the directors and stockholders of the Capital City Gas Light Company and the Des Moines Gas Company which we had here the other day.

At this time an adjournment was taken until 1:30 P. M.

2550 1:30 P. M., FRIDAY, *August* 18, 1911.

WILLIAM D. MARKS continued on cross-examination by N. T. Guernsey, testified as follows:

Q. Referring to this holder in this holder the lift is made of what, steel?
A. Probably not. Probably of wrought iron. It is 34 years old.
Q. And the tank is made of brick?
A. Yes, sir.

Q. Is that an underground tank or not?
A. Yes, most of it. I noticed one thing the rim stuck up a little higher than usual above the ground.
Q. You have depreciated it here seventy per cent haven't you?
A. Yes, sir.
Q. So far as the physical condition of the holder itself is concerned the holder is all right isn't it?
A. No.
Q. What is wrong about it?
A. It is 28 years old and it *it* is my opinion that it will not be safe after it reaches forty years of age.

Mr. GUERNSEY: I move to strike the latter part of the answer out as not responsive.

Q. Now what is there in the present physical condition of this holder tha- is not good?
A. Do you mean I should specify flaws and defects *Q*erceived in it in particular?
A. I want to know whether as far as physical structure is concerned it is in good condition, if not what is wrong with it.
A. It is another case of the old man, it is doing its work
2551 well enoug- but it won't last much longer.
Q. Now you think that the wrought iron is about done?
A. It will be done in about 40 years.
Q. You don't mean that exactly do you?
A. Forty years after the time it was put in.
Q. How many years from the present time?
A. Twelve years more I think.
Q. Are there evidences that you have been able to perceive of deterioration in this wrought iron?
A. It is covered with tar partly used I think as paint and partly brought up in going up and down. There is another conviction that makes me more confident as to 40 years limiting its life and that is the fact that where you use it as a relief holder you are continually running it up and down. It is not like a storage holder which in a quiet way goes up and then goes down slowly but is a holder which goes up and down a good many feet a good many times in a day.
Q. Now going back t- the question again what if any evidences of deterioration in the wrought iron did you observe?
A. Nothing exceot the general appearance that I spoke to you of.
Q. You mean it was painted and had tar on it?
A. Didn't look clean and fresh and in good shape.
Q. Now what was there aside from the paint and tar that indicated depreciation?
A. I had ni opportunity to do anything more than form a general opinion in regard to it.
Q. That means I suppose you did not observe anything that did indicate deteri*roat*tion don't it?
A. If I had not known its age, being perfectly frank with you about the matter I would not have looked after it as sharply as
2552 I did, and I would not have depreciated—I may say if you

wish me to put it another way that I depreciated it on its age rather than on clos- inspection which I might make.

Q. How much money will it cost to replace this holder itself?

A. You mean just the iron tank.

Q. Yes. The brick work has not depreciated very seriously has it nor the excavation nor foundation?

A. I should think it would cost about half as much as the structural cost, about fifteen or sixteen thousand dollars to put a new tank in, but I don't think any engineer would ever be talked into putting a new holder in the tank.

Mr. GUERNSEY: I move to strike out what he thinks about what an engineer would do as not responsive.

Q. Getting at half, you mean half of what, half of thirty thousand?

A. Half of thirty thousand, yes.

Q. How much does that lift weigh?

A. I don't know, because I don't know the amount of water it throws as they call it.

Q. What is the size of it?

A. Of the holder?

Q. Yes? I don't mean in cubic feet, but what is the diameter of it and height of it.

A. I think it is on the blue print.

Q. Well pass that for the present. I see I have here that this throws five inches. Now can you tell us about what the weight would be?

A. That was not furnished to me at the time.

Q. No, I have furnished it now.

A. Are there counter weights on it.

Q. I think not.

A. The weight of the holder, that is the weight of the iron
2553 in the holder is measured by the depth of water or weight of the depth of water which it displaces you know and it would be the weight of the depth of water—if it measure five inches, about five inches deep a disc is about the diameter of the tank I presume knowing what the holder is at the bottom, whatever it might be.

Q. Just figure the weight for us there.

A. The weight of the water?

Q. Weight of the holder?

A. You say no counter weights on it.

Q. No counter weights and throws five inches.

A. Displaces five inches you say.

Q. Yes.

A. Will you give me the diameter. In what position does it throw five inches when it is full up at the top?

Q. Yes. 80 feet is the diameter.

A. The area of a circle is equal to pi into the square of the radius and the radius is 40 feet and the square of that is 1,600 feet and pi is taken in this case only roughly about 22 sevenths so I divide by seven and multopky by 22 and that gives me 5,060

and you tell me that the thickness of the displaced water is 5/12 of a foot, about a half foot, but call it 5/12 and that if my figures are correct gives me about 2,110 cubic feet of water displaced and fresh *a*ater weighs about 62 and a half pounds to the cubic foot and multip*k*ying about 62 and a half pounds to the c*i*bic foot you get 131,875 pounds, that is if my figures are correct, they are made hastily.

Q. So that you figure this wrought iron costs something over ten cents if you make it $15,000.

A. No, I beg your pardon I simply; use them accepting the statement made to me with regard to this holder and I have told
2554 you if these statements are correct that this disc of water will roughly weigh 131,875 pounds.

Q. Well is that the way you ascertain the weight of the lift?

A. If correct that would probably be near the weight of the lift, as it is I tell you it is rough rapid calculation.

Q. I don't mean the accuracy of the figures, I think they are approximately correct, I was simply talking of the method?

A. The method is a recognized method of obtaining weight, it is the method of specific gravity displacement of water.

Q. You said that lift would cost about half of the 30,000 dollars in your judgment?

A. In round figures, yes.

Q. So that if this estimate as to the throw there is correct you have estimated that wrought iron something over ten cents a pound.

A. Ten cents a pound in the old days when it was built.

Q. Is that your notion as to a fair price for wro-ght iron in place?

A. It is not simply fair, used for different wrought iron work in the old days when it was built.

Q. Now then how much will the lift of the million foot holder weigh?

A. I don't know.

Q. How much would that holder be worth at ten cents a pound on the lift?

A. I have not figured that way.

Q. Can you figure it?

A. I can figure the weight of water for you if you give it to me, but I decline to go any further without careful consideration and thought to go further than to act as your computer.

Q. How much excavati-n does this relief holder require?

A. I didn't figure it.

Q. How deep is the excavation?

A. I didn't figure it.

2555 Q. Well don't you know anything about it?

A. Yes, I know the average value about 175 dollars per thousand cubic feet.

Q. You mean excavation?

A. No, the holder.

Q. That was what we were talking about, excavation. Don't you know anything about the depth of the *depth of the* excavation there?

A. I didn't figure it, didn't examine it.

Q. Do you know whether 30 feet?

A. I didn't examine it.
Q. Can you tell us whether 40 feet?

Mr. Byers: I submit when the witness says he has not examined it, what is the use asking further?

Q. This is a two lift holder or one lift holder?
A. Two lift holder.
Q. What are the heights of the lifts?
A. I didn't examine them.
Q. Have you any opinion on that *w*uestion, can you tell us about what the — would be?
A. I tell you I confined myself entirely to the cibic contents and let it go at that.
Q. Your general information is not such you could give us approximately what the height of the two lifts would be?
A. It is not.
Q. Now what would the foundation cost, did you estimate that at all?
A. I meant what I said, I toold you I took it as a whole.
Q. To go back if at the end of a dozen years or at the end of 20 years it should develop that this lift was no longer fit for use another one could be put in its place couldn't it?
A. Yes, sir.

Q. And that would not have to be put up at the cost of
2556 wrought iron thirty years ago?
A. No.

Q. And then whatever there is in this structure aside from the lift would be available for use after the time that this lift becomes unusable if that should happen in the near future?
A. Well do you mean that in a technical engineering sense or do you mean it just as a bald statement of a layman's ideas?
Q. Well if I knew what you meant I would tell you?
A. For a bald statement I will answer you yes if you will make a bald statement of a layman's idea for instance not an educated man not a gas man or some of these alleged engineers that you have around the country.
Q. Now then I wish you would be a little more specific. Speaking for yourself and not for the alleged engineers in your opinion would this structure, aside from the lift be useful if it became necessary to renew this lift within five or ten years?
A. You mean would I renwew it and repair the holder within five or ten years if it gave out?
Q. No. I asked you whether this would be useful what remained after the lift was gone if the lift should go within five or ten years?
A. Yes, as a car well it would be quite useful.
Q. You think it would be worth while to repair a holder assuming that it would not cost $15,000 but cost about six or seven?
A. That is a knotty question in one—you see I give the United Gas Improvement Company credit for doing business in a large way. Unless forced by necessity I don't think a concern would replace that holder after it once gave out. They are so much cheaper and better to build larger holders.

Q. This is used for what purpose? As a relief holder?
A. As a relief holder.
Q. And up to what capacity of a plant, what maximum
2557 day would it be adequate for that purpose?
A. That is very difficult to say, but it is none too big for what you are doing today.
Q. If the maximum day were doubled it would be adequate for relief holder purposes wouldn't it?
A. Have you watched it? I don't think if it was doubled it would be adequate.
Q. What determines whether or not a relief holder is of adequate capacity?
A. The amount of movement, the rough usage that it gets from being driven up and down as for instance the one there is continually being driven up and down now.
Q. Now can you imagine any relief holder that will not be driven up and down whatever its capacity?
A. To the extent that that is being driven up and down it seems to me it ought not to be used although every relief holder has to go up and down.
Q. A relief holder goes up when you're making gas?
A. Yes, sir.
Q. It goes down as soon as you stop?
A. Yes, sir.
Q. Goes up when you begin again?
A. Yes, sir.
Q. At what intervals do they make gas and stop?
A. I didn't time them.
Q. No, but you know from general knowledge don't you?
A. I should say if they are running right along that holder would move every fifteen minutes on an average the day through.
Q. That would be true whatever the size of the holder.
A. Yes, but not to the same extent.
2558 Q. If it were larger it would not move quite so far?
A. That is it.
Q. If smaller, it would move a little farther?
A. That is it.
Q. A holder is built to move up and down isn't it?
A. Slowly, yes.
Q. Will you say the holder will not be adequate as a relief holder up to a maximum day of five million cubic feet?
A. In my opinion it would be too small although it could be used and probably would be used by a concern a little short of funds.
Q. You- heavy depreciation here is predicated not on physical deterioration, but upon your theory that a larger relief holder would not move so far each time?
A. Not at all. It is predicated on such general information as I was able to gain as to the point at which a holder one of the old fashioned kind would become unsafe, not even broken down but unsafe, regarded as unsafe by gas engineers and that was forty years.

Q. Do you know of any holder that has ever been abandoned because it was unsafe?

A. There is a very large fine one in the old style in Cleveland that has been abandoned for two or three years now simply because re-g-ded unsafe.

Q. How large a holder is it. Give us approximately, I don't care for it exactly.

A. I find upon looking over my list of the People's Gas Light Company in Cleveland that I put in only the holders which were in use leaving out in valuation any statement as to the contents of an abandoned holder so that I cannot give it to you. I can't recall it without going further back into my detailed papers from which the report was prepared.

Q. Can give us nothing whatever as to the size of it?

2559 A. I should think just recalling it that it was about a couple of times anyhow as large as the relief holder which you have here.

Q. How long had it been built before it was abandoned?

A. About forty years.

Q. And what was the reason for its abandonment. What part of it developed an unsafe condition or was it simply like the one horse shay, general?

A. No, when I inquired for the reason for the abandonment the reply of the engineer in charge was that it was unsafe.

Q. Can you give me his name?

A. I can give you his first name, everybody called him Charley, he was a son of the principal stockholder, I think it was Beardsley. If not Mr. Beardsley can tell you who the man is.

Q. Was it abandoned about the time they began using natural gas in Cleveland?

A. I don't know. I simply asked why it was abandoned and the reply was that it was unsafe and they had abandoned it. I went no further.

Q. Do you know of any instance where a holder has been ab*d*n-doned on account of the deterioration in the lefts?

A. Unless you shoose to take this case and the case of a little gas holder, Inwood, New York City, Manhattan. I never knew what was the matter with that. It was abandoned too.

Q. Those are the only two cases you know of of the abandonment of holders?

A. The only cases I recall at present.

Q. And on the strength of that you depreciate us here seventy per cent?

A. Oh no. On the general information which I had from men whose opinion I respected as gas men that forty years was a good life for a holder.

2560 Q. Now the next holder here is the three hundred thousand foot holder. What difference is there in the construction of this holder and the other one we have just referred to?

A. It is of the same general type with a tank under ground.

Q. Wrought iron lifts?

A. I don't know whether they are wrought iron or steel lifts in that case.

Q. And you put that at $150 a thousand?

A. Yes, by way of an outside value expecting to give you ever-advantage of price I did so.

Q. Didn't you do it because you thought it was right?

A. Because I thought it was right to be sure not to do your company any injustice and if I made any error to make it in your favor straight through.

Q. What I want to get at is whether you have taken your estimates on some broad philanthropic charitable basis or based on what you thought was right?

A. I was trying to get at the truth and give you something to come and go on.

Q. What makes the difference of $25.00 a thousand feet between this holder and the one preceding it No. 18?

A. The skin of a holder and the skin of the tank do not increase with its cubic contents.

Q. In other words the larger the holder the less per thousand.

A. Yes, sir.

Q. Did you find in this holder anything you could see indicative of deterioration or decay?

A. Nothing except the ordinary decrepitude that comes with age and I gave it a life of forty years and an annual depreciation of two and one half per cent.

2561 Q. Now the million one hundred and thirty two thousand foot holder you put in at $100 per thousand?

Q. Do you think we would be warranting in figuring this there at ten cents plus a pound if we were trying to itemize the various factors that go into the cost of it?

A. It is a question that I have not take- up. I should have to to have some time to form an opinion as to the price that ought to be put on that work——

Q. How did you get at your value that you put on this holder No. 19 did you take the New York prices for that and simply follow them?

A. Do you mean the 300,000?

Q. Yes.

A. Yes, I took the averages of the old holders of New York. You see it is an old style holder.

Q. How did you get at your $100 on No. 20, the same way?

A. I had seen a number of estimates and a number of bids on the large new type or steel tank holder of such forms and those would run all the way from $75 to $85 a thousand cubic feet capacity, as you get up beyond a million or more than a million running donw as the capacity went up. This holder itself, the one now here in Des Moines is not only of most modern workmanship, but in addition to that has an excellent piece of brick work enclosing it. It seems to be true in every way I assume from the way in which it stood that its foundations were excellent and I felt that you ought to have credit for what appeared to be extra pains taken and so instead of taking about $85.00 or something of that sort plus foundation I

estimated it a round hundred dollars and computed it on that basis and then added overhead charges at 12 and one half per
2562 cent making the total price or structural cost of $1,127,350.

Q. These large holders in New York you have talked about were five and ten million capacity.

A. No, I have not talked about anything but one fifteen million capacity at Astoria, I spoke of five million capacity as showing what we are getting now in New York, as a starting point.

Q. What was the capacity of these holders in New York where you got your eighty and ninety figures if I remember them correctly?

A. You mean seventy five dollars to eighty five dollars. One to two million cubic feet capacity of holders?

Q. Built by what company?

A. If I could recall it, I would, I think it is a Baltimore company and the *ie* engineer at that time was a man by the name of Myer.

Q. What gas company?

A. Built for the consolidated gas company.

Q. Within how many years.

A. Well certainly within the last eight or ten years. This holder here is more finished than most of theirs.

Q. How did you get at the structural cost of your oil tanks?

A. Will you mention the page?

Q. Page 38 of your report?

A. And the section please. There are a series of them.

Q. You used the same method for all didn't you?

A. No, I did not.

Q. Take the first one, what method did you adopt in estimating the value of oil tank 21?

A. Fixing the price of brick work at I think $18.00 and the cost of your wrought iron work at about five cents, and turning the blue prints and your inventory list over to my assistants, I requested them to give me the result of their computations
2563 which they did in this case and oil tank 21 the contract price for that in position was returned to me $4,180 and checked by figuring the structural cost about 33 cents per cubic foot.

Q. Is the wrought iron in one of these lists worth twice as much as it is in the tank?

A. I never said so.

Q. Who were the assistants that made these figures?

A. Mr. Dobson or Mr. Hasek and I think both of them, one checking the other.

Q. I don't care which one it was. Now this oil tank is steel in brick, is there anything about that structure that is not either steel, brick or cement?

A. Is it submerged top?

Q. The same tank you have been estimating.

A. Tank submerged head type. I don't know whether the head has any supports inside the tank or not or whether the head is suppo-ed to support itself.

Q. I think this is it in Exhibit 16, you can look at the plan and perhaps answer your question better than I can.

A. No. 21 capacity 100,000 gallons. It appears to be of cement and iron and brick and as computed.

Q. You think that would deteriorate 20 per cent in eight years.

A. No, I think it would be out of use in forty years though, and you have got to prepare for it.

Q. What would prevent its use in forty years?

A. If Des Moines continues growing as it is growing you will find it very much in the way won't be large enough.

Q. Need more tanks wouldn't we?

A. Yes, sir.

Q. Now take the next tank, what was your method that

2564 was taken there to get at the value?

A. All of these tanks were computed by assistants and computed in the same way, there were unit values to brick work unit value of concrete and unit value of a pound of iron.

Q. Your brick work was $18 was it not, each one of them?

A. Brick work $18, concrete $7.00 a cubic yard, back filling 15 cents, excavating 50 cents including sheathing, iron work five cents per pound.

Q. Those were the figures you gave them and they *they* made the computation?

A. They made the computations.

Q. You got these figures I think you testified as to excavation and perhaps several of the other matters from Mr. Dobson?

A. No, I would like to make that very clear. I asked Mr. Dobson, I asked Mr. Hasek, I asked Mr. King, I took occasion to ask the contractor on the bridge here, Mr. Wheeler whose name I can rarely recall, and I asked several other people who I thought kn-w about these prices making note of it every time. My active assistants in this were Mr. Dobson in particular and Mr. Hasek in general. In every case I have taken whatever was suggested to me o- brought to me, considered it looked it over, and just as your engineers or any engineers would have to do further advised myself as well as I could as to local prices by any inquiries or lists I could make and when I had gotten to what I believed to be a liberal fair valuation of any unit I fixed this and I gave it to my assistants and they did the computation. I have forgot to mention that my assistants also have an adding machine by somebody in the place which I presume ought to be mentioned.

Q. Isn't it a little curious when you work out these two

2565 tanks you find the smaller cost a little less per cubic foot than the larger ones when about 50 per cent larger?

A. Referring to what?

A. These two tanks we have been talking about.

Q. Being which ones?

Q. Tank 21 and tank 22 section 47 and section 48.

A. If you will go into details of this you will find that the emplacement and excavation for these tanks are quite costly and that

therefore the iron work in each of these tanks is relatively not a small factor, but not a great factor.

Q. About how much is the iron work in the brick tank?

A. You are referring to which one?

Q. The larger one?

A. Give me the number if you please.

Q. 21.

A. 36,800 pounds of iron at five cents, $1,840.

Q. How much was the iron in the other one?

A. What tank, what number?

Q. 22.

A. 24,700 pounds of iron at five cents, $1,235.

Q. You explained the fact that the price per cubic foot in the small tank is just under what it was in the l-rger tank by the difference in the amount of iron used in the two tanks.

A. I did not generalize, these are figures that were turned in.

Q. If that was not the reason what is the reason for it? Naturally you expect as the quantity is larger the price per cubic foot is smaller don't you?

A. I can work it out if you like.

Q. I don't want to spend much time on it. If you can't
2566 tell me without working it out we will let it go. Now I see you have got steel tar tank here in section 49 that you have depreciated 47 and a half per cent. Is that on account of any physical deterioration in the steel tank or the brick emplacement?

A. It is a question of probably life, forty years.

Q. As far as the physical condition of the tank goes it is in as good shape today as it was when built isn't it?

A. No, of course you know I *put* very little time to look over these works. I have been obliged to go over them rapidly. It looked about the worst in the lot.

Q. Now what was there about it looked badly?

A. Its general appearance.

Q. Did you get at this, that is did you have your assistants work this out as they worked out this other matter?

A. Yes, sir.

Q. And the same thing with the tar separator?

A. Yes, sir.

Q. The same thing with the oil tanks in 1907 and 1910?

A. You mean oil tanks 24 and 25?

Q. Yes.

A. Yes, sir.

Q. This plate No. 28 shows these two oil tanks 24 and 25, doesn't it?

A. Yes, sir.

Q. Now you charged us off for three years seven and a half depreciation on No. 24, don't you?

A. Yes, sir.

Q. And there is nothing to it but steel, brick and concrete is there?

A. That is it.

COURT: What is the life you give to them?
2567 A. Forty years probable useful life.
Q. What life do you give to the ordinary frame dwelling?
A. I will have to refer you to Mr. Summers.
Q. What life do you give to the ordinary brick building?
A. The ordinary brick building according to the Summers' system in bad condition has depreciated seventy five per cent at the end of 50 years. It is impossible of course to generalize because you know perfectly well that in the old country——
COURT: That would make the life of the building then depreciate seventy five per cent in fifty years, be about 62 and a half years life?
A. Something of that sort if you could live in a building when it don't exist, a building three fourths gone in fifty years.
COURT: So you explain this way it is the life of the steel tank and brick here.
A. I am speaking of the useful life not of any question of what might be or what we might possibly agree might be the utmost life.
COURT: Is there anything about the oil that would injur- them or affect the steel?
A. On the contrary it would preserve it. It is one of the best preservatives.
COURT: Anything about the exposure there to affect them there on the outside?
A. The action of the weather would rust and injure them. The collection of water possibly on the inside of the emplacement would rust and injure them particularly the bottom underneath the tank.
Q. Are the tanks painted?
A. Not the bottom underneath.
2568 Q. What do you mean by the bottom underneath, the part that is underground?
A. The part that constitutes the bottom of the tub.
Q. You mean the part that is not exposed to the weather?
A. Yes, sir.
Q. Painted before it is put in there isn't it?
A. Usually set in dry cement.
Q. Steel is supposed to last a good while in cement isn't it?
A. Yes, sir.
Q. Otherwise reinforced concrete buildings would not be much good.
A. None of them are sure about them yet. I asked that question of distinguished architects who were building them and their answer is that they will be dead before the building falls down anyhow so they are not interested.

COURT: By actual observation the life of a steel building is unknown?
A. It is unknown.
COURT: That is largely true of these steel tanks isn't it?
A. I think so.
Q. I notice here in section 55 you have lumped off the works yard apparently, is that right?
A. Using the unit values which I gave you a short time ago my

assistants have computed every detail of the yard and then put it altogether. There has been no jumping at conclusions in that.

Q. Can you tell what in the inventory is included under your heading works yard in section 55?

A. Referring to the inventory page 158 well, valve boxes, tar separators, etc., erected at various times covering a period of thirty four years.

2569 Q. You mean the items detailed in the next two pages, 159 and 160?

A. 159 and 160. You wish me to go into details?

Q. No, I don't care to. I notice something here on page 46, you say as company's attendants appeared to be directed to answer no questions merely pointed out the objects, it was impossible to learn anything regarding buried pipes from inspection. How did the silence of the company's attendants affect what you might learn by inspection?

A. Your point is well taken. That was improper use of the English language. May I add by way of explanation that as the attendants appeared prevented from saying anything I went to Mr. Haines and told Mr. Haines I should like to have somebody who would explain these matters to me and he said he would authorize me to use laborers to dig up anything I wanted to in the yard, laborers, of course being at the city's expense, but I did nor do so because of the fact that it was an interminable job and my time was limited.

Q. Mr. Haines also told you in that connection didn't he that he refrained from attempting to influence you there because he wanted your estimate to be entirely without any influence emanating from the company?

A. He may have said something of that sort, but I don't recall it.

Q. Now I want to turn to Section 75, page 53, you say that in the distribution system that is the street mains and services you have not used your 12 and a half per cent as overhead, but have added 26 and a half per cent to the cost of raw material and productive labor.

A. Yes, sir.

2570 Q. By that you mean the cost of the pipes, the fittings, and valves, the material you use for making joints, drip pots and all the other material that goes into a completed main, is that right?

A. That was the fact of the matter.

Q. That is what you mean by your raw material?

A. Yes, sir.

Q. And productive labor, what special significance do you give the word productive there?

A. Meaning by that not including all of the salaries of the officials of the company which are charged to operating expenses and the cost of gas?

Q. Simply the salaries or wages of the people who are directly and solely engaged in the work of laying the mains?

A. And their foreman.

Q. I suppose the foreman would be devoting his entire time to it too.

A. Yes, he would stay right on the ditch.

Q. Now you took here as I understand it the figures that were shown on the blue print, the Buffalo blue print that you produced on your direct examination?

A. Yes, approximately.

Q. Well what does approximately mean?

A. As near as I could get at it.

Q. Couldn't you get at it exactly, for instance turning over to page 57 of your report, you have cast iron pipe three inches, I suppose that means three inches and under?

A. No, just three inch size that is all.

Q. There was nothing under that then?

A. Nothing was given me as being under that.

Q. The reason I asked that was that my recollection is that in the inventory it is inventoried as three inches or two and a half inches or under, something like that.

2571 A. If you look again you will see at the time wrought iron two and one half inches.

Q. I see, depreciation 33 per cent.

A. Yes, sir.

Q. Going back, you took up three inch pipe, you had the number of feet and you took a specific number of centes per foot?

A. Yes, 36 cents.

Q. And that is what your Buffalo plat shows?

A. Yes, sir.

Q. And you did that in the same way all the way down didn't you?

A. Yes, sir.

COURT: That included pipe and laying both or just pipe?

A. These figures include all and every expense of laying pipe digging ditch, buying iron, making joints, filling in and everything but putting a pavement over the pipes afterwards, 36 cents per foot for three inch pipe.

Q. And it not only includes that every expense, but it is 126 and a half per cent of that every expense as you compute it. In other words this 36 cents is 26 and a half per cent added to the original cost figures as you made them.

A. This 36 cents per foot is what in Buffalo three inch cast iron pipe cost taking into consideration all the records given me by the city of Buffalo worked out to be, but if you were to take the cost of the pipe and the cost of labor as you naturally estimated it without having all the troubles that arise from running into street railways, running up against sewer inlets, bad weather interrupting you, poor soil, occasional ledges of rock and things that could not be anticipated and would not be anticipated by any engineer purely as a matter of preliminary estimate, then if you sit down

2572 and figure it that way, then I would have to add 26 and a half per cent to what he got to equal what acrually happened in the city of Buffalo.

Q. You state here, and I want to get at this so there won't be any misunderstanding between us, you say on page 53 the system of over-

head charges heretofore used at 12 and a half per cent is changed to an addition of ten per cent for undistributed expense and fifteen per cent for contractor's profit making a total of 26 and a half per cent added to the cost of raw material and productive labor.

A. Yes, sir.

Q. Now that 36 cents that we referred to a moment ago for three inch pipe is the cost of the raw material and productive labor plus this 26 and a half per cent is it not?

A. That is it, yes,

Q. And that 26 and a half per cent is figured on pipe and every other article of raw material that goes in as well as upon this productive labor as you defined it heretofore?

A. No, that would not be that way for this reason. If you were asked to make a preliminary estimate in a system of mains you realize at once—so many miles long and you undertake to estimate so many miles of it you realize at once you could not go into details by any possibility as to the extra expenses, you cou- simply figure the length of pipe in that system, number of feet and probable cost of the ditching for it and then getting that in straight pipe you would have to add ten per cent undistributed charges and fifteen per cent which would cover one of two things: either the contractor's profit if you had the advantage of laying a very large amount of mains at one time or the expenditure for idle men and preparation for short jobs where the company itself keeps
2573 its own men on and does its own work on the installment plan as it is required. That frequently becomes necessary to keep the men on, you do not dare part with reliable men when really they are not earning their wages or are put at something at which they are not good for much.

Q. That don't make it clear to me, what I want to get at is this. whether these figures are 26 and a half per cent more than the cost of the raw material and the productive labor or not.

A. I will try to make that clear to you if you will allow me——

Q. I don't want to know why, but can you tell me whether it is added in.

A. The 26 and a half per cent over the estimate covering cost of pipe per lineal foot for any given number of miles of feet and over cost of ditch for any given number of miles or feet of that, those figures in that scale are what -ctually happened in the city of Buffalo in the five years prceding the year 1907.

Q. Then there is in these figures no addition over the actual results of the work in the city of Buffalo?

A. As a fact, yes.

Q. Then there has been nothing added in your estimate here to the actual cost or what you estimate would be the actual cost of the material and the productive labor?

A. There has been an addition of 26 and a half per cent or we will say fifteen per cent because of the fact that the work is done interruptedly and in small installments.

Q. That was added to what?

A. Added to what it could be done for in a large way with large gangs to get results, but it is mostly extra labor.

Q. Now let's see about that. Did you make any computa-
2574 tion of what it could be done for with large gangs and as consecutive work.

A. That was the reason that I sought this explanation that I did make these computations.

Q. What did you get as your figures then for the actual cost of doing it?

A. In round figures every one of these figures represents 126 and a half per cent of any estimate I would make on straight pipe or straight ditch work.

Q. These figures represent then the actual cost in Buffalo without any overh-ad added whatever.

A. They are the actual cost in Buffalo done in small ditches without any overhead added.

Q. Now your blue print that you produced on your direct examination and which has just been marked by the reporter Exhibit No. 41 says this, "Note, figures include ten per cent undistributed expense and 15 per cent contractor's profit."

A. Yes, sir.

Q. Now do the figures shown on this blue print show actual cost of doing work in Buffalo or is this note correct, and was there added to the cost ten per cent undistributed expense and fifteen per cent contractor's profit?

A. There was added to that cost as near as we could figure it from the quantities as ten per cent undistributed charges. That made $1.10. Then in addition to that there was added to it 15 per cent of $1.10 making $1.26 and a half on the original hundred per cent. Now it was found as a result of these computations based on the exact data from the city records of Buffalo that the actual facts run from this in small quantities down to about fifteen per cent lower
2575 than that in large quantities. There was a great deal of time spent on this, a month or so I think not only myself but my assistants.

Q. Mr. Dobson and Mr. Hasek?

A. At that time I had not the pleasure of knowing either of them.

Q. I understood you to testify on your direct examination that this blue print marked Exhibit 41, was made up from the records of the city of Buffalo?

A. Yes, sir.

Q. Now do I understand you to say that it was not but that you added ten and fifteen per cent to some computations or estimates which you made at Buffalo? Which is right?

A. I will give you a concrete example of it. If I was asked to lay down a hundred miles of main of a given size or of a number of given sizes I could easily figure the ditch work on it and the straight cost of the iron pipe and the straight cost of lead and open and caul-ing and of handling it. I would find out though that after figuring that that I would have to add ten per cent if I had a hundred mile job to get the cost as a contractor after I had done the best

I could, mind you I have not talked about bends, valves or anything of that sort, I was just estimating miles of pipe. If I add 15 per cent to that contractor's profit I would then get these figures shown in this blue print and I would as a contractor have a hundred miles and expect to make fifteen. But I find and you will find on examining my report elsewhere that owing to the uninterrupted way of doing work on the installment that this cost the gas company in Buffalo, the gas company in Cleveland and Mr. William Henry White for Des Moines, they have all wiped out that profit of fifteen per cent by reason of the conditions under which they are
2576 obliged to do their work with small gangs and in an interrupted way. Is that clear?

Q. No. Now let's back to earth.

Mr. BYERS: I submit that was rather an unkind remark.

Mr. GUERNSEY: If unkind and hurt the witness' feelings I will withdraw it.

Q. Now you said didn't you, this is at page 2306 of the record in this case, "Well in Buffalo I had occasion to originate a graphic system of recording cost in a gravelly or alluvial soil. For this purpose I made a very large number of computations based on the actual records of the cost of laying pipe, water pipe, in the city of Buffalo, New York." Now is that much of it correct?

A. That is correct.

Q. "The whole of it after being tabulated was reduced to a graphical form for sizes of pipe running from two inches up to sixty inches in diameter." Now the whole of it, that means the computations based on the actual records of the cost of laying pipe, water pipe in the city of Buffalo does it not?

A. Yes, sir.

Q. And is this Exhibit 41 the tabulation or blue print of the tabulation showing the graphical system to which you refer?

A. Yes, sir.

Q. Now then is this blue print made up, this Exhibit 41, is that made up from figures based upon the actual cost of laying water pipe in the city of Buffalo, New York?

A. Well in laying water pipe in Buffalo, New York——

Q. Can you answer that without explaining?

A. No, you can't answer a technical question yes or no. They got their pipe——

Q. (Question read.)

2577 A. In the case of water mains in the city of Buffalo, New York, they got their cast iron pipe under large contracts and they also contracted——

COURT: You need not explain but just the fact is this made up from the record?

A. It is made up from the records of the Buffalo City contracts for iron pipe, contracts for ditching in the streets, contracts for laying water mains and the cast iron pipe for gas is of wider weight and shown than cast iron pipe for water. Cast iron pipe for gas is usually laid in small installments, they are compelled to in gas and

only run a short distance out one street and then out another. In the case of water at least the case that we had under consideration there the work was done in much larger quantities and for longer distances and as a consequence I found that what I would figure as the cost of raw material and productive labor for gas taken a large way was less than the actual facts with regard to the smaller way of doing work used by the gas company. The consequence was that to my estimate which I would have made of the cost of laying gas mains on the basis of large and continuous work I was obliged to add not only the ten per cent that would come in in either case in undistributed charges, but also fifteen per cent in contractor's profit in difference in the way and for loss due to laying the main in small quantities by the company.

COURT: Then it is not made up of water mains?

A. There is no water main in that but all work of ditching everything done for water mains and laying cast iron gas pipes substituted.

Q. Now to get back to the question can you tell me directly and without qualifying the statement whether this Exhibit 41
2578 shows the actual cost to the city of Buffalo for the laying of water mains?

A. For the laying of gas mains to the city of Buffalo it shows the actual cost.

Q. Do you mean by that, that is predicated upon figures derived from the books of the gas company or from any other records of the gas company of the city of Buffalo?

A. Nothing except the price paid for cast iron gas pipe by the gas company of the city of Buffalo.

Q. Were those prices obtained by you from the books of the gas company in Buffalo?

A. They were not. They were obtained from the sworn return of the gas engineer of the gas company antedating the era of President Humphreys.

Q. I am not as familiar with these historical epochs as you are, about how many years ago was this?

A. This was 1907 when this happened.

Q. I know, but these prices I am talking about.

A. They were somewhere between 1900 and 1907?

Q. Are you sure that the prices contained on Exhibit 41 for cast iron pipe were obtained by you from a sworn report made by the Buffalo gas company or some officer of that company?

A. By an officer of that company, yes.

Q. Absolutely sure of that?

A. Yes, and not only that, but they are higher than the figures given by this gas engineer.

Q. What do you mean by that, did you take them from the report, the figures shown in the report or not?

A. I took this man's—the statement that was handed to me of this man's oath, this man engineer in charge of the Buffalo gas
2579 Light Company or something of that sort. He was the man who had been busy building it up, who had been with it for

years. He had disappeared then and president Humphreys was in his place. I took his figures and worked from them.

Q. Then these are not the figures he swore to as the actual cost of gas pipe to the Buffalo Gas Co.?

A. They are somewhat larger and higher.

Q. They are not his figures, however?

A. Oh no, they are my own figures selected after a great deal of study and care, a great deal of comparison, doing everything I knew how to get right and put down by myself.

Q. Now as a matter of fact in Buffalo you testified these prices were given you by R. D. Wood & Company didn't you?

A. You mean for cast iron pipe?

Q. Yes.

A. I don't recall it may be, but I don't think I did. Thank you very much for reminding me, I did have them verified by R. D. Wood & Company I know and I think some others. I know I exhausted every means at my po-er to get right.

Q. I call your attention to this which appears page 533 in the record of the Buffalo case, part of your testimony: "Q. Now I would like to have you state to the commission the pipe costs on which you have based your estimates and for the different sizes. Ans. The pipe costs per shot ton of 2000 pounds delivered on cars in Buffalo have been fixed as follows: 3 inch pipe $26.80, 4 inch pipe—I beg your pardon, 3 inch pipe $30.80" will you check these as I read them and see if they agree with the prices on the blue print—"4 inch pipe $28.80, 6 inch pipe $27.80, 8 inch pipe $27.80, 10 inch pipe $27.80, 12 inch pipe $27.30; 16 inch pipe $27.30; 20 inch
2580 pipe, $26.80; 24 inch pipe $26.80; 30 inch pipe $26.80; 36 inch pipe $26.80. Q. We haven't got any such price as that? Ans. I will stop there. Q. What is this chart you have got, where did you get these figures? Ans. These are the Wood & Co. figures for 1905. Q. And you adopted them? Ans. Yes, sir. Q. Without making an investigation of the conditions here in Buffalo like these conditions stated here? Ans. I assumed them more suitable for my use than even present prices today." Is that what you testified to in Buffalo about the source of your figures on the price of cast iron pipe as given in this chart Exhibit 41?

A. Very probably that. Of course I can't recall so far back exactly what I said in this case. But I am very glad to be reminded I had so great an authority as R. D. Wood & Co. back of my work.

Q. What do you say now whether you got the figures from a sworn statement of an officer of the Buffalo Gas Co.?

A. I did also, also got figures from a good many more besides which I can't recall but perhaps you have dug it up and may be able to direct my attention to it.

Mr. BRENNAN: That record which counsel have defendant's desire to look at the testimony in the Buffalo case from which counsel for complainant has just quoted in his cross-examination and let the record show this request has been refused.

Mr. GUERNSEY: On the ground that counsel for complainant de-

sires to make further use of this book without first turning it over to the defendant.

—. Now then is what you testified in Buffalo true or did you obtain these prices from R. D. Wood & Company as 1905 prices?

A. It must have been so if I said so. That must have
2581 been the final result of all my hunting around that I settled on these and put them in.

Q. So that these figures do not represent either the cost of pipe in Buffalo or to the city of Buffalo or Buffalo Gas Company, but represent figures given you by R. D. Wood & Co.

A. As I stated the best figures and in my judgment the most accurate figures I could obtain.

Q. Now did you testify on your direct examination in this case page 2307 this way, referring to this chart, "The cost of cast iron mains was taken from the records of the purchase of the city of Buffalo for water purposes and $1.00 a ton added to the piping used for gas purposes." Did you testify to that in this case?

A. I think that was it. Of course I don't know while you read a sentence in that way how much more comes into the context, of course you can twist it all around.

COURT: If you want to look at it you may do so.

A. This is a long ways back.

Q. This is only a few days ago, I am reading the testimony given here.

Mr. BRENNAN: I think the witness is correct there, his attention is not called to the general subject, just a sentence here and there.

Q. Well I will go back and give you the discussion beginning with the beginning of the answer. "Well in Buffalo I had occasion to originate a graphical system of recording costs in a gravelly or alluvial soil. For this purpose I made a very large number of computations based on the actual records of the cost of laying pipe, water pipe in the city of Buffalo, New York. The who-e of it after being tabulated was reduced to a graphical form for sizes of pipe running
from two inches up to sixty inches in diameter. The basis
2582 for the excavation and back filling in this ditch which was used in this place, the ditch being dug under the ordinary difficulties occurring in the streets of any city such as interference of sewer inlets, or going under street railways or going under steam railways or occasional slight difficulties from water small quantities of rock and occasional small quantities of paving and crossings that come up, in other words what might be called the rough and tumble condition of the city street work as is usually the case they kept out of the way of the more expensive pavements as far as they could. Under these conditions I have the actual practical fact of the cost of excavation and back filling in these ditches of various sizes averaging about 40 cents a cubic foot. The question then came up of the cost of the cast iron mains. This was 1907. The cost of cast iron mains was taken from the records of the purchase of the city of Buffalo for water purposes and $1.00 a ton added to the piping used for gas purposes." Now is that what you testified to on your direct exam-

ination as to the source from which you got this cost of cast iron pipe?

A. You mean direct examination here?

Q. Yes.

A. Yes, and taking pains to be exactly right all of them are not mentioned there. I had the quotations for water pipe, R. D. Wood & Co. and further had every advantage in the accounts of the city of Buffalo and also the quotations for cast iron pipe through the kindness of the director of the public works there what the cast iron pipe were gotten for and in some other cases I don't recall what it was, but finally these figures were fixed by assuming that the lighter cast iron pipe for gas would run at an average of about $1.00 a
2583 ton above the heavier for water. I think that is a fact that is practically accepted all over the country.

Q. I know it is a long way from what we are talking about. Of course we know gas mains are worth more than water mains. These same things you testified here that you obtained from the record of the city of Buffalo for water purposes, then you state on your cross-examination here you obtained them from the sworn statement of the engineer of the gas company of the city of Buffalo——

A. That was equally true.

Q. You testified in Buffalo in 1907 at the time the chart was prepared you obtained of R. D. Wood there?

A. Yes, sir. I think every word of that, every statement is equally true. I have no reason to try to conceal the truth in any way.

Q. Now I want to get back to where I started before you led me off on to this digression. I want to know whether on this chart you took the actual cost of pipe as shown by the records of the city of Buffalo and showed it graphically here or not, whether they are these costs or whether they are something else.

A. They are these figures in this tabulation shown here.

Q. This is one of Mr. Bemis' exhibits in the Buffalo case or copy of it?

A. I don't think Mr. Bemis made an exhibit of this sort.

Q. Who made it?

A. I did.

Q. In the Buffalo case?

A. I don't know about that so far back, you know I have not been able to hire anybody to look the thing up.

Q. Do you know who made this paper you refer to?

2584 A. This one?

Q. The one you have in your hand just referred to in your last answer.

A. I was always under the impression I made it.

Q. Well just let me know whether you made it or you did not.

A. Why of course I made it.

Q. Did you make this up from the books of the city of Buffalo?

A. I did not.

Q. Who did?

A. This is the result of my own opinion straight through. My results from the engineer to whom you refer at the same time my

result from what I was able to learn of R. D. Wood & Company, my result from what I was able to learn from the records of the city of Buffalo, my results from such information as I could obtain elsewhere and I think there is perhaps a dozen other directions from which I sought for information in order to do the square thing by the gas company of Buffalo as near as I could.

Q. Then this statement in your direct examination is not true is it on page 2307 of the record in this case for this purpose I made a very large number of computations based on the actual record of the cost of laying pipe, water pipe in the city of Buffalo, New York, the whole of it after being tabulated was reduced to a graphical form for sizes of pipe ran-ing from two inches up to sixty inches in diameter. Is that the statement you made in your direct examination that Exhibit 41 is a tabulation of the actual results in the city of Buffalo, is that true or not?

A. It is true and accurate, what you have said is true about various ways in which I got at it.

2585 Q. That involves that tabulation your opinion as well as these actual results that your opinion happened to coincide exactly with these results?

A. Why certainly. Did you expect me to put anything down I didn't believe in?

Q. Don't ask me questions because you might be embarrassed by the answer. Now then this chart, Exhibit 41, does show the actual results of the city of Buffalo over a period of years of laying water pipe in that city.

A. It does not.

Q. Well then I will go back to my other question, is the statement shown on page 2306 of your direct examination in this case for this purpose I made a very large number of computations based on the actual records of the cost of laying pipe, water pipe in the city of Buffalo, New York, the whole of it after being tabulated was reduced to a graphical form for sizes of pipe ranging from two inches up to 60 inches in diameter, is that true?

A. Yes, that is true.

Q. Now then is it true that this Exhibit 41 does show graphically the result of the computations based on the actual records of the cost of laying pipe at Buffalo, New York?

A. It shows that and a good deal more besides as you know from what I have told you and is an expression of my final opinion.

Q. I am asking about this one thing that I want to know. Now you say here on this Exhibit 41 figures include ten per cent undistributed expenses and 15 per cent contractor's profit. Do these figures contain anything added to the actual costs as shown by the records of the city of Buffalo, this chart Exhibit 41?

2586 A. You are getting too far back, I should have to look that up before I could answer you. Good gracious you know that is three or four years ago.

—. I recognize the fact that your memory is not trustworthy, but haven't you confidence in your statement on the plat here.

A. Indeed the utmost confidence in that blue print. You can

regard it as my opinion and my final conclusion not only with regard to Buffalo, but also Cleveland and also as a liberal statement for the city of Des Moines.

Q. And recurring to my question it says here figures include ten per cent undistributed expense and fifteen per cent contractor's profit?

A. Yes, that is correct, too.

Q. Now are these items added to the actual cost of this work in the city of Buffalo as disclosed by your examination of the records of that city covering that work?

A. That is a long ways back, three or four years, I think I explained to you that if I had made an estimate for mules of mains at certain fixed costs different from the city of Buffalo that I would have had to add to it ten per cent undistributed charges and fifteen per cent of contractor's profit. That table was gotten up for the purpose of making preliminary estimates as well. It is, however, my final opinion, my verified opinion and the facts on which I wish to stand. I don't recall all that Buffalo business three or four years ago and it would take a good deal of time to read it up.

Q. Now do you know whether the statement in your report is true where you say that the report includes ten per cent and then fifteen per cent *to* addition to the original cost, I am referring to your report, Exhibit 23.

A. Do I know that is so?

2587 Q. Yes.

A. Yes, I know it is so, I stand by it.

Q. Now then do you know whether these figures shown by Exhibit 41 show the actual cost in the city of Buffalo or show these costs plus ten per cent and 15 per cent.

A. I have used all the English language I know how to use when I say to you these are the actual cost to the city of Buffalo so reported there and further state it was more than the actual cost here in the city of Des Moines.

Q. Now then I wish you would take the matter of excavation for these ditches, what does this chart show per cubic yard or what have you taken as the basis per cubic yard.

A. 40 cents for excavation and back filling on unpaved streets per cubic yard.

Q. Is that what this chart is based on?

A. That is it.

Q. Now take off 26 and a half per cent, what would that give you?

A. Why should you take off 26 and a half per cent? You mean divide by 126 and a half per cent?

Q. I don't believe you could divide 40 cents by 126 and a half per cent. Be about 30 cents a cubic yard if you take off 26 per cent.

Q. So if you have added this 26 and a half per cent your cost of excavation here is based on thirty cents and that includes back filling and all, about thirty?

A. Yes, that includes bare cost of labor, back filling, streets without pavement. It frequently runs down to 15 cents as an actual

fact, but don't hold of course that sort of work where you can get any horse work.

2588 Q. You told us on direct examination Mr. King told you and he was a contractor who had done work in all streets in the city that his excavation for telephone conduits cost 40 cents?

A. Well that was with trials and tribulations of paved streets where I am talking about unpaved streets when you talk about 40 cents with only occasional difficulties that come in.

Q. Did that include removing and replacing paving, Mr. King's 40 cents?

A. Oh where it was outside in cheap pavement yes.

Q. Mr. King told you that?

A. I asked him that, so understood it.

Q. When did this conversation occur?

A. About a week or two ago down in the doorway of the—I forget the name of the hotel here, the place you all live in.

Q. Chamberlain?

A. Chamberlain, yes.

Q. A week or two ago, what time of the day was it?

A. It was in the night.

Q. What time of evening?

A. I don't know.

Q. Did you ever have more than one conversation with him about the matter?

A. I think two, City Solicitor Brennan introduced me to Mr. King first and I think I met him afterwards.

Q. You had two conversations with him then about the cost of excavation?

A. Yes, sir.

Q. Now how deep is a telephone conduit trench?

A. I didn't ask him.

Q. Well don't you know?

2589 A. No.

Q. Don't you know that they simply put these conduits under the pavement, go down low enough to get under the pavement and stop?

A. I don't know how deep they run down I never inquired that sort of thing. I have seen a great many of them, had a lot to do with them.

Q. But you don't know how deep they would run?

A. I don't know how deep they would run, I didn't even ask how many ducts they had in the thing, I know they go down there so they dig a shallow ditch, the 40 cents would make a deeper ditch somewhat cheaper so I didn't worry about it at all. I have been at this work for years.

Q. Yes I observe in Durham, Fostoria and St. Louis.

A. In addition to that had a part in underlaying the whole of Philadelphia, the business part of the town.

Q. How many miles of conduit did you lay there in Philadelphia?

A. I have never figured it out but a great many miles.

Q. Well two or three hundred or five or six?

A. Well that would be the way you put it. I would have to look that up too.

Q. Don't remember it?

A. Oh no.

Q. You say it was as much as ten miles?

A. I would say a good many ten miles.

Q. How deep is your trench for your gas pipe?

A. It is all laid out for you on the blue print.

Q. Can't you tell us what the cover is?

A. Well now three feet eight inches deep in the case of two inch pipe, three feet nine inches deep in the case of cast iron
2590 three inch pipe, three feet ten inches deep in the case of four inch cast iron pipe, four feet deep in the case of six inch cast iron pipe and so on going deeper as the size of the pipe grows larger.

Q. Can't you tell us what the cover is, give us a general statement by how much it is covered above, the cover.

A. What do you mean by the cover?

Q. The distance from the top of the pipe to the ground?

A. Well about three feet and a half it would be about right that way.

Q. Now then it is your idea that this shallow trench could be excavated more economically than a deeper trench?

A. Oh yes.

Q. I suppose the deeper you go the less it costs?

A. Within certain limits of three or four feet you know. It is practically straight work after you get down where you can handle your shovels and spades pretty easily.

Q. Now I want to go back to this chart again, that is something I think very interesting. Are these prices of cast iron pipes shown on this chart the prices you took for Des Moines?

A. They are.

Q. And do they include the pipe delivered where?

A. In Des Moines.

Q. F. o. b. cars in Des Moines, is that right?

A. Delivered 'long-side the railway platform or whatever you chance to call it on the cars.

Q. Are you sure that you took these prices on the pipe?

A. I had this chart and this chart is the basis of them.

Q. I want to get what some of these things cover, you have here cost oer foot for tools, etc., one line here what does the and
2591 so forth mean?

A. That includes shovels and things that they take home at night and think you are not looking.

Q. Well does it include anything except tools?

A. No.

Q. Are you sure about it?

A. I don't think so, I am not certain.

Q. Can you refer to the figures there and find out whether it does or does not?

A. No, I can't go any farther than that, too far back to recall what

the rest is, it is a very small matter. Call it all tools and leave it and so forth.

Q. Now miscellaneous per foot, what does that cover?

A. It covered practical actual expenditures brought out in the investigation of the records of pipe laying of all sorts and kinds which it is better to throw in that way than to attempt to itemize it and we did so.

Q. Could not be classified?

A. They could be classified.

Q. Give us something that illustrates what it included?

A. If I remember rightly that had something to do with street permits, in part something else. There are a great many expenditures of that sort for inspectors and street permits that you may not have to expend in a place like Des Moines, but they certainly would have to expend in a larger eastern city.

Q. Now then lead, cement, etc., for joints, the next curve covers the material used in the joints.

A. Yes, sir.

Q. Cover anything else?

A. No unless it says so.

2592 Q. Well it says lead, cement, etc., for joints and what is this, and so forth?

A. When you want to make a joint you have to put in open and then you make a clay roll and bring it around the pipe and make a gate at the top to pour the lead in, these are all little things, but they take trouble and time to get.

Q. This curve covers material of that sort?

A. Of that kind, yes.

Q. The next giver per foot for special castings, that explains itself I suppose?

A. Yes, sir.

Q. The next line is cost per thousand for carting pipe?

A. Yes, that is it. You will observe that when you get to 48 inch pipe the cost per foot for cartage becomes something terrible.

Q. Well that depends on whether you are interested on- side of it or the other. The next line is cost per foot for excavating filling city proper at 40 cents per cubic yard. Now that is excavation I suppose?

A. Excavation and filling, yes.

Q. Then you have some paving costs which follow I believe?

A. Down below concrete p-ving.

Q. I don't care to go into those at present. Now do the items that I called attention to include all of the items of cost which you have taken into account in unpaved streets?

A. The cost per foor for pipe laid witho-t pavement includes the following items. Straight pipe, special castings, lead, cement and so forth for joints, carting pipe, tools, etc., miscellaneous per foot, excavation and filling in the city proper, making a total given by the curve cost per foot for pipe laid without paving. I

2593 should say in addition to that that when I mentioned carefully the city proper in this that I did not intend to include expenses pavements, but I did intend to include difficulties with

sewers, difficulties with street railways, difficulties with steam railways, difficulties with occasional crossings, difficulties with occasional macadam in a small way, just enough to keep them out of the mud, an occasional valve and all of the various practical things that it would be difficult to fo-esee in an estimate, in fact you would not foresee it in an ordinary estimate.

Q. Did the items which you have enumerated include all of the items which go to the cost of a pipe in the ground?

A. Well yes, as far as human fallibility would permit me to give it.

Q. Now then your cost of pipe here is the pipe on the cars, which item do you include cost of unloading it and storing it, your store house expenses?

A. You don't put cast iron pipe in a sto-e house, you lay it out in the yard.

Q. Now which item will include cost unloading it and piling it out in the yard?

A. In the carting, sufficient to cower it and the miscellaneous some charges to that.

Q. And which one do you include it in?

A. Well I think I would rather let it go in the miscellaneous with a little on the carting.

Q. You didn't split that up in making this chart did you and include part of it under one head and part of it under another?

A. You must remember one thing, I began my report by stating clearly no man can be absolutely accurate in his work.

2594 Q. You didn't split up this item of expense of unloading and piling up in the yard and put part of it into miscellaneous, part of it into tools and part into cartage and that sort of thing did you?

A. No, but I just left it in the miscellaneous, where it happened to occur. Didn't always occur, sometimes hauled straight to the ditch.

Q. You left it in the miscellaneous?

A. If it happened that way.

Q. When you made this chart up you took and analyzed some figures and separated them?

A. Yes, sir.

Q. So as to get these separate items of cost didn't you?

A. Yes, all of these were not important you know.

Q. Did that just happen to be sometimes one kind of an expense and sometimes be another kind of an expense?

A. In the miscellaneous.

Q. This expense occurred in unloading and piling up your pipe in the yard?

A. I should — perfectly willing to have you put it in miscellaneous and let it go at that.

Q. Now take the chart and take six inch pipe how much would the miscellaneous amount to? Can you read it from the chart or is it necessary to refer to the figures?

A. About three cents a foot miscellaneous seems to go here on six inch pipe.

Q. And that weighs how much a foot?

A. About 500 pounds a foot in this case I think. Wait a minute, maybe I have got that wrong. About 350 pounds per foot. That would be a little less than a cent for a hundree pounds.
2595 Weight per foot is 29.2, it is per length I gave that 350 pounds.

Q. Going back further in which one of these things do you put the labor of pipe laying, I don't find it anywhere in your cost of laying pipe?

A. Lead, cement labor, etc., in joints you will find that in.

Q. But I don't see any lead, cement, and labor on joints?

A. No, labor should have been put in there.

Q. You told us a few moments ago that curve simply covered material used in making joints and nothing else?

A. Just simply a misleading question on your part which I being rather tired answered without looking at very carefully.

Q. Do you mean the question which was asked you whether that curve included anything except the curve was misleading?

A. It mislead me.

Q. You are satisfied that this labor is in that curve?

A. That is where it is, yes, on your calling my attention to it.

Q. I didn't call your attention to the fact that it was in that curve, I didn't know where it was, I thought it was funny you didn't have any here. You are sure now it was in that curve and is there?

A. It is there.

Here the further hearing was adjourned until 9:30 A. M. Monday, August 21, 1911.

2596 SATURDAY, *August* 19, 1911.

At this time, 9:30 A. M. of this day, an adjournment was taken until Monday, August 21, 9:30 A. M.

Monday Forenoon Session.

AUGUST 21, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

WILLIAM D. MARKS, continuing his cross examination, examined by Mr. Guernsey, testified:

Q. Professor Marks, I find on page 2574 of your cross examination, referring to Exhibit 41, the blueprint chart, this: "Those figures represent then the actual cost in Buffalo without any overhead added whatever?" Answer: "They are actual cost in Buffalo done in small ditches without any overhead added." And then with reference to the same matter on page 2585: "Now then this chart, Exhibit 41, does show the actual results of the city of Buffalo over a period of years *on* laying water pipes in that city?" Answer: "It does not." I want to ask you again whether the figures which are shown on this Exhibit 41 of the cost of pipe in the ground are based or are the actual results in the city of Buffalo or not?

A. Results in what, gas or water pipe?

Q. Either.

A. They are intended to represent the actual results occurring in Buffalo with a ten per cent added for undistributed charges and fifteen per cent contractor's profit if the contract is made in a large way or if the work is done in an interrupted way the loss or the additional charge due to the trouble with holding labor and
2597 with starting and stopping work in small quantities.

Q. I don't think you understand my question. You do not claim that these figures shown on Exhibit 41 are made up from the actual results of laying gas pipe in Buffalo as shown by the books of the Gas Company, do you?

A. I do not.

Q. Now, then you do claim, do you not, that they are made up from the actual results of laying the water pipe in the city of Buffalo as shown by the books of the city?

A. By the accounts of the city.

Q. What is your distinction between books and accounts?

A. The city is more apt to let large contracts for water pipe than the gas company is to do large amounts of gas piping. The consequence was, as I remember, that some of the memoranda which are furnished us from the city inv*l*oved quite a considerable amount of water pipe laid for certain sums of money or certain rates. It was not always the charge for the labor of the city—independently bossed by the city. It was four or five years ago since I went into the matter and of course it is difficult to recall the exact details.

Q. But what I asked you was as to the distinction which you made between books and accounts; it all appears on the books of the city if it is the city's business?

A. I can't say; we had access to the books of the city; we had access to the accounts of the cost of laying water mains.

Q. On what did these accounts appear?

A. Sometimes on forms of contracts for a certain price, sometimes in *in* transcript, which transcript I simply accepted as being the same as the books.

Q. Well, then, who furnished you this information?

2598 A. The gentleman who was then director of public works. He was—the most that I recall about him is that he was a very obliging and very energetic gentleman—I cannot recall his name.

Q. Don't you remember that he was a man thoroughly competent and of very sound judgment?

A. I was so told.

Q. I inferred that had been omitted. In what shape did he furnish you this information?

A. I just related that to you as nearly as I can.

Q. That is, partly from contracts, partly what you call transcripts—what do you mean by that?

A. Pay rolls, cost of the amount of ditching done, localities and streets, all of the engineering memoranda that we wanted to get,

as well as the ultimate facts and figures as near as he could furnish them to us.

Q. And you yourself did not verify it with the books or records, whatever character they were, of the city of Buffalo?

A. I did not.

Q. Now do you know what period this memoranda covered?

A. A period of five years back from 1907 was my instruction to those who were looking up these matters for me.

Q. From January 1, 1907, or December 31, 1907—was the year 1907 included or not?

A. I think the year 1907 was not included, because in was during the year 1907 that this matter of gas came up.

Q. I was going to suggest, I see this was copyrighted March, 1907, so that the inference would be that the year 1907 was not included.

A. No.

Q. Now, would the contracts for laying of pipe in large
2599 quantities show the items making up the aggregate per foot; that is, would they show how much was on account of grading, how much on account of miscellaneous, how much on account of lead, cement, etc.?

A. You are going into details that I can not recollect for a period of four or five years.

Q. What I was going to get at was how you could get these items here from the contract; wouldn't it be very unusual to put these items into the contract?

A. Why, of course the men made their bids.

Q. And they based their bids on either so much a foot or mile, or something like that, wouldn't they?

A. They based their bids, if I remember rightly, in most cases on so much a foot—even that I cannot accurately remember.

Q. So assuming that this did not come from the contract, can you tell us where you did obtain those details that appear here on Exhibit 41?

A. There were also a number of memoranda of work done by the City's own employés at times.

Q. Is that where they originated?

A. In part at least. You must recollect one thing: that in each and every one of these quantities I trusted to no one else's judgment, obtaining such data as I could obtain, examining it carefully, I was the one to give the final decision; that is a matter I carry out in every appraisement I make, no matter how many assistants I have.

Q. Does this show then the results in Buffalo or does it show something else?

A. It shows the results in Buffalo with a liberal margin in favor of the company.

Q. Then it does not show the results in Buffalo, this chart, Exhibit 41?

2600 A. It does as near as one can show it. You must recollect I begin by saying in my report that anybody is insincere

who pretends any extreme accuracy on a large number of decimals for an appraisement.

Q. What I want to get at is whether this is an estimate or whether this is the result of analyzing and tabulating the figures which were shown by the actual work in Buffalo?

A. They are the result of analyzing and tabulating the figures shown by the work in Buffalo with the utmost care.

Q. Then it is based upon the actual figures in Buffalo?

A. I did not say so. I said taking those quantities, the results of that analysis, I used figures which were always outside, largely more in favor of the Gas Company, if I had any doubt in my mind in the fixing of the scale of prices for Buffalo.

Q. Then is this right; did you first analyze the Buffalo figures and ascertain the actual cost from the figures given there, assuming them to be correct, of laying water mains in the city of Buffalo for five years prior to 1907?

A. You are assuming a question of analysis of the water main business—I see what you are trying to get at.

Q. I am trying to find out how those were made up?

A. You are assuming I first calculated the water mains, and having calculated all that, then went back down the hill again and calculated it up on the gas main business. I used the water main business particularly if I remember rightly in the matter of excavation, to get that as accurately and as closely as I could. If I remember rightly I used it too in the matter of materials, getting that as accurately as I could. Now, mind you, I am talking just what a man can recall about it some four years after the thing oc-
2601 curred, please. You asked me a day or so ago about another matter, about where the calking came in; that labor that comes in the miscellaneous; I tried to think that matter up; that miscellaneous labor too was gotten from the water mains record. Then the weights of the pipes used, the gas mains were gotten from the Buffalo gas mains. I think that is about all I can tell you about it.

Q. We will go back to the question for a moment; what you call calking, I called it pipe laying; you told me then it was in the lead, cement, etc.

A. I thought it was at first; after looking it over I concluded it was in the miscellaneous.

Q. Now, to get back, did you ascertain the actual cost of the matters contained in Exhibit 41 from the records of the city of Buffalo for the five years preceding 1907, and did you then add to that ten per cent for undistributed expense and then an additional fifteen per cent, and does that give you the result shown in this exhibit 41?

A. In the case of some contracts I did so, being large and street work; you will note I put something in there, and I wonder since why I put it in; that was the contractor's profit, fifteen per cent.

The MASTER: You explained that before.

Q. Then this Exhibit 41 is not predicated upon actual results in the city of Buffalo, plus the percentages I have stated?

A. As near as I can*t* get at it, it is.

Q. Then I will put the question the other way. The results shown here on Exhibit 41 are the actual results shown for the five years in question for water mains in the city of Buffalo, plus ten and fifteen per cent to which reference has been made?

A. Not at all. I told you distinctly that I did not compute
2602 the water mains.

Q. Did you have any data from the books of the city of Buffalo as to the cost of laying gas mains?

A. No. The books of the Buffalo Gas Company were inaccessible.

Q. I asked you about the books of the city of Buffalo?

A. I don't recall they did anything but gas main laying in the city.

Q. Let me ask you this question over again. I will put it in another way. Does Exhibit 41 contain an addition of ten per cent and a further addition of fifteen per cent to the cost of labor and material, as you ascertained them in some way in Buffalo?

A. In large quantities it contains an addition of fifteen per cent contractor's profit, where large contracts are made, and I left it that way because I knew from practical experience that — it was done in short lengths, it would cost that much more.

The MASTER: Doesn't it contain ten per cent too?

A. The contingent ten per cent, but the ten per cent applies equally to the large contract and the small work on the contract, and the fifteen per cent was assumed contractor's profit, or adduced, whatever phrase we may adopt. That made a difference between large contracts' costs and small and interrupted work.

Q. Was this 26½ per cent computed on the cost of the pipe as well as upon the other things?

A. It was computed on the cost of everything.

Q. That includes the cost of the pipe?

A. The cast iron pipe you are referring to.

Q. It includes the cast iron pipe?

A. The cast iron pipe.

Q. Do those prices shown here include 26½ per cent or not?

A. You will see it is two thousand pounds laid down in Buffalo.

Q. So that those prices shown on Exhibit 41 do not in-
2603 clude that 26½ per cent?

A. That is the actual cash cost, real money paid by the Gas Company to the pipe people.

Q. And that 26½ per cent was added thereafter?

A. Thereafter.

Q. To the cost of the cast iron pipe?

A. And the ditching and all the other things that go into these unit prices.

Q. That go into these unit prices?

A. Not all of them; the straight pipe, without extras, bends and curves and all that sort of thing. I will make that a little clearer. The last time I was here I told you I took the straight pipe and of course straight ditching, and with this ten per cent and the con-

tractor's profit was supposed to cover irregularities difficulties and that sort of thing, making a total of 26½ per cent.

The MASTER: If I understand you correctly this chart shows simply the actual cost without the percentage added?

A. You mean ten and twenty-five per cent and fifteen per cent?

The MASTER: Yes.

A. That chart shows ten per cent and fifteen per cent added.

The MASTER:

Q. I had understood you both ways; I wanted to know which was correct.

A. I could explain it all to you in fifty words.

The MASTER: That is all

Q. Let us have the fifty words.

A. That blue print shows the result of the Buffalo computations, inclusive of ten per cent undistributed charges and fifteen per cent contractor's profit, on the assumption that the pipe is all laid we will say, in one large contract, we will say 180 miles of
2604 pipe a year. The man that gets that contract would make fifteen per cent on that at those prices. If, however, the company does, as it generally does, lays a little piping at the start and then runs a block in one street and stops there, and then picks up the work at the other end and runs two blocks on another street, and then sends its gang of men off somewhere else and runs three blocks, and changing back run another block, you will find that by the end of the year the men are wasting a lot of time getting ready for work and getting the stuff on the work, they waste time in between their jobs, and in addition to that the men themselves know perfectly well when the work is being rushed under a systematic drive that they are expected to do a little better than where they are allowed, as they are with the Gas Company, to go from small job to small job.

The MASTER: Have you added ten per cent on that account?

A. Ten per cent goes into the contract, for the large contract, and also goes into the small job. Fifteen per cent goes into the large contract for profit for the man who lays the pipe; fifteen per cent goes into the small jobs to cover interferences and delays and annoyances, and puttering around and doing a whole lot of little jobs instead of one big job.

Q. What I cannot understand is this, Professor, if this is made up from actual figures, it seems to me that you must either have taken those figures as they were, or taken those figures and added those percentages; can you explain this and make that clear to us as to whether it was made up from actual figures and if it is, did you take them as they were or did you add something to them?

A. I will say, in getting at the quantities in Buffalo a discrepancy
at once appeared, one no theory would have predicted, and
2605 that was the fact that the same number of small jobs giving a given length, the sum of the cost was always greater than one straight job of the same length. In other words, a contractor would lay a thousand feet of main, we will say, for in the neighbor-

hood of fifteen per cent less cost than the company's men would lay the same thousand feet in lengths of one hundred feet or two hundred feet or three hundred feet and so on. I don't know that I can possibly go any further. I have not a sufficient command of the English language if I am not clear now. I never will be able to be clear as to what I wish to convey.

Q. Can you tell us whether this is made up of actual figures or not?

A. I have told you repeatedly that it is.

Q. Did you take the actual costs in Buffalo during the period referred to, and add to that ten per cent and fifteen per cent on both labor and material and then tabulate them for the purpose of getting the result shown in this Exhibit 41?

A. I have endeavored to explain that repeatedly to you. If I have not made myself clear to you, I will simply have to say that I have no further command of the English language to make it clear.

Q. Can you answer that question by yes or no?

A. No, I can't and won't.

Q. Then you cannot say that you did take the actual results in the city of Buffalo during the period referred to and add to them this ten per cent and fifteen per cent and then tabulate it to get the results shown on this chart?

A. I have repeatedly endeavored to explain to you exactly how I did it.

Q. Would it be correct to answer the question I just asked you in the affirmative without qualification?

2606 A. In technical questions it is impossible to undertake the methods of a police court and answer yes or no; sometimes explanation is necessary, particularly if the witness is trying to make clear the truth of the matter.

Mr. GUERNSEY: I don't know whether that is intended as a criticism of the court or counsel.

The WITNESS: It is intended as a criticism of counsel.

Mr. BYERS: We all agree to that.

The MASTER: Did you get the costs from the contracts under which the mains were laid in the city of Buffalo, where there were contracts?

A. I did.

The MASTER: And then fifteen per cent would be included in that contract?

A. Yes.

The MASTER: In that case you took the contract price?

A. Yes.

The MASTER: Then when you come to the small jobs put up by the city it is?

A. Not by the city itself so much—yes it is the city itself, but I would want to say irregular jobs. You see, whenever you get at a thing practically and try to get at the honest facts about the matter, you are very apt to bump up against two things you can't reconcile and in this case, I could not reconcile after a very laborious com-

putation covering weeks of time, I could not reconcile the difference in prices for irregular and small jobs, and the large contracts. The question at once occurred, if it costs as much as this per foot to lay down certain size pipe and a contractor comes along and bids on it at the same price, where is the profit for the contractor. He
2607 is not working for his health you see; he is in business for money.

The MASTER: The fact is, you took the actual cost the city incurred in laying the pipe per foot?

A. Yes.

The MASTER: Did you add ten per cent to this?

A. In both cases, the ten per cent always came in.

The MASTER: You didn't add fifteen per cent on account of contractor's profit because that would be included in the contractor's price?

A. Yes.

The MASTER: But you found ten per cent in the small work?

A. Yes. That is exactly it; you stated it in another way, in a way I am very much obliged to you for stating it.

Q. Now taking your three inch pipe, what is your cost for tools?

A. You mean mains?

Q. You have certain unit costs for your three inch pipe which is 36 cents, I believe. How much does that include on account of your item of tools per foot?

A. I should judge about one cent.

Q. Can you give it to us accurately?

A. No, not nearer than that; I wouldn't get it nearer than that; I never pretend to decimal accuracy.

Q. Now, how much is miscellaneous, about?

A. One cent.

Q. Joints, lead, cement, etc.?

A. About one cent.

Q. And specials?

A. About one and one half cent.

Q. Carting?

A. That is about a cent.

2608 Q. Excavation and back filling?

A. That jumps up to about eleven cents.

Q. Now take four inch pipe, tools, how much?

A. About a cent.

Q. Your typewritten memorandum shows one and one half cent?

A. I don't know; I had so many books to carry, I didn't get that in.

Q. Refer to this copy, a part of the Buffalo Exhibit?

A. Yes, one and one half cents.

Q. This typewritten memorandum is more accurate than scaling the plat, isn't it?

A. Yes. If that is correctly typewritten it would save a good deal of time if you will accept it.

Q. I will accept it if you will?

A. Barring typographical errors.

Q. This is the memorandum you referred to Friday which is marked "Respondents' Exhibit G" in Buffalo?

A. That is intended to be correct; I think it is too.

Q. Referring to this typewritten memorandum, will you read the prices per ton in Buffalo of 2,000 pounds of the various sizes of pipe as I will give them, commencing with three inch cast iron?

A. $30.80.

Q. Four inch?

A. $28.80.

Q. Six inch?

A. $27.80.

Q. Eight inch?

A. $27.80.

Q. Ten inch?

A. $27.80.

Q. Twelve inch?

A. $27.30.

2609 Q. Sixteen inch?

A. $27.30.

Q. Twenty inch?

A. $26.80.

Q. Twenty-four inch?

A. $26.80.

Q. Those check with the same amounts on Exhibit 41?

A. Yes.

Q. Now the weight per length in pounds—they are the same in this Respondents' Exhibit G, typewritten memorandum, that they are in Exhibit 41?

A. Yes.

Q. The same way the weight per foot given in this typewritten memorandum checks with the weight per foot in Exhibit 41?

A. Yes.

Q. Now then taking the width of trench, that checks in Exhibit 41 with the typewritten memorandum?

A. It does check.

Q. And the depth of the trench given in Exhibit 41 also checks with the depth of the trench in this memorandum, does it not?

A. It checks.

Q. The cubic yards in trench per foot as given by Exhibit 41 also checks with the typewritten memorandum?

A. It does.

Q. Now, then, referring to the various items, will you give me the cost of the special casting as I read them, first take three inch pipe?

A. One and one half cents.

Q. Four inch?

A. Two and one half cents.

2610 Q. Six inch?

A. Three and one half cents.

Q. Eight inch?

A. Five cents.

Q. Ten inch?

A. Six and a half cents.
Q. Twelve inch?
A. Eight cents.
Q. Fourteen inch?
A. Not given.
Q. Sixteen inch?
A. Ten and one half cents.
Q. Twenty inch?
A. Twelve cents.
Q. Twenty-four inch?
A. Fifteen cents.
Q. Thirty inch?
A. Eighteen cents.
Q. Now will you give me the cost of lead and cement, etc., for three inch pipe?
A. One cent.
Q. Four inch?
A. Two cents.
Q. Six inch?
A. Three cents.
Q. Eight inch?
A. Four cents.
Q. Ten inch?
A. Five cents.
Q. Twelve inch?
2611 A. Six cents.
Q. Sixteen inch?
A. Nine cents.
Q. Twenty inch?
A. Twelve cents.
Q. Twenty-four inch?
A. Fourteen cents.
Q. Thirty inch?
A. Eighteen cents.
Q. Will you now give me the cost for carting for three inch pipe.
A. One cent.
Q. Four inch?
A. One cent.
Q. Six inch?
A. One and one half cent.
Q. Eigght inch?
A. Two and one half cents.
Q. Ten inch?
A. Three and one half cents.
Q. Twelve inch?
A. Four cents.
Q. Sixteen inch?
A. Six cents.
Q. Twenty inch?
A. Eight cents.
Q. Twenty-four inch?

A. Ten cents.
Q. Thirty inch?
A. Fifteen cents.
Q. Will you give me the cost of tools, etc., for the same
2612 sizes, beginnign with three inch?
A. One cent.
Q. Four inch?
A. One and one half cent.
Q. Six inch?
A. Two cents.
Q. Eight inch?
A. Two and a half cents.
Q. Ten inch?
A. Three cents.
Q. Twelve inch?
A. Three and a half cents.
Q. Sixteen inch?
A. Four and a half cents.
Q. Twenty inch?
A. Five and a half cents.
Q. Twenty-four inch?
A. Six and a half cents.
Q. Now miscellaneous, what is it for three inch?
A. One cent.
Q. Four inch?
A. Two cents.
Q. Six inch?
A. Three cents.
Q. Eight inch?
A. Three cents.
Q. Ten inch?
A. Four cents.
Q. Twelve inch?
A. Five cents.
2613 Q. Sixteen inch?
A. Seven cents.
Q. Twenty inch?
A. Eight cents.
Q. Twenty-four inch?
A. Ten cents.
Q. Thirty inches?
A. Thirteen cents.
Q. Does that cover the items aside from the excavation?
A. The total cost per foot consists of the cost of columns 5, 6, 7, 8, 9, 10 and 13.
Q. We have taken 6, 7, 8, 9, 10, haven't we?
A. Yes.
Q. Now 13, take the three inch pipe, what is the cost for installation?
A. Eleven cents.
Q. Four inch?

A. Twelve cents.
Q. Six inch?
A. Sixteen cents.
Q. Eight inch?
A. Eighteen cents.
Q. Ten inch?
A. Nineteen cents.
Q. Twelve inch?
A. Twenty-three cents.
Q. Sixteen inch?
A. Twenty-six cents.
Q. Twenty inch?
A. Thirty cents.
2614 Q. Twenty four inch?
A. Thirty-two cents.
Q. Thirty inch?
A. Forty cents.
Q. Now, take this twenty-four inch pipe, because it is an easy one to figure, that runs 200 pounds to the foot—I am giving you that correctly, am I not?
A. Yes, I remember that.
Q. Now, what would the pipe cost for a foot there without any profit added?
A. You mean on the railroad track?
Q. Yes, on the track at Buffalo; it is $26.80 a ton, and $2 is one-tenth of that or $2.68?
A. I presume; I haven't any copy here of the blue print.
Q. I am making this an independent computation anyway. Will you add to that 26½ per cent. to the $2.68?
A. If I have made the computation correctly, it is $3.39.
Q. $3.39?
A. Yes.
Q. Now, what did you estimate the cost of this pipe per foot, laid and all in Des Moines?
A. $3.60.
Q. Now, will you deduct from the $3.60 the cost of the pipe on the cars at Buffalo, plus those percentages and tell us what you have left?
A. You mean deduct from $3.60, $3.39?
Q. Yes, sir.
A. Twenty-one cents.
Q. Now, Professor, the cost of the tools, miscellaneous, lead, cement, special castings, carting and excavation for that size
2615 pipe per foot amount to 88 cents; where did you get the other 69 cents?
A. You made a mistake there; that $3.60 includes all those costs you just mentioned.
Q. I understand it does in your computation, you gave us a moment ago for tools; will you take those figures for 24 inch pipe, tools, etc., per foot, six and a half cents?
A. Yes.

Q. Miscellaneous per foot, ten cents.
A. Yes.
Q. Lead, cement, etc., fourteen cents?
A. Yes.
Q. Special casting fifteen and a half cents?
A. Yes.
Q. Carting pipe, etc., ten cents?
A. Yes.
Q. Excavating and back filling thirty-two cents?
A. Yes.
Q. Will you please foot those?
A. I want to go at that pretty slowly.
Q. I have no objection to your going at it slowly—will you foot those items for us, Professor?
A. Just a moment; I get those as follows——
Q. Pay attention to the question I asked you, to foot the various items I gave you and give me the total of the items?
A. You would be misleading——
Q. We will get to that later. I want to know the total of these items first?
A. You asked me to foot 6½, 10, 14, 15½, 10 and 32.
Q. Yes.
A. That makes 88 cents.
2616 Q. When you deduct your $3.39 which was the cost of the pipe, plus 26½ per cent from the $3.60 which you allowed here as your total cost of this pipe in the ground, you get 21 cents to cover these items that amount to 88 cents?
A. You would the way you do it; that is an error; I want to explain that.
Q. Let us do it another way——

Mr. BYERS: I think the witness ought to be allowed to explain.

Q. Will you take your $3.39 which is the cost of the pipe, plus 26½ per cent and add to it the cost of these other items for pipe of that size and tell us what the total is? The cost of the two miscellaneous, lead, cement, special casting, carting pipe and excavation and back filling which amounts to 88 cents?
A. You want me to add 88 cents to $3.39?
Q. Yes.
A. The two added together will give you $4.27.
Q. And that is the aggregate of the items taken from this Exhibit 41 and adding your 26½ per cent to one foot of pipe of this size, is it not?
A. As a computation it is; but it is not a fact; I am ready to give you the figures any moment.
Q. Now will you take the next smaller size, 20 inch pipe, and tell us what one foot of that pipe would cost according to your figures, plus 26½ per cent?
A. Do you wish me to act as your computer or tell the facts in this case?
Q. I would like to have you answer the question?

A. You wish me to add 26½ per cent to what?

Q. The 20 inch pipe is 4.2 pounds. For convenience, if you prefer, I will take that cost per foot from this Exhibit G; it will
2617 save us a little computation; that is given here 2.067 per foot in the typewritten memorandum?

A. 20 inch pipe?

Q. 20 inch pipe, yes. Will you add 26½ per cent to that?

A. That makes $2.61.

Q. Now, then, will you give me the total of the items in addition to straight pipe that as shown by Exhibit 41 go into pipe this size: they are 5½ cents for tools; 8 cents for miscellaneous; 12 cents for lead, cement, etc. per joint; 12½ special castings; 8 cents for cartage; 30 cents for excavation and back filling. The total as I have it is 76 cents?

A. 76 cents.

Q. Add that if you please to the cost of the pipe, plus 26½ per cent and that gives us what?

A. $3.37.

Q. And at what price have you computed this pipe in your estimate on page 57 of your report?

A. At the correct figures which are $2.83.

Q. $2.90?

A. I know I gave you the big end of it.

Q. I asked you what figures you computed this at in your report?

A. $2.83. I presume I gave you $2.90.

Q. Now, let us get the next one.

A. If you will allow me to state one fact, you will save a great deal of labor.

Q. All right, what is that one fact?

A. The City bought the pipe and delivered it to the contractor and paid for it and therefore the 26½ per cent don't come in on that at all.

Q. Well, you said, did you not, on Friday and today that
2618 these figures which you used here were used and allowed a profit of 26½ per cent on the pipe?

A. I don't know what profit R. D. Wood & Company made on the pipe, but the city bought the pipe, paid for it, and delivered it to the contractor, and the ten per cent and fifteen per cent comes in on what the contractor does after he gets the pipe on board cars; so you see these figures are entirely correct and with the actual facts.

Q. I don't see it yet. Well, then, tell us whether these prices of pipe shown here on Exhibit 41 are the prices of pipe f. o. b. cars at Buffalo, or whether they include 26½ per cent?

A. The exact statement is right here on the blue print, the cost per two thousand pounds in Buffalo, and the city paid for them and the contractor took them off the cars and hauled them.

Q. Does your estimate then include any 26½ per cent of the cost of the pipe?

A. It does not.

Q. You told us Friday and this morning that it did?

A. Possibly I may have done so. If I have done so it was of a statement which was an old thing, three or four years back; I might have overlooked it; in fact I didn't have the pipe in mind when you brought it up.

Q. When I asked you about the pipe?

A. As to the contractor paying for it, I mean?

Q. Now, you say in your report at page 53, when you come to the distribution system, referring to street mains and services but not attached meters system of overhead charges heretofore used at 12½ cents is changed to an addition of ten cents undistributed expense and fifteen per cent as contractors' profit, making a total of 26½ per cent added to the cost of raw material and pro-
2619 ductive labor, is that true?

A. I should have stated raw material purchased by the contractor.

Q. Did you add that 26½ per cent to the pipe?

A. No, I did not; I just told you so. I took the pipe in consonance with the actual fact that the city bought it, paid for it, delivering it on the siding, board of cars, to the contractor.

Q. On page 2569 of the record in this case a part of your cross examination you stated this: Question. "Now I want to turn to section 75, page 53, you say that in the distribution system, that is, straight mains and services you have not used your 12½ per cent overheard, but have added 26½ per cent because of raw material and productive labor"? Answer: "Yes, sir." "Q. By that you mean the cost of pipes, fittings and valves and the material you use for making joints, drip pots and all the other material that goes into a completed main, is that right? A. That was the fact of the matter. Q. That is what you mean by your raw material. A. Yes, sir." Did you so testify on your cross examination in this case?

A. If I did I made an oversight which I wish to correct at once by stating that the fact of the case is the mains in Buffalo were delivered and paid for by the city on the siding.

Q. Then you did not add anything in the way of a percentage to cover overhead on the cost of mains?

A. So far as the contractor was concerned I did so, and that explains why I used the phrase contractors' profit. You brought it out very clearly by your cross examination.

Q. Is that 26½ per cent in your price of $28.80 for four inch mains, that is the price given on Exhibit 41?

A. No; I didn't know what Wood made on it.

Q. That is the profit of the pipe seller, the manufacturer?
2620 A. Yes.

Q. We weren't talking about his profit at all?

A. No.

Q. We weren't considering his profit?

A. You just asked me if he made 26½ per cent.

Q. No, I did not.

A. I so understood you.

Q. I am talking about the profit the contractor makes who lays the mains, not about the profit of the pipe manufacturer. Now

then I want to know whether these prices $28.80 per ton for four inch pipe includes the profit which the contractor who laid the mains made on the money that he paid out for the pipe?

A. He never paid a cent for pipe. The city paid for the pipe. He had no money in cast iron pipe; it lays on the flat car on the siding; the city would not allow him to make a profit on the money they paid out.

Q. Then as a matter of fact there is no where any overhead figure on the cost of cast iron pipe in your estimate here, is that right?

A. You mean to say that this ten per cent and fifteen per cent don't come in on the cost of cast iron pipe on the siding?

Q. I want to find out whether you get it in on the cost of cast iron pipe in the job on the streets?

A. No, I did not; I called your attention to that——

Q. So it is not in anywhere on the cost of the cast iron pipe?

A. I won't say that, but it certainly is not in those figures here.

Q. And it is not in the figures shown in Exhibit 41, is it?

A. You mean the blue print?

Q. Yes.

A. It is not in there either.

2621 Q. On just what did you compute this then, the 26½ per cent; oet us see if we can get it right, or do you know?

A. To begin with, I did not add this 26½ per cent on the bare cast iron pipe as delivered on the siding. In the case of interrupted work, the results of such figures as I could get at was included in it, all except the ten per cent. By interrupted work I mean the piecemeal work done by the company, the odd jobs. In the case of the contractor where I got hold of his figures, in some cases. I could in round figures — the cost. I followed the matter up to the contractor, if he expected to and claimed and did get fifteen per cent profit on the contracts which he had taken from the city.

Q. As to the figures in Des Moines, take this $3.60 for 24 inch pipe, you have said you did not include any additional 26½ per cent in the cost of cast uron pipe, that is right, isn't it?

A. Yes.

Q. Now on what did you include the 26½ per cent in that figure of $3.60?

A. You have got that wrong end to. I took the actual figures obtained from the company's books for interrupted work, and also learned as far as I could, as I told you before, the contractor's price which happened to agree very closely, not exactly. I wish to be very distinct on that point; I do not claim entire accuracy in anything I have to say in the way of the appraisement, but near enough for all practical purposes and then investigating the matter further found the contractor claimed and did make about fifteen per cent, on what they did themselves, which was to haul the pipe, to dig the ditch, fill it in again, to lay the pipe, to put in the joints for the pipe, to handle the ugly corners and places where shecial
2622 castings came in to handle and put in the valves, and there were very few of them in Buffalo, but I took them in along

with the rest, because there were few, and not of much consequence, in comparison with the aggregate.

The MASTER: You have gone over that three or four times; answer his question; was it included at all in your calculation there on page 57, except as it is included in the Buffalo figures?

A. On page 57 are the Buffalo figures and therefore all there is included is as it was in the Buffalo figures.

The MASTER: Then you did not add the 26½ per cent at all to the Buffalo figures; I mean by the figures, as you got them there?

A. Your honor, I am sorry I seem to be stupid about this thing.

The MASTER: Here is what I want to know; you did not add anything to these Buffalo figures?

A. Not a thing.

Q. These figures just referred to are the figures the unit prices are shown on page 57 of your report?

A. Yes.

Q. You say on page 54 of your report: "Recent quotations from the Iron Age of $30 a ton for cast iron pipe confirm these basic prices which are obtained for a period of five years anterior to the year 1907." By these basic prices do you mean the prices per ton shown on Exhibit 41?

A. Yes, in a general way.

Q. What do you mean by the qualification, in a general way?

A. Recalling the quotation in the Iron Age, which is assumed to be authority.

Q. On page 54 of your report you say this, near the bottom of the page: "Recent quotation in the Iron Age of $30 a ton for
2623 cast iron pipe confirm these basic prices which are obtained for a period of five years anterior to the year 1907, and give the following prices per foot for pipe laid without pavement." Do the words "these basic prices" which you there use in your report refer to the prices per ton for cast iron pipe shown on Exhibit 41?

A. They do. In using these basic prices I am using as near as I can in my opinion come to the average structural cost of these mains at the time and when they were laid.

Q. I want to call your attention to your testimony in the Buffalo case on page 534, Vol. 1 and ask you whether you testified there with reference to this chart as follows: "Q. What is this chart got, where did you get those figures? A. Those are R. D. Wood & Company's figures for 1905. Q. And you adopted them? A. Yes. Q. Without making an investigation of the conditions that existed here in Buffalo while this commission is sitting here? A. I deemed them more suitable for my use than even present prices of today. Q. Then to clear up the subject you computed our pipe, reproduced new today, on the basis of 1905 prices? A. The prices of iron furnished—— Q. No, 1905 prices? A. I say on prices of iron furnished by R. D. Wood & Company for 1905." Did you — testify in the Buffalo case?

A. Of course it is a long ways back; that would be substantially what I think I did.

Q. You put the cost of excavation in Des Moines the same as the cost of excavation in Buffalo?

A. I did, after making proper inquiries, as any strange engineer would have to do.

Q. Did you investigate the conditions affecting the excavation in Buffalo?

2624 A. I did at that time.

Q. I want to call your attention to page 540 of your testimony in the Buffalo case and ask you whether you did not testify as follows with reference to that question: "Q. Now we have got pipe on the ground. Now how much does it cost to put in the ground, four inch pipe in the city of Buffalo? A. Will you give me that memorandum? (Mr. Babcock hands paper to witness.) The Witness: From the chart it appears to be about 12 cents per foot for excavation, back filling and the price given of $633.60 is the cost per mile. Q. How deep do you excavate? A. For four inch pipe the depth to the bottom of the trench is fixed at three feet ten inches, the width of the trench two feet and the cubic yards in a foot trench 1.29 of a yard. Q. And on what basis of price? A. About four cents per cubic yard. Q. Did you ever know of any work being done in the city of Buffalo at that price? A. No but recent work has been done at Indianapolis at thirty cents. Q. Oh, you are talking about Indianapolis then? A. No about Buffalo. Q. What locality are you talking about? A. Buffalo. Q. What knowledge have you got about Buffalo conditions which enable you to testify to prices per cubic yard of excavation? A. The general knowledge that any man of average common sense would have. Q. No knowledge about this locality, special knowledge about this locality? A. Such as results from casual observation. Q. What casual observation have you had on that subject? A. I have been looking around for three weeks here, looking at the soil about. Q. Well have you advised with any contractors about what it costs them? A. I have not; I don't need to. Q. Can you evolve this out of your inner consciousness by looking at the soil? A. Well after 34 or 35 years of experience as an engineer, and I am pretty near right on
2625 that." Did you so testify as to your investigation and information of the soil condition in Buffalo?

A. I should think that would be substantially what I would say.

Q. Did you use this chart and take these same figures for the cost of pipe laying in Minneapolis?

A. No, I did not, because a large amount of that pipe is wrought iron piping.

Q. Now did you testify or state this or this in substance in Minneapolis, at the discussion of this matter there before the city council on Thursday, December 9th, 1909: Q. The question now arises as to how to get at, not the actual cost of this system of mains for that we have not data and I doubt very much whether or now the company could give it to us if they wanted to. The more I look at things the more I doubt the record of the company being complete and adequate having been kept up all through, and I am forced to go away from Minneapolis for my cost and my price to places where figures have been either freely given and more carefully kept.

In 1907 I was employed to make a careful inventory of the plant, mains and apparatus of the Buffalo Gas Company, and recalling the characteristics of that city and its altitude, and consequently its winter temperature, I selected it for comparison as the basis for computation for Minneapolis." Did you so state at the time and place which I mentioned heretofore?

A. I think so, yes.

Q. Did you proceed: "So far as the price of cast iron pipe was concerned I was controlled by the corporation counsel of Buffalo, directing me to take an average price covering a period of five years anterioe to 1907, and which appears to me that this price would be a fair price to use in the case of the city of Minneapolis."

2626 Did you so state at the time and place mentioned?

A. You are asking an effort of memory I can't make very well. I think that is about what I would have said.

Q. Will you say you didn't say that?

A. No.

Q. Did the city council for the city of Buffalo direct you to take the average five year prices in making up this chart Exhibit 41?

A. The city council did not direct me so to do.

Q. You didn't take it, did you?

A. I did take it.

Q. An average of the five years' prices?

A. As near as I could get at it.

Q. You didn't take the price given you by R. D. Wood & Company for 1905?

A. I can't recall; I got as near a square deal for them as I knew how. Those prices you will find are about right.

Q. Now did you proceed at the time and place in Minneapolis I mentioned: "I bring this out with a good deal of confidence, gentlemen, for the following reason. It can be called a seasoned document. These had the worst that a large array of experts could do to shake it as of value. In fact it is simply the facts of the city of Buffalo system of laying mains put in the form of a diagram for easy use and actually derived from the records of the pipe departments and the water department, as far as excavation was concerned and verified in every case by computation and recomputation." Did you there refer to this chart and Exhibit 41?

A. I should say so.

Q. You say here it was verified as far as excavation was concerned as that statement was concerned?

2627 A. Yes, I stated so in a few moments here.

Q. Did you proceed at Minneapolis as foll-ws at the time and place mentioned: "I don't think any engineer for a city similar in its characteristics and altitude would vary probably in fixing the price of the various sizes of mains. Now, that being the case you will find on examining this chart for the four inch mains laid in the street without pavement that the four inch line of pipe crosses this line for street work at about fifty cents. In other words, about fifty cents a lineal foot is what it would cost to lay a cast iron main in the unpaved street in Buffalo or Minneapolis."

A. I should say that I did say that.

Q. You testified for the city in June in Jersey City in June this year, didn't you?

A. Just before I came here, I don't recall exactly.

Q. And that city was interested in a hearing with reference to taxation?

A. Yes.

Q. Now, when you gave the Jersey City conditions did you take this same chart and fix the same prices for cast iron mains in the streets?

A. Exactly.

Q. Where does the Jersey City pipe come from, where is it manufactured?

A. I did not ask them.

Q. You don't know, do you?

A. No, I couldn't say positively.

Q. How do the freight rates between Des Moines, Minneapolis and Jersey City from the nearest available place compare?

A. You will have to ask a freight agent that. I should add
2628 to that reply, of course, you all know freight rates are very elastic where contracts are concerned.

Q. We don't know that since they commenced to enforce the interstate commerce act. Now, then, in Jersey City, when you referred to those prices, instead of going to R. D. Wood & Company as the source you said this in June of this year, on the 22nd or 23rd day of June, 1911, at a hearing at the city hall in Jersey City, in the matter of the appeal of the public service electric company and public service gas company upon the assessment of the 1910 property in Jersey City: "In reaching these prices I took the price of cast iron pipe as stated for the years 1902, 1903, 1904, 1905, 1906, and 1907 on an average and as checked by the quotations from the Iron Age for May 19, 1910 with which——" That is what you gave as the source of those prices there?

A. I mentioned the Iron Age to you a few moments ago.

Q. And you proceeded, didn't you: "In addition to taking the average prices as near as I could get at it, I used the usual methods of engineers, and added ten per cent undistributed charged to the cost of material and labor and fifteen per cent contractor's profit above and on top of that."

A. Yes.

Q. Did your prices you gave there include anything added to the cost of cast iron pipe on account of this ten or fifteen per cent?

A. It did not include any profit on the cast iron pipe as brought out a few moments ago.

Q. That pipe was not bought by the city of Jersey City?

A. This was a gas company case; yes the gas companies had about the same thing.

Q. You went on and explained that this way: A trifle over 25% is customary; if a contract is not awarded to a contractor it
2629 then is to be supervised by the higher officials of the concern and very frequently their salaries would interfere with that very work and make it very costly to personally supervise it than

it would be to give it to a contractor with an average profit, who expects about 15%." Did you say that?

A. I expect so.

Q. You also produced this chart there, did you?

A. I don't recall whether I did or not.

Q. Wasn't this asked you: "What is the scale that you have there? A. That is a very carefully studied cost of laying gas mains made from the records of the city of Buffalo from 1902 to 1907."

A. If it referred to this, that is about the description of it.

Q. And didn't you proceed: "These prices and computations you have made, do they represent the market cost of the material during the years that you have mentioned from 1902 to 1910, the average cost around New York? A. Yes. Q. To which you have added these percentages you tell of? A. To which I have added the usual percentages."

A. Yes, that is right.

Q. You were asked there: "Q. Do these prices and computations represent the market cost of the material." What material was there of any consequence aside from the cast iron pipe?

A. I suppose lead and cement as well as cast iron pipe. Cast iron pipe is the controlling item.

Q. I find your lead and cement, etc., amount to 14 cents a foot on the 24 inch pipe against the $2.68 for the cast iron pipe. Did you mean to say when you were asked for the cost of the material in Jersey City, and stated that you added this percentage to it, you took these trifling, insignificant materials and excluded cast iron pipe that would cost nearly twenty times as much?

2630 A. I am very glad you brought it out. It is the contractor's profit I added to and you will find it on the blue print as a contractor's profit.

Q. What I want to get at is when they asked you whether these prices shown by this same chart were the prices for material around New York, the average from 1902 to 1910, talking now about the material, and you told them yes, and then they went on and said, to which you have added these percentages you tell of, and you answered, to which I have added the usual percentages, did you mean then that you added that percentage only to these few cents of lead and cement, etc.

A. It is not so inconsiderable as it might seem. It came also on the pay roll.

Q. Is the pay roll material; this question is limited to material, I thought?

A. I said productive labor.

Q. And did you proceed: "Q. Those prices you have made do they represent the market cost of the material during the years you have mentioned from 1902 to 1910, the average cost around New York? A. Yes." Now you knew and know now that says market cost of material?

A. Yes.

Q. Tell us again whether in response to that question you eliminated in your mind without referring to it in your answer all of the

cast iron pipe, or whether you included it in your answer and you did add this percentage to it?

A. I assumed that the company bought and paid for its cast iron pipe and turned it over to some contractor to lay, if it was a large job or else made it itself if it had a small job. Of course I did not include ten per cent profit undistributed charges, or fifteen
2631 per cent profit on the cost of the iron pipe, but merely what went to pull the contractor through.

Q. Now you have testified here that you took those prices from the Iron Age, May 19, 1910, on cast iron pipe and then did what was customary, add a dollar on account of the higher price of gas pipe, because this was water pipe.

A. No, I don't think I testified that; if you will kindly read what I did testify to there.

Q. Is there any variation between the price of gas pipe and water pipe?

A. It is usual to reckon about a dollar difference in favor of the gas pipe, as it runs lighter.

Q. Is the gas pipe higher or lower?

A. A little higher.

Q. About a dollar a ton?

A. Yes.

Q. You referred to the Iron Age of May 19, 1910?

A. Yes.

Q. Now all that says about cast iron pipe is this, isn't it, on page 1162: There were cast iron pipe, there were no large municipal lettings last week in the west but a fair line of small lettings and orders from municipalities; some business was received from the railroads for culvert piping; in Chicago four inch water pipe was quoted at $28.50. Will you tell us what you took on your chart for water pipes?

A. I didn't mean anything more than an average in that case, four inch gas pipe here is $28.80.

Q. So it is fifty cents over these figures instead of a dollar?

A. It depends a good deal on the size of the contract you let. These men all cut. The U. G. I. can get deeper cuts than
2632 anybody else.

Q. You in your testimony said you took the Iron Age figures?

A. As an average, yes.

Q. This proceeds: Water pipe four inch $28.50; six to twelve inch, $27.50; and 16 inches up $26.50, with one dollar extra for gas pipe. Did you add the dollar?

A. No, I didn't.

Q. You didn't add freight to Des Moines, did you?

A. No, it is impossible to find out what that would be.

Q. You mean to say it is impossible to find out what the freight rate is from Chicago to Des Moines?

A. It is quite impossible to find out what the real freights are in the United States in regard to the monster trusts today; the U. G. I. is in the game.

Q. Is the U. G. I. engaged in the manufacture of gas and iron piping?

A. No.

Q. You are under oath, will you give us one specific instance upon which you base that statement with reference to the U. G. I.?

A. I certainly will not withdraw it. I happen to know the highest official of that concern, Thomas Dolan, and I know if anybody in the United States gets inside figures, it is that gentleman and his associates. It is of course not in the nature of legal proof; it is simply my general knowledge of the situation.

Q. You know what you are swearing to here amounts to charging these people with a crime, with the violation of the interstate commerce act, you know that?

A. Not specifically; I am simply charging them with getting inside prices.

Q. You are charging them with getting concessions on the freight rates from the tariff rates?

2633 A. I didn't put it that way.

Q. That was the essence of it?

A. I distinctly make the statement that I am morally convinced they get less freight rate than any gas machinery ever gets.

Q. Do you say on your oath here that they get freight rates that are less than the published tariff rates?

A. I don't know what they are. I do say I am certain, as you must be that they get the best rates and lowest rates going on everything.

Q. Do you still adhere to your statement that it is impossible to ascertain the freight rates on cast iron pipe between Chicago and Des Moines?

A. For an individual, you mean like myself, making an inquiry like myself, I wouldn't believe one word they said to me in regard to freight rates, going in my individual capacity; I wasn't born last summer.

Q. So that it is impossible for you to ascertain what cast iron pipe would be worth laid down in Des Moines?

A. By mere inquiry, yes.

Q. I didn't say mere inquiry, can you ascertain what cast iron pipe is worth laid down in Des Moines?

A. That would depend on the size of the contract largely.

Q. Can you ascertain what cast iron pipe is worth laid down in Des Moines?

A. That would depend on the size of the contract.

Q. So you could or couldn't ascertain?

A. Yes, sir.

Q. Did you attempt to ascertain for the purposes of this case?

A. No, I did not.

Q. Would it surprise you if you learned that the average

2634 price paid by the company for cast iron pipe laid down in Des Moines in the last five years is over $32 a ton, and if you should learn that was a fact would that in any way affect your confidence in the correctness of your conclusions?

A. The books are the best evidence, and you have the figures of

course as to what you actually paid. I should believe what I saw in the books if they are properly kept and properly interpreted.

Q. I wish you would turn over to another page of your excluded items, page 71; you have estimated here the cost of replacing pavement, have you not, at the top of page 71, asphalt on concrete?

A. Yes.

Q. And at how much per square yard?

A. $1.85.

Q. Now, will you turn to this chart, Exhibit 41, and tell us how much you estimated it a running foot in a trench two feet wide?

A. I don't seem to find asphalt on this—$3 a square yard. Here it is given at $1.85 which is the statement of ex-City Engineer Dobson as to the actual figures which had been paid.

Q. Did he have bids on work like this, piece-meal work like this?

A. Again I don't wish to say positively in regard to that matter. I asked him about that and I think he can verify it or contradict it according to the actual facts of the case. I think he said that all repairs to the streets were to be made at the contract price so that I took it for granted that would cover patch work in the way of paving.

Q. You know that is a part of a general contract for doing all the work?

A. I knew of course it was.

Q. How did you get these costs of this asphalt work in Buffalo?

2635 A. By inquiry there, just as I would make inquiry in any city where I was not actually engaged.

Q. Did you testify in Buffalo from this same chart that the cost of asphalt paving was 97 cents on a two foot ditch per lineal foot?

Objected to on part of defendants as being irrelevant and immaterial.

A. It is so far back, I'll go over it again if you like.

Q. The difference between 97 cents and $3 is very marked?

A. A two foot ditch?

Q. One lineal foot would be two square feet?

A. Yes.

Q. And nine square feet in a yard?

A. Yes.

Q. Four and half times one lineal foot would make a square yard?

A. Well, it may be a typographical error; it is quite possible, in fact it is so far back without going over the thing again, it must be obvious to you that I cannot recall distinctly as to what I said four years ago.

Q. Will you kindly check there again and see whether it shows 97 cents, how much per lineal foot is required for asphalt on concrete?

A. Well, I don't know whether it is mentioned here or not. I think I instructed the assistant who did that for me to allow six inches extra on each side, so that instead of being for a two foot ditch, instead of the cut of asphalt being exactly two feet it would be three feet wide.

Q. Your recollection about that is distinct and specific?

A. No, I was only thinking of the custom.

Q. Take a six inch pipe or a four inch pipe and get your asphalt for a running foot from the chart of asphalt on concrete—

2636 take a four inch pipe for a two foot ditch?

A. The cost per foot for streets with brick, asphalt, block stone on concrete, the cost of a four inch pipe complete laid in the ditch without pavement is about fifty cents per lineal foot, and the cost of a four inch main complete, laid in the ditch, with pavement of asphalt or block stone on concrete, is given here as $1.45 on the chart.

Q. That would be 95 cents a foot for the asphalt or other pavement?

A. That would be 95 cents a foot, assuming it to be $3. per square yard in Buffalo, and assuming what would be usually done, a cut would be made of six inches from the side of the edge.

Q. Did you investigate to see whether the cost of laying asphalt pavement was the same in Des Moines that it was in Buffalo?

A. Yes.

Q. You found it was pretty near twice as much to lay asphalt in Buffalo as in Des Moines?

A. At the time such were the facts; that is one reason why you always have to make local inquiries.

Q. On the asphalt pavement you took Mr. Dobson's straight contract prices, that is, if a man would lay ten or a dozen blocks of asphalt in the street here?

A. Yes.

Q. You think it would cost more to do the work if you had to do it in small pieces than in large jobs?

A. I suppose so, yes.

Q. Take the next item, wood block on concrete, $3 a yard?

A. If I remember rightly, I talked with quite a number about paving in this city, and finally went over the matter with Mr. Dobson, going into the exact figures assembled from the city records.

Q. Did you get the figures from the city records here the

2637 way you did in Buffalo?

A. I did not get them, Mr. Dobson got them.

Q. Before I forget it, where in these prices for this pipe is the engineering?

A. Engineering and omission, etc.?

Q. Yes.

A. It is allowed as explained to you previously in ten per cent undistributed charges, whatever engineering is required; practically as a matter of fact all the men that superintend this street patch work have their pay charged up to the operating cost.

Q. If we were reproducing this plant it would require an engineer to lay out the system of mains?

A. I am giving you the structural cost.

Q. If we were reconstructing this plant you would have to have an engineer to lay off your system of mains?

A. It would pay in the end; it is not often done you know.

Q. It would be necessary if you were to construct this plant economically to have an engineer of practical experience lay out your system of mains and specify the size of the pipe and locate your valves, drips and everything of that kind?

A. It would pay in the end, but it is not often done.

Q. That is not just what I asked you. It would be necessary to do this if you were to construct the plant economically?

A. No, for the simple reason that it is not very frequently done.

Q. Give us one or two cases where it is not done?

A. I think Des Moines is a pretty fair sample.

Q. I want you to give me a concrete case that you know of where a system has been constructed without having an engineer lay out a system of mains.

A. I was just trying to tell you; I think Des Moines, judg-
2638 ing from the maps—

Q. You said usually they did not employ an engineer to lay out the mains; I would like to have you give us one case you know of where any work of any considerable amount was done without employing an engineer?

A. You mean, and charging their pay specially to the mains?

Q. I mean just what I say; I would like to have you give us one case you know of building a gas plant or of the building of a large addition to a gas plant where it involved the laying of a system of mains or a large addition to the system of mains, where an engineer was not employed to lay out the mains?

A. I think in almost every case a draftsman or engineer is employed, such a matter as that, but his pay is usually charged to operating expenses.

Q. You told us a few moments ago usually an engineer was not employed?

A. I meant directly and charged to the job, that is what I meant.

Q. In other words, to get back to the question I asked you at first, it is necessary to employ an engineer to pay out a system of mains if it is to be an efficient system and economically constructed?

A. You put that condition in and I agree with you, but in the majority of cases that is not so.

Q. Where in the items that make up your 36 cents for instance, 49 cents, take the four inch main, how much have you allowed in there for engineering and superintendence; where do we find it?

A. Four inch main, 49 cents, first of all I assumed in patch work of the sort done—

Q. I am talking about the item of 49 cents for this specific
2639 job?

A. There would be no specific charge against it, for the salary of the engineer who laid it out; he would be called an engineer on the works and it would be charged up to the cost of making gas; but to be on the safe side I allowed ten per cent undistributed charges, you would find it in there.

Q. Ten per cent of what?

A. On all the expenses outside of buying the cast iron mains.

Q. And did you then put 25 per cent on top of that?

A. Fifteen per cent on top of that.

Q. So that in order to get at it—see if this is right—take the 49 cents for instance, and the cost of the bare pipe is 27½ cents?

A. There is a line here called cost per foot for straight pipe not laid.

Q. That is 27½ cents, isn't it?

A. 4 inch pipe, about that.

Q. That would be 27½ cents taken from the 49; am I right?

A. 21½ cents with all the other expenses besides the main.

At this time an adjournment was taken until 1:30 p. m.

2640 1:30 P. M. MONDAY, *August* 21, 1911.

WILLIAM D. MARKS continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. I was asking you before luncheon I think about whereabouts in this analysis of the cost of pipe in the ground that you find this engineering?

A. Pardon me, you were asking me about the difference in price between asphalt wasn't you?

Q. No, I had passed that. Before I take that up. I see you have now this typewritten memorandum from which the chart was made up which shows the various prices in figures. Will you give us the price per foot of the various sizes of cast iron pipe?

A. Under the head of straight pipe, column five.

Q. Begin with three inch?

A. Three inch, 19.2 cents, 4 inch 27½ cents. 6 inch 40½ cents; 8 inch 58 cents; 10 inch 78 cents. 12 inch 97.2 cents 16 inch, $1.48. 20 inch, 2.067; 24 inch $2.68. Do you wish to go any farther?

Q. No, I think that covers all the sizes here doesn't it?

A. Yes.

Q. Now there is no engineering in that is there?

A. No.

Q. Now is there any engineering in the special castings?

A. No. I can cut that short by telling you whatever engineering there may be there, is either in the ten per cent of the whole or in the miscellaneous per foot.

Q. Now the miscellaneous per foot amounts to——

A. That is column eleven.

Q. Ten isn't it?

2641 A. Column 11, miscellaneous per foot.

Q. What is column 10?

A. Column 10 is labor in street with macadam surface.

Q. Now your miscellaneous begins with one cent for three inch pipe don't it?

A. For two inch wrought iron pipe.

Q. I am asking about cast iron pipe?

A. Yes; three inch cast iron pipe one cent.

Q. Now go on down in sizes for that.

A. Three inch one cent; 4 inch 2 cents; 6 inch 3 cents; 8 inch 3

cents. 10 inch 4 cents; 12 inch 5 cents; 16 inch 7 cents 20 inch 8 cents; 24 inch 10 cents.

Q. Now does this miscellaneous run any fixed per centage of the whole?

A. It does not. I recall that the miscellaneous expenses is all sorts of things that could not well be classified and that it was quite irregular for the various sizes and that finally it was added up and smoothed out a little bit. In other words it was smoothed out to the extent of not bothering with anything except the nearest cent.

Q. Well take your three inch pipe the cost given here is 36 cents isn't it for the whole thing?

A. That is 36 cents.

Q. Your one cent miscellaneous is a little under 3 per cent of that?

A. Just about.

Q. It is not three per cent on the next size?

A. You are referring now to the 6 inch?

Q. No, the 4 inch.

A. That is two cents in 45 cents isn't it?

Q. 48½. Three per cent would be a cent and a half and
2642 you equalize- that and made it two cents?

A. Let me explain that the last column under the heading 27 is a double column and that my own figures finally taken by myself figures that I worked out and that there is a column alongside of it called Buffalo are the figures that I found somewhere in some paper given for Buffalo gas pipe, I think by a gas engineer of theirs.

Q. The fact is, isn't it that this plat, Exhibit 41, is what you used in the Buffalo case and that the figures you have made up and are using there are not exactly the same figures that you used in the Buffalo case?

A. Well it is a long ways back. I think you will find that I have always thrown any favor of the company.

Q. I call your attention to this paper in the volume of Exhibits in the Buffalo case, marked Respondent's Exhibit "G" and ask you whether or not that is not a copy of the figures which you used in the Buffalo case which you produced on that hearing at that time. Perhaps I can refresh your recollection about that a little. Let me read this to you and see if this refreshes your recollection, commencing at page 610 of your testimony in that case, referring to some paper "Commissioner Davies: Did you not just say Mr. Marks you did not quite understand what Mr. Babcock wanted a moment ago. A. Yes. Q. But that you did not have it here to use it? A. I did use it to make more accurate work. Commissioner Shedden: And referred to it in your testimony? A. And referred to it. Commissioner Davies: Produce it then. (Produces paper.) A. This is the original from which——Commissioner Davies: Hand it to Mr. Babcock. A. And from which the blue print chart has been made out. It contains a great deal of information in addi-
2643 tion to that—Commissioner Davies: Well you are here to give them all the information you are in possession of. Mr. Babcock: Will you check off in pencil what columns you used in

calculating your cost. Just check the vertical columns that you used in connection with your calculations, nthen we will know the basis of your computations. (Witness marks on sheet with pencil.) Q. How have you indicated it? A. By putting a ring around those columns which were used. Q. Now will that enable us with the blue print to re-compute your figures? A. If you wish. Mr. Babcock: I would like to have that marked for identification. (Paper marked Respondents Exhibit "G" for identification)." You notice the paper to which I call your attention is marked Respondent's Exhibit "G" do you not?

A. Yes, sir.

Q. Does this refresh your recollection so you can say whether or not that is the paper which you used in Buffalo and from which this chart, Exhibit 41 was made up or a copy of it?

A. It appears to contain about the same figures but rearranged when being copied. I see there is some below here, the lower part of this exhibit off to the left hand lower side I assume for the sake of room having been stuck over here on the end. I have no reason to believe it is not substantially*b* what I put in, wherever I have caught it, it seemed about right. There may be a few points that it is wrong.

Q. Then this respondent's Exhibit "G" pages 209, 210, 211, 212 and 213 of the volume of exhibits in the Buffalo case is the paper or copy of the pa-er which you produced there as the paper containing figures from which this blue print was made?

A. It appears to be a copy of this paper used there slightly rearranged, I find no difference in figures in a cursory glance
2644 over it.

Q. Referring to this Exhibit "G" column one, contains the sizes of pipe under the head "diameter of pipe?"

A. Yes, sir.

Q. Column 2, Cost per ton of 2,000 pounds in Buffalo New York?

A. Yes, sir.

Q. Three, weight per length in pounds?

A. Yes, sir.

Q. Four, weight per foot?

A. Yes, sir.

—. Five, straight pipe?

A. Yes, cost per foot for straight pipe. That is column five.

Q. Now there is here this heading at the top of the whole paper see whether you have it also in the one you are using, that is here in this respondent's Exhibit "G" "Estimated cost of laying *has* mains 1907, elaborated for use in Buffalo, N. Y.?"

A. Change that to 1906.

Q. 1906?

A. Yes, 1906. I presume it is just a typographical error.

Q. Elaborated for use in Buffalo, N. *L* Y. Figures include 15 per cent contractor's profit and ten per cent undistributed expense?

A. Yes, sir.

Q. Then getting back the 5th column is cost per foot for straight pipe.

A. I have changed this to figures include 15 per cent of laying contractor's profit.

Q. I don't care anything about what you change on that.

A. I want to see what this one is.

Q. The 5th column is cost per foot for straight pipe.

A. Yes, sir.

Q. The 6th column is cost per foot of special castings.

2645 A. Yes, per foot of straight pipe.

Q. General heading, cost per foot for, and the subhead special casting?

A. Yes, sir. That is in addition to cost of pipe.

Q. The next column 7 is unde- the same general head cost per foot and is lead pipes, cement, etc.

A. Yes, sir.

Q. Next parting pipe?

A. Yes, sir.

Q. Next tools, etc.?

A. Yes, sir.

Q. Next miscellaneous?

A. No, the next is No. 10, labor in stre-ts with macadam surface.

Q. That don't appear here. That must have been added since you furnished these Buffalo figures wasn't it?

A. I don't know about that.

Q. Now let's have that column labor in streets having macadam surface?

A. That is column 10, is what——

Q. Give us that in the 3 inch and then on down?

A. Three inch pipe ten cents, 4 inch pipe 10 cents, 6 inch pipe 12 cents, 8 inch pipe 14 cents, 10 inch pipe 14 cents, 12 inch pipe 15½ cents, 16 inch pipe 16 cents, 20 inch pipe 17 cents. 24 inch pipe 17 cents.

Q. Give us the heading of this column again please?

A. Labor in streets with macadam surface.

COURT: What does that mean, in removing macadam?

A. There were some streets as I recall it in Buffalo that were likely macadam, quite a number of them.

COURT: This is the labor for removing the macadam and

2646 digging the streets complete?

A. Through Macadam, put the macadam back, instead of through straight earth without any pav-ment there at-all.

Q. That is not the cost of the paving is it?

A. No.

Q. Nor the cost of replacing paving. You have a column there have you not stone or macadam at $1.50 a square yard.

A. I have a total cost per foot*n* for laying gas mains, streets with macadam top——

Q. No, I don't mean that. What is the column following miscellaneous Miscellaneous here is 10, you have it 11 I understand. Now what is column 12?

A. Column 12 is streets macadam top outside of city proper.

Q. And what about it?

A. There are prices given.

Q. For what?

A. For the cost of laying pipe per foot and putting pavement back.

Q. Now will you give us that column for these various sizes, 3, 4 6, 8, 10 12 16, 20 and 24?

A. Streets with macadam top outside city proper?

Q. Yes, whatever it is there your column 12?

A. Column 12, yes. Three inch cast iron pipe 46 cents. 4 inch cast iron pipe 58½ cents; 6 inch cast iron pipe 88½ cents. 8 inch cast iron pipe $1.07. 10 inch cast iron pipe $1.33. 12 inch cast iron pipe $1.62½ cents. 16 inch cast iron pipe $2.27. 20 inch cast iron pipe $3.00. 24 inch cast iron pipe $3.73.

Q. Have you a column here headed cost per foot for paving stone or macadam, $1.50 a square yard?

A. I don't find such a column here. What is the number
2647 of that column.

Q. It is No. 11 here. Macadam or stone is marked on this blue print $1.50.

A. The streets with macadam top outside of city proper run as follows, perhaps you can catch it by coincidence of figures. 3 inch, 34 cents——

Q. That don't check. This is 50, 50, 50, 58, and so on, nothing under 50 in this column 11 here.

A. I don't find it here.

Q. Now then have you cost per foot for paving brick, asphalt or block stone on concrete at $3.00 a square yard, it is column 1*w* in respondent's Exhibit "G" in the Buffalo case?

A. I have one here asphalt $3.00 a square yard, beginning at $1.00 for three and $1.00 for four.

Q. That is asphalt alone?

A. No, asphalt is not put down, not intended to be put down except on concrete base.

Q. Is asphalt the only kind of paving that column covers, you misunderstood me?

A. Yes, that is the only one it gives there.

Q. That shows $1.00 a foot for four inch pipe for asphalt instead of 95 cents scheduled here this morning?

A. No, I think this is intended——

Q. Pardon me, this column in respondent's Exhibit "G" is headed cost per foot for paving, sub head brick, asphalt, or block stone on concrete $3.00 a square yard, that would not include anything but paving?

A. No that includes nothing but paving. A three inch main is put down $1.00 here. Now if it came out 97 cents on the average of figures, figuring down by two or three computers, I think
2648 with me it would be perfectly natural for me to stick it down at $1.00 and let it go at that.

Q. Now I want to get back at your column 11, give me the heading of that again, or ten?

A. Labor in streets with macadam surface. It is evident that that was all got from some particular paper or contract that fell into my hands which showed the difference between the labor in the

street without anything on, clean dirt, and labor in the street with the coating of macadam put in.

Q. You don't mean b- tha- the excavation do you?

A. That is just exactly what I think I do mean if I could find it here. If I could find the labor. My column 22 here excavation and filling city proper 40 cents per cubic yard gives eleven cents a foot.

Q. For three inch stuff?

A. Three inch stuff and also eleven cents for four inch stuff?

Q. This gives ten cents in your macadam?

A. Yes, sir. I will tell you where that came in I think, in this I distinguish between the city proper and outside the city and it is a factor that you could theorize about but it is an undeniable fact that where there is much traffic the work goes on slower.

Q. Costs more money I have no doubt about that. Then you think this column eleven—will you read the heading of that again please?

A. Labor in street with macadam surface.

Q. That don't indicate it is outside the city?

A. No, but—when I say city proper I don't mean city limits, I mea- what they call the city, for instance in London, the *the* busy part of the city.

2649 —. I think you better leave that out, I can't place it very well -yself.

Q. Maybe I can help you. Take your column there headed labors in streets with macadam surface and your streets with macadam top outside city proper and you will find that you added——

A. Column 10, I see it now, thank you.

Q. You added your labor in streets having macadam surface to the unit price in streets that were unpaved.

A. Yes, sir.

Q. To get streets with macadam top outside of the city?

A. Yes, sir.

Q. So that ten cents does not include the trenching which you have in these unit prices does it?

A. That is right, thank you.

Q. But that is extra work on account of the macadam?

A. I presume so.

Q. Now what do you say as to whether the paper which you are using there is a copy of the paper you used in Buffalo after the comparison we have been trying to make here?

A. I was under the impression it was and I think any differences there may be, occur from some marking which was done on it which was mentioned at the time.

Q. Don't appear to be any marking here or changing?

A. No, but when I handed over a copy of this I think some were marked down by some request of counsel or commission.

Q. Was there anything aside from the indications on the columns that you took into account?

A. Quite impossible to remember four years back.

Q. Have you any objections to having that paper you are using marked and offered as an exhibit?

A. Certainly not.

2650 Q. I would like to have it marked and also like to have this exhibit in the Buffalo case marked as an Exhibit. The paper marked by the reporter, complainant's exhibit 42, is the copy of the paper which you have been using?

A. Yes, sir.

Q. The paper that is referred to as respondent's exhibit "G" in the Buffalo case is the one marked complainant's exhibit 43.

A. Yes, sir.

Q. Now to get back in which one of these items here that go to make up the total say of your 49 cents on the 4 inch pipe is the engineering?

A. Wel- I should say that 10 per cent undistributed charge contained the engineering perhaps if there was any done—of course I didn't theorize about it at all, I simply took what I found to be actually done, if there was — done at all, and some other charges such as permits and that sort of thing that come in. I at first thought miscellaneous charges contained permits but I think now the miscellaneous per foot is the caulker's gang and the pipe handlers along the edge of the ditch and something of that sort.

Q. You also said it covered the store house charges, unloading cars and that sort of thing.

A. Everything was intended in and I think the hauling and carting, you call it carting pipe here covers that.

Q. You told us it was in the miscellaneous didn't you?

A. If there was anything in the way of storing anything I could not charge to carting I probably stuck it in miscellaneous.

Q. You told us further the cost of handling pipe, what you call store house charges were in the miscellaneous didn't you?

A. If it was not in the carting.

2651 Q. Now just tell us which one of these items were taken as the basis of the computation of this ten per cent?

A. All of them.

Q. You mean by that—you don't mean straight pipe?

A. Oh no I am talking about now, about what the contractor did

Q. You don't mean special castings?

A. The contractor don't furnish special castings.

Q. The contractor furnishes lead, cement etc.?

—. He did.

Q. Cartage?

A. And the cartage.

Q. And tools?

A. And the tools.

Q. And miscellaneous?

A. And the labor, the labor is the big item.

Q. Where is that?

A. Excavation. Column 22, excavation and filling city proper 40 cents per yard.

Q. That is column 13 here. Then it is on these items that this 10 per cent is figured?

A. I think it is.

Q. And on no others?

A. Oh I won't say that.

Q. Well don't you know?

A. I could settle down and figure it all out if you wanted me to go at it. I want to say and assure you there is absolutely nothing omitted here that could in any way come in the way of expense.

Q. About what is a proper charge for pipe laying per foot or per mile or per length or per anything else on four inch pipe.

A. Do you mean for instance the total cost per foot for pipe laid? Four inch pipe is——

2652 Q. No, I don't mean that, you misunderstood me. You have some men you call caulkers you say?

A. Yes, sir.

Q. They are not men used in doing excavation?

A. No.

Q. You have some men you call pipe handlers don't you?

A. Yes, work along the ditch.

Q. What is the duty of the pipe handlers?

A. The teamster drives up along side of the ditch and the pipe ha-dler generally gets out, skids, and the teamster gets out his rope and they have a few hand spikes and the teamster lets go of the rope until it rolls down and the pipe handler- with their hand spikes generally have a tripod or a frame and when the boss caulker calls for a pipe they cling it in.

Q. Pipe handlers men as then that take the pipe from the wagons, unload it or help unload it at the ditch and then put it into the ditch?

A. Yes, with the aid of the caulkers if the caulkers are not busy.

Q. And the caulkers make the joints in the ditch and also I suppose see that the pipe is laid at the proper level and proper direction?

A. That is it.

Q. And neither of these gangs do this excavating?

A. Well that is depending on how you are working. A good handy gang and a small job you don't want many men on it for working advantageously and they will swap around, do most anything if you have got a good boss.

Q. That is not the ordinary way of laying pipe is it? What do pipe caulkers get a day?

2653 A. I don't know.

Q. What do they pay men for digging a trench a day?

A. That depends a good deal on the men, dagoes, I suppose about a dollar and a half along about there, able bodied men usually and as high as $2.00 and $2.25.

Q. Do you know what the price is the city is paying now for common labor in Des Moines?

A. I do not. I was told too, I reported it to you.

Q. You need not hunt for it. Now I want to know whereabouts in this estimate this labor performed by the caulkers and pipe handlers appears, what item?

A. Miscellaneous I told you.

Q. That also includes this ten per cent does it?
A. No. It is ten per cent of the whole business.
Q. That is spread over all the items?
A. Intended to be, yes. In other words you might say miscellaneous in a rude way is ten per cent too much.
Q. It is 110 per cent of what you base it on?
A. Of what we found.
—. What is a fair price for six inch pipe, or fair cost for six inch pipe for the labor of the caulkers and of the pipe handlers either per foot or per length or per mile or any other basis you want to take?
A. That is getting down very fine but suppose you take it miscellaneous per foot and cut a little off that if it looks big. Six inch, about three cents.
Q. Your three cents includes other matters don't it, besides this labor?
A. It is very probably too I think there was a system of inspection there or taking out permits or was there at the time, they
2654 didn't amount to much, but had to be gotten in somewhere, I think that went in.
Q. Also includes your handling pipes at the yards and so on?
A. I don't recollect whether they handled pipes much in the yard there or not if *it* at all.
Q. You can't unload from the cars and distribute on the streets an a big job?
A. That is just what they try to do right along.
Q. If they wait until they get ready before they order they take chances on not being promptly filled don't they and costing money?
A. Oh yes.
Q. That would not be a very conservative way to do work?
A. No.
Q. And in these days pay demurrage if they don't unload cars promptly?
A. Railroads are pretty accommodating if they find the right sort of a switch roll the pipe out and let them lay there and let them take the cars. They don't bother you if out of the way on the siding.
Q. Involves unloading pipes from the cars and the small sizes have to be put into store houses?
A. Everything is in the carting if I remember rightly that occurs between the time they swing the pipe out of the cars and land it inside of the ditch, but I can't give you details of it now four years afterwards.
Q. Have you any idea what your total for your ten per cent and fifteen per cent are in this item of pipe, this aggregate item of pipe?
A. I suppose it could be figured.
2655 Q. You haven't figured it?
A. I did four years ago, but as far as looking up work of mine four years old, might as well be done by another man, I sat

down and looked it over makes no difference what kind of work I have done.

Q. Passing that then, I see something here I want to ask you about for a moment on page 76. On that page the 5th line from the top of the page you have the structural cost of the whole investment per thousand cubic feet sold, $3.22.

A. Yes, sir.

Q. And that is how much in dollars from the total there from which you got your $3.22?

A. $1,700,215 structural cost.

Q. Now then what is the amount of this distribution system on which you figure no depreciation in dollars?

A. The structural cost and the present value both are $625,947.

Q. So by deducting that $652,947 from $1,700,215.00 it will give me the original cost as you make it on the property upon which you figure depreciation?

A. Yes, I think so. Wait a minute let me think that over. On page 72 inventory page 83, contents houses, 6 A, B and C, and No. 7 for water gas manufacturing $62,311 for both structural cost *an* and present value. There is no depreciation figured.

Q. That is about a thousand miles from what I asked you. As I understood you a moment ago you got $1,700,215 as the cost of all of the property?

A. Yes, sir.

Q. Then you got $652,947 as the cost of the mains upon which you figured no depreciation?

A. That is it.

2656 Mr. BYERS: He just told you there was another item he didn't figure any depreciation.

Q. If I deduct that amount I have $1,047,268. Now there are other properties to be deducted are there not?

A. Yes, sir.

Q. Can you give them?

A. Contents generator house.

Q. These are amounts for how much?

A. $62,311 for both structural cost and present value.

Q. Anything else?

A. The only thing that I—these are the only two things I see that are not depreciated. Then there is the land owned which was given to me——

Q. You didn't depreciate the land did you?

A. No, I appreciated it.

Q. I want to get that property that was not depreciated. I don't care for small items. Now then what was the total amount of depreciation which you charged against this property not taking into account appreciation in real estate, excluding that.

A. The residual appreciation——

Q. No, I don't want that. Not residual depreciation. I want

to know how much you charged against us in dollars here on account of depreciation.

A. $299,128.

Q. That is the net amount is it?

A. That is the amount.

Q. Don't that include appreciation of real estate?

A. Yes, sir.

Q. Well give us the amount if the depreciation with appreciation on the real estate out?

2657 A. On page 77 the structures of this gas plant and apparatus for the purpose of supplying gas is depreciated $363,-363. And the land purchased for the purpose of supplying gas——

Q. I don't care about that, you have answered the question. If you took out depreciation to the amount of $363,363, charged that against the property, which you estimated to cost $1,700,215 it gives $984,957?

A. Wait until I figure it.

Q. Cost $1,700,215, mains $652,947 which I deducted then giving a balance of $1,047,268. You gave me another item $62,311. That leaves a balance $984,957?

A. 984,957.

Q. That property you depreciated to the extent of $363,363?

A. That seems to be what I depreciated.

Q. Or about 37 per cent on the average?

A. 36.8 per cent.

Q. That would give present per cent condition on the average 63.2?

A. Meaning by that of course what is left, 63.2?

Q. Now you give us a value of thousand cubic feet sold of $2.65 in your report, page 76?

A. Yes, sir.

Q. Now do you remember a conversation that you had with Mr. Haines on or about the 3d day of February 1911 at the office of the gas company here in the city at which yourself, Mr. Haines, Mayor Hanna and myself were present?

A. I remember such a meeting.

Q. And do you remember telling us at that meeting that the value of the plant here should be from $4.50 to $5.00 per thousand cubic feet of annual sales?

A. I don't recollect that at all.

Q. Would you say that you didn't say that?

2658 A. I might have said that the original cost would approximate $4.00 something of that sort. I hadn't at that time seen the plant at all if I remember rightly and probably spoke of the original cost of other plants and not of this at all.

Q. And did you not, in that conversation say that the value of the property of this company should be somewhere from $4.50 to $5.00 per cubic feet of annual sales.

A. I certainly didn't say so in regard to this property. I may have said such were generally the facts in regard to gas works mean-

ing more particularly with regard to coal gas works and meaning by that not present value, but original structural cost.

Q. I only asked you what you said in this conversation. And you also told us at that same time didn't you that gas could be furnished at the meter for from 50 cents to 52 cents a thousand in your judgment?

A. You mean at a cost of 50 to 52 cents?

Q. Yes.

A. Yes, seemed to me it ought to be.

Q. Do you remember that in that conversation I took a piece of paper and made a memorandum of those amounts asking you if you had any objection to me putting them down?

A. I don't remember that at all. It seems, if you will allow me to explain, it seems almost impossible I should have expressed any such opinion in regard to works which I had not seen had not examined carefully. I could have mentioned these facts as being common facts in the case of most of the works of the country, but at that time I am quite sure I was not aware of the fact that they make nothing else but carburetted water gas and no coal gas at all.

2659 Q. And you went on did you not in that conversation to compute the return on the ba-is of $4.50 or $5.00 as the average cost per thousand cubic feet and reached the conclusion that 90 cents was a very reasonable rate and profitable to the company didn't you?

A. I don't remember of computing in the presence of any of you, in fact I don't think I did anything of the sort.

Q. And in that conversation——

A. I probably did say that I believe 90 cents to be a very liberal price because it was a remark which I had made to the mayor before going to your office at all and that is the only thing that I recall distinctly.

Q. And you computed that and told us did you not in that conversation that on a seven and a half per cent basis it would require 30 to 37½ cents per thousand cubic feet to take care of the investment making a fair price from 80 cents to 87½.

A. Wasn't it from 82½ to 89½ wasn't it about that?

Q. No, I have the memorandum before that I made at the time.

A. I think you are mistaken about that, my opinion was it was all generalization and I made no computations to you whatever doing nothing more than discussing the problem generally about 82½—might be 82½ and might be 89½ would be the price that would be fair. I am quite certain that I did not in any way profess any knowledge whatsoever of your works in any detail or form, I was discussing the price of gas generally throughout the United States.

Q. I think somewhere there has been some reference to a letter or report that you made to the mayor about the 17th of Febru-- 191[illegible]

A. Yes, sir.

Q. Have you a copy of that with you?

2660 A. I have not, no.

Mr. GUERNSEY: Will you produce that Mr. Brennan, please?

Mr. BRENNAN: What letter is it you want?

Mr. GUERNSEY: It is the letter from Mr. Marks to the Mayor, dated February 17, 1911.

Mr. BRENNAN: I don't recall that any reference was made to it up to this time, but we will look it up.

Mr. GUERNSEY: I don't know whether there has been here, but I think there was some conference at which there was some reference to that.

Q. Didn't you say this in that letter, speaking generally I should estimate the probable cost of gas in Des Moines as follows: Cost of gas, 18 candle power at consumer's meter 45 to 50 cents. Royalty 2 cents. 52 cents. Investment profit, $4.00 per thousand sold at 7½ per cent 30 cents, or $5.00 per thousand sold at 7½ per cent 37½ cents. Fair liberal price 89½ cents. Didn't you say that in that letter?

A. Well I know I put 89½ cents as the outside price but I want to say I didn't pase it on these works at all, but it was in response to a request from the Mayor to give him an idea of what gas should be made for and sold for here and I very naturally took coal gas as being at least part of your concern not knowing that you had the cheaper process and cheaper plant in some ways of gas, carburetted water gas.

Q. In this letter then you did estimate the value of the plant at four to five dollars per thousand cubic feet of sales?

A. I did nothing of the sort. I venture no estimate whatever on what you had here for I had no facts to base any such estimate at all.

2661 Q. Didn't you as I have just read in this letter compute your return at 7½ per cent on $4.00 per thousand sold and then on $5.00 per thousand sold at the same rate?

A. I would have to see the letter first. It was a letter that the Mayor asked of me in a confidential capacity which I wrote to him as a general guide, general idea of about what was right.

Q. You arrived there in that letter at a conclusion of 89½ cents for 18 candle power gas?

A. Coal gas.

Q. 18 candle power gas?

A. Coal gas I told you.

Q. I know, but I ask you about the candle power?

A. Yes, sir.

Q. You arrived at that conclusion for 18 candle power gas and not 22?

Objected to as irrelevant and immaterial.

A. 18 candle power coal gas.

Q. And not 22 candle power gas?

A. No.

Q. Now you say on page 76 in your report this, at the bottom totals rejected claims for rate appraisements and all duplications in full of apparatus. What are the duplications in value of apparatus that are referred to?

A. Line pot drips, valves in street steam and street railway crossings, that is what I would call duplicated apparatus.

Q. Now on page 84 you have five years' operations with deductions of $16,746.88 and some additions. Did you make up this table?

A. That is a very general question. I did the computation and put it together, receiving the data from the city accountants.

2662 Q. That is they gave you the total operating?

A. Gave me the total operating expenses for five years from the company's books and they submitted for my approval the following items accident and damages occurring in 1893, replacement value, salary, time and expenses of engineers, draughtsman and others on inventory, interest on floating debt and interest received on bank bonds.

Q. As to this item $3,685.17 accident and damages 1893, that is an expense that was incurred on account of some personal injury that occurred in 1893?

A. Yes, sir.

Q. Was that 1893 or 1903. Thirteen years looks a long time for it to be running?

A. 1893 as I recall it, I might be mistaken.

Q. You think that because of the time it ought to be charged to the year when it occurred?

A. Well it looked a long ways off to appear in 1910.

Q. When was it paid as a matter of fact? This is five years of course to 1910 was are talking about here?

A. Well 1905 you know.

Q. When was the payment made as a matter of fact.

A. I was told that the accident occurred in 1893 when the payment was made, I don't know.

Q. Now then were you told there are pending now claims for $150,000 of this same character that have arisen since 1906 and have not been paid and on account of which nothing has been added in the operating?

A. No.

Q. Did you make any inquiry to see what adjustment ought to be made in the company's favor if you were to adopt the time

2663 the accident occurred instead of the time when payment was made as the proper time to make the charge to your operating?

Q. No.

Q. Didn't it occur to you that it would be necessary to adjust both ways to get a fair result?

A. It is about this way that within five years of the time any of these claims for damages come up, anything of that sort on the average you get—one reason for taking five years you get the average or sort of cycle of the concern particularly in a coal gas works. You get a cycle of the repairs and average of five years, the first time I ever heard it brought up, would be likely to bring out any expense unless something extraordinary occurred and any damages paid.

Q. That don't answer my question, what I want to know is

whether it would not be proper in your judgment if you are going to strike out of this account the payments made on account of accidents that occurred prior to your period to add something to this account for the expenses that occurred and where suits are now pending and where the expenses have to be taken care of as of this period on your theory.

A. No, I think not, I think five years is long enough to let the thing run, close it out both ways, front and back.

COURT: This goes back seventeen years?

A. That was the statement made to me by the city's accountant?

Q. I want to turn over to some of the other computations with reference to increases of sales of gas with decrease in price. Beginning page 91 of your report they are all predicated upon conditions in Massachusetts are they not?

A. Yes, sir.

Q. Now with reference to this matter or question you tes-
2664 tified to this in the New York case didn't you, it is not possible for a mere accountant familiar only with figures and unfamiliar with the practical process of gas making to authoritatively determine the distribution of vouchers and accounts now assume these vouchers to have been properly distributed to determine the proper account which should go to operating cost and which should go to capital or investment accounts. You testified to that in the New York case?

A. I did.

Q. In all of these questions of account you have taken the figures of somebody else haven't you, the computations of somebody else?

A. I accepted no one's figures unreservedly without careful scrutiny on my own part.

Q. You give over here on page 83 the operating costs for five years. Now did you check those with the books?

A. It was quite an impossibility, but I went over them most carefully and checked them with each other and asked a great many questions in regard to some of them before I was satisfied to accept them.

Q. The accountants made these figures and analyzed these accounts and gave them to you didn't they?

A. Mr. James Hall was one who did. And is most exceptional accountant in his ability and experience.

Q. What experience had he had in a practical point of view in gas making?

A. He had a very long one in the consolidated gas suit in New York City, a practical discussion of their accounts in all shapes and forms.

Q. I was asking about gas making?

2665 A. He has nothing to do except with the accountant and there he was with the engineers of the city day in and day out and weeks at a time.

Q. Now referring to this first table on page 91 here the populations are populations shown in the census of 1910?

A. Yes, as given by the Massachusetts Gas & Electric Light Commission.

Q. And have you the 1910 report of the Commission with you here?

A. Not in this room. I have at my room.

Q. I notice here in the 80 cent gas in the first table that the per capita sales in Boston are 6,190 in these figures and in Worcester, 4,340 with the same price, the difference in Boston being at least I think 45 per cent higher than Worcester. If there were any fixed rule, how do you account for the fact that in one of these cities at the same price the per capita sales are 40 or 50 per cent more than the others?

A. When a city reaches about 75,000 inhabitants it changes from an ordinary town into a metropolitan city. That change is not at exactly 75,000, it is somewhere in that neighborhood the inner life changes, the theaters, very large buildings, places of amusement, parks, everything of that sort restaurants, saloons, the night life increases after you reach 75 in any city and you will see it right here, the value of real estate and buildings, everything going up on account of that sort of thing after you pass 75,000. I have been employed a great deal in Worcester, Massachusetts, so I happen to know, a mere accident, why Worcester does not have the amount of use of their gas or electricity that Boston does per capita. Worcester is very unfortunate in one respect it is within about an hour's easy ride of the city of Boston and the consequence is that excepting the very commonest kind of cheap theaters, every-
2666 body that wants to go to a theater goes to the city of Boston where there is a lot of good ones. There are no theaters that amount to anything in Worcester. It is equally true of the restaurants, anybody feels inclined to indulge his appetite of an evening hops on these trains which are continually going, steam trains in cold weather or trolleys in warm and goes into Boston and the consequence is that a great deal of the demand for gas, the demand for electricity, the demand that is greatest perhaps, where the most dissipation it is deserted almost altogether in Worcester and is in Boston, Boston in other words sucking the extra cash and the life out of Worcester.

COURT: I suppose Boston being the Athens of America would be burning more gas than others.

A. Boston does burn a great deal more than Worcester and burns a great deal more electricity.

Q. To get back to the question the fact that at the same rate there is a per capita of consumption in Boston of 6,190 as against a per capita consumption in Worcester of 4,340 would indicate that there is no hard or fast rule which makes the per capita consumption dependent on the rate at which the gas is sold wouldn't it?

A. I have been most careful to so state.

Q. For instance the per capita consumption in Lynn, where the rate is lower than in Boston is less than in Boston where the rate is higher?

A. It is in the same unfortunate position Worcester is, anybody that has any money to waste goes to Boston to do it in the evening.

Q. Now will you turn to the next table here and turning
2667 to the report for 1910, give us the population served in east Boston?

A. It is given here 40,940.

Q. That is an error isn't it?

A. May be.

Q. Well you look at the report and see? The population in each instance is the population served is it not?

A. Yes, sir. I see there is put in here which seems to be right, 90,940 instead of 40,940. I will foot that up and see whether a typographical error or original error.

Q. All right foot it up and see.

A. There is an error of 50,000 there.

Q. Now will you look at Springfield and tell us what the population served in 1910 was in Springfield, see if there was not an error there of 20,000 or something like that?

A. In the case of Springfield the additional population served is Agawa, 3,501, West Springfield, 9,224, Long Meadow, 1,084 and Ludlow, 4,948.

Q. So that the figures for Springfield for population in 1910 should be 107,683 instead of 88,926 should they not?

A. Yes, sir.

Q. Both of those errors would tend to reduce their per capita consumption would they not?

A. Somewhat, not very much. It would not alter the principle involved at all.

Q. I want to see if there is not another error there that would be in your favor. I wish you would give us the sales in thousand- of cubic feet in Lowell in 1910. You have it there 376,672, see if that is right. Isn't that about 200 *hundred* million too low?

A. Gas sold by meter in the year ending June 30, 1910,
2668 554,828,500 and gas for public lighting, 181,844,200.

Q. You are about 200 *hundred* million too low are you not?

A. Just about.

Q. So that in order to get the correct average sales per capita we should add about 70,000 to our divisor and about 200 million to our dividend?

A. I can figure that if you like.

Q. All right; figure it and see if it is about 4,023?

A. Is it worth while. This is simply a generalization showing there is an increase in the sales——

Q. I don't care to have you compute it unless you wish to. I wish though you would go over the table there for Lowell and see if they are right.

A. Total sales in thousands of cubic feet 573,678. I have 373,672.

Q. I want to know whether 573,678 is correct?

A. It appears so should be 573,673.

Q. Well you come within 5000 cubic feet?

A. Are you sure that is not a typographical error?

Q. Yes, we are, you can check it.

A. It makes no difference whatever in what I am trying to show you and that is the constant increase on sales per capita as the price goes down.

Q. Turning to the next table, what the population of Revere served in 1910, I wish you would look at the report and see whether you are right there with 18,219?

A. The Suburban Gas & Electric Light Company of Revere and Winthrop 18,290 and 10,132.

Q. You left out the 10,132 didn't you?

A. Yes, sir.

Q. So that your population served was instead of 18,219,
2669 should be 28,351?

A. Something like that.

Q. Now Taunton, you have 34,290, is that correct?

A. The *twon* of Dighton given here 2,235 and Taunton, 34,259.

Q. That ought to be 36,494 instead of 34,259.

A. Yes, sir.

Q. That would reduce your sales per capita there?

A. Very slightly, make no particular difference in what I am trying to show.

Q. Reduce them from 4,007 to 3,844?

A. Something of that sort.

Q. In the last table on that page there is a slight error or difference of about 8000 in population?

A. Any others?

Q. Not on that page. I think also you will find in your next table the population served in 1910 by Webster given a little incorrectly, but the difference is very small. Now turning to the last column on that page you have population served at Stoneham 7090 in 1910, will you look at the report and tell us what it actually was?

A. Population of Stoneham 7090, also of Reading is 5,818.

Q. About 5000 short there in the population?

A. Yes, 5,818.

Q. Your sales there for Gardner are off about a million cubic feet aren't they? You have 7,298,000. That is about a million feet too low isn't it or a little more?

A. Given here as 8,331,000.

Q. That would reduce your average sales per capita there about 10 per cent wouldn't it?

A. That would only exaggerate still further what I wish
2670 to show.

Q. Now turn to the next table here. In the first place you begin with price $2.25 per thousand in 1901, is that right?

A. Price $2.25 sales per capita 1901.

Q. Now the next you have sales where the price per thousand is $2.00.

A. Yes, sir.

Q. That is all the cities in Massachusetts that charge the $2.00 rate you have averaged in your first column under 1901?

A. Yes, sir. You must recollect one thing you know this is all rough work because when I say $2.00 I don't mean exactly $2.00 but I mean within 12½ cents either way.

Q. It appears to be rough work, my computation shows each of these figures in this table are wrong. Not one of these sales per capita is correct. But we will come to that later.

A. There is no very great pains taken with them I will be frank about that.

Q. I am confident of that because I don't see how pains could have resulted in so many errors. Now what I want to get at is this, you took all of the cities which in 1901 were selling $2.00 gas in Massachusetts as shown by the report for 1910 and got the average sales per capita?

A. Yes, sir.

Q. Then took all of the cities which in 1907 were selling at $2.00 for gas and got the average sales per capita?

A. Within 12½ cents either way.

Q. Now then what I want to get at is this whether the cities in 1907 were the same as the cities in 1901? That is take this column $2.00 that rins across the page you have 1901, 584, 1907, 722, 1910, 614. Now is that average for the same cities?

A. No, of course not, applied to the price of gas in all 2671 cities.

Q. So that don't show the price of gas in any city or class of cities or increase in the sales of gas in any city or class of cities?

A. Oh yes; this sho-s in the class of cities giving $2.00 gas in rough way.

Q. In the same way in regard to $1.75 cent gas, were any of the cities which were selling at $1.75 in 1901, selling it at $1.75 in 1907?

A. I could not tell that without referring back.

Q. Have you your memorandum from which you made up this computation so you can give us the cities?

A. I can't give the cities for 1901 or 1907 because that memorandum is in the form of a paper which was published and the details were not gone into. They are in the same rapid way in which I sketched it 1910.

Q. Can you say that any city under the $1.75 price in 1907 is included in the same price in 1901, or cities of the same price in 1910?

A. I didn't look at it from that point of view, didn't go into it. I was simply c-assifying sales of gas at so much per thousand as near as I could get at it in that rough way.

Q. So what this table means as a matter of fact is that certain cities at the $1.75 price in 1901 had averag- sales of 843 and certain other cities at that price in 1907 had average sales of 898 and that certain other cities at that price in 1910 had average sales of 988.

Q. And there is no comparison of any city to show what the growth has been in that city as prices have gone down?

A. Yes, a very careful comparison in the case of the city of Des Moines. I am talking now about Massachusetts.

A. No, I didn't regard that as important at all.

2672 Q. Now as a matter of fact that 283 there should be 339 shouldn't it?

A. I really couldn't tell you. I told you I didn't even know the cities that are in it.

Q. 584 should be 589 shouldn't it?

A. For 1901?

Q. Yes.

A. No, I think that is about right.

Q. And the 845 for 1901 should be 626 shouldn't it?

A. I think that is all worked out very carefully somewhere.

Q. But where?

A. As I told you it was worked out in 1902 along about that time it is so far back it is out of the question—it was worked it just as I have just explained, worked out not regarded as giving a quanti-tive matter but simply showing the tendency and results of lowering prices of gas invariably showing an increase although often a very irregular one.

Q. Is there any way by which you can tell us what cities are included in the 225 rate for 1901?

A. None except going back and getting hold of the volume for 1901 and that I have not with me.

Q. Now will you *that* if you take the cities for 1901 having the price you state as shown by the report of the Massachusetts commission that any figure in that 1901 column would be right?

A. I think for your purpose they are all right. They show universally as the price of gas goes down that the consumption of gas goes up, that was all that I wished to show.

Q. Did you take any one city and run that through with it?

A. In 1901?

Q. From 1901 on?

2673 A. No. Except Des Moines.

Q. Now there is another thing that they do isn't there in Massachusetts that has some bearing on this. They maintain a constant population for five years in their reports taking the census and maintaining the population constant for five years and then jumping to the next census?

A. Well I don't know.

Q. Isn't that — they do?

A. I don't know how they do there. I never thought of it. I am perfectly willing to accept their facts.

Q. Haven't you carefully studied these reports?

A. In regard to that?

Q. In regard to the whole situation?

A. Massachusetts reports in regard to development of gas if I thought I could get an accurate rule out of that I would take no end of trouble.

Q. You have got an equasion in there?

A. Got an equasion in but you will find the equasion for 1901 is

entirely different from the one for 1907. There is no use pretending to an accuracy that you cannot reach.

Q. Getting back as a matter of fact, do you know how they treat this population matter in reports whether they attempt to give the actual population or whether they adopt the census and carry it until the state census and then carried that until another federal census in five years?

A. I could not say.

Q. Of course if they do that is there *is* any increase in your population your per capita consumption is too high four years out of five isn't it?

A. Well yes if they only make a hop once in five years
2674 the gas would probably roll along up per thousand for a lower population than real. But these Massachusetts cities are slow of growth and very thrifty and the commission knows what they are about if they don't change the population.

Q. Well take one of them here, Lawrence, I see that in 1901 the population was 81,127. That population was used continuously for 2, 3, 4 and in 1905 it jumped to 89,972. That was used continuously to 1910. 1910 it jumped to 110,170. That is an increase for the ten years of 25 per cent roughly?

A. Two and one half per cent per annum.

Q. Is that a fair average increase in population for ten years?

A. I should say it is very unusual for Massachusetts.

Q. Well I notice that in the same period Cambridge jumped from 162,152 to 158,924 also just about 25 per cent. Does that look right to you?

A. That is a college town you know, it is different as far as gross is concerned and the manufacturing towns are the towns that generally burn the most gas and most electricity.

Q. Suppose you should take one town like Lawrence and run that down for ten years and get your reductions in prices and your increases in consumption, would you say that would be as good a test as good a criterion of the affect of the reduction of price as would be comparing Lowell at Lowell in 1901, and Cambridge in 1907 and Worcester in 1910?

A. If you are seeking what I sought in the Massachusetts discussion a generalization directly state- and was not to be quant-ative but simply showing the general tentative or law it would be the greatest mistake in the world to take up an individual city with the idea of proving anything of that sort. Nothing but these aver-
ages that you have will show the two ways in which gas
2675 seems to increase per capita. One is by the steady growth which you notice has occurred in the Massachusetts cities, occurred very irregularly without any change in price, but still occurring all the time as the price gets lower the growth without change in price seems to grow stronger, and the other is the growth in the sales per capita due to the reduction of price and to pick out any one city whatever it might be you are liable to go either way and do an injustice in making comparisons with it.

Q. What city in Massachusetts is most nearly like Des Moines in its population and conditions as far as gas sales are concerned.

A. I can't answer that question at all. They are thrifty people in Massachusetts and not the same conditions, not liable or not willing to spend as much for gas, their towns do not change as rapidly, not as many new buildings going up and the consequence is there is not as much gas put in as there would be in a town of smaller population in Iowa where the constant change is going on and the growth going on.

Q. So that the situation in Massachusetts is not analogous to the situation in Iowa.

A. No. Just as you would not expect a Massachusetts man to do business the way an Iowa man would.

Q. Will you check up this first table on page 94 and if you can find any figure in it that is exactly correct will you point it out to us, between now and the next hearing?

A. I don't think there is any attempt made, there could not be any attempt made where one took a range of 25 per cent or 12½ cents either way from a certain given price to obtain accuracy in the matter to have attempted to have obtained accuracy in this
2676 matter would have filled a report bigger than the whole of the report I turned in.

Q. So you don't pretend it is accurate?

A. I have stated so at the outset and at the end, and approximation, it is only a rude approximation showing the growth of gas on reduction of prices.

Q. You have a table headed study of increase per capita for dollar gas showing an increase of 179 feet. Are you willing to say that may be 131 feet if computed accurately on the basis of what precedes?

A. Might be a hundred or might be 200 but it agrees with the main thing to be proved.

Q. Now in the same cities the sales per capita are ascertained by dividing the gross sales of the year by the population?

A. Yes, sir.

Q. Consequently your sales per capita do not indicate that each indi*vudal* consumer is taking more gas. You may double your number of consumers may you not?

A. The sales per capita makes no mention of the sales per meter and purposely makes no mention of sales per meter. It is intended to show that a community as a whole and on the average their attitude towards the gas company. Their desire to use gas regardless of whether it is done through a thousand or ten thousand or twenty thousand meters.

Q. Then your figures here would not show whether the individual consumer was using any more gas or not and you could not tell that without going further than you have gone and taking the number of consumers.

A. Correct.

Q. Consequently your increase here would not afford the
2677 basis for any inference as whether or not to obtain this additional consumption a*j* additional investment had been made necessary?

A. In services and meters you mean?

Q. In services and meters and in mains and in manufacturing plant.

A. In a general way, no.

Q. Now have you ever taken any of these Massachusetts cities and run through a period of ten years to see whether your theory is right that people spend about so much for gas or whether this additional consumption per capita was due to the increased number of consumers with an increased investment?

A. I never have carried my work into such detail as that.

Q. Don't think that would be a very material factor if we are to use this for the purpose of determining whether the Des Moines Gas Co. can be held here to furnish ten per cent more gas without any additional investment in the plant?

A. No, I don't think that a matter of importance.

Q. You assumed that in the first year the Des Moines Gas Company would sell 600 million cubic feet at the 90 cent rate didn't you?

A. No, I said when it got to the 600 million cubic feet. I didn't say when it was.

Q. Did you not say this at the bottom of page 95, the statement has heretofore been made that the safe capacity of the existing works of the Des Moines Gas Co. is about three million cubic feet per day or say 600 million or more cubic feet per year. Its sales 1910 amounting to 528,375 thousand cubic feet it is reasonable to assume that the price of gas at the rate of 90 cents per the ordinance of December 7, 1910, 600 million cubic feet annual sales, the works capacity will be reached. You say that don't you?

2678 A. Yes, sir.

Q. Then you say following this it is obvious that the only increase required to reach its capacity will be in the oil, coal and coke for fuel and the purifying material in general all the other conditions of operation will remain as they are today.

A. Yes, sir.

Q. Was that in contemplation of obtaining 600 million some time in the next ten years or in the first year?

A. Oh I would not be the least bit surprised to hear you were doing that right today, 600 million.

Q. I didn't ask you that, I asked you what assumption was this statement made?

A. Well within some reasonable time, a year or so you would get along to it.

Q. How soon did you say, a year or so?

A. Yes, a year or more.

Q. How much more?

A. Well I don't know.

Q. Isn't it important to know?

A. Well you never should prophesy unless you know. I think the books would show if you have gotten to it already. You ought to.

Q. Now you say following this that the sales would run up to 600

million. Now passing that what do you figure per capita sales would be when we get to 600 million?

A. Of course it would *ge* 600 *hundree* million divided by whatever population it is you sell to.

Q. Well how soon is that going to happen?

A. I just declined to state that definitely, gave it to you as my opinion that if it has not happened already it will happen—

2679 I would not be at all surprised if it happened already.

Q. Do you say it has happened already?

A. I would not be at all surprised if it had happened already.

Q. If it has happened already it will give us in the actual case a very fair check on your accuracy of 25 cents per thousand here will it not?

A. No, not if you jump your accounts in the way you did in 1910.

Q. You refer to the two items of $15,000 that make a difference of three cents?

A. No, to the increase all along the line everywhere, run down these five years or four, run along pretty smoothe and get to 1910 they jump right up every one of them, big increases in all the different forms of repairs and operating expenses.

Q. Well let's get back to that for a minute and have you point some of them out. In 1908 the cost per thousand was 64.0——

A. Will you pardon me if I refer to what I was speaking of?

Q. I beg your pardon but I only refer to the exhibits showing the actual book cost. Will you take this Exhibit 24 and take the cost per thousand for the two months ending February 28, 1906 and what was it. You were talking about the way we have jumped things, these amounts are the book items, this is what our books show.

A. Will you allow me to call your attention to another thing in Exhibit 24?

Q. I prefer you answer the question.

A. Will you allow me to complete the answer to the original question.

Q. I prefer to have you answer my question.

Mr. BRENNAN: I would like to have him answer the question in the way in which he thinks he can answer.

2680 Q. The question is referring to Exhibit 24, what does it show the cost per thousand to be for the two months ending February 28, 1906 I think you can answer that very easily from the exhibit.

A. I was speaking more particularly in the accounts there in the way in which they increase, not 24.

Q. I know but I am asking the question now answer it if you please.

A. You cut me off on the way I wanted to answer the question, the one you asked me by switching in another question before I answered.

Q. Please answer the question. What does the cost appear there for two months ending February 1906 of gas per thousand, as shown by Exhibit 24?

A. This is complainant's Exhibit 24 and there is for the two months ending February 28, 1906, there is given total operating expenditures, 74.15 per M sold.

Q. It is cost per M made?

A. No, if you go down a little below that you will find per M cubic feet sold.

Q. Now if you will go -ver to the year 1910 and give us same cost including the two disputed items amounting to about $15,000 or about 3 cents per thousand, that is the 12 months ending December 31, 1910?

A. It is shown on this account as being 66.47 cents, but it is absolutely unfair and incorrect as a means of comparison. Two months being compared with a year.

Q. Now will you take the cost per M for the twelve months ending February 28, 1907, as shown by this same Exhibit and what are they?

A. The total operating expenses in that twelve months give 65.81 per thousand cubic feet sold.

2681 Q. And for the next twelve months is what?

A. For the twelve months ending February 29, 1908, the total operating expenditures give 64.1 per thousand cubic feet sold.

Q. And twelve months ending February 28, 1909?

A. The total operating expenditures 59.69 per thousand cubic feet sold.

Q. And for the next ten months period?

A. The ten months ending December 31, 1909, gives 62.56 cents as the total operating expenditures per thousand cubic feet sold.

Q. Now this 1910, 66.47 less the three cents, 66.47 is at least as low as the average for this five — period isn't it?

A. It looks that way.

Q. Ans that is the expense as it jumped up in 1910.

A. Will you allow me to answer your question now?

Mr. BRENNAN: Go ahead and answer it yes.

A. That is not the expenses to which I referred and the jumping, it is this, the repairs to works for 1907 were, 9,699,99.

Q. What page are you reading from?

A. Pages 79. For 1909 the repairs to works was $6,825.23; 1909, 5,996.71; and for 1910, where the jump occurs $14,193.78. Again the repairs to mains for 1907, $2,838.28, 1908, $4,420.78, 1909, $3,166.75; 1910, $9,347.30, again a jump. Repairs to services 1907, $469.22; 1908, $504.92; 1909, $910.41, 1910, 5,224.76. Repairs to meters 1907, $2,392.77; 1908, 3,443.85, 1909, 4,772.99; 1910, $5,211.63. In every case a very great jump except in the case of meters.

Q. Now you say in your report this, the Des Moines Gas Co. presents the following record of repairs covering a period of four years and giving yearly averages which probably are not as accurate as might be derived at a longer period. What does the last

2682 part of the statement mean that you thought that taking these averages and these jumps, does it mean in your judg-

ment the charges are excessive or not, or the charges probably are not as great as might be derived at a longer period.

A. I presume it was my intention to say that they are not as great as they would be if continued for a longer period.

Q. That is if you have taken your average over a longer period instead of this five years?

A. No, I have taken four years, if I would go on for 1911, what I mean to say?

Q. You wanted to insinuate in 1911 there would be something wrong?

A. No, keep on going up.

Q. Did you make any effort to ascertain what causes this increase in repairs to mains for instance?

A. Yes, sir.

Q. Did you l-arn that the repairs to the mains and to the s-rvices increasee in 1910 because the city had changed the grade on a good many streets such as east 6th street, east Des Moines street, east Locust street, east Second street and many others involving the company in *the* unusual expense in lowering or raising mains and services.

A. That didn't interest me so much as repairs to works, $14,193.

Q. That don't answer my question.

(Question read).

A. Only in a general way was a reference made to the matter, no specific reference to streets or anything of that sort.

Q. You didn't take the trouble to find out what in fact caused this increase?

A. I asked about it.

Q. You didn't follow it up so you found out?

A. Gave instructions to find out about it, no I did not.

2683 Q. You might follow it up on the books?

A. No, I didn't follow it up on the books.

Q. Did the accountants follow it up on the books?

A. Well I don't know how far they followed it up. I made but very slight inquiry *anything* about the matter.

Q. You just condemned it without knowing what caused it?

A. I made no condemnation, I noted the fact expenses jumped up. Might possibly be your error was the other way, you made up on repairs in the business, I have not passed any opinion on it.

Q. Then if I understand you correctly you do not want to be understood as criticising these amounts as improper amounts under the circumstances?

A. No further than as shown and comparative inconsistency of the management.

Q. Well would you say that it showed inconsistency of the management to charge into the operating expenses of 1910, the extraordinary amounts which on account of the action of the city in changing grades it had been necessary to extend on the mains and services?

A. I have called your attention to it, I rather decline to express an opinion at all until I had investigated it very thoroughly.

Q. And that also would be necessary with reference to these other

things, take repairs works, do you know what items make these increases in 1910 in repairs works?

A. No, sir.

Q. Until you do you could not very intelligently either approve or condemn them could you?

A. That is the way I look at it.

Q. The same thing is true all the way through isn't it?

2684 A. All the way through. My point is the sudden jump.

Q. And with this sudden jump here there must have been an economy somewhere else to keep the average down where it was in 1910?

A. Average per thousand, good showing.

Q. Good showing isn't it?

A. Good showing, yes; no getting away from that.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

2685 Tuesday Forenoon Session.

AUGUST 22, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

WILLIAM D. MARKS, continuing his cross examination, examined by Mr. Guernsey, testified:

Q. Now, yesterday I was asking you about this proposed 600 million, I asked you when we were to assume that that amount of output had been attained, or that amount of sales had been attained, and as I understood you, you couldn't fix any definite time. How in your direct examination on that question the assumption was that this volume of sales would be obtained in a year, was it not?

A. In about a year from the time of change of price.

Q. So that is the assumption upon which you gave your testimony and made your estimate, is it not?

A. No.

Q. Well, now, let me read the question, page 2348 of your direct examination: "Now assume that at the end of the year, we will say one year after the ordinance was in force, the one in controversy, that the sales of gas would amount to say 600 million, about what would be the rate of return based upon your valuation in this case? A. About ten per cent with gas at 90 cents." Was your answer there based upon the assumption there in the question that this volume of business would be attained in one year and is your computation in your report based upon that assumption?

A. First of all, to go from 550 million to 600 million means an increase of about ten per cent in the sales. Looking at

2686 the exhibit of this complainant, shown on page 88, I observe——

Q. You mean page 88 of your report?

A. Yes, page 88, I observe that the increase going from $1.10 to $1 was given as being about 15 per cent and then sticking at the

price of $1 for the years 1906, '07, '08, '09 and '10, the increase became slower and slower until it was only 7 per cent per annum. Now it appeared to me, judging from analogy, and of course you understand that this is rough work shown here——

Q. I concede that——

A. Shown here in this column of your exhibit that at the best can only be an approximation, but it seemed fair to assume that about ten per cent would accompany the reduction of the price of ten cents somewhere within the neighborhood of a year after that reduction had been made. I understand, however, that the fact of the matter is that you have gone on increasing your sales—this is merely a passing remark—which leads me to believe that you are very close to the 600 million already.

Q. To get back to the question—then your testimony and your report are based on the assumption that the sales of 600 million will be acquired in a year?

A. They are not.

Q. They are not?

A. No; there is no such exactitude possible.

Q. Are the- based on the acquisition of that amount or volume of business within any specific time?

A. Within a reasonable time, one year perhaps, perhaps a little more, perhaps a little less from the time you go to 90 cents.

Q. Approximately a year?

2687 A. You may put it that way, but approximately is a little close.

Q. Now to go back a little—you said when we decrease the rate from $1.10 to a $1. we jump 14 cents, or 15 per cent. Now if you will look at the table you will see that in the first year after the dollar rate went into effect, our increase was 11.3 per cent?

A. 11.3—I see in the second year it was 15 per cent; that only verifies what I was trying to tell you.

Q. 11.3 per cent the first year?

A. Yes.

Q. And that increase was less than the increase in any one of the five preceding years, was it not?

A. No, I see you have 9.2 per cent there——

Q. I know, did you count right—that is the sixth preceding year, isn't it?

A. I will see.

Q. Just count it up? Starting with 1905, '04, '03, '02, '01——

A. Do you count that in?

Q. That is the sixth preceding year.

A. But the $1.10 is the preceding year; this takes in five preceding years.

Q. My question was the years that preceded the reduction; now the reduction was January 1, 1906, and the increase in the year in which the reduction occurred was less than the increase in any one of the five preceding years, was it not?

A. Slightly less than some of them.

Q. Well slightly—one of the five preceding year- was 28.4?

A. Yes and one was 13.

Q. But the average was nearly double this 11.3 per cent, wasn't it?

A. I haven't figured it up.

2688 Q. I haven't either, but just looking at the figures I would say it was.

A. It is all right to say double in work like this anyhow.

Q. Now, then, this statement is rather interesting—let us go back a little. Have you taken this statement, take for instance that 15.4 per cent in 1907; have you looked through the expense, the operating expense to see whether an abnormal amount was spent to extend the business at that time?

A. I have not. I have had a very limited time, indeed, in which to go over these matters.

Q. It would be necessary to do that before you could ascribe this to a mere decrease in the price—isn't it possible to extend the gas business as any other business?

A. You can create a precocious growth in the gas business by the methods you are using here. I don't say that in the way of criticism at all, but rather in the way of commendation, and it has been done evidently.

Q. So that is would not be safe to take these figures alone to draw conclusions from?

A. Not at all if you try to draw exact conclusions.

Q. Now, then if you increase this per capita to 600 million, this volume of sales to 600 million within two years, what would our sales per capita be, say when the population is 87,000—86,000 plus by the last census of 1910?

A. 87,000 is what I would take, is it?

Q. Yes, I call it 87,000 instead of 86,000; I want to emulate you and give you the benefit of the doubt.

A. It would be near enough to call it sixty-nine hundred.

Q. Yes. What are the sales per capita now, do you know, in Des Moines?

2689 A. I was told about six thousand, in that neighborhood, so closely there was no difference.

Q. Do you know of any city in the United States at 90 cent gas that has sales per capita of 6900?

A. Certainly no New England city; I haven't looked that matter up.

Q. Wouldn't that be a very material factor in determining what the future of this proposition was going to be here?

A. Not in a rapidly building community like that of Des Moines; not in one that is always putting up new houses and small houses too.

Q. Now, I have a list of some of the cities here—Baltimore, with a population of 600,000—a very much larger place than Des Moines, with 90 cent gas, and sales per capita of 4454?

A. Yes, I had occasion to look into Baltimore; I am not talking about the last year or two; up to that time it was just about the most poorly managed gas outfit in the United States.

Q. Take Providence has 225,000 population and the sales per capita are 4796, that is right?

A. As I stated to you, you will not find that in New England; they are not growing communities.

Q. Let us go to Denver then, a very prosperous and extravagant city, farther west than we are, and have a population of 213,381 with 90 cent gas and sales per capita of 5022.

A. I don't know the sales per capita; that would be about what I would expect of Denver.

Q. Let us take Richmond, Virginia, they have a population of *of* 127,000 and sales per capita of 3406, at 90 cent gas.

A. There you get again in a community in which a large population is colored and as a natural consequence the per capita is not a fair criterion.

2690 Q. The- take Hartford, Conn., they have 90 cent gas and a population of 110,000, and the sales per capita 5047.

A. That is about right; you understand I distinctly except throughout New England.

Q. Didn't you take New England as the entire basis of your report for the computation you make?

A. Simply to show the growth of gas.

Q. It is not at all as a basis for what you anticipate in Des Moines?

A. Not at all; simply to show the general tendency.

Q. In Lowell we have 90 cent gas, and a population of 107,000, and the sales per capita 5128?

A. Lowell is one of the best New England cities.

Q. Now, then, going further west, Fort Wayne has a population of 75,000, 90 cent gas, and 3000 sales per capita?

A. That I don't know. I would have to go over that. I should think they ought to be better than that.

Q. Will you verify that for us?

A. Yes. What are the figures?

Q. Population of 75,000 and the sales per capita——

A. No the total sales please.

Q. I didn't give you the total sales, gas sales, they exclude the street lighting.

A. That would give you about 3000 per capita.

Q. And the rate is 90 cents?

A. Yes.

Q. Go a little further west to Peoria, with a population of 70,000 and sales per capita of 4381 at a rate of 90 cents.

A. Of course the only point is not what these towns are doing, but what the city of Des Moines is doing according to your books today.

2691 Q. I know, but I think there is something in your report about what you call satiation?

A. Yes, properly should be.

Q. I won't quarrel about definitions—that is a factor to be taken into account in determining what the possibilities are of developing and increasing the business.

A. At any given price it should be taken into account.

Q. And in determining whether or not that point would be reached you would naturally compare the consumption per capita here with the consumption per capita elsewhere, wouldn't you?

A. In the same rough way in which I used New England to show a general tendency; certainly not as an accurate quantitative method.

Q. Now take Terre Haute, Ind., that has a population of 65,000, and sales per capita of 3558 at 90 cent gas?

A. I will have to accept your statement; I haven't looked it up.

Q. Are you willing to accept it?

A. I said I would have to do so.

Q. I don't want you to do it under duress, but I would like to have you verify it?

A. I have no means to verify it. Of course I am taken by surprise by these announcements.

Q. It would be the natural thing to look up the per capita sales elsewhere if we wanted to form a conclusion of the per capita sales in Des Moines?

A. You might as well look up the general tendencies elsewhere.

Q. Do you know of any city where the conditions are like those in Des Moines that has as large per capita sales at either dollar gas or 90 cent gas, that Des Moines now has, if so, what is it?

A. I have not had opportunity or time to look it up.

2692 Q. So that you don't know then?

A. I can't recall any.

Q. Now, then, what is the increase in per capita sales in Des Moines been due to, has it been due to the fact that the consumers of gas have been using larger quantities, or to the fact that the number of consumers has relatively increased?

A. It has been due to a precocious growth of the business of this company, and that in turn has been due to the extraordinary care taken of your consumers, for I understand that the consumers of the city all feel that you are ready at all times to take care of their apparatus and of them.

Q. In other words, we give them good service?

A. Good service and with the amount of solicitation and advertising which has been done recently, that seems to have resulted alike in larger numbers of consumers in proportion to the population than usually happens in a town or city of this size, and also in the more generous use of the gas than usually happens in a community of this size.

Q. Now, I wish you would take Exhibit 36 and tell us what the population per meter is in Des Moines or was at the end of 1910?

A. Twelve months ended December 31, 1910, population per meter 4.5.

Q. Now, then, on the 31st day of December, 1905, when the last reduction in rates was made, what was the population per meter?

A. Twelve months ended December 31, 1905, population per meter, 5.84.

Q. So that during this period now, since the dollar rate has

been in effect, we have first to start with here in Des Moines, we have now one meter for every four and a half persons in the city, while when that rate went into effect, there were 5.84 persons for
2693 every meter here?

A. I would not be willing to accept it without going over the matter carefully.

Q. Assuming this is correct, that would indicate that the use of gas during that period had been materially extended, wouldn't it?

A. Yes.

Q. And that would tend to increase your sales per capita without reference to whether the persons who had been using the gas before used more or less?

A. If you take the number of meters and divide into the population of any town, you get of course, the number of people as it were, attached to each meter; but I don't say that you can infer from either of the figures 5.84 or 4.50 any more than that.

Q. Well, let me see, if I can make it clear to you. If in Des Moines, or some hypothetical city—we have not referred to a hypothetical city yet—there were a thousand people taking gas, each of them burning 5,000 feet a year, and the population of the city was 10,000, and then the next year 2,000 people took gas, each of them burning 5,000 feet a year, your per capita consumption would be doubled, wouldn't it?

A. The population remaining the same?

Q. A thousand consumers the first year burning 5,000 feet a piece, what would that per capita consumption be that year?

A. Of course, you have 5,000.

Q. You added five million, didn't you?

A. Yes.

Q. Divided by 10,000 would give you what?

A. Five hundred.

Q. Now, then, suppose the next year you had 2,000 people taking gas, each taking 5,000 a year?

2694 Question continued: That would double your consumption?

A. The population remaining the same?

Q. Yes.

A. That would be an increase.

Q. It would double it?

A. Yes.

Q. Well, now, then as you decrease the number of people per meter, you increase the number of consumers, don't you?

A. That assumes a constant population always.

Q. Wait a minute—if your population increases your number of consumers would increase more rapidly?

A. Yes.

Q. You only have assumed a constant population?

A. Yes, you started out with a constant population.

Q. Wouldn't the fact that the number of people per meter decreased indicate that relatively more people were taking gas?

A. Yes, not how much.

Q. It wouldn't indicate how many more, but if there was an increase in population, it would be greater than what appeared on the face of the returns greater than the line of difference between 5.84 and 4.50?

A. Yes.

Q. That would increase your per capita consumption without taking into account the amount consumed by each consumer?

A. I would have to take that specifically in each case; I wouldn't generalize in that way.

Q. Are you willing to say, that the tendency of the decrease, or the increase in the number of meters, that is, the decrease in the population per meter, are you unwilling to say that the tendency of that would be to increase your per capita consumption?

2695 A. Using the word tendency, nothing more than the word tendency. That statement appears to be correct, unless on further investigation it has been found that something has happened to cut down the use of gas per capita at the same time that the cut down of people attached to each meter occurred. You see you can't generalize without qualification in that case.

Q. Now let us study this a little more, because I think it is safer to stick to Des Moines. You notice in 1906 the decrease in the number of people per meter was only .05 and you remember looking at your table in 1906 the increase of sales was 11.3?

A. That is not my table; that is one furnished by the Gas Company.

Q. It is yours by adoption, isn't it—I won't quarrel with you about that; it is the table set out on page 88 of your report.

A. Taking the year 1905 to 1906?

Q. No, the year 1906.

A. The year ending December 31, 1906.

Q. That is the first year of this dollar rate?

A. There is an increase of 11 per cent.

Q. Now, then, if you go to 1907, you get an increase, referring again to the table set out at page 88 of your report, of 15.4 per cent?

A. Apparently.

Q. You will find that your number of persons, your population per meter has dropped some instead of one half of one per cent, has dropped .44, don't you—so that there has been a radical increase in the number of consumers; that is, it dropped from 5.79 in 1906, and 5.35 1907?

A. .44 per meter.

Q. Instead of 1905?

A. Yes.

2696 Q. You observe that?

A. It appears in that way here.

Q. Now, I understood you to testify on your direct examination that the revenue remained just about the same, the revenue per meter shown on this table for the last year in which the dollar ten rate was in force and was 28.50, wasn't it?

A. Referring to the year——

Q. The last year in which the $1.10 rate was in force, 1905?

A. The revenue per meter 28.50.
Q. The next year it is 26.83?
A. It is so given.
Q. The next year it is 27.78?
A. Yes.
Q. The next year it is 28.15?
A. Yes.
Q. The next year it is 22.20?
A. For ten months, yes.
Q. And the next year it is 27.33?
A. Yes—wait a minute; there seems to be 4.54 here.
Q. That is for the two month period. So that the revenue per meter has not in any way got back to where it was at the $1.10 rate, has it?
A. Not according to those figures, if you wish to be very exact.
Q. All we wish to be is right.
A. Yes.
Q. So far as you know this table is right?
A. Yes.
Q. Now, then let us turn to the sales per meter, and see whether they jump up amazingly at the $1.10 rate; the sales per meter were 25843?
2697 A. You mean the year 1905?
Q. Yes.
A. Yes, 25843.
Q. For the next full year it is 26680?
A. Yes.
Q. An increase of about five per cent?
A. Yes, that is 12 month ending February 28, 1907.
Q. So that the increase in the sales per meter is about 5 per cent, and the increase of gross sales according to the table in your report on page 88 was 11.3 per cent.
A. So it appears; you speak of it as my table, it is your own table.
Q. I beg your pardon; I was very careful to avoid hurting your feelings; I referred to the table set out at page 88 of your report.
A. I thank you.
Q. So it won't do to say that this increase was due to an increase of consumption by the people taking gas at the time the price was decreased, will it—now referring to Des Moines and not Massachusetts?
A. It will appear from the figures that you have given here that for the year ending December 31, 1905, the sales per meter were 25843, and then the sales per meter go on increasing in an uneven sort of way and at the end of December 31, 1910, to 26995 or in round figures about 27000; so that it would appear from this table as if the sales per meter had appreciably increased as a result of the lowering of the price.
Q. Now, Mr. Douthirt just made for me a short computation. We find that the increase in the sales per meter in the first full year given after 1905 is about three per cent and the increase in sales is about 11 per cent.

2698 A. Do you mean the year ending February 28, 1907?

Q. Yes; I am again giving you a little the better of it, following your example; you will see in the year 1907 the increase was 15.4 as against 11.4 in 1906?

A. Comparing the two tables with the increase of sales per meter does not follow on as rapidly as the increase of sales.

Q. The increase of sales per meter is about three per cent for that year, while the increase of the total sale is 11.3 per cent, and the conclusion that I want you to deduce from that is that the increase in the sales during that period was due more to the increase of a number of consumers than it was to the increase in the gas consumed by the persons connected.

A. You mean the increase of the number of meters got right down to it and jumped the consumers.

Q. Well, I'll substitute that.

A. That of course happens right along; the increase occurs in two ways; there are more meters, more sales per meter, but the increase in services and meters just about picks up the average depreciation that is going on; so that the depreciation money comes right in.

Q. Now, then, in that year you figure an increase of say 10 per cent for one year on account of the decreased price, haven't you?

A. First of all, I haven't figured a year.

Q. I withdraw that question. I want to ask you another question. Now the sales for the twelve month- ending December 31, 1905, were 25843 per meter, weren't they, as shown by this Exhibit 36?

A. Yes.

Q. And the sales for the five years after that, the year ending December 21, 1910, were 26955?

A. Yes.

2699 Q. Now, the difference is 1112, isn't it, and that is what per cent of increase in five years in the sales per meter—4.3 per cent, isn't that right?

A. About 4 per cent.

Q. So that the increase in sales in five years, due to increase in consumption is something like four per cent as shown by these figures?

A. You can't increase the sales per meter.

Q. Yes. Now, then, during that same period I find referring to the table set out in your report on page 88, that the gross sales increased from 334,404,640 to 531,991,054 cubic feet, and I find also during the same period the population per meter decreased from 5.84 to 4.50; what do you ascribe that increase in sales to, to energy in extending the business, and getting new consumers of a decrease in price?

A. First of all, the influence of the price is seen in the year ending December 31, 1906; we have an increase of 11.3 in the total sales; in the year ending December 31, 1907, we have an increase of 15.4 per cent in the total sales; at about the end of this year I should judge that the influence of the recent reduction of ten cents

in the price had vanished and then comes the regular growth in the sales per capita due to the advance of the art of using gas; for in the year ending December 31, 1908, we have a growth of 7.3 per cent; for December 31, 1909, we have 7.8 per cent; and for the year ending December 31, 1910, we have 7 per cent. In other words, at a constant price a very unusual increase, about 7.8 per cent has occurred during the last three years, due to the unusual efforts and skill with which the service and the people of Des Moines have been handled, but that 7 or 8 per cent is only about .4 or .5 of
2700 the growth which happened during the first two years, the average of this is 13.3 per cent, during the first two years, for the years 1906 and 1907.

Q. During this period, including 1905, down to 1910, that is six years, we find that the sales per meter have increased about three per cent; we find that the population per meter has decreased from 5.84 to 4.50, and we find that the gross sales have increased from 334,404,640 in 1905 to 531,991,054 in 1910, an increase of a little over 59 per cent; now then, do you ascribe that increase in the gross sales to the fact, or to the claim that the consumers when the price was reduced in 1906, used more gas, or to an increase in the number of consumers?

A. It would appear as if both were the case.

Q. And which would appear to be the more important factor taking into account that the increased sales to each meter was only 3 per cent during the entire period, which the increase of gross sales was 59 per cent?

A. What was the increase in the meters?

Q. It don't appear on this sheet; I have got it here somewhere. The total number of meters December 31, 1904, or January 1, 1905, was 11,436, and December 31, 1910, 19,736?

A. That is to say in those five years?

Q. In six years?

A. Is that December 31, 1910?

Q. Yes.

A. The number of meters run up 8300.

Q. Yes, about 70 per cent; now do you think our increase in sales was due to the decrease in price or the increase in the number of consumers.

2701 A. I think it was due to both.

Q. Which do you think was the more important factor?

A. As a basis for decrease in price, for you would not have got the consumers without it.

Q. Now, let us see; now we had here the first of January 1906, 12,940 meters, and on the 1st of January 1907, 14,640; now that would give us an increase of 1700, wouldn't it?

A. That is correct.

Q. Now, then we had on the 1st of January, 1908, 16,076?

A. 1436 difference.

Q. So that the difference in one year we had a decrease in 10 cents and the other year no decrease with the difference of 250 meters—there is a difference in the number of increase?

A. In other words, it began to flatten out; the progress did, the wave of progress.

Q. Now, then, I want to go back a little further and check your theory a little more with the Des Moines business. Now on the 1st of January, 1896, the rate dropped from $1.70 to $1.30 and remained $1.30 for the years 1896, and 1897?

A. The year ending December 31, 1896?

Q. I asked about the rate first?

A. The rate appears to have been $1.30 flat for all purposes.

Q. What was it for the year 1895?

A. $1.70, $1.50, $1.25, for use on a large scale.

Q. Now, then, in 1895 our consumption per meter is 24558, isn't it?

A. Yes, 24558.

Q. The next year it jumped to 26652?

A. 26652 cubic feet per meter.

Q. Then, in 1897 it went back to 24921, less than it was in 1905?

A. Yes.

2702 Q. Those are the two years covered by the first reduction, the two years at which the price was $1.30?

A. That is right.

Q. If you will turn to the revenue per meter you will find in the year 1895, before the reduction it was 38.35; in the next year it was 34.04 and the next year 31.59?

A. Yes, it is so given.

Q. Now, then, on the 1st of January, 1898, we had another reduction to $1.25, didn't we?

A. You omitted one point; before you leave it, the increase of total sales as the result of that reduction was 25 per cent; that is, referring to the table on page 88.

Q. I am willing to digress and am willing to concede an increase in the total sales, but did you notice that during these two years, the population per meter was 22.72, while in 1897 it was 16.61, and did you take into account the increased number of meters which in 1895 was 2448 and in 1897 was nearly fifty per cent more, 3479, and must not you take that into account before you can say that the increase was due to the decrease in price?

A. As a technical proposition, you are to a certain extent right. But these gas companies are in business for money and nothing else; they are not worried over what engineers are doing in these matters and if they can see a jump of 25 per cent in the total sales of their gas, the wise manager, and you have them, does not worry about a few more services and a few more meters; they are a trivial matter, forgotten in the enormous gain there is in the business. That is the reason why I lay some stress on that 25 per cent, as showing the general tendency.

The MASTER: The increase of sales per meter is without

2703 expense to the company, isn't it?

A. Yes, without any additional expense.

The MASTER: But the increase of sales by reason of new customers does increase the expense to the extent of the meters and services?

A. Always to the extent of a meter, and frequently you will find one old service has a lot of new meters attached to it, so that there is no service put in.

The MASTER: It will be increased by the expense of a meter or service?

A. Either the expense of a meter alone or the expense of an additional meter and the service.

Q. Let us check that out a little. I notice by Exhibit 33, for the year ending December 31, 1895, we had a total miles of mains of 38.36 and I note here the total number of miles at the end of 1896 were 48.433; that is an increase roughly of ten miles or something over 25 per cent?

A. Nearly 30 per cent.

Q. Then I observe going on down to where we stopped that from this same exhibit, December 31, 1897 the miles of main were 57.67, so that in each instance there was an increase in services, meters and mains apparently, wasn't there, to get the increased business?

A. Yes.

The MASTER: Are the number of miles of mains in the city of Des Moines unusual, considering the amount of gas sold or are they simply normal?

A. Normal, considering the amount of gas sold.

The MASTER: There are a great many outlying districts?

A. When I say normal, I mean clearly for western cities.

2704 The MASTER: Western cities?

A. Iowa cities.

The MASTER: How is it as compared with New England cities?

A. I should think New England cities had a little the advantage in the number of cubic feet sold per mile of main; everything is snugger, thriftier and closer up.

The MASTER: How is it with Baltimore?

A. I have to figure on Baltimore; I will be glad to.

The MASTER: How is it with Buffalo, if you remember?

A. That would not be fair to compare, for this reason, that the natural gas has gotten into Buffalo and they have four or five hundred miles of mains there; so that Buffalo would be at a great disadvantage as compared with this place; this place would show up a great deal better than Buffalo because the natural gas is in there at 34 and 35 cents.

The MASTER: How is it with the district in New York that you investigated?

A. Do you mean the Island of Manhattan?

The MASTER: Where the Consolidated Gas Company was?

A. That is the richest territory in the world. London, I believe, has between eight and nine thousand sales per capita and that for a long time was considered the richest territory in the world, but New York has gotten up, Manhattan has gotten up to 10,000.

The MASTER: I simply wanted to know how it compared in mains.

A. Well, the sales per mile of main in New York are so far beyond anything else that it is a case of its own.

The MASTER: How is it compared with the city of Boston?

A. I should say Des Moines today the sales per capita was about abreast if not a little ahead of the city of Boston.

2705 The MASTER: Per miles of main?

A. That I can't recall, because I don't know the miles of main in Boston.

The MASTER: I had a curiosity to know. I thought possibly Des Moines had many miles of main as compared with other cities, because I believe it has about 53 square miles.

Mr. BRENNAN: About 54.

Mr. GUERNSEY: The population per miles of main in Des Moines is 467, and the population in Baltimore is 1036, and Boston 672.

The MASTER: I suppose it is just as Mr. Marks said, that the New York district would have perhaps the greatest sales per miles of main in any city in the United States?

A. The sales of gas in New York are so enormous, they won't put in any main now under eight inches. The smallest main we have on the island of Manhattan is away beyond the average and almost the largest size main used in Des Moines.

Mr. GUERNSEY: The city of Harrisburg is an illustration. The population is 98,320 and the population per mile of main is 763 as against 470 here.

Mr. BRENNAN: What is the rate in Harrisburg?

Mr. GUERNSEY: $1.10.

The WITNESS: Gross or net?

Mr. GUERNSEY: Net.

The MASTER: It struck me all the time that the extension of mains here every year was very great.

Mr. GUERNSEY: The record shows that since 1903 it has doubled from 98 miles to 190 miles.

The MASTER: 88 miles; Jansen Haines says 88 miles when he took charge of it.

2706 Mr. GUERNSEY: I took December 31, 1903, when it shows 88 miles.

The MASTER: I would anticipate that the mains as they are extended there would be an increase in services from those mains.

Mr. GUERNSEY: There is and the meters.

Now, there was on the 1st of January, 1998, the next decrease from $1.30 to $1.25 in price?

A. Yes.

Q. That $1.25 remained in effect during the years '98 and '99, two years?

A. Yes.

Q. Now, then, if you will take the sales per meter the year before that went into effect, they were 24,131, weren't they?

A. That is for the year ending December 31, 1897, they are given here as 24,131.

Q. And for the first year when the reduction was in effect they were 22,684, a decrease of about 1400 cubic feet?

A. Yes, 1400 cubic feet.

Q. The next year they decreased again from 20,689 in 1899 as against 22,684 in 1898.

A. Isn't that 1900?

Q. No, sir; the year ending December 31, 1899.

A. Yes, 20,689 is the sales per meter at that time.

Q. Now, in 1898, the sales increased 11½ per cent according to this table?

A. Yes; you mean the total sales?

Q. Yes; though the sales per meter had decreased?

A. Yes.

Q. And in the next year the total sales increased 17.3, although the sales per meter had still further decreased?

2707 A. Yes, that is a point I have been trying very hard to make.

Q. In 1898, however, the number of meters increased just about 20 per cent, over 1897, that is, from 3479 to 4127?

A. Where do you get that?

Q. From Exhibit 35.

A. I haven't that before me.

Q. In the year 1899 the number of meters increased to 5308 and the mains increased in 1898 to 64.51 from 57.67 in 1889?

A. *From* 69.42 *to* 64.51.

Q. Would you say the increase of the sales during those two years in Des Moines was due to the fact that the consumers that were taking gas when the reduction was made used more gas than they had been using theretofore, or to the fact that more consumers took gas.

A. Due to both and due to the fact that you are always able to talk a reduction when you are trying to sell.

Q. You said due to both; you had in mind the consumption per meter during that two years was less than it had been prior the preceding two years?

A. Yes.

Q. In view of that, would you say that the old consumers were using more gas?

A. The old meters probably were making up a little bit. I am not talking about consumers of all meters; do you see the distinction?

Q. Yes, I see the distinction.

A. It is this: the total sales increase first is 11.5 and next 17.3 per cent; that brings in the money. It is true that you have to add some money for services and meters, but the aggregate is away up above the million and what you add in the way of services

2708 and meters to the plant is hardly felt.

Q. Why do you leave out mains there?

A. I should have included mains.

Q. And the manufacturing plant?

A. Well, the manufacturing plant usually has a good deal of margin, and more gas does not mean more men, it only means more oil and more fuel, and until you come to a jumping off point of what might be called a new installation——

The MASTER: Right there, if I understood you right, the production of gas reached about 600 million, and that is about 70 million more, isn't it?

A. About 50 or 60 million, anyhow.

The MASTER: 528 million would make it about 72 million?

A. Yes.

The MASTER: I understood you they would have — institute new machinery and a new holder of some kind; is that correct?

A. Just as a matter of opinion, I would say they would have to put in a larger purifier and a larger holder.

The MASTER: I don't remember whether you stated the expense of those things or not?

A. I did not state it; it is very easy to make a rough estimate if you like.

The MASTER: I simply wanted to find out whether you had or not.

A. I would feel almost safe in stating it to you now, if you wish.

The MASTER: I could not recollect whether you had stated the expense of the new installation, whenever it reached 600 million or not.

A. I tried to say that until you reached 600 million, you would not need any additional machinery; what was there would do.

2709 Q. You would also have to put in some new generators, wouldn't you, when you reached 600 million?

A. Oh, no; what they have got there will pull them through on three million cubic feet nicely.

Q. They have now how many generators?

A. One set of 10½ feet and two sets——

Q. What is its capacity?

A. Will you allow me to lump it?

Q. No.

A. The company itself will not fix the capacity of the 10½ foot accurately.

Q. What is the capacity daily of the 10 foot set?

A. Well, I don't know what they fix it at; I should give it myself as a million and a quarter to a million and a half.

Q. Now what is the capacity of the two eight foot sets?

A. In the case of Cleveland they fixed that at a million cubic feet daily capacity for each one of them; the company fixed that.

Q. The eight foot sets a million a piece?

A. Yes.

Q. What is the capacity of the 6 foot 6 set?

A. I am not at all certain that I can recall it. Would you mind letting me look at that catalog you have there. I wouldn't rely on

that 6 foot 6 set. If you will foot this up you will find it furnishes three million and a little over.

Q. In your total capacity you eliminate this 6 foot 6 set and your total capacity would be less than your maximum day?

A. Less than the rate of capacity for a minimum day.

Q. It would be less than your maximum day capacity of any of the three machines, wouldn't it?

A. You understand perfectly—you don't—but people
2710 running those water gas work- understand, that temporarily you can drive them considerably beyond their rated capacity.

Q. Just how much?

A. That, with the aid of the holder, if you had sufficient holder capacity would pull you through with three million a day; if it came on you, you could get through with one broken down.

Q. Do you think it would be a safe proposition to wait until you got to where you had to work your machine over your capacity to get through your maximum capacity, before you installed another machine?

A. I suggested that when you got up to three million a day you got to add more machinery.

Q. Wouldn't good judgment require that you begin to get this machinery in place and arrange for it before it was imperatively necessary to have it?

A. Well, I should say when you got up to about three million the point had been reached you just stated, before it was imperatively necessary.

Q. And you say we are about there now, for all you know?

A. I shouldn't be surprised to hear you were there.

Q. Ordinarily in building a holder the foundation is put down one year and the lift is put on the next year?

A. That seems to be the way it is done.

Q. So that we ought to be making figures on a new holder now?

A. That depends on what you decide from your sales.

Q. Did you see the estimates for the new work for this coming year, or this year that were actually made by the company and were called for by Mr. Byers and which provided for work this year on new holders?

A. I don't remember.

2711 Q. So you don't know that the estimates of expenditures made by the company prior to the bringing of this suit, if my information is correct, show a contemplated expense during the present year on account of additional holder capacity?

A. I did not. The first I heard of it.

Q. Now do you say that the history of this plant shows that the amount of gas consumed by each consumer has increased as the price has been decreased and that that increase has been obtained without additional investment in mains, services or meters and the manufacturing plant?

A. I could not make any such statement as that; I never had

access to figures that enabled me to say whether they would or would not be correct.

Q. You have noticed, have you not, that at the time that the $1.30 rate went into effect the population per meter was 22.72 as against 4.50 now?

A. That is for the year 1895?

Q. Yes.

A. And the year 1910?

Q. Yes.

A. Those are the figures shown on Exhibit 36.

Q. So that while there was in January, 1896 one gas meter for every 22.72 people in Des Moines, there is now one gas meter for every 4.50?

A. Yes.

Q. Do you know of any city situated at all similar to Des Moines which approaches Des Moines in satiation, as you call it?

A. Of course, I never knew until this moment the amount of satiation which existed in Des Moines, I couldn't compare it with other cities.

2712 Q. You haven't any general information that would enable you to answer the question?

A. No.

Q. Now, then, whether or not you can increase your sales depends on this question of satiation and this question of whether there are new uses to which the gas can be put, industrial uses?

A. Precisely. May I explain that—one of the most conclusive proofs that I have ever seen in my life of the enormous increase of sales per capita comes in the form of natural gas which is sold at from 25 to 30 cents and which is sold in enormous quantities in the city of Cleveland, and apparently the point of satiation for natural gas will never be reached; there is a continual fuss going on because they cannot get enough of it.

Q. At a price of 25 cents you can compete with coal and things like that?

A. That is what they do; it is 30 cents there, but even at that there are so many conveniences attached to the burning of natural gas that people are willing to pay any slight excess.

Q. So that in the eastern cities or manufacturing cities where there are large industrial uses for gas you would expect a larger per capita consumption than you would in a place like Des Moines?

A. Provided the price is low enough.

Q. At the same price you would expect a larger per capita consumption in those cities than you would in a place like Des Moines?

A. No, I could not. I will tell you the reason why. One of the peculiarities at Durham, North Carolina, a town of 22,000 inhabitants, there was difficulty with the service; they could not get good service—the consequence was to the surprise of everybody concerned, when they put in cooking stoves the sales per capita

2713 were much larger per white per capita than we anticipated and in making inquiry we discovered it was entirely due to the difficulty in obtaining good service there, and the necessity for

cooking. Now I notice here in this city a very large number of small homes—going around—a few large ones, but the great bulk of them are small homes which look as if they formed the best possible district with a low price for gas and for the sale of gas cooking stoves.

Q. Do you know how many gas stoves have been sold here?

A. I do not.

Q. If you found that more gas stoves have been sold than there are meters, you would think that field had been pretty well occupied?

A. That is a new one; I never compared gas stoves with meters before.

Q. You haven't had any experience in putting in gas stoves or that sort of thing?

A. A very lively one for a short time in Durham; couldn't get them in fast enough.

Q. Now, then, I want to refer for a minute to the revenue per meter; the general tendency of the revenue per meter as shown by Exhibit 36 was at first down, was it not, and since 1895 it has run down some?

A. Pardon me for calling your attention to the important point that the revenue per capita has run steadily upwards as the price has gone down.

Q. Will you answer the question and then we will take up the other matter?

A. Yes, in 1895 the revenue per meter was $30.35, and in 1910 the revenue per meter was $27.33.

Q. Now, then, take your revenue per capita, take the year 1895 and the revenue per capita was what?

2714 A. In 1895 the revenue per capita was $1.69.

Q. Now, then, what was it in 1910?

A. $6.06.

Q. That is less than four times?

A. Slightly.

Q. Now, then, if you take the population per meter in 1895 it is 22.72, isn't it?

A. 22.72.

Q. While your population per meter in 1910, 4.50, that is in 1895 it was about five times what it was in 1910?

A. Yes.

Q. So that if the revenue per capita had remained at the same basis at which it was in 1895, that is among the persons who actually had meters, you would have more than $6.06 in 1910, wouldn't you; it had not kept pace with the decrease of population per meter, has it?

A. Would you mind cutting that question up in two parts; it seems to be two or three questions in one.

Q. If you don't understand it I will try it over again. You note here the fact that the revenue per capita in 1895 was less than it is at present, which of course is obvious, and it is because the population per meter was very much larger for one thing, isn't it?

A. Oh, no sir; the revenue per capita can be gotten independently entirely of any question of meters.

Q. I know, but before you can infer that each consumer is spending more money on account of that increase of revenue per capita, you must go to your population per meter or your increase in meters.

A. I don't care, it is a question of gross revenue of the
2715 company. If your town is increasing in population all the time; if your per capita runs from $1.50 to $6, you are having a bigger and bigger income for the company.

Q. Are you still satisfied that the company, basing it now upon the experience of this company in Des Moines, that the company will get an increase up to 600 millions, if there is a decrease in the rate of ten cents, and that that increase will come in about a year, and that it will not involve any increased capital expenses?

A. I will say, that if the company has not already reached sales of 600 million cubic feet annually that it will within a year or so reach that, after the reduction to 90 cents per thousand cubic feet and that it will be able to do so without any additional expense for mains, but with additional, some additional expenses for services and meters, which will compensate keeping the value of the concern about even as against depreciation—the present value of the concern.

Q. Now, then, how much has the company actually done this year in the way of laying additional mains up to the present time?

A. Of course, I don't know, but yesterday I saw a number of gas mains, it seemed to me lying in an unpaved street ready to go *do* down before the pavements went down; it was on the way to one of the parks.

Q. Would your confidence in your conclusion that it is unnecessary to lay additional mains be at all shaken if you learned that additional mains had been laid since November 31, the date of your inventory?

A. It may frequently be advisable to lay mains where they are not needed at once, where they would not be needed to sell 600 millions; you are getting away beyond that in this town.

2716 Q. You have given us credit for pretty fair management——

A. I have given you credit for being ahead of the game all the time.

Q. If you had learned that the company had in fact been laying mains this year since you made your inventory, you would assume that they were necessary to put the company in a position to take care of the present and immediate future?

A. I would. I would be glad to say though they were unnecessary to get the 600 millions.

Q. Now, then, your computation here based on a 600 million output is also based upon an additional investment?

A. No, additional value.

Q. It is based on no additional investment?

A. It is based on an additional investment in meters and services and no additional present value.

Q. It is based on no additional investment in mains?

A. Yes, I assume that the mains would not be required to jump from 550 to 600 million.

Q. And so far as the manufacturing plant is concerned, it is based on running clear up to the capacity before you take steps to provide any additional capacity?

A. I would call a safe and easy capacity 3 million cubic feet a day.

Q. You didn't call it a safe and easy capacity?

A. I think in my preliminary considerations I mentioned it being a safe capacity for about 3 million cubic feet a day.

Q. You said on your direct examination on page 2349: In my report I called attention to the fact that about three million cubic feet daily capacity of sales was about all that was safe for them to carry; so that your estimate here is predicated upon their reaching their safe capacity before making any provision for increased holder capacity where it is customary to build the foundation in one
2717 year and put up the holder the next, or increase the generator capacity or increase the capacity of the purifying boxes?

A. Always in each case, remembering that I have used the word safe capacity, your statement is correct.

Q. Now, I want to ask you about something else in this same connection in this table set out on page 88 of your report; it appears that the output for the year December 31, 1907, was 15.4 per cent more than the output for the year ending December 31, 1906, that is right, isn't it?

A. It so appears.

Q. Now then, that is a greater increase than you figured here to get your 600 million, a greater percentage increase?

A. Yes.

Q. Now will you turn to Exhibit 24 and see whether the actual experience of the company verifies your assertion that such an increase would only amount to the cost of oil, labor and so on, by the actual Pers.

A. Spell Pers.

Q. P-e-r-s. That is a technical expression with the gas people.

A. It is indigenous to Des Moines, I believe.

Q. Turn to page 83 of your report—your figures are about the same—you find the total cost per thousand in the year ending February 28, 1907, was 64.90?

A. 64.90.

Q. And your total cost for the year ending February 29, 1908, which includes this big increase of about 15.4 per cent is 63.50?

A. So stated.

Q. Now there is a difference of a cent and a half per thou-
2718 sand?

A. Yes.

Q. According to your own figures, how much of an increase does that cover at 15.4 per cent?

A. This figures 31,658,974 cubic feet.

Q. These figures I call your attention to on page 83 are the figures which are made up, as you stated, by the City's experts and carefully checked by you before you adopted them?

A. Gone over by me and examined.

Q. Didn't you tell us before you adopted them you carefully went over the matter so that you were satisfied they were right?

A. About right on an average, yes.

Q. That does not indicate that your theory that the increase in the amount of sales involves only an increase of about 25 cents a thousand?

A. It does for this particular step: from 530 million up to 600 million.

Mr. BRENNAN: That question is objected to as being argumentative in form.

Q. Let us get at it in another way. For the first year there are shown at page 83 of your report the operating cost thereof 64.90 the full year?

A. Yes.

Q. For the last full year, 65.30 which includes 3 cents in the disputed item?

A. Yes.

Q. During that period what was the per cent of increase in the amount of sales?

A. I cannot get that, because this tabulation on page 83 ends February 28, 1907, and the tabulation on page 88 ends on December 31, 1907, you see.

2719 Q. You can get at it approximately, can't you?

A. I should think, rough work, yes. In 1910 the total sales appear to have been 531,990,000 and in 1907 the total sales appear to have been 429,519,000; the difference is 102,472,000; dividing that by 429,519,000 gives about 24 per cent increase in the period elapsing between December 31, 1907, and December 31, 1910. The figures on page 83 do not correspond exactly because the year that ends February 28, 1907, and gives 64.9 per thousand feet cash operating cost, anticipates December 31, 1907, by ten months. The year ending December 31, 1910, and giving 65.31 coincides with the 531,991,000 sales.

Q. So that so far as the record in this case goes at least, in order to sustain your figures you will have to anticipate a condition that has not heretofore existed in the experience of this company, or a result that has not heretofore existed.

A. No, because at 600 millions I have given you the total cost amounting to 64 and a fraction cents per thousand cubic feet sales.

Q. In order to get that you put in six cents depreciation on the 531 million sales which were not any of the figures on page 83?

A. I put in all through six cents for residual depreciation.

Q. Turn to page 96—528,375,000 under operating there, you took 69.33 cents which includes six cents depreciation?

A. Yes.

Q. That includes six cents depreciation?

A. Yes.

Q. And you did not figure any depreciation on the other 71,625,000?

A. The reasoning for that is very simple.

Q. I asked you for the fact?

2720 Mr. BRENNAN: I think he ought to have a chance to explain.

A. I did not figure the depreciation on the increase and for this reason: that 528,375,000 cubic feet at 69.33 cents covers under the existing conditions not only the cash operating cost but also the existing residual depreciation, and would at that rate cover it without any question whatsoever from anybody. If however, by the lowering of the price, which is done of course, without in any way modifying the works, the sales jump up to 600 million cubic feet, your depreciation would be taken care of for that time and the only thing that would befall you would be the necessity of at once increasing the amount of coke and oil and perhaps the amount of purifying material and attention to it, because you would have to purify more rapidly, and in that way nothing would be disturbed in the regimen of your works at all.

Q. To get back, you get your 64 cents and you already put in six cents per thousand feet on that 528,375,000 in the computation on page 96, which gives you the gross operating 584,228?

A. Yes.

Q. And that six cents is not included in the operating cost shown on page 83 from which you made your comparison?

A. That six cents is not in page 83, because that is the cash operating cost.

Q. So that to make the comparison fair you would have to compare 63.33 plus 6 or 69.33 with 64 to get at the difference you figure here, wouldn't you?

A. Put it this way if you like.

Q. Please answer the question?

A. That would be it.

Q. In other words, you figure a decrease of about five cents

2721 per thousand?

A. Which would be what I think would happen.

Q. You did not figure any increase in operating on account of additional meters and on account of additional services?

A. Not for that step of about 10 per cent, you would not know it in your labor in the works or the labor in the office.

Q. Still our aggregate is made up of very small things, none of which you would know alone?

A. Well, that is too general; I couldn't answer that question.

Q. Well to summarize this, in order to get your figures as to your return here, it is necessary for you to take the figures which result in making the cost per thousand of the gas about five cents under the average of the last five years?

A. You mean—I see what you mean, although you haven't stated it. You mean and include residual depreciation?

Q. Certainly; or if you exclude it in one, exclude it in the other; it don't make any difference as long as you don't put it into one and take it out of the other.

A. Taking it either with or without residual depreciation it would appear to me that the result running from about 531 million to 600 million would be a reduction in the cost of gas of about five cents per thousand cubic feet, giving 64 cents as the cost of gas delivered at the consumer's meter in this case, as against 69 cents heretofore.

Q. Now I want to ask you one or two questions about working capital. You allowed us 13 cents per thousand on working capital, based on some experience of somebody in a Massachusetts Company, as I understand it?

A. Based on careful consideration of what Massachusetts companies seem to do.

2722 Q. What Massachusetts company did you take into account?

A. No one in particular.

Q. Which companies did you take into account?

A. All of them, the whole of them, looking them all over.

Q. You couldn't tell that it is 13 cents a thousand by just taking and looking at them, this is based on figures?

A. I made a lot of figures; after all, you may say I didn't use them in so indeterminate a matter as the working capital of an operating company.

Q. Did you take this for the year 1910 from the 1910 report?

A. What, working capital?

Q. As a matter of fact, what you are giving us here is what you gave them in the New York case?

A. No, I haven't given you anything here, not except the 13 cents.

Q. Didn't you testify in the New York case: "If we subtract the total of these floating liabilities $637,165.66 from the working capital $852,249.94 we obtain $215,084.28 being the active capital furnished by the stockholders for the ordinary needs of the gas business. If we divide this amount by the total annual sales 1,653,012,30 cubic feet we obtain $0.13 per annual M sold as the amount of capital actually and practically necessary on the part of these Massachusetts companies." Did you say that?

A. That sounds like it, but I have not used that method in your present case today.

Q. Tell us what companies you used here?

A. All of them.

2723 Q. All of the Massachusetts companies?

A. Yes.

Q. For what years?

A. That would be very hard to say. I looked at a number; there was no definite work done. I can give you the working capital in items.

Q. I prefer to cross examine along my own lines. You say in your report here from my own investigations of the working capital of the Massachusetts Gas companies, which I deemed to be well

managed, I am led to believe that 13 cents per thousand cubic feet is all that is practically needed. Now then that statement is true, isn't it?

A. That is correct.

Q. That is the basis that you have for your conclusion here?

A. That was the basis of my conclusion many years ago; that has *sin* since been modified, but the conclusion has not been changed.

Q. You stated that your investigation of the working capital of the Massachusetts companies is what led you to believe that 13 cents is right, is your investigation what led you to that belief?

A. What led me to that belief; not what confirmed me to that belief.

Q. What companies did you investigate?

A. I don't recall, there were four companies, in 1906 or 1907; I haven't made up your working capital in that way at all.

Q. Can you give me the names of the Massachusetts companies which you investigated in order to reach this conclusion?

A. The effort of memory would be too great; I haven't even taken the trouble to revise for the purpose of getting your working capital.

2724 Q. How recently did you make this investigation?

A. Which investigation?

Q. The one you refer to here, which led you to conclude that 13 cents was a fair amount to allow.

A. I think it was in 1906 or 1907, I don't know exactly.

Q. Was it prior to the testimony in the New York case?

A. Even that I can't recall; I know it was in the New York case; There was 15,000 pages of testimony in that and 2,500 pages of exhibits.

Q. Then you do not have any idea what companies those were on which you based this conclusion—now then in the consolidated case, do you remember what companies you took?

A. I couldn't recall it.

Q. You made a running guess at it?

A. I didn't care to look at it even.

Q. Now, when you made your computation here did you include the materials on hand?

A. That was what I worked out here, a certain amount of materials on hand and a certain amount of cash.

Q. And did you figure that we had to wait a month and a half for our receipts for gas?

A. How about your quarter meters?

Q. We don't have to wait so long on them.

A. I would like to give you the working capital, if you will permit me to go ahead.

Q. I see you are rather evading the report here. I want to *to* get you down to brass tax; you say you got this out of the Massachusetts computation?

A. I did.

Q. Will you say that the working capital of the Massa-

2725 chusetts companies in 1910 as shown by the 1910 report of the Massachusetts Commission amounts to only 13 cents per thousand cubic feet of sales.

A. I will not.

Q. Will you say it amounts to less than forty cents per thousand cubic feet of sales?

A. I will not; I have not investigated it.

Q. So that the statement in this report as to how you got this 13 cents is not to be applied to any existing condition in Massachusetts?

A. I don't know. I will tell you very frankly, I did not look into it at all.

Q. I am assuming what you say here is true. You say on page 82 from my own investigations of the working capital of the Massachusetts gas company which I deemed to be well managed, I am led to believe that 13 cents per thousand cubic feet is all that is practically needed. I assume that statement is true?

A. It is.

Q. You also say that investigation is so ancient that you cannot say whether an investigation made now of existing conditions in Massachusetts would verify it.

A. I can say that there is also another statement of about 30 cents there which is equally ancient.

Q. You did not adopt 30 cents in order to be entirely fair to us; you took 13 cents?

A. I took the 13 cents.

Q. That is because you wanted to give us the benefit of the doubt?

A. Always.

Q. Now you go on further—coming to figures I find the necessary working capital for the profit of the Des Moines Gas Company
2726 about 68,689 which results from the multiplication of 528,375,000 by 13 cents; is that the way you got it, or is this statement not correct?

A. That is the way I got it.

Q. You haven't finished the idea as to where you got that 13 cents; you can't remember, can you?

A. You mean originally?

Mr. Byers: I think, your honor, that has been fully explained.

The Master: I think he has answered this question.

A. I got it as a constant or average result of a considerable amount of work fixed at 13 cents in my mind and trying it on this carefully and checking out and making a list of what things were required in the working capital and finding that checked out about 68,000 I let it go at that.

Q. Have your expert accountants told you what the actual average working capital of this company has been for the last five years?

A. They have not.

Q. You don't know whether it is two or three times what you have got here?

A. I have heard the testimony here—you wanted $150,000 working capital, something of that sort; that is all that I have heard.

Q. Well, now how much in making up your working capital would you think the store room supplies would ordinarily inventory, what would be a fair amount?

A. For this concern about $8,000.

Q. About $8,000?

A. About what you would need to carry in the way of samples, and fixtures for sale, service pipe material and necessary emergency material.

2727 Q. Would your judgment on that be affected any if I should tell you that the actual amount on the 28th of February 1907 was $82,978.83 and in 1908 $76,492.07 and for the year 1909 the same date, $53,701.38 and on the 31st of December 1910, $40,251.89?

A. Not as to the actual necessity of having that on hand.

Q. You think the management here is not good then in this respect?

A. I don't know; I am talking now about what is actually needed for working capital.

Q. In this respect you did not require or regard the actual results as shown by the books as valuable?

A. I did not.

Q. What did you give us for store room supplies?

A. About $8,000.

Q. What would you itemize that?

A. About $3,000 for fixtures for sale and $5,000 for service pipe material and necessary emergency material, such as you have to have in the work shop underneath the main office.

Q. That is all you included there for the store room?

A. Only samples and odds and ends.

Q. You have got just two items, emergency supplies, services and fixtures and that is all the matters you took into account?

A. Yes.

Q. Now, then, for the stock of tar, how much did you allow us?

A. I thought you might be able to hold on until you got a thousand dollars worth of tar in your well.

Q. Do you know what that is, the average for the last five years?

A. I do not. About two cents a gallon; you know, fifty gallons to the dollar.

Q. Where would we have to get it?

2728 A. You mean sell it?

Q. Where do you have to sell it?

A. There is just one concern in the United States that seems to buy it and they don't want very much of it. I think it is Barrett in Cleveland, Ohio.

Q. How much tar do we make to a thousand cubic feet of gas sold?

A. Water gas?

Q. Yes.

A. I don't know.

Q. What I was getting at is how many dollars' worth of supply of tar do you think we would have to have there?

A. I thought 50,000 gallons was about where you would have to get rid of it.

Q. You can't tell us about how much tar we ought to get out of a thousand cubic feet or a million cubic feet?

A. No, not oil tar.
Q. Didn't they do that at Durham?
A. No, that is coal gas.
Q. Nor at Fostoria?
A. They did at Fostoria; you was not sure what kind of oil you were putting in and so you did not know what kind of tar came out; none of your experts can tell you.
Q. Now, then, what did you allow us for the gas stock?
A. What do you mean?
Q. I use it in the ordinary sense it is used.
A. I thought you had to have oil on hands, about 300,000 gallons and allowed about $9,000: that would carry you a month.
Q. That is what they mean by gas stock in gas book keeping?
A. I am not a gas book keeper; tell me what you mean.
Q. Gas in the holder?
2729 A. Why didn't you say so. Gas in stock is all right, but you got it mixed.
Q. How much did you allow us on account of gas in the holder?
A. Not a bit.
Q. We always have an investment in that, don't we?
A. Yes.
Q. How much did you allow us for boiler fuel stock?
A. Coke and coal on hand?
Q. I don't mean that; I mean boiler fuel.
A. I didn't separate it; I put coke and coal on hand anywhere from $5,000 to $10,000.
Q. Would you be inclined to modify that at all if you learned that in the last five years there had been no time at which there has been as little as $10,000 of coke or generator fuel stock on hand?
A. No, because $10,000 at the outside is all you need for safety; what you need for commercial reasons is a matter of balancing the cost against the investment.
Q. Where do we have to get our coke?
A. I don't know.
Q. Isn't that a factor to be taken into account?
A. That is the reason I made it an indeterminate quantity from $5,000 to $10,000.
Q. That includes also boiler fuel?
A. It includes boiler fuel.
Q. You don't know how much you included for any one?
A. I should say four-fifth- and one-fifth; your coke costs you $5.89 here doesn't it.
Q. I don't know.

At this time and adjournment was taken until 1:30 P. M.

2730 1:30 P. M. TUESDAY, *August* 22, 1911.

WILLIAM D. MARKS continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Mr. GUERNSEY: Complainant offers in evidence the chart marked complainant's Exhibit 41 and the papers marked Exhibits 42 and 43 which are the figures used in connection with that chart.

Mr. GUERNSEY: Mr. Brennan did you get that letter of Professor Marks' of February 7th?

Mr. BRENNAN: I have not had a chance to see the Mayor, he has been out of the city, I expect to see him this evening if he returns to the city.

Q. Now Prof. Marks I think the last one you gave us was boiler fuel and generator fuel. Now take the other items that you take into account in making up this capital account, working capital I mean.

A. Oil, 300,000 gallons $9000. Cash on hand at the beginning from $40,000 to $45,000. Total $68,000.

Q. Those are all of the items which you included?

A. That is it.

Q. Now take Fall River, will you take the report for 1910 for Massachusetts and tell us how we would find the actual working capital of that company there from that report? I did not ask you to work it out, unless you prefer to, I just asked how we would get it?

A. I would like to go over this pretty thoroughly.

Q. All right, I have no objection, only I didn't want to be responsible for the time.

A. Do you wish what I would give them as working capital
2731 or what you think they have got as working capital?

Q. The question was how you would ascertain from the report what their working capital was?

A. You mean what is the actual value, not what I consider necessary?

Q. Certainly. I didn't ask you to compute it, I simply asked you what method you would adopt to ascertain from the report what their working capital is.

COURT: Can you answer without taking up so much time?

A. I am just through. Looking over the balance sheet of the Fall River gas works company I find amongst its assets the following, the quick assets, due for gas $22,604. Gas coal on hand $5,552. Tar, $5,602. Meters on hand, $6,276; other material not specified $47,356; stoves $4,446; fixtures $1,098; sundry accounts due to the company $11,743, making a total of $104,577 if I have footed it correctly. Now I find on the other hand amongst the liabilities the unpaid bills $13,607, the assumption being that these unpaid bills are covered in the assets above stated, deposits from consumers $5,171, that is cash in the hands of the company for any use that they choose to make of it and amounts due from the company which they should pay out $8,697 or a total of $27,475. The difference between $104,577 and $27,475 is $77,102. Now they have

on hand cash to the amount of $127,406 making $204,508 available liquid assets.

Q. Well the actual working capital is shown by this report isn't it?

A. What they use there, yes; of which $77,000 is invested and the rest is in the form of cash.

Q. So that their actual working capital is about 41 cents a thousand cubic feet, their sales being 495,612,000.

2732 A. That depends on the matter of cash.

Q. It depends on how often their sales will go in $104,508 which was the actual working capital.

A. Also on whether that $127,000 in cash there was actually needed or not.

Q. I am not talking about what they needed, talking about what they had?

A. That is what they had.

Q. That is about 41 cents a thousand cubic feet of gas sold?

A. I have not the number of thousand cubic feet of gas——

Q. It is under 500 million, 495,612,000. Five hundred million would give over 40 cents?

A. Yes, sir.

Q. So 41 cents is near enough right?

A. Forty one cents is near enough right I should say, or 40 cents anything of that sort.

Q. On page 58 of your report you have depreciated the services 15 per cent have you not?

A. Yes, sir.

Q. On that page just below that you say it is customary to reckon the life of wrought iron services at about 15 years?

A. Yes, sir.

Q. Who reckons it at fifteen years?

A. The last instance I can recall is the chief city engineer for the city of Minneapolis who testified that fifteen years was the average life of wrought iron services in the city of Minneapolis and as the soil there seemed to be about the same as it is here I thought that would be about the life you could expect here for the untreated services.

Q. I know, but you say it is customary. Did you predicate

2733 this statement that this is customary on this single instance?

A. Oh no.

Q. Who else?

A. I have heard that before again and again.

Q. Well where?

A. I think the first time I heard of that was in St. Louis forty years ago where that statement was made in a case of purchasing a lot of old gas mains from the old St. Louis Gas Co.

Q. Did you predicate your statement that that is the present custom on that statement you heard in St. Louis?

A. No. In fact I think I state below there that if they are tarred a longer life is given to them.

Q. Are these services tarred now?

A. They seem to be tarring them now.

Q. How long have they been doing it?

A. I don't know. I know that the probabilities are it has not been very long.

Q. Just to give the company the benefit of the doubt you depreciated them all as if they had not been tarred?

A. No. In referring back to the testimony given in 1894, I can't recall the name of your engineer in charge at that time, but I think it was Pratt, he took 2500 services as in existence at that time and he further valued them on a basis of an average of 35 feet to the lot line or house line. In other words stated that about thirty five feet was the estimated average length of your services anterior to 1894. And how far or how long you did—how long you kept it up between 1904 and 1910 I had no means of finding out. I took it for granted that particularly anterior to 1894 the services that had been put in would probably have to be replaced, in other words that there would be very few of them, I am talking
2734 in averages, of your 2500 left that were in at that time, they would be replaced one way or another charge for repairs. That would cut your services down to about 14,500 something like that, that might by some possibility be 80 feet long.

Q. What has this got to do with depreciation and tarring of the services?

A. Now since that time, since 1894 I took it for granted that all of the services had been practically been put in new. That is speaking in averages and that 1894 to 1911 gives you about fifteen years and about half of that life was seven years, seven years and a half something of that kind would be somewhere near an average life of your services giving you the advantage of a year or two as I have tried to do.

Q. You mean age instead of life don't you?

A. That *is* not depreciate you as much as I would if it was eight or nine or ten years of age instead of seven and a half is what I am getting at.

Q. If as a matter of fact services last longer than fifteen years then of course this depreciation is too great?

A. Not necessarily because I heard from your testimony, I happened to *ge* present and hear that—I forget now I think it was Mr. Lea's testimony that you put yo- services about eight years of age and life about 20 years and then I found Exhibit 8 which you sent in here and from which the data were obtained for the various reports you have turned in apparantely and there it was carefully computed at I think about eight years of age.

Q. (Question read.) That is true isn't it? You have taken this depreciation on the basis——

A. As a matter of age seven and a half to twenty five——

2735 COURT: I wish you would answer the question we will never get through if you don't.

A. I should say so yes.

Q. The Wisconsin Commission takes 25 years as the life of services don't it, for the purpose of figuring depreciation?

A. That I don't know.

Q. If your theory is right here, of course the services in Des Moines must have been renewed within a very short time, is that right?

A. Fifteen years.

Q. If they had only been renewed within fifteen years that would give them an average age of seven and a half if the number had been uniform all the time.

A. Yes, sir.

Q. And of course the number of services have been increasing as the output has increased, you take that into account?

A. Yes, sir.

Q. So they must have been renewed much less than fifteen years the whole thing put in if your theory about the average age is right?

A. Not all of them, but on the average they have been renewed in less than fifteen years.

Q. Of course if it turns out that our services have a life longer than fifteen years, then this depreciation is too great?

A. As a matter of age, that might be correct.

Q. Now did you ever lay any services except in Durham, Fostoria and St. Louis?

A. No.

Q. Who told you what the costs were?

A. In what way are you speaking of now, the costs per
2736 foot?

Q. Well how ever you did it.

A. It is given in my report here very carefully and in detail.

Q. Who gave you the figures so as to get what you put in?

A. First the ordinary price list of some local company here for inch and a quarter pipe gave me 5.7 cents as the net cost per foot of inch and a quarter pipe, I don't know that all your pipe are inch and a quarter but I gave you the benefit of the larger size. Carting, fittings and miscellaneous 4 cents is my own estimate. Labor ditch, etc., I have already explained to you I priced there a good many places as to the cost of ditching, I took that at ten cents, making a total of 19.7 cents. The average cost per foot length I take at about 20 cents, again somewhat swelling your figures. I had accepted your figures of 80 feet long for new services. Of course I did not—I ought not to use the word accept for I did not accept it. I made use of it as the only available figure and took 80 feet which gave $16.00.

Q. You run your carting, fitting and miscellaneous for inch and a quarter service higher than you do for three inch cast iron main don't you?

A. That is one of those jobs that the only way you can get at it is by knowing about what actually does happen and I found it to ve so.

Q. Where did you get the experience of what actually does happen?

A. I think I got most of it in Durham along about 1900, along about there.

Q. I suppose you have not kept the figures?

A. Oh no.

Q. Now turn to meters, page 60. Did you ever buy any meters since you left Durham?

2737 A. No.

Q. Ever buy any except at Durham?

A. Yes, sir.

Q. Fostoria do you mean?

A. Yes, sir.

Q. They had not been bought before you went there?

A. Some had and other- had not.

Q. That the extent of your experience in buying meters?

A. Had a very large experience in the early days, happened to fall one of my jobs to look after meters awhile.

Q. Same kind of meters as this?

A. No, the old wet meters.

Q. Not the same price as these?

A. No.

Q. Where did you get your prices on meters you used as a basis?

A. This here I got in Cleveland.

Q. Who told you about them?

A. I took the statements of Walter K. Sladden.

Q. Who is he?

A. He is now secretary of the Cleveland Gas Light & Coke Company and Mr. Edward Wormington who was formerly manager of the People's Gas Light Company of Cleveland.

Q. So what you know about prices of meters is what these gentlemen told you?

A. They made oath to it before the tax commissioner.

Q. Trying to cut their taxes down were they?

A. I don't know I suppose it was something of that sort. They did get them raised though as a result.

Q. Now then these prices, take a three light meter $4.35 is that the price you charge for our meters?

2738 A. No, you will observe I gave you the additional of 15½ per cent below, do you notice it on page 61. I add 15½ per cent to cover 33 per cent discount instead of 42 per cent discount assuming that the U. G. I. of Philadelphia might not be willing to use its influence directly and without some compensation. It places your meters at 33⅓ off.

Q. Have you any reason to assume as you do here or insinuate that the U. G. I. Company buys meters at one price and sells them at an advance to the Des Moines Gas Co.?

A. I feel tolerably confident of it because in the case of the generators here for instance I assume $60,000 where the U. G. I. of Philadelphia manufactured these generators and in all probability delivered them to the U. G. I. at Des Moines at the same rate that they would at Cleveland or some outside concern.

Q. Now if I can understand you get the idea out of the words

you infer that the U. G. I. sold to the Des Moines Co., generators at the same price at which it would sell them to anybody else.

A. I base my figures on that yes.

Q. Upon that inference you infer that they bought meters and sold them to the Des Moines Gas Co. for more than they cost to the U. G. I. Company, is that right?

A. I would not put it that way exactly, but I have very little doubt being as old as I am that the U. G. I. is in control of meter factor-s, own stock of them perhaps not appearing on surface.

Q. Now what definite knowledge have you for that statement, I want to know just how careless you are in your statement, how much you have to have in the way of facts in order to swear to it because you are under oath now. Now what definite information have you as a basis for your statement that the U. G. I. Com-
2739 pany controls some meter manufacturing company from which these meters are purchased if you know?

A. I have no legal proof of any sort or kind in regard to that matter. I have heard talk with regard to that matter which leads me to believe that they called their usual policy of controlling—I am not speaking of this in a derogatory way. Their manufacturing department deserves its profit and so I give you 33⅓ off.

Q. What meter company is it you claim they control?

A. Well suppose we don't go any farther, I have given you 33⅓ off.

Q. I want to go farther and see if you know anything about it or whether it is just hot air. What meter manufacturing company is it you say you have reason to believe the U. G. I. Controls. You have brought this thing in, now let's follow it down.

A. I don't propose to say anything more than I have said.

Q. Have you the fainterst idea that it controls any meter company?

A. I have very distinctly stated that I have a very strong feeling that it does.

COURT: You don't know anything about it as a matter of fact?

A. I have no proof except heard talk that has come to me.

Q. Now can you name one person that has said this to you?

A. I certainly shall not mention any.

Q. Can you name one person?

A. I certainly shall not do so.

Q. I have not asked you to do so, I asked you whether you could.

A. Name a good many if I wanted to.

Q. But you don't want to have us run it down is that it?

A. I don't care to go any further into the matter.

Q. I should not think you would. Give us the names of
2740 some companies that manufacture meters.

A. Oh I am not posted on that at all.

Q. Can you name one?

A. If it has not changed its name we will call it the American Meter Company.

Q. Where is it?

A. Was located for awhile in Philadelphia.

Q. And can you name another, is there any that is nearer this market?

A. No.

Q. Can you name another company that manufactures meters in the United States.

Mr. BYERS: I think that question was all covered two weeks ago or several days ago.

A. I mentioned one to you, that is sufficient.

Q. Do you know of any others?

A. I have talked to Mr. McLehaney in regard to meters quite frequently.

Q. Do you know of any other company that manufactures and sells meters?

A. Mr. McElhaney of Philadelphia, McLehaney Brothers.

Q. Are these prices $4.35 for three light prices f. o. b. cars in carload lots at Cleveland?

A. So stated.

Q. That is all you know about it?

A. That is all.

Q. Now then you took these prices these men down there said they were paying and they said they were getting 42 per cent discount?

A. They did.

Q. From this price, $4.35, was it?

2741 A. Oh no, these are net prices.

Q. What per cent of these prices did you charge with this?

A. I carried it to 33-1/3 per cent, carried it working through there.

Q. You made the discount from the cash price or from the list price 33-1/3 per cent?

A. No, I did it this way if you like.

Q. I want to find out how you did it.

A. 42 per cent, that leaves 58 per cent. If you multiply 58 per cent by 15½ per cent you will get about 67 per cent. Multiply 58 by 15½ and then add 58 to it?

Q. You mean take 115½ per cent of the 58?

A. If you choose to put it that way.

Q. That is a fact isn't it?

A. Yes, sir.

Q. That is the way you made it up?

A. Yes, sir. Took 15½ per cent profit if they were sold at 42 off.

Q. And that would pay for the meters on the car in Des Moines you think?

A. I think so.

Q. Less freight?

A. The freight is all charged in you know below.

Q. This item does not include the freight?

A. No.

Q. It is f. o. b. the cars Philadelphia then?

A. Philadelphia or wherever they are manufactured.

Q. Not at Cleveland. Now then you allow per meter $1.00 for furnishings settings connections and so on?

A. Total 19,742 meters furnishing, etc., $1.00, $19,742.00.

2742 Q. What does freight, etc., cover.

A. Oh take about 50 cents of the dollar for getting the meter in position and the balance of it is handling, for carting it around and fr-ight on it.

Q. Well it covers the expense that is incurred in connection with the meter from the time it leaves Philadelphia or wherever you buy it until it is in place in Des Moines?

A. Yes, you might call it the handling of the meter, in other words.

Q. When you get the meters here at Des Moines what do you do with them first?

A. I suppose the first thing they take them up first and stack them up.

Q. Put them in the store room?

A. Yes, sir.

Q. Then what is it necessary to do?

A. Well if they are not sealed, that is authoritatively sealed, I suppose they test them. If they are authoritatively sealed by the city, I don't think there is any public inspector here who has to seal them.

Q. When you say authoritatively sealed you mean sealed by whom?

A. By the public inspector.

Q. Do they have public inspectors where they get these meters?

A. No, I meant here.

Q. The public inspector here would not seal the meters if there — one, I guess there is not, without testing them I suppose?

A. Yes sir.

Q. So they must be unloaded, take- to the store room and tested, that is the first?

A. One minute, if there is not an inspector here you know

2743 the *com-* company would be very likely to accept the meter test of the meter company as being probably better than anything they could get done.

Q. As a matter of fact the company don't take the test, does its own testing. Now then what would be the next step?

A. With the meter?

Q. Yes, sir. Do they put a tag on it with a number?

A. I presume so. I don't know how they card their meters here, what system they have about it. Of course they keep track of them in their own way. May be they paint a number on them.

Q. What do you mean by dipping meters?

A. Do I say anything about it?

Q. No, but I see it on this memorandum I have and I am not an expert in the gas business, I don't know what it means and thought you could tell me.

A. I don't know what they mean by dipping meters unless they mean to paint them.

Q. Then I don't believe you know much more about that than I do.

A. Not their way of talking about it.

Q. Do you know what dipping a meter is?

A. I don't know it by that name.

Q. Is that an ordinary trade name in the kind of meters that are in use here?

A. I don't know. I simply know what your meter is here, it is a dry meter on the operation of a bellows having a valve movement which is operated by these bellows which move to and fro and these bellows composed of I suppose tin, with a sheepskin preferably, an oil soaked sheep skinned diaphragm.

Q. When the meters come here, do they have this oil in them?

A. Not usually.

2744 Q. And do they call meters that have oil in them so that this sheepskin dips in the oil as the bellows expands, dipping meters?

A. I never heard that name used at all as dipping meter, it is some localism like something else you mentioned a little while ago, the per. You have to keep your diaphragms oil soaked, you can't work a meter—the trouble with a meter is the diaphragms dry up.

Q. How long do they have to be soaked with oil?

A. Supposed to have all the time.

Q. And how often do they put this oil on to them?

A. Oh you have got me. I never bothered enough about meters to find out. If it don't work right the meter maker is expected to make it good. I could not tell you to save me anything about how often they dip a meter as they call it.

Q. Did you ever hear of a meter that had a receptacle in the bottom for carrying some oil so automatically the diaphragm dipped itself?

A. I never paid enough attention to the mechanism of a meter to be posted on that.

Q. And is it meters of that class that we are using here in Des Moines?

A. You have a most elaborate table for that purpose and it is mentioned in your inventory list, can be seen in your meter building having a number of compartments for oil and that sort of thing, but I did not pay much attention to it, wasn't a very big thing.

Q. Do they mean by dipping meters putting oil into this receptable in the bottom of the meter so when this meter operates this diaphragm will oil itself?

A. Well if you were in New England they would call it

2745 oiling a meter I suppose in Des Moines call it dipping a meter and I suppose the Pacific Coast might call it greasing a meter, I don't know.

Q. You don't know do you?

A. No.

Q. Just drawing on your imagination again. That is something that a meter of this kind has to have done before it leaves the store room isn't it?

A. I don't know whether you do it or not.

Q. Now then what do you do in the way of additional work on this meter before it leaves the store room?

A. I suppose you unwrap it.

Q. What else?

A. I never looked one of them over. Fix it up I suppose so you can hook it into your union joints. Union coupling and I don't know whether you use lead connections or whether you hang it up on union co-plings, I didn't take the trouble to look.

Q. You did take the trouble to estimate all this didn't you and give us about 50 cents for it?

A. For what?

Q. For this work we are doing on the meter.

A. It was very important that the court should know about what the average expenditure was connected with this thing.

Q. You estimated expenditures without knowing what they cover.

A. I can hardly say that.

Q. What soldering is done in the shop before a meter is taken out?

A. A new one?

Q. Yes.

A. What kind of connection do you use, do you use a union joint coupling or hang it up by the wrought iron service.

Q. Well take what you estimated?

2746 A. I didn't look it over to see.

Q. You estimate here $1.00 per meter covering the entire cost for each meter on 19,742 meters from Philadelphia to their place in the house?

A. That was handling meters.

Q. Where have you estimated these additional items of cost?

A. When you put your service in you hook your meter on.

Q. You have down below the next line total delivered and erected for operation $163,594. Does that cover the delivery and erection of the meters?

A. With the exception of what you spend on services running it up to it.

Q. That is not part of the meters, that is services.

A. Well the service goes into the meter, take it either way. You can say part of this cost—you can say the meter connected with the service or service connected to the meter, whichever way you choose to put it.

Q. How did you estimate it as a matter of fact?

A. In the case of the meters here I concluded that the service would cover about all up to this point here where I gave you 15½ per cent to cover 33 per cent discount instead of 42 and then gave you overhead charges of 12½ per cent and reached an outside structural cost of $212,570 by first adding 15 per cent and then adding 12½ per cent and let the rest go with the service.

Q. You told me a little while ago that your $1.00 covered the total expense of the meter fro- the time it left Philadelphia until it was set up in the house. Now if that is not true tell us just

waht part of that expense you included in your estimate of the services.

2747 A. I tried to make that clear to you by saying I think it meant handling of the meter from the time it started out of Philadelphia or whatever place you started from until it landed in the place where it was intendee to work. In the meantime you have your meter department going on here which is 12½ per cent on top of that. Then in order to be sure to be on the safe side I added 12½ per cent giving you the ordinary discount of about one third off.

Q. That don't answer my question. Can you tell what items are included in that dollar or turn it around and what items in connection with meters you now classify as services.

A. I don't classify anything with services as meters unless you get it getting up the meter connection.

Q. You send a man out to set a meter, do you call that service or not.

A. No, I call that as I said to you about 50 cents.

Q. Now we have a man that does some work on a meter in the storehouse do you call that service or not?

A. I call that 12½ per cent.

Q. That is overhead.

A. Business of the meter room is overhead charge there.

Q. Then you didn't figure overhead on the actual cost, you put actual cost into the overhead, that is right isn't it, if what you say is correct?

A. That is a little bit fine for me, I thought that about 12½ per cent would cover what you had to do on the meter in the way of extra tests, attention and everything of that sort inside the meter department.

Q. That is in your overhead?

A. Well maybe I used the wrong phrase, when I said overhead, I didn't mean I included any part of the present salary in

2748 the care of meters or anything of that sort.

Q. You can't tell us can you what it is necessary to do from the time a meter is received in Des Moines on the cars until the meter is in place in the house?

A. I can if you would like.

Q. All right I would like it very much, just tell us and tell us in the order in which it is done.

A. First of course you know the meter is stored in this room. Then if you do not have a public tester or inspector and if you have any doubt about the meter being properly tested where it was bought or about its being possibly thrown out of adjustment on the way you test it. If this test comes out all right your head of the meter deparment, whoever he is, has a card, he also has a card catalogue. The card slips into a place prepared for it on the meter being properly marked so it can always be identified by anybody that takes it out. Now if you want to use the old fashioned lead connections there is a certain amount of soldering has to be done in making lead connections or put it on the shelf. The shelf stands like that, is

fastened in the cellar and has side pieces here holding it up against the cellar wall. Of late years, it is a little risky, but of late years some prefer to bring the wrought iron service in and put in the necessary bends and union joints and hang the meter by the inlet and outlet right over the shelf or on the shelf. If that is not done carefully and careful not to get the meter out of level you might strain it. Reading of the meter is taken in the ordinary meter book. When that is done it is turned over to the ordinary inspector and the stop cock is turned on and I presume you are through with the meter until you bring it for repairs I think that is the history of it.

2749 Q. What material is furnished—you have a stop cock?

A. Meter cock you mean.

Q. Yes, meter cock, I think you called it stop cock a minute ago, brackets and shelf?

A. There is no brackets just a wood shelf.

Q. What does the shelf stand on?

A. It is on the wall like that and a piece comes down here and a piece comes down here and fastens to the wall. That is the cheapest thing you could get.

Q. What else, how much pipe and that sort of thing.

A. As I have told you, you have not told me whether you use lead or whether you use——

Q. I am getting at what you used in making the estimate.

A. I should use the union couplings, union joints you know.

Q. What do you have to furnish them?

A. You carry your service around and carry it up along the side of the shelf on each side so it is about ready for your meter, you have your meter cock there and stick that in. That is about it. That generally comes in on the service, come around and have another man set the meter.

Q. You put it on service?

A. Usually let it go on service.

Q. Did you let it go with the service?

A. I did let it go with the service in this case, yes.

Q. How many men do you send out to set a meter, one or two?

A. It is a horse and wagon and a boy and a man and a bunch of tools.

Q. You have allowed us for this material and labor 50 cents?

A. I didn't say anything about the labor.

Q. Well isn't that in the setting?

A. No, that is in the 12½ per cent. 50 cents is getting it

2750 out there

Q. Then this 12½ per cent is not overhead charges?

A. I told you I didn't know; maybe I had used an incorrect phrase. It includes none of the president's salary or anything of that sort.

Q. Have you figured your overhead on this same basis on the other items that is have it include part of the actual cost of doing the work?

A. What do you mean by other items?

Q. The other items in the inventory where you use 12½ per cent overhead.

A. No, done it the other way, you have an overhead very carefully gotten out.

Q. Now after you have gotten this meter in you depreciated it 33⅓ per cent, in parenthesis here two to three years' use?

A. Yes, sir.

Q. That cuts it down to what?

A. That cuts off about one third of it, and cuts it down a total of $141,713?

Q. What is the average life of the meter?

A. A meter that is not looked after carefully——

Q. No, a meter that is looked after carefully?

A. Well that depends, the more carefully you look after a meter the longer you can keep it in good working order.

Q. Did you assume this well managed company did not look after the meters?

A. I don't know. I have no knowledge of the details of their mete- department, I merely glanced through it.

Q. I didn't ask you, your knowledge, I asked you whether for the purpose of giving the depreciation without knowledge you simply took it for granted that they did not look after their meters?

2751 A. No, I thought the- looked after the- pretty well.

Q. One of the items which you referred to yesterday where you said they spent too much money and then afterwards concluded they did not was the meter repairs wasn't it, and you said that was one item where the expenses had been going up?

A. I think I excepted meter repairs as not unduly abnormal while all of the other repairs for 1910 were strikingly abnormal.

Q. You were disposed to condemn them without first inquiring. I will pass that though. Assuming that these meters are kept in good repair what would be their average life?

A. I would have to find out first about how often they take them out and look them over and replace them, dip them if you please to put it that way.

Q. What average life did you take in getting at your depreciation here?

A. Why about seven years without paying much attention to repairs merely putting it in that line.

Q. In other words you assumed that the meters were just simply put in place and not kept up in order to get your life of the meters for the purpose of your depreciation here?

A. No, a little hard to put my impression in regard to that matter in words. I assumed that the meters were very well taken care of from the looks of things and I assumed too that notwithstanding that fact that a meter was something which had continued movement in it which had diaphragms in it which would stiffen and harden and it had moving valves and parts on the top which would probably wear a certain amount, no matter how good your repairs were or how careful you were of them and by the time a meter was about seven years old it was ready for what they call a thorough

overhauling in which the records were quite costly. Now on
2752 the other hand, if that was not the case and everything was taken care of and watched closely fixed promptly then the probabilities are that the li- of the meters was so considerably more than seven years and that consequently the age of the meters would go up as well. I did this and left it as it was without revision after having had an opportunity to carefully read Exhibit 8 which is the basis of all the work presented by the engineers here furnished by som- person who knows the figures.

Q. It is customary for gas companies to take meters in and adjust the- periodically isn't it and make any repairs that is necessary?

A. It certainly ought to be done.

Q. That is customary isn't it?

A. No, I would not s-y that but among all good companies and I shoul- fancy here it was done.

Q. It is something that is done in all companies that are properly managed isn't it so far as wou- knowledge goes?

A. Yes, so far as I know.

Q. Now this company here takes its meters at least once in three years and tests them and overhauls them and if the- need any repairs makes then. Would that change your inference as to the probable age of the meters or as to whether they had depreciated 33⅓ per cent in from two to three years.

A. I- should certainly increase the life of them.

Q. I said age, I meant life?

A. Unfortunately their Exhibit 8 as to age is I think somewhere about eight years so any opinion I might give you now would not be unbiased and I understand that you claim in No. 8 that the life of a meter is about 25 years.

2753 Q. I don't remember.

A. That is what Exhibit 8 and also all reports of engineers, and this Exhibit 8 came from Philadelphia or some unknown person. I should not think that the ratio of depreciation or percentage of depreciation would be much affected, you get a greater life and you get a greater age out of your mete-s as you get a greater life.

Q. You then would not change your depreciation whether the life was seven years or twenty.

A. I tried above all things to assure you it was a matter of judgment and opinion and I don't think there is any necessity now of changing it, but I might under different circumstances make a widely different depreciation.

Q. Now then let's get back to this service and find out where you put in that dollar for the meter cock. That is section 77, you have given your cost of your services detailed there, now where is it?

A. 80 feet multiplied by four cents gives $3.20 it is somewhere in there.

Q. Price per foot you have given as wrought iron, it is not in there?

A. No.

—. Then comes carting, fittings and miscellaneous, is it in that?

A. Yes, it is in that $3.20.

Q. I didn't ask you about the $3.20, is it in the carting, fittings and miscellaneous?

A. Yes, sir.

Q. Is it in that item?

A. In that item.

Q. That you have at four cents a foot?

2754 A. Yes, sir.

Q. And there are 80 feet, that gives you $3.20?

A. Yes, sir.

Q. Now $1.00 of that is for the meter cock?

A. Something about that price, a meter cock is not necessarily just $1.00.

Q. It may be more I suppose.

A. May be more, may be less I don't know the recent prices.

Q. What does miscellaneous cover?

A. Just what I said there.

Q. That must cover the pipe laying must it not?

A. Ditching at ten cents, if a man picks up the pipe like that and throw it in and couple it, might throw it into the ditch.

Q. Your ditching is exactly what you use the same amount for ditching without any pipe laying.

A. I hardly know, the difference in mains is so great, some men ditch and screw the pipe in and get away with the thing before another man would get the ditch finished. It is always a rough average.

Q. How closely then ought honest competent engineers, how close to each other ought honest competent, experienced engineers get in their estimate upon the value of such a plan as this suppose they are independent estimates?

Objected to as incompetent, the form in which the question is asked.

COURT: I don't think that is a proper question.

Mr. GUERNSEY: I think it is proper but I can get at it in another way.

Q. You say here in your report y-at where you have the details from which to make an estimate given fully it is unneces-

2755 *neces*sary to include any item for omissions or contingencies, things of that kind or any considerable item. Now will competent and experience- and honest engineers making an estimate such as this come within say ten per cent of each other?

Objected to as incompetent, not proper cross examination.

A. I can't answer you.

Q. Then unless competent, experienced and honest engineers would reach substantially the same result, would it not be necessary to include something to cover this matter of conti*b*gencies and omissions and differences of opinion, things of that kind?

Same objections.

A. In the matter of a preliminary estimate where the question of a man's foresight or man's memory, of a man's experience which

might be said ought to be more or less independent of his honesty, it is quite possible that just in proportion to lack of experience and lack of thoroughness and lack of memory or of foresight the percentage for the probable omissions should be increased that should be necessary and every man usually marks—if my experience of 40 years is worth anything—the amount of his lack of confidence in his own argument. The more inexperienced an engineer feels himself to be the higher he runs up all these everhead charges.

Q. It is something l-ke a dwelling house where you have everything covered by your plans and specifications it is necessary to add a percentage to cover contingencies.

A. In preliminary estimates.

Q. In any estimate either made by the bidder or made by the architect or made by the engineer if you please to cover probably cost of building.

Q. Do you refer to an estimate of a building built and in
2756 position and open to examination at every point?

Q. I refer to an estimate of the cost of building a building.

A. Ahead of its being built.

Q. I don't care whether before or after it is done?

A. Before a building is built and while simply a matter in the mind of the architect or engineer or contractor it is necessary and proper that a considerable allowance, we will say of 15 or more per cent should be made, I am giving merely my opinion, for overhead charges and contingencies and omissions and all of the various points even in the best of work by the most experienced men. I will say just such men as William Farmer of whom I have spoken as highly as I know how. After the work is done——

COURT: You have explained that to us.

Q. Then on your theory your estimate of that i*w* would cost to reproduce this plant would be less than what -ou would estimate of the cost of building it if it had not been built by the difference in this item.

Mr. BRENNAN: It seems to us he has explained his theory very fully it is a mere repetition.

(Question withdrawn.)

Q. If I understand you the result of what you say is that if we had the plans and specifications of this plant and you were estimating what it would cost us to build it this amount would be greater by what you would add on account of these contingencies than the amount which you would estimate now is necessary to reproduce it?

Same objection.

A. It would not be—probably would be less because it would be impossible for any living engineer to anticipate the enormous detail of your inventory of November 1, 1910.

2757 Q. Well could you build any of these houses without having—could you l-t the contract for any building without having as much detail as we have here?

A. Of course I had no opportunities to see your contracts, but I should consider it very extraordinary if the specifications and drawings approach even in a remote degree the exhaustive list and work which has been done on your inventory list.

Q. You would expect drawings that showed accurately the dimensions wouldn't you if you were going to let a contract for a building, you would expect that?

A. Yes, theoretically.

Q. You would expect these drawings to show the openings, windows and doors of various styles in the building wouldn't you?

A. Yes, sir.

Q. You would expect the drawings and specifications to show the materials used wouldn't you?

A. Yes, sir.

Q. And you would expect the specifications to go further and specify the kind of brick, kind of mortar and things like that.

A. Yes, sir.

Q. Now then do you think it would be posible for us to get bids on machinery in place without describing it with accuracy or in detail to complete such a plant as this?

A. Most of your machinery has probably been bought simply as of a given capacity without any accurate drawings or specifications being made by the engineers of this company.

Q. That is true and you do not find drawings or specifications for pumps or generators or boilers or engines in this inventory do you?

2758 A. No.

Q. Now then in what particular is the description of the machinery here more specific than it would have to be to get intelligent bids?

A. Because you have not taken into consideration the matter of human fallibility to a time certain and there would be omissions and alterations, perhaps large changes made either during the progress of the building of this estimation or within a period of a few years after its starting *it* merely as a matter of convenience.

Q. So if we were to reproduce this plant we would have to incur all these contingent expenses if we were to build a new plant here?

A. You use the phrase, reproduce this plant.

Q. Yes, by building a new plant.

A. Well do you mean having a plant being equal in capacity or simply it should be a matter of brick and mortar and iron photograph of what you have down there.

Q. I mean the latter.

A. Well in that case I presume you could come very close indeed to it without any particular allowance, I should say ten or 12½ per cent for overhead charges.

Q. You would allow us for building new works ten or fifteen per cent for contingencies and for reproducing this allow us about 20 I understand?

A. No, I said about ten to 12½ per cent.

Q. Don't that cover interest and taxes and a lot of other things?

A. No, for reproducing it you would have interest and taxes just as much.

Q. I wanted you to give me what the actual contingencies were, what you allow us for contingencies?

A. I will look it up.

2759 Q. Don't allow us anything do you in your 12½ per cent, see the top of page 10?

A. Yes, I make you quite an allowance for contingencies there in general management.

Q. You state with reference to general management in the preceding page that it covers these organization expenses don't you?

A. In order to be liberal I allow cost of board of directors, legal advice at its actual cost, drawing and supervisions of four per cent.

Q. That don't say contingencies does it?

A. It involves very much of contingencies for management.

Q. Then you didn't mea- what you said when you said four per cent on account of these general expenses and organization expenses?

A. Well I may have been polite about it.

Q. That is also inaccurate. You say here on page 9 it does not appear to be the custom in any community to tax unfinished buildings or unfinished machinery. Do you know as a matter of fact the assessor goes around in Des Moines and does collect even unfinished small residences and check them?

Objected to as immaterial and irrelevant because it does not apply to a concern of this kind what the assessor may do with regard to residences or dwellings?

A. I am not posted.

Q. So as to getting your taxes down as low as you put them you had to assume that the property would not in fact be taxed?

A. The books are the best evidence always, if they are taxed they could be shown, but I don't know. I did the best I could.

Q. You assumed that the property would not be taxed?

A. I understood that the land would be taxed.

2760 Q. That is all the taxes you charge in there?

A. I allowed a margin to pay some taxes on finished buildings, if I had not I would not have put 2 per cent on. In other words I put two cent, it was very close to 2¼ on to take care of any buildings which might be taxed during the last year of the year and a half.

Q. Now you put drawings and supervision at 2 per cent.

A. Yes, sir.

Q. The minimum engineering fee that is charged under like circumstances is five isn't it?

A. It is not.

Q. Give us an instance of any engineer within the last five years charging for preparing designs and for supervising the erection of a gas plant less than five per cent.

A. The St. Louis——

Q. No, I ask for the last five years?

A. This happened within the last year. The St. Louis engineering club, if I remember rightly in the engineering news met together and passed a set of rules with regard to prices for their work, and if I remember rightly they mentioned five per cent as the top price and then scaled down in proportion to the size of the work for instance, where an enginer probably would have to handle to the amount of about a million dollars in the work here, something of that sort perhaps 750,000 if he was designing it, give him one per cent for the drawing, $7,500——

Mr. GUERNSEY: I move to strike out the answer as not responsive.

Q. (Question read.)

A. I can't name specific instances.

Q. Do you know anything about what engineers charge for work of this —.

A. I do.

2761 Q. Tell us a specific instance within the last five years that you know about?

Mr. BYERS: I submit that has been answered, it is not important anyway, the question is ,what it is worth.

A. I know they are very glad to do work less than five per cent.

Mr. GUERNSEY: I move to strike the answer as not responsive and ask to have the question read to the witness.

(Question read.)

A. Have to give me a little time to look up memoranda on the matter and in the meantime I will tell you I can't recall any.

Q. Now you put your interest down to 4½ per cent if I understand you correctly on the theory that payments will be deferred?

A. I did.

Q. Did you suppose that the manufacturer, or contractor is going to carry the company without charging for it?

A. He gets his money in the contract price.

Q. But do you think that if you defer the payments that the interest won't be in there?

A. Very probably not.

Q. Probably not.

A. Yes, sir.

Q. You figure that the manufacturer and contractor don't know enough to know that somebody is paying that interest and don't know enough to take it into account in making his price.

Mr. BYERS: That is simply argumentative.

A. I gave you prices which the manufacturer would be very glad to get at the time when the contract is finished and therefore the company would hardly pay interest on it unless they borrowed the money.

Q. Now where do you cover here in your contingencies
2762 things like insurance and personal injury and things of that kind?

A. Again I shall have to refer you to general management.

Q. Can you give us the total amount that you have allowed on account of overhead charges?

A. No, I didn't pick it out.

Q. Taking your revision of your statement as to meters, it runs less than $51,000 on the total job don't it?

A. I just told you I didn't pick it out.

Q. Who gave you your figures on the cost of pipe laying in the yard?

A. Result of my own computations.

Q. Turn to page 80 for a moment. Have you in ascertaining your annual depreciation, have you figured meters at the rate of 15 per cent on the structural cost per annum?

A. Yes, sir; shown here seven years.

Q. And while you were taking your residual depreciation of six cents, when you were getting it here to get your computation on this page, it shows a residual depreciation of 8.17 don't it per thousand?

A. Yes, sir.

Q. Now just for fun I would like to get from this page your total depreciation that you charge for a year including both kinds?

A. That is only a rough check.

Q. The page is headed residual depreciation for one year?

A. Yes, sir.

Q. Computed for one year.

A. Yes, sir; and the bottom of that the following 6 per cent depreciation derivee from larger quantities and longer period is a more correct approximation.

Q. You have as depreciation $12,445.77, that is without figuring your repairs off?

2763 A. Yes, sir.

Q. Then your depreciation on house services and lamp post services of $20,536.18?

A. Yes, sir.

Q. And then depreciation on meters of $31,885.50?

A. Yes, sir.

Q. So to get the total depreciation which you figure we should have to add these together shouldn't we?

A. Yes, and then subtract the appreciation.

Q. The appreciation you deduct, but it does not affect the depreciation that actually takes place, simply affects your balance don't it?

A. It affects the amount of total depreciation, residual depreciation purely a commercial matter.

Q. So you get a total of $65,000 you figure the plant will depreciate per annum. Then cutting out part of that for repairs you have for residual depreciation, you leave 2 cents and a fraction per thousand without taking the correction?

A. 63,000 less 7, 57,000 less the repairs.

Q. No, your total depreciation you figure here is just under $65,000 isn't it, $64,867.45, about 65,000 on three matters, house services and the yard structures and buildings and meters, if you take off repairs you get residual depreciation?

A. And if you take off the appreciation of the land you get what might be called the residual commercial result which is about $43,162.

Q. And getting back to your total you figure a total depreciation there of about 5 per cent on your present value of the plant don't you, 5 per cent on your $1,400,000 would be $70,000 wouldn't it?

A. Well you might average it so in that way.

Q. Well that is a fact isn't it?

2764 A. It is a little less than five per cent but that is depreciation without repairs you understand.

Q. I understand. We charge part of that away to repairs and part of it not. Now in your earnings that you gave us, charged us with you included our earnings from Valley Junction didn't you?

A. What page if you please?

Q. Well in making your figures here what our earnings were and what the net return would be.

A. On what page if you please.

Q. Wherever you did that in your report?

A. As far as I could I used 528 million instead of 531 million in 1910.

Q. Well take your page 85 where you estimate the receipts for five years there?

A. The accountants advised me the gas that is sold at Valley Junction and to the city of Des Moines.

Q. You didn't take into account the investment outside of the city limites did you?

A. I did not. And it made no difference whether I did or not.

Q. What do you mean by that?

A. It is a question of operating cash cost for gas.

Q. But you also get a question of return back here, don't you?

A. Yes, but that is return for Des Moines by special request of the company.

Q. It excludes the Valley Junction earnings does it?

A. The Valley Junction outfit or inventory I find a statement in which you have cut it out altogether from your inventory. It was excluded by the company and so of course I let it go. Now when you come to the question of putting in coal and oil to make gas and averaging up a price as the result of that it would be rather

2765 unfair to leave out Valley Junction because you could not separate the coal or coke or oil that makes the gas for Valley Junction from the coal or coke or oil that makes the gas for Des Moines, so it is better to charge the sum total to the gas sales for the two places and divide it into calculations for the two places and also into operating expenses of the two places.

Q. Also figure it as return on the investment in Des Moines alone?

A. No, the operating cost is based on the cash that goes out and on the depreciation that occurs per thousand cubic feet of sales.

Q. The Valley Junction gas is sold at $1.50 isn't it?

A. I don't know about that.

Q. Why didn't you just figure the expense of the additional gas that goes to Valley Junction at the expense of the oil and fuel the way you figure up the additional expense of this new 60,000,000 we are going to sell?

A. Because that was not what might be called——

Q. It was not the right way to figure it was it?

A. I don't know how to phrase it but it was not a thing that was temporary and impending, of course this 60 million you speak of will soon be reached, you will have more apparatus then, you will have to add on to the old plant again.

Q. Now then on page 89 here in giving the per capita sales, you include Valley Junction as well as Des Moines don't you?

A. I have no means of separating the gas sold to Des Moines.

Q. And these gentlemen you remember, exhibited a sheet of sales in Des Moines and sales in Valley Junction?

A. I was not in the court room, away every day and hard at work on what I had to do myself.

Q. You didn't ask the city's accountants to give you that
2766 information?

A. I don't recall that I did. It was not a matter—please recollect one thing when we get per capita sales it is nothing more nor less than rough irregular quantities, it shows a tendency of growth if you choose to call it so but it is hard to measure and certainly I don't claim to measure it regularly at all only as a tendency of growth.

Q. I have here Professor, a table that has been made up showing Lawrence, Cambridge, Lowell, New Bedford and Springfield from the Massachusetts reports showing as to each of the years 1901 to 1910 inclusive as to each town, the average rate per thousand of population as given in these reports which you will observe runs uniformly at five year periods, the total sales of gas, the sales per capita the total meters, the sales per meter, the population per meter, the total miles of main and the works' daily capacity together with the per cent of increase in some of these amounts as we go along. Now I don't want to take the time to ask you to make these computations here, but will you verify these tables for us so there may be no question about their correctness as showing the actual facts as to the sales of gas in the particular cities in Massachusetts in connection with the change in the prices?

A. 1901 to 1910, I have but a few copies I might go back a year or two and be glad to do it because I always welcome any additional information on the subject.

Q. We will furnish you the copies of the reports that you have not of the Massachusetts commission if you need them.

A. It would occupy quite a considerable length of time to carefully verify this.

Mr. GUERNSEY: It seem*ed* to us i*n* we are to get any intelligent

results from Massachusetts as to whether a decrease in price meant
an increase in sales without an increase in plant it would be
2767 necessary to run through the history of a single city and we
took four or five cities nearest to Des Moines in size and
having about the same price and we would like to have the witness verify this so there may be no dispute about its accuracy.

Mr. BRENNAN: If they have an exhibit that they want to offer in evidence of course it seems to us it would be time enough when it is offered.

COURT: If the witness is willing to do it I have no objection.

Mr. GUERNSEY: I would like to have the witness do it so we will have no dispute about its correctness, that is the only object we have in having it checked. Are you willing to do it?

A. So far as I have time I would be glad to.

(Table marked Exhibit 44 and 44-A.)

Mr. GUERNSEY: I think your honor that is all with this witness except when we get this letter of February we would like to ask some questions about that. We may have inadvertantly overlooked something.

Mr. GUERNSEY: We move to strike out Exhibit 23 and make the same motion as to each paragraph of it because it appears first that it is not based upon the experience or knowledge or information of the witness. Second, it appears that it is hearsay. Third, that it appears that the prices are not prices which the witness from his experience and knowledge knows are current prices in the city of Des Moines and finally because it does not purport to be an estimate of the value of the property in controversy.

Redirect examination by R. O. BRENNAN, Esq.:

Q. Now Professor Marks, you were asked by counsel with regard to
these omissions. I will ask you if you were going to buy a
2768 stock of goods and the merchant or owner from whom you
were purchasing there goods had a complete and detailed inventory of the stock which you were about to purchase if you would expect to have him add to that inventory 8 per cent to cover omissions?

Objected to as irrelevant, immaterial because not predicated at all on similar facts and also as argumentative.

A. I should not.

Q. Where you have as you have in this case a complete detailed itemized inventory of the property which you were called upon to appraise or value you do not feel it necessary to add anything for omissions?

A. I have not in this case.

Q. And the reason you have not done so is because you have assumed that all of the property is contained in the inventory Exhibit 15?

A. Because so far as I have gone into this matter I have not been able to find any omissions.

Q. Now there is another matter to which I want to call your attention at the bottom of page 87 of your report Exhibit 23, you

suggest a sliding scale as the fairest method as between the purchaser and consumer in regulating prices of gas and I note that you use this language but no suggestion of a sliding sale has been made in the ordinance the Des Moines City Council passed December 27, 1910. Referring to the above what qualification do you make as to the statement regarding the sliding scale?

A. I should have made the qualification that it would be impossible for the city council of Des Moines or any other city council to pass a proper sliding scale ordinance without having a complete present valuation of the company's works and a complete investigation and determination of the cost of supplying gas at the
2769 consumer's meter and further fixing upon some rate of profit or of dividends whatever you choose to call it as being fair and reasonable and from the cost of gas and the profit fixing a standard price for gas.

COURT: Can there be a sliding scale under our statute?

Mr. BRENNAN: He has referred to it in his report and I imagine he had the Massachusetts method in mind when he introduced it in the report and I simply wanted to have him explain upon what theory a sliding scale might be introduced, what was essential.

Q. So if I understand you rightly even a sliding scale could not be safely introduced in an ordinance prescribing rates with any fairness to the consumer as well as the producer without an appraisal and valuation of the plant should be made in advance of the passing of the ordinance.

A. That is correct, it should be so.

Q. Now did the prices secured by Mr. Dobson and Mr. Hasek commend themselves to you as to being reasonable prices and charges for materials to be used in your report Exhibit 23?

A. Wherever the prices secured by my assistants were brought in I gave them careful consideration and used them when I found them to be reasonable. I had occasion to compare these very carefully with them and with others, of course I used no figures that did not commend themselves to me personally as being reasonable and right.

Q. Now did you in the use of the unit prices which you have introduc- or employed in connection with your report, Exhibit 23, rely upon the judgment of either Mr. Dobson or Mr. Hasek with reference to the prices which you have used in your report or are the prices used by you in your report based upon your own independent judgment ?

2770 A. In every case upon my own independent judgment, but it is quite impossible for one man pressed for time as I was to do anything else than avail himself of assistance where he could get it and information from where he could get it in every direction.

Q. You have referred to the number of brick and have referred to this model showing the number of brick to a cubic foot. Was that suggested to you by Mr. Dobson or Mr. Hasek or anyone else?

A. It was not. It was wholly my own idea.

Q. In making your valuation of the property of the Des Moines

Gas Company as shown by your report, Exhibit 23, were you influenced or controlled in any way by anything which appears in the reports of Mr. Lea or Mr. Beahr or Mr. Hagenah, or any of the engineers who testified on behalf of the complainant in this case, or Mr. Randolph, I forgot him.

A. Of course I didn't hear all of them only portions of each one I think except the first. If by the word influenced you mean made use of any of their reports I would say most positively that I had no use for them and made no use of them.

Q. In other words, Exhibit 23 represents your independent judgment and valuation of the property of the Des Moines Gas Company?

A. It does as near as I could make up my mind.

Q. In answer to one of Mr. Guernsey's questions with regard to your experience with a low carburetted water gas system you mentioned some experience which you had in an experimental plant near the city of Philadelphia. I wish you would tell us what that experience was.

A. When Prof. Lowe had just begun his work and had gotten far enough along to make gas and put it in the holder, I was sent by the president of the Brooklyn Gas Light Co. to Manayunk, Philadelphia for the purpose of assisting Prof. Lowe and also of
2771 making a record, that is keeping a record of what he was doing and how he did it and reporting orally with memorandum to them. I was engaged for quite awhile during the operation of these little generators and of course there learned the principles of operation which Prof. Lowe was trying to carry into practical effect in a large way. Subsequently some time in the neighborhood of 1900 at Fostoria, Ohio, it was necessary for me to get this apparatus into operation on a practical scale it was either 6 or 6½ feet generators I forget which and as it is difficult in a small town to get anybody to operate—experienced in the carburetted water gas process for some days and a portion of each day I personally operated the low carburetted water gas process making the gas and getting it into the holder so that I can feel that from beginning up to date almost so far as the low carburetted water gas process is concerned I had not only a history, but a very practical apprenticeship of the business.

Q. Do you recall whether any information which you secured at that time for the persons whom you represented was acted upon by them in making investments?

Objected to as not proper redirect examination.

A. The information was reduced to the form of memoranda and subsequently used in considering purchase of gas works in which these gentlemen who were men of very large means, millionaires and multimillionaires, were interested all over the United States.

Q. Now at the risk of emphasizing Fostoria, I want to venture the question and have you tell the Master just what services you performed in and about the gas works at Fostoria?

A. Going to Fostoria, Ohio, a town of some 15 or 16,000 inhabitants, I found there a joint gas and electric light works. I have been

in electricity from its very outset working with Edison in
2772 1878 and so the rehabilitation—the works I should say were in very bad shape and in getting the rehabilitation of the street lights practically the matter was disposed of and I turned my attention to the gas works which was also in the same building. I found that the benches and retorts there were in such shape they had to be rebuilt, I refer to coal gas retorts where gas is made by the carbonization of hard coal. In order to be able to rebuild the coal gas works it was necessary to get an incomplete low carburetted water gas apparatus into practical operation. There was no one there knew how to run it and so with the aid of a man who was a common laborer and inexperienced in the matter the small low carburetted water gas business was started in and when it was running right the coal gas benches were allowed to die out and the benches were renewed I think under a contract with the Russell Bros., or Russell, St. Louis men I remember making a contract with them, I have forgotten who they were excepting there was a Russell in it. After the coal gas benches were again put in proper shape, generator benches, it is a little more economical to make coal gas because of the residuals and so the carburetted water gas plant was kept as very frequently is done, after putting it in good shape for its run, kept in good shape for the purpose of meeting any emergency that might arise in the way of extra demand for gas.

COURT: If I understood you right you did not use the crude oil there?

A. No, the difficulty of that was this, I was right there in the oil country you know and the moment a man strikes oil there, he calls on the pipe line people to run a line to him from the tank to his small oil tank to run to their big tanks and they found out without anything particular being said that if they sold crude
2773 oil to me they could not get a pipe line run in if they struck oil and we got from the Standard Oil people, the- sold us what they called gas oil which is a heavy distillate, heavier than kerosene at between 3 and 4 cents a gallon in carload lots.

Q. State in what manner they measured the gas used by the consumer?

A. Through an ordinary meter, station meter and through an ordinary dry meter.

Q. Installed at the residence or place of the consumer?

A. That they installed at the residence yes.

Q. You were actively engaged at Fostoria in superintending the works and seeing to it that the service was performed?

A. It was a small works and it was necessary that somebody should actually do the work and often with my own hands I have made gas for them, made gas with my own hands and I have run the electric machinery with my hands.

Q. I believe counsel asked you something about your inspection of the monitor supports on one of the buildings of the Des Moines Gas Company and you stated that the employés of the company refused or did not at least give you any information such as you asked. Now I wish you would tell the Master more fully just how

they did act toward you during the times you were making your investigations?

A. Whenever I have been to the works the first thing to do was to obta- a pass from the general office located on Seventh street. Having obtained the pass from the general office I generally fix the time when I would be there at the works and reaching the works I was usually met by two men whose business it was to accompany me. If I asked any question beyond merely where a thing was there was no reply, they were dumb. A good many times I found them whenever I made a note busily engaged in looking over my
2774 shoulder and reading it, in fact in one case one of their representatives having failed to read over my shoulder asked me what I had put down in my note book. That is the only time they manifested any desire or interest in the way of talking, to talk or ask questions or to answer them. There was nothing more than the mere pointing out of whatever I asked for. If I desired to have any explanation of any sort or kind, I did not get it, might as well have been a deaf and dumb asylum. However, it did not bother me very much because I have been in a great many gas works.

COURT: Find them all alike?

A. Pretty much all alike there is not very much difference in them.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

2775 Wednesday Forenoon Session.

AUGUST 23, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

WILLIAM D. MARKS, continuing his re-direct examination, examined by R. O. Brennan, Esq., testified:

Q. Now, Professor, in answer to one of the questions propounded to you on cross-examination you started to tell of some experience which you gained in connection with some work you did for Thomas A. Edison, concrete work, I think, and you were not permitted to finish your answer. I wish you would tell the Master in a general way your experience in that connection.

A. In 1887 I was appointed through the influence of Thomas A. Edison engineer in chief for the Philadelphia Electric Light Company with instructions to build a 10,000 horse power station, the idea being at that time to build the largest station in the world for the Edison Company in Philadelphia. There were no precedents for such stations. It was necessary for me to begin at the foundation with my work and the foundation plate for the station there is something over one hundred feet high and a plate of concrete one hundred feet long, seventy feet wide and ranging from four to ten feet in thickness, according to the condition of the earth underneath the foundation. This plate of concrete at that time was considered a

very great undertaking. It was necessary for me to work out the methods of making concrete, experimental, and then to build the plate, which I did. It was also necessary for me to work out a station having some eight floors on it and carrying about four million pounds of machinery and its own weight of course,
2776 iron work to the floor for each floor. The station was built and is standing today. The important point at that time, in 1887, was that concrete was practically in a large way very little known in this country and it was considered quite an innovation—I mean on a large scale—so I think I can say that some twenty years ahead of the general use of concrete this large work had been done. The floors themselves where this heavy machinery lay were on steel beams——

The MASTER: Steel?

A. Steel beams and arch and concrete so as to give them very great weight as well as very great strength on account of the vibration received. That too was considered at that time an innovation rather a daring one. In 1889, or by 1889 I had become unofficially consulting engineer for the many stations that were in contemplation or in actual construction for the Edison system throughout the United States and in the case of the larger ones was usually requested to personally investigate the matter and did so in a number of cases, and in every case that I recall there was more or less concrete work there. I think this will straighten out for you any doubt that may have arisen in your mind as to whether or no I am practically familiar with concrete.

Q. Did that work you have described come under your personal supervision?

A. Every bit of it.

The MASTER: That is, you superintended the construction of it as well as designed it?

A. I felt so anxious about it, you may say a good portion of my time was spent right along side the reamers and gangs and nobody could get closer to the work without doing the actual work
2777 with *its* own hands.

Q. And what did you have to do with the designing of the work?

A. I designed every bit of the Philadelphia station, from the first bed of concrete through to the last connection, you might say almost.

Q. Have you in connection with your work as a consulting engineer made valuations at any time for investors in gas properties and other public utilities?

A. From 1876 to 1887, when the whole of my time was absorbed by this electrical work I have just mentioned, I was Professor in the University of Pennsylvania and practically all my leisure was absorbed, as I have stated before, by a certain syndicate of gentlemen who at that time were largely interested not only in Brooklyn and New York, but also in many cities of the United States, and it was necessary in serving their purpose that I should not only make a physical examination on the spot with particular regard to the condition of the work, but also that I should at times go very carefully

into the finances of the work, making careful computations of the profit earning capacity. These reports were very numerous, sometimes several in a year, and so far as I was concerned disappeared, being wholly for confidential purposes and furnishing data on which they acted in purchasing gas works.

Q. Now, in your report on valuation, Exhibit 23, counsel asked you if you allowed anything for clearing the site and staking out buildings. Is that item, or rather are these items included in your report, and if so, please state where?

A. The clearing of the site and staking out appears to me a very small matter and fully covered by the 12½ per cent overhead charges.

2778 Q. Now your attention has been called to the sketches referred to as Complainant's Exhibit 16, and I noticed in testifying with reference thereto you consulted a blueprint. I want to ask you if you were furnished with a copy of Complainant's Exhibit 16, or are the blue prints to which you have referred the only copies that have been furnished you?

A. The blue prints were the only thing I have been able to examine and the only thing furnished to me.

Q. Have you made an examination or a comparison between Exhibit 16 and the blue prints which you have used in your report and in giving your testimony for the purpose of ascertaining whether the blue prints are a true and correct copy of the sketches in Exhibit 16?

A. I attempted to do so but was refused an opportunity so to do by counsel for complainant.

Q. The question is whether you have?

A. I have not.

Q. Now, Professor Marks, would there be any substantial difference in the value of complainant's property on the 1st day of January 1911, as compared with November 1st, 1910, the latter date being the date used in Complainant's Exhibit 15?

A. There would not be if the same items were taken as were furnished to me in the inventory list—none that could be measured.

Q. Is your valuation of the property of the complainant at the manufacturing works, that is the buildings, machinery and holders, the cost of duplication for November 1, 1910 on the basis of the prices then prevailing?

A. It so happened that on the average the prices of duplication about the 1st of 1911 are the prices which were used for the purpose of obtaining the structural cost.

2779 Q. And what would you say as to the meters?

A. In what respect?

Q. In the same respect, whether or not your valuation which you have placed upon them would be on the basis of the prices then prevailing as of January 1, 1911 on the duplication theory?

A. So far as I have been able to learn the reduplication of the meters in position on the 1st of January, 1911, is about the same or perhaps a little less as the structural cost of the meters allowed by me on the basis of 33⅓ per cent off.

Q. Now would the structural cost of the meters as of January 1, 1911, coincide with the structural cost as of November 1, 1910?

A. Very much the same, slight variation.

Q. In the case of mains and services, and leaving out the question of paving, how does the value reached by you compare with the value you would have reached had you assumed all the mains and services had been laid say within two years following January 1, 1911?

A. If by that you mean one large undertaking or contract, continuous, occupying two summers, I would say that the mains and the services could be put in by the company for about 15 per cent less than was actually paid for interrupted work or contracted out with the fifteen per cent profit to the contractor for about what I have estimated.

Q. What would you say about the cost of mains and services, that is, the relative cost of the mains and services in the past?

A. One moment—let me clear up the last point. When I use the word 15 per cent, I refer to 15 per cent contractor's labor and on the contractor's raw material, but not 15 per cent on the cast iron pipe and not to 15 per cent in the case of services on the wrought iron pipe.

2780 Q. The last question was, keeping in mind the structural cost of mains and services in the past, what would you say now as to the relative cost thereof?

A. As near as one can do, when one is making an appraisement, they are identical.

Q. And would this 15 per cent which you say would be added if it were a small job, would that obtain in the case of meters and services laid in the past, where it might have been in large quantities or large jobs?

A. Wherever you can organize work—I think everybody agrees with me—that continuous work is very much reduced in cost, for many reasons. Perhaps I had better not try to go into detail. To take up the putting in of meters and services, I referred to, labor now would undoubtedly produce a very large saving. 15 per cent in the least, and in proportion to the organization a larger per cent would be quite probable.

The MASTER: But meters and services have to be put in at the time they are called for?

A. Yes.

The MASTER: The- couldn't be put in under large contracts?

A. We apparently are drifting away to the hypothetical idea of the company, for a reduplication.

Mr. BRENNAN: I was simply making that inquiry for the purpose of comparison.

Q. How much value do you give or did you give to the mains and services new by the method which you actually followed in your report Exhibit 23?

A. You mean the total cost of mains?

Q. Yes, and services.

A. The total cost of mains is about $652,000 on which
2781 there was no depreciation allowed or taken. The total cost——

The MASTER: That figuring as I understand it here, is where they are laid entirely before the pavement was put down?

A. Entirely before the pavement is put down, but allowing for the ordinary difficulties in street works, such as moving a sewer, inlets, running under crossings, possibly running into small amounts of macadam paving, and coming under such steam and electric railways as would occur in a city like Cleveland or Buffalo.

Q. Do you remember the amount which you allowed for the services house services without depreciation?

A. I don't recall the exact figure.

Q. On page 58 of the copy of your report it refers to the house services?

A. The present value of the services is appraised by me as $137,-360.

Q. But I am getting at the structural cost of the services, which would be in round numbers $275,000, as shown by your report?

A. Yes.

Q. So that if we add that to the $652,000 representing the structural cost of the mains, we have in round numbers $927,000.

A. $927,000, adding the structural cost of the mains to the structural cost of the services.

Q. If you followed the duplication theory with reference to mains, and house services and deduct the 15 per cent off the $927,000, you have in round numbers about $135,000.

A. I have not made myself clear in that matter apparently to anybody. It would not be 15 per cent off of the cost of the cast iron mains, and it would not be 15 per cent off of the cost of wrought iron services, but it would be 15 per cent off of all the other cost that occurred in laying the mains and in laying the services.
2782 I have not figured that exactly; I could figure it for you.

Q. The 15 per cent representing the figures to which I called your attention includes of course the 15 per cent deducted from the cost of the mains and services.

A. Yes.

Q. Now, I propounded the question so as to give you an opportunity to clear up the situation with reference to that 15 per cent, so that there would be no misunderstanding in regard to it.

A. I seem to be very unfortunate. I'll get right at it, if you will permit me. (Witness computes.)

Q. Perhaps I can save you some of this computation—what I was getting at is this: If we take the amount of labor involved in the mains and services and deduct 15 per cent, as comparing it with the duplication theory, we would find the comparison in that way?

A. Yes. I could work it out in that way. I could give you a few examples if you desire, to save the time of the court. For instance, the four inch pipe is rated as costing 49 cents per foot, laid

down complete, without paving. In this 49 cents there is 27½ cents paid by the gas company for the cast iron mains furnished, and 2½ cents paid for the special castings, making about 30 cents paid for the cast iron mains and cast iron specials delivered by the company, leaving, 30 from 49, or 19 cents paid the contractor per foot for what he does in digging for his cast iron mains, digging the ditch and furnishing all the necessary lead, cement, oakum, labor, carting and everything of that sort and getting the pipe under ground and ready to pass gas. The 4 inch main in this case appears to be in this city of Des Moines about 573,724 feet, or some-
2783 thing over one half of the total length of mains—970,923 feet. And I could go on in the same way with as many as you desire.

Q. No, that illustrates it, I think, very fully. You were asked about your New York appraisal. I wish you would tell the Master just about how much time you devoted to the making of that appraisal?

A. The New York appraisal included six active generating works. About four-fifth- of all the gas in 1905 used in the city of New York was carburetted water gas. The remaining one-fifth was ordinary coal gas. Besides these generating stations there are also four distributing stations. The making of this inventory was delayed by the opposition of the Consolidated Gas Company—I might perhaps more correctly say, the apparent neglect of the company than the opposition—the results were the same for a considerable length of time, and then required the utmost industry on my part to even inspect the works. The inspection of the works item by item as near as I recall, and I only recall from memory, after a number of years, occupied about six weeks. While this inspection was going on with my assistants, the classification under the head of works was daily being taken up. In reference to the identification of the various items, it was made by me personally and no one else and was very complete. It was then necessary to make the computations and comparisons, that occupied day and night work on the part of myself and on the part of a number of assistants, as near as I can recall now, seven or eight of them, and they were occupied for many months. I do not recall how many. I was fortunate in being able to obtain, not regularly, but incidentally, the appraisals
2784 of the chief engineer of New York City in gas and electricity, Charles F. Lacomb, who kindly went out independently, and occasionally with me, and examined and valued certain buildings and certain apparatus. I was also fortunate in obtaining the inventory appraisal of Mr. Thomas Rowland, a contractor of Green Point, Long Island, opposite New York, who for many years furnished the great bulk of the machinery and buildings of the various gas companies of Manhattan and New York, and from his own records was able to give the actual cost of these buildings, as you will see from my tabulations submitted here. These were all carefully put together and compared with the testimony of a Mr. Meyer of Baltimore, who was at that time the engineer, and I think also

the selling agent of a big Baltimore gas works manufacturing concern. The inventory of Mr. Meyer was not turned in in tabulated form, or I might say in a collective form, but was given through testimony item by item, so far as he went in the various items, and in the majority of cases no explanation given as to how the work was done, but merely the bald statement as being his opinion of the worth. Putting these together and comparing them was an enormous labor, but resulted in a very thorough understanding of all the reasons and facts in the valuation of these ten gas stations on the Island of Manhattan.

Q. About how much time was required by you in doing that work?

A. As I have stated, I was about six weeks in tramping through the works and seeing those things and making notes of them; I could not say it was continuous, because I had much to do and many things to think of, but it was pretty nearly, if not every day, and just in many cases all day, and just as much of every day as I could possibly get in for six weeks and that work was followed by myself and seven or eight assistants covering many months.

2785 Q. For what length of time did your services cover in the city of New York?

A. The actual services in the city of New York began on or about January 1, 1906; I was engaged in 1905, and it was officially terminated by the decision of the Supreme Court of the United States in January 1909. I do not recall the date when the decision came down, but it was in January 1909, covering a period of almost exactly three years. By the way, I should say that in addition to that my services were used in a number of adjustment- or computations in a large amount of rebates by corporation counsel. Of course I did not appear, he merely used that material. I was afterwards requested to appraise the Bronx Gas & Electric Light Company, which I think I forgot to mention.

Q. How long were you engaged in Cleveland making your investigations and appraisals of the Cleveland Gas Works?

A. I know that it practically took up nearly all the summer and part of the autumn of the year 1910.

Q. Did your work in making that appraisal require you to make a personal inspection of the works of the company?

A. In the case of Cleveland, for the three works, there was nothing whatever furnished except permission to go on the ground, and under those conditions it was necessary for me, not only to go over the works item by item, but also to supervise and complete a set of drawings of each of the works, giving all the detailed plans of the whole three works, and in addition to that a small number of sections, such as are required for estimating purposes to make this list, and then to place the valuations, doing very nearly, but not quite so literally, the same thing as I have done here.

Q. Now, Professor Marks, I want to ask you, if the esti-
2786 mate of depreciation used by you in your report and valuation in Exhibit 23, is reasonable and in an amount which appeals to you as a consulting engineer as being fair and just?

A. On looking back over it, I can only say it was the most honest and best thing I could do in the way of engineering and making a fair and reasonable depreciation. I took for instance such buildings as are along the northern edge of the property close to the railroad, those old buildings built in 1876—a good many people would claim that they were practically at the end of their life, but because they were used, I depreciated them as nearly and as fairly as I could, for the reason of their use; in other words, if they were not in that use, I would call them worthless; that is equally true of all other parts of the older apparatus.

Q. So that upon the whole inquiry then, you would say it was fair and just?

A. Just as fair and reasonable as anybody could make it, to do the best he could.

Q. Now, counsel called your attention to some errors in your figures indicating the population in certain cities and towns in Massachusetts, and also to the fact that some outlying districts were apparently omitted from your tables. I wish you would tell the Master whether or not such omissions would affect the results which you desired to obtain from such tables, and if they did not affect them tell the Master why?

A. The overlooking of some of the outlying suburbs, and I think one mistake in the amount of gas sold, would have no effect whatever on what was being proved by that collection of figures, for this reason, the only object of that collection of figures was to
2787 show in a general way, and not in a quantitative way that as the price of gas goes down the sales go up, after the manner of a teeter, I used the sales per capita, meaning the sales per head, simply because each and every one of these cities has a different population over the rest, and the only unit I could find that would enable a fair comparison would be the sales per capita or the sales per head of population.

Q. In that connection you used the term per capita sales instead of total sales; why do you make that distinction?

A. Going more into detail in that matter, I would say of course you know the cities have not the same population, and that the only way of comparing cities of different population is by getting the sales per unit of inhabitants. I think I should add that those sales per capita, which was a matter taken up in a paper by me, in the Progressive Age, received very careful consideration in the New England Gas Engineers' Association and resulted in a committee being appointed and that committee reported the sales per capita as being a proper basis for comparison of the various cities.

Complainant moves to strike what the committee reported as being secondary, hearsay and not competent.

Q. Now I notice also that you were careful to distinguish between meter sales and per capita sales, or total sales; what purpose did you have in distinguishing between meter sales in answering questions?

A. The question of meter sales and sales per thousand feet or per mile of main are technical questions of great importance and

necessary to the managers of the companies to know what their apparatus is costing them and how effectively it is acting
2788 and it is not an important matter to the public in general nor is it relatively near as important a matter as the revenue per capita obtained. When I say that, I wish to call your attention to the fact that the revenue per capita in the city of Des Moines in 1895 was reported by the company as being in the neighborhood of $1.50. I looked up the exact figures yesterday but I do not recall them now; and in 1910, it was something over $6. per capita, the revenue per capita was; so that if you take the population in 1895 and multiply it by $1.50 you get the gross revenue of the company in 1895 per year; and if you take the population for 1910, and multiply it by $6. or thereabouts, you would get the gross revenue of the company for the year 1910, which shows as a result of lower prices which have gone on ever since then, from my point of view and of the good service which the company is rendering, an enormous increase in the sales of this company between 1895 and 1910, a period of about 15 years.

Q. Now, I think you were asked by counsel in your cross examination if your employments have been confined to muincipalities in all cases. I want to ask you if you have been consulted by others besides municipalities, for the purpose of making valuations or appraisals of gas properties or other public utilities?

A. I will answer your question without mentioning any names. You will understand that it is not fair to go into details.

Q. I don't care for the names; I want to know what the fact is as to whether you have been employed by the owners of public utilities?

A. I have been approached by the managers of the largest gas works in the United States, and I have been offered very large retainers, very large retainers, but as the condition of my work
2789 is that my reports shall always be entirely public, no reservation, of course I could not meet the conditions which would have been imposed.

Recross-examination by Mr. GUERNSEY:

Q. Referring to this last statement of yours, you do not mean the U. G. I. Company, do you?

A. I do not know. I never know where the U. G. I. is under the surface.

Q. You are not familiar with the lists of plants in which the U. G. I. Company is interested?

A. I have occasionally read over the list.

Q. How recently was it you were approached by these people.

A. If I should answer enough questions, I presume it is quite possible to locate them; so I will only say to you in one instance it was very recently; in others it was during the last few years.

Q. You are unwilling for us to know from whom you refused to accept retainers?

A. Of course, you understand perfectly well as a man of business, when one comes to you in that way, although you may not be pledged, you had better not do any talking, if you are square.

Q. So that you prefer to leave this in such a way that it is impossible to verify your statement?

A. I should insist upon so leaving it.

Q. And you are not able to say this offer of employment came from the U. G. I. Company directly or indirectly?

A. I cannot, or anybody else. I decline to deny or affirm any.

Q. What I was getting at whether you were able to tell
2790 us whether these offers of employment came from the U. G. I. Company or not?

A. My reply to that is again, as I never know where the U. G. I. is, I could not possibly say.

Q. That would mean of course that you have no affirmative evidence that it was interested?

A. I don't know where it was; that is the only way I should care to put it.

Mr. GUERNSEY: Before I forget it, I want to have this exhibit 43 marked by the reporter as Complainant's Exhibit 43.

(It is so marked)

Mr. BYERS: We do not know whether it is correct or not.

Mr. GUERNSEY: Do you want to verify it?

Mr. BYERS: Not now.

Q. Now, Professor, you said that you attempted to compare the blue prints which you had of these buildings with a copy of Exhibit 16 and were refused opportunity to do so by complainant's counsel. What you were doing as a matter of fact, was walking off with the original of that Exhibit without saying anything?

A. I asked my counsel, Mr. Brennan, whether it would be proper for me to take that exhibit for the purpose of comparing what I had, and I was told it was so proper, and I picked it up very innocently, when one of the gentlemen retained by the company seized the book and insisted I could not take it and walked off with it.

Q. You did not tell him about your conversation with Mr. Brennan?

A. Well, when one commits assault and battery——

Q. You did not tell him about your conversation with Mr. Brennan did you?

A. At that time——

Q. Yes.

2791 A. Certainly not.

Q. Counsel for the City thereupon requested this same gentleman who was one of the counsel for the complainant, to furnish the city his copy of Exhibit 16 for the uses of the city, and that was done within 24 hours from that time, and at least six weeks ago?

A. That copy never passed into my hands.

Q. I did not ask you that. It was turned over to the city for the city's use?

A. That I know nothing about.

Q. You will not say then that as a matter of fact a copy of this Exhibit 16 was not turned over to the city for the city's use within 24 hours from the incident you referred to?

A. I speak only for myself. I know nothing more than what happened then. Since then I have not had possession of that Exhibit 16.

Q. You know, don't you, as a matter of fact, that the difference between Exhibit 16 and your copy of it, so far as these plans are concerned, in your copy they are blue prints and in Exhibit 16 they are paper prints, but taken from the same drawings?

A. I do not know that.

Q. Will you say that is not true?

A. I don't know.

Q. So that you do not mean to say then that the blue prints which you have are not exact copies of what is referred to in Exhibit 16, what is contained in Exhibit 16?

A. On that point I said to you I don't know.

Q. You testified yesterday on your re-direct examination that an examination of the inventory, an investigation of the costs fixing the dividend rate and fixing the standard rate were necessary to
2792 a rate fixed upon a sliding scale, as I understood you?

A. I did.

Q. It is equally necessary to intelligently fix any rate, isn't it?

A. Yes. Pardon me for adding an explanation there, that is this, that as a matter of my own judgment I have always objected to the fixing of a rate for any more than—a single rate—for anything more than a very short time, for it appears to me that a change in the cost of raw material or productive labor would result in a change in the cost of gas and consequently might be unjust either to the company or to its consumers.

Complainant moves to strike the explanation made by the witness as irrelevant and immaterial, in view of the fact that under the law of this state a rate cannot be fixed for any specific time.

Q. Now, on cross examination, commencing on page 2386, you were asked about that, what your Exhibit 23 showed, and you were asked this question: There is one thing I want to get straightened out about your report, defendants' Exhibit 23, is that supposed to show the reproduction cost of the plant or not? And you answered: "No." That is correct, is it not?

A. That is correct.

Q. Then on page 2387 you were asked, referring to this report: "Q. Then it is not intended to show the value of the plant at this time, is it? A. At what time? Q. This time, today? A. Only in so far as the cost of materials and labor correspond with the cost of materials and labor used in gas works at the time in which these structures were put in." You so testified?

A. I did.

Q. That is correct?

A. That is correct.

2793 Q. So that if any of the items in your report Exhibit 23 happen to be the same as the corresponding items for the reproductive value of the plant, it is a mere coincidence?

A. It is.

Mr. GUERNSEY: I think that is all, except Mr. Brennan, did you get that letter of the 17th?

Mr. BRENNAN: Not yet.

Mr. GUERNSEY: There is one other question I want to ask the witness.

Q. With reference to these Massachusetts reports, in your report here, you do not claim that these figures in the report are correct, do you?

A. Not with a great degree of precision; sufficiently so for the purpose for which they are used.

Q. That is true enough, if as you said yesterday, they haven't any particular bearing in Des Moines. Referring to the first table on page 94 of your report is there any one of the figures in that table showing the sales per capita, which is correct?

A. I should say that all the figures there are near enough correct for the purpose for which they are intended.

Q. That don't answer my question. I asked you whether you say any of the figures in your columns showing the sales per capita and your average sales per capita in the first table set out on page 94 of Exhibit 23 are correct?

A. If you mean absolute correctness——

Q. I mean correct as shown, checking the source from which you take them?

A. You mean absolute correctness?

Q. I do not mean within ten decimals; I mean whether those figures are right, or within one decimal?

2794 A. I cannot alter the statement I made. If I felt the necessity of greater accuracy, I would have endeavored to obtain it; they are sufficiently accurate and correct for the purpose for which they are intended, showing the relation——

The MASTER: Are they correct?

A. Until correctness is defined, until the use of that word is defined, I cannot very well answer, although I will say they are correct enough for any use I have made of them.

The MASTER: You don't say they are absolutely correct?

A. I do not.

Q. For instance, take your last average figure, and you have 57.60 and that ought to be 63.28 ought it not?

A. I have not the last figure before me. That is correct for the purpose for which it is used. 6000 I should say would be about a fair average.

Q. Will you do this, Professor, will you give us the cities that are referred to where the average figures are taken for your per capita sales, at the $2.25 cent rate for 1901?

A. I could not give you that without going back to my office?

Q. Will you furnish them to us later here?

A. I will be very glad to.

Q. Also the cities upon which these figures as to the $2 rate here are based?

A. You see there are three $2 rates, groups.

Q. Not in this same table I am talking about.

A. There is a group for 1901 and group for 1907 and for 1910.
Q. I want all of them, of course.
A. You mean the three groups?
Q. Yes.
A. I thought you had that all worked out.

2795 Q. We have it all figured out but we do not find any figures to be right, and that is why I am asking for the information, and to avoid any chance for error I would like to have you give us the cities taken in each column?

Mr. BRENNAN: That is in the table shown on page 94?
Mr. GUERNSEY: The table at the top of page 94.

Q. Will you furnish us that information?
A. I will if I can. I presume we do not substantially differ—just a fall in the price of gas will always result in increased sales of it.
Q. I am talking about these computations based on the Massachusetts reports; we get as the final result for one year's increase instead of 1.79 1.31 which is something more than 25 per cent less than your figure?
A. But you get an increase in both cases, and that is all I *I* was trying to show you.
Q. All you claim for the figures is that they show an increase but not the amount of it?
A. Yes.
Q. Now will you furnish us this list of cities giving the list for each rate for each year, 1901, 1907, and 1910, referred to in the first table on page 94?
A. I will have it dug up if my counsel so desires, as soon as I can get access to my data.

Mr. BRENNAN:

Q. You wanted to show approximately the results of the reduction in price of gas?
A. That is all that I wished to do.

Excused.

2796 W. F. DOUTHIRT, being first duly sworn on part of defendants, examined in chief by Hon. H. W. Byers, testified:

Q. Where is your home, Mr. Douthirt?
A. In Philadelphia.
Q. And what is your business, please?
A. Secretary of the United Gas Improvement Company.
Q. How long have you been secretary of that company?
A. I think about six or seven years.
Q. Were you secretary of the company prior to 1906?
A. I was in the employ of the company prior to 1906. The date when I was elected secretary has escaped me. I think it was prior to 1906.
Q. When was that corporation organized, do you know, the United Gas Improvement Company?

Objected to as not the best evidence and incompetent on that account.

A. Well, I can only make a guess. I think it was some time prior to 1890.

Q. And what is the business of the United Gas Improvement Company?

Complainant interposes the same objection last made.

A. It operates under a lease from the municipality of Philadelphia the gas works owned by the municipality. It operates a construction department which builds water gas apparatus for any gas company in the United States who may desire to buy such apparatus from the United Gas Improvement Company. It also is a share holder in a number of gas companies and gas and electric companies and gas and electric and traction companies in different parts of the country.

2797 Q. And who is its president?

A. Thomas Dolan.

Q. What are your duties as secretary?

A. My duties as secretary are to keep the corporate records.

Q. Is that what you do do?

A. Oh, I do a good many things besides that.

Q. What other duties do you have besides keeping the corporate records?

Objected to on part of complainant as being immaterial.

A. I am a member of two or three bars and I do a good deal of legal work in connection with the company's affairs. I also have more or less to do with the accounting, and I am a member of a good many boards of directors of companies in which the United Gas Improvement Company is a shareholder. I render such services as I can, general, attending to matters and the general business of the companies in which it is interested, in my capacity as director of the various concerns.

Q. Are you also a stockholder in the company?

A. The United Gas Improvement Company—I am not.

Q. What relation does the United Gas Improvement Company bear to the Allentown Gas Company of Pennsylvania?

Objected to on part of complainant as wholly irrelevant and immaterial as to any controversy here.

A. It is a shareholder.

Q. What do you mean by shareholder?

A. It owns stock in the Allentown Gas Company.

Q. Does it own all the stock?

Complainant interposes the same objection last made.

A. I do not recall; if it does not own it all, it owns a large majority of it.

2798 Q. Why do you say recall, it owns it all?

A. Because I don't.

Q. Are you not an officer of that Company?
A. I think I am; I am not sure.
Q. You are drawing a salary there, are you not?
A. I think not.
Q. Are you sure about that?
A. I think not.
Q. Well, at any rate, it owns a majority of the stock?
A. Yes, I am safe in saying that.
Q. The Burlington, Iowa, Gas Light Company, what relation does the United Gas Improvement Company bear to that company?
A. It owns stock in that company.
Q. How much of that stock?
Judge CARR: We ask to have the same last objection made continued.
A. I cannot tell you any more than say that it owns a substantial majority.
Q. All of it, don't it?

Same objection.

A. I think not.
Q. Is there more than a half a dozen shares held by parties outside?

Same objection.

A. I really couldn't say.
Q. You are an officer of that company?

Same objection.

A. I think not in the Burlington Gas Light Company.
Q. Do you know who the treasurer of the company is?

Same objection.

2799 A. Yes.
Q. Who is it?

Same objection.

A. Mr. S. T. Bodine.
Q. What relation does Mr. S. T. Bodine bear to the United Gas Improvement Company?

Same objection.

A. He is 1st vice president.
Q. Mr. Walton Clark is an officer of the Burlington Company?

Same objection.

A. I do not recall whether Mr. Clark is or not. If you will let me have Poor's Manual I will give you the whole thing.
Q. I want to know what you know about it?

Same objection.

A. All right. I don't recall whether Mr. Clark is or not.
Q. Mr. Clark is an officer of the United Gas Improvement Company?

Same objection.

A. Yes.

Q. And Mr. Lewis Lilley is an officer of the Burlington Gas Light company?

Same objection.

A. I think Mr. Lilley is in the Burlington Gas Light Company.

Q. What relation does he bear to the United Gas Company?

Same objection.

A. Mr. Lilley is the 4th vice president and treasurer.

Q. And Mr. G. A. Pearson, does he have any relation with the Burlington Gas Light Company?

Same objection.

A. My recollection is Mr. J. A. Pearson is purchasing agent of the Burlington Gas Light Company.

2800 Q. What relation does he bear to the United Gas Improvement Company?

Same objection.

A. He is purchasing agent of the United Gas Improvement Company.

Q. Now, Mr. Douthirt, you are also secretary of the Des Moines Gas Company?

Same objection.

A. Yes.

Q. And how long have you been such?

Same objection.

A. Let me see. The company was organized in 1906. It was some time subsequent to its organization, according to my recollection, I was not elected secretary immediately upon the organization of the company; possibly a year or two later than 1906.

Q. Say in 1907?

Same objection.

A. Possibly.

Q. What relation if any do you bear to the Capital City Gas Light Company?

Same objection.

A. I think I never was an officer or director of that company; I don't recall that I was.

Q. Now as secretary of the Des Moines Gas Company, what are your duties?

Same objection.

A. I keep the corporate records, and I have been in attendance at this trial and spent a good deal of time in consultation with the attorneys prior to the beginning of this trial.

Q. You have been one of the counsel, have you not?

Same objection.

A. Oh, I think not.

2801 Q. Haven't you been acting in that capacity here?

Same objection.

A. Well, you may form your own conclusions.

Q. What else, what other duties if any; you don't mean it is one of your duties to try the lawsuits of the company?

Same objection.

A. Oh, no; I haven't tried a lawsuit for fifteen years.

Q. As I understand you, you are simply here as a witness the same as these other gentlemen?

Same objection.

A. I didn't come here as a witness.

Q. What particular duty do you have here?

Same objection.

A. Oh, much the same as Mr. Haines, except that he was called as a witness, and I am here as an officer of the company to help in any proper way I can.

Q. Have you any other duty in connection with the business of the Des Moines Gas Company in addition to what you have said, if so, I wish you would give it to me?

Same objection.

A. Every month in Philadelphia we get these 26 reports Mr. Haines spoke of; they are examined and the results are compared with the results of other companies in which the United Gas Improvement Company is a shareholder, and we make suggestions as to where the results may be improved.

Q. What do you mean by we?

Same objection.

A. Everybody in the organization, myself included.

Q. You mean in the United Gas Improvement Company?

Same objection.

2802 A. Yes.

Q. Now, is there anything else you know of?

Same objection.

A. I think I can't be more specific than that.

Q. You get a salary do you from the company?

Same objection.

A. Yes.

Q. When did you begin to draw this salary?

Same objection.

A. It was either late in 1909 or the beginning of 1910; I can't recall definitely.

Q. Well, how was it with reference to about the time that the company began to get ready to have a valuation put upon its property?

Same objection.

A. It was practically a year before that time.

Q. About a year you think?

Same objection.

A. Yes, about a year.

Q. How was it with reference to the time that the United Gas Improvement Company engineers began to make schedules and prepare data for replacement valuations?

Same objection.

A. About a year before that.

Q. You are pretty sure about that now?

Same objection.

A. My recollection is that Mr. Brodnax testified that he came here early in November 1910, and I told you a moment ago that this salary commenced either late in 1909 or at the beginning of 1910.

Q. Have you got the records with you that you have been keeping as secretary?

Same objection.

2803 A. You mean are they in the court room?

Q. Yes, or where you can reach them?

Same objection.

A. Oh, yes.

Q. I wish you would have them brought in after dinner, so that I can have them here. Now as secretary, I assume you attend the meetings of the board of directors?

Same objection.

A. Yes, I attend most of them; occasionally I am not there.

Q. And you make up the record at the time the meeting is held so that you are familiar with what is done by the board of directors?

Same objection.

A. Yes, at all those meetings at which I am present; I have not been present at all of them.

Q. Who are the board of directors of the Des Moines Gas Company?

Same objection.

A. Mr. Samuel T. Bodine, Mr. Walton Clark, Mr. Lewis Lilley, Mr. Jansen Haines and myself.

Q. Is Mr. Jansen Haines a director now?

Same objection.

A. Yes.
Q. I thought he was president?

Same objection.

A. He is.
Q. And director too?

Same objection.

A. Yes.
Q. Now, Mr. Bodine, what is his official title in the Des Moines Gas Company now?

Same objection.

2804 A. First vice president.
Q. And what is his relation to the United Gas Improvement Company?

Same objection.

A. First vice president.
Q. And Walton Clark, what is his official title in connection with the Des Moines Gas Company?

Same objection.

A. Second vice president.
Q. And with the United Gas Improvement Company?

Same objection.

A. Third vice president.
Q. And Mr. Lewis Lilley, what is his connection with the two concerns?

Same objection.

A. Which one.
Q. The Des Moines Gas Company and the United Gas Improvement Company?

Same objection.

A. He is treasurer of the Des Moines Gas Company and he is fourth vice president and treasurer of the United Gas Improvement Company.
Q. Now, who are the directors of the United Gas Improvement Company?

Same objection.

A. Samuel T. Bodine——
Q. He is a director of the Des Moines Gas Company?

Same objection.

A. Yes. Randal Morgan, C. A. Griscomb, Rudulph Ellis, William Wood, Morris L. Clothier; and in that connection may I say that nobody knows owing to certain peculiarities in the charter, whether the president, Mr. Thomas Dolan, is a director or not. The charter provides, as I have been informed, that the affairs of the

corporation shall be controlled by the president and the six
2805 directors. The president is elected by the stockholders and the six directors are elected by the stockholders.

Q. You do not give me the name of Mr. Dolan for the reason that it is not known that he serves on the board?

Same objection.

A. He is president of the company though.

Q. Now, who owns the stock of the Des Moines Gas Company?

Same objection.

A. The United Gas Improvement Company owns substantially all of it.

Q. Is there any part of it that they don't own?

Same objection.

A. According to my recollection there is not.

Q. And never has been?

Same objection.

A. That I think is right.

Q. And the same is substantially true of the Capital City Gas Light Company?

Same objection.

A. I can't answer you as to that, General Byers.

Q. Well, Mr. Secretary, you have the records of the two companies, haven't you?

Same objection.

A. Yes.

Q. You can answer it, can you not, by investigation?

Same objection.

A. I can give you the names of the stockholders as appears by the minute books which I have her-.

Q. That wouldn't be a truthful statement as to who was owner of the stock, would it?

Same objection.

A. Well, it might in part.

2806 Q. Well, not very much of a part, would it; I'll get to that later though; I want to follow another line for a few minutes. As I understand you, you now are secretary of the United Gas Improvement Company?

Same objection.

A. Yes.

Q. And as such secretary you keep the records of the corporation, that is, the minutes of the meetings of the board of directors and assist in the inspection and examination of reports that come in from

corporations and concerns that the United Gas Improvement Company is interested in, either as owners or owners of stock?

Same objection.

A. Yes, except that the United Gas Improvement Company does not own any properties in any other way.

Q. Except through the stock ownership?

Same objection.

A. Except through the stock ownership.

Q. Then I assume from your statement as to what your duties are that you know just the manner in which the books of these concerns in which the United Gas Improvement Company *wons* all or a majority of the stock and the manner in which their accounts are kept, and the manner in which they make their charges on their books?

Same objection.

A. Generally speaking, yes.

Q. So that you have been informed right along for the last six years by an examination of the reports sent in from Des Moines just what was being charged to operating expenses in Des Moines, have you not?

Same objection.

A. In a general way, yes.

2807 Q. Right at that point, may I ask you what has been the practice of the Company during the last five years, while you have been secretary of it, with respect to money that was paid out by the Company in the way of donations, either for charitable purposes or business purposes, or contributions to the officers or anything of that kind.

Same objection.

A. It has been charged to operating expenses.

Q. Everything that has been paid out at this office in the way of charity or in the way of contributions and business and to officers has been charged up to operating expenses?

Same objection.

A. I think so.

Q. Will you give me when you come in after dinner a list of these contributions for the last four or five years—maybe it would *it would* be fair for me to ask you if you know, I don't know whether you know or not, whether those expenditures are so shown on the books that you can readily pick them out?

Same objection.

A. Why I think they are. Whether it could be done at the noon recess, or not, covering the period you mention, I have very much doubt.

Q. Well, you as an officer of the company have known right along —take for instance this item of $2,000 being contributed to the

local so-called Booster Committee—you know that item was being charged to operating expenses?

Same objection.

A. Yes, I voted for it at the meeting of the board of directors.
Q. What was the purpose you and the company had in mind in making that contribution, what was it for?

Same objection.

A. To help the city of Des Moines.
2808 Q. Was that the purpose of it?

Same objection.

A. Yes.
Q. And not to help the Gas Company?

Same objection.

A. Only incidentally, as the Gas Company might be helped by any general improvement in the city.
Q. So you thought it would be entirely proper to have the gas consumers of Des Moines contribute through your concern $2,000 for that purpose, that was your idea?

Same objection.

A. Yes.
Q. Was that your idea as to the contributions to the Y. M. C. A. Y. W. C. A.—if there is such a concern—and these other associations here?

Same objection.

A. Yes.
Q. So that all this class of contributions has been charged into the operating expenses and gone in with the cost of making gas in Des Moines?

Same objection.

A. Yes.
Q. I would like to have you have some one of your very active young men furnish me a list of that, say for the last four or five years and the amount of it. Going back to the Allentown, Pennsylvania, Gas Company, Mr. Bodine is treasurer, isn't he?

Same objection.

A. According to the best of my recollection.
Q. Mr. Clark is vice president?

Same objection.

A. I think he is.
2809 Q. Mr. Lewis Lilley is treasurer?

Same objection.

A. Yes.

Q. Mr. Douthirty is secretary, is he not?

Same objection.

A. Yes.
Q. Mr. Pearson is purchasing agent?

Same objection.

A. Yes.
Q. Now, Mr. Bodine, what is his salary in Allentown, do you know?

Same objection.

A. I don't know.
Q. What is yours?

Same objection.

A. I don't know.
Q. You don't know; who does know?

Same objection.

A. The books of the Allentown Company will show.
Q. When do you get your money?

Same objection.

A. It comes in once a month I think.
Q. Do you get it?

Same objection.

A. No.
Q. Who gets it?

Same objection.

A. The United Gas Improvement Company.
Q. It gets your salary from here too, don't it?

Same objection.

A. Yes.

Q. I find Mr. Walton Clark on the salary list here for
2810 $1,800. Do you know when he first got on the salary list?

Same objection.

A. I think at the same time I did.
Q. Just tell the Master how it come that you both got on at that time and why you got on?

Same objection.

A. Well, Mr. Clark and the various members of his force, Mr. Lilley and the members of his force, and myself had been rendering a great deal of service in connection with the Des Moines Gas Company for a good many years; the Des Moines Gas Company had never paid anything for it and it was finally determined that it was proper that the services should be paid for and the appropriate way to do it seemed to be to pay us salaries as officers of the company.

Q. You say the Des Moines Gas Company had never paid anything; what do you mean by that; had never paid anything to you or the United Gas Improvement Company?

Same objection.

A. Never paid anything to the United Gas Improvement Company or to any of its officers who were not residents in Des Moines.

Q. Well, how was it going to help you any to have this $1,600 if it went to the United Gas Improvement Company?

Same objection.

A. It wasn't going to help me personally.

Q. This was just another way of getting a dividend on their stock and calling it salary?

Same objection.

A. No, it was a way of getting compensation for services of all sorts rendered in behalf of this company by all the organization of the United Gas Improvement Company.

2811 Q. In addition to Walton Clark, vice president, $1,800, I find Lewis Lilley here, the treasurer, at $1,600. When did he get on the pay roll here?

Same objection.

A. I think the sametime.

Q. Mr. J. A. Pearson, purchasing agent, $2,500; when did he get on?

Same objection.

A. I think the same time.

Q. I find by an examination of the authorities on gas properties and electric light properties that Mr. Bodine is an officer of one kind or another in about, between 30 and 45 companies; does he get $2,500 from each?

Same objection.

A. No.

Q. How much does he get?

Same objection.

A. I don't know.

Q. Let us take your own case—that is perhaps a better way; do you have anything to do with the accounts of the United Gas Improvement Company—I think you said a moment ago a part of your duties was to look after the accounting?

Same objection.

A. Yes, in a general sort of way.

Q. You know in a general sort of way about all these salaries, don't you?

Same objection.

A. Very general sort of way.

Q. How general would you say?

Same objection.

A. Well, I couldn't give you figures.

2812 Q. Let us take your own case and run through it a while and see—passing Allentown—the next is Burlington Gas Light Company, and I find Mr. Bodine and Mr. Lilley and Mr. Pearson and I think yourself fill practically the same positions with the Burlington Gas Light Company that you do with the Des Moines Gas Company; what is your salary?

Same objection.

A. I don't think I am an officer of the Burlington Gas Light Company.

Q. Mr. Bodine is?

Same objection.

A. Yes.

Q. And Mr. Libbey is?

Same objection.

A. Yes.

Q. And Mr. Pearson is?

Same objection.

A. Yes.

Q. Mr. Pearson occupies exactly the same relations to the Burlington Company which he has as purchasing agent?

Same objection.

A. Yes, he is purchasing agent. Wherever you find him an officer of the company he is purchasing agent.

Q. What dies he get in Burlington?

Same objection.

A. I couldn't tell you.

Q. Does he get a salary?

Same objection.

A. I think he does.

Q. That goes to the United Gas Improvement Company?

Same objection.

2813 A. Yes.

Q. What is your salary with the United Gas Improvement Company?

Same objection.

A. I refuse to state.

Q. I did not ask that question, Mr. Douthirt, out of any idle curiosity at all. I was surprised this information was not furnished originally by the company, because I think it is entirely competent and I think it is absolutely necessary for the Master to have this

information, all of it, in order to reach anything like a safe and reliable conclusion here, and these question- are for the express purpose of getting at the exact facts. If I thought the question of your salary would not cut any figure I would not ask the question. I do not care to press it, if you do not care to state.

Mr. GUERNSEY: I would decline to state if I was you.

Judge CARR: I think the salary he may get from the United Gas Improvement Company has nothing to do with the issues in this case.

The MASTER: Well, it looks that way to me; I suppose these various salaries make up his salary.

Mr. BYERS: The purpose is to get dividends under the name of salaries.

Judge CARR: Mr. Douthirt has stated frankly what is done, and further than that, it seems to me what salary he gets from the United Gas Improvement Company is in no way material here, and I think counsel knows it.

Mr. BYERS: That is a slight reflection on my decency.

The MASTER: The main question is whether or not the company here is entitled to have the amount of those salaries taken out of the expense; that is the main question.

2814 Mr. BYERS: The question here, Mr. Master, is whether this ordinance, if it is put in operation, from my standpoint, would result in confiscating the property of this Gas Company. I have in mind what I think is a very important reason why this testimony would be proper, if we can get it. I have already told the witness I would not press it if he did not care to say.

Mr. GUERNSEY: The only question is whether these services were worth what was charged for them, not how it was paid or where the money ultimately went.

The MASTER: I don't know about that. There is a serious question, another question whether under the present showing the salary could be charged to operating expenses at all or not.

Judge CARR: That is the Des Moines salary here?

The MASTER: If it is paid to somebody else.

Mr. BYERS: Let me state briefly what I have in mind; here is the view I have of this situation: Here is a controversy now resting entirely upon complainant's charge that this ordinance will in its operation result in confiscating the property of the Des Moines Gas Company. Now that question involves in its settlement an accurate and intelligent knowledge of all of the operations of the Des Moines Gas Company and every other concern interested with it in the operation, and my notion about this line of testimony is that the Master ought to know when he comes to make up his findings just what the relation of all these parties are, just where this money is going and the purpose for which it is being used and just the manner in which the business is being done; when he has that then the question as to how it may affect the final result is one the

2815 Master will have to work out himself. It is my judgment and I thought it was the complainant's duty to furnish this

testimony themselves, not only to furnish the testimony, but to furnish the books and records, and it is my purpose now to do that for them.

The MASTER: As I understand it, you are not pressing the question?

Mr. BYERS: I don't care, if he don't want to say. I have no doubt it is enough; I don't mean that in any offensive way either.

Q. Let us take the Charleston Consolidated Railway & Lighting Company. Are you any officer in that concern?

Same objection.

A. Yes.

Q. What relation does the United Gas Improvement Company bear to that concern?

Same objection.

A. Owns the majority stock.

Q. What is your salary with that concern?

Same objection.

A. I don't get any salary there—nothing.

Q. Mr. Bodine is an officer in that company?

Same objection.

A. No, I think not.

Q. Mr. Lilley?

Same objection.

A. I think Mr. Lilley is treasurer, yes.

Q. How about Mr. Pearson, is he purchasing agent?

Same objection.

A. Yes.

2816 Q. Does he get the same salary there he does with the Des Moines Company?

Same objection.

A. I don't think he gets any salary there.

Q. Can you give the Master any reason why he should have $2,500 from the Des Moines Gas Company and nothing from the Charleston Consolidated Railway & Lighting Company?

Same objection.

A. No.

Q. The Chester County Gas Company, Westchester, Pa., what relation does the United Gas & Improvement Company bear to that concern?

Same objection.

A. It owns the majority stock.

Q. Mr. Bodine is president, is he?

Same objection.

A. I think he is.
Q. Mr. Lilley is treasurer?

Same objection.

A. I think so.
Q. Mr. Pearson is purchasing agent?

Same objection.

A. I think so.
Q. You are the secretary?

Same objection.

A. That is my recollection.
Q. What is your salary there?

Same objection.

A. I don't recall.
Q. Is it more or less than at Des Moines?

Same objection.

A. I don't recall whether I get any salary there at all or not.

Q. You perform practically the same services there that
2817 you do here?

Same objection.

A. Well, it is a very much smaller property and does not require as much time.
Q. Do you remember whether you get any?

Same objection.

A. No, I do not.
Q. How about Mr. Bodine or Mr. Lilley?

Same objection.

A. I don't know.
Q. And Mr. Pearson?

Same objection.

A. I don't recall.
Q. Mr. Pearson gets a salary charged up against all the concerns that he acts as purchasing agent for?

Same objection.

A. I couldn't tell you that General Byers. You see there is a list of forty or fifty of them. I think he gets a salary from most of them, but whether from every one or not, I really couldn't say.
Q. There are some he does not get a salary from?

Same objection.

A. I think so.

Q. This Charleston Consolidated Railway & Lighting Company, do you know how that is being operated in that city, under what arrangement with the city?

Same objection.

A. The Charleston Consolidated Railway & Lighting Company is the *is the* lessee of the railway, gas and electric properties is Charleston, which are owned by the Charleston Consolidated Rail-
2818 way Gas & Electric Company. Now does your question address itself to the franchises under which the properties are operated.

Q. What rate do you get for gas there?

Same objection.

A. I think it is $1.25.

Q. Under what arrangement with the city?

Same objection.

A. There was an ordinance passed within the last two years I think, and I think the price is subject to regulation by the city, according to my best recollection.

Q. That don't quite answer my question.

Same objection.

A. You are asking me to recall the terms of a franchise.

Q. The Concord, New Hampshire, Light & Power Company, you are an officer in that concern?

Same objection.

A. I think not, according to the best of my recollection I am not.

Q. And Mr. Lilley and Mr. Bodine and Mr. Clark?

Same objection.

A. According to the best of my memory Mr. Lilley is and Mr. Bodine and Clark are not.

Q. How about Mr. Pearson, is he the purchasing agent?

Same objection.

A. According to the best of my recollection he is.

Q. The Connecticut Railway & Lighting Company, New Haven, Conn., are you an officer in that?

Same objection.

A. Yes, I am secretary of that.

Q. Do you know what your salary is there, Mr. Douthirt?

Same objection.

A. Yes.

Q. About how much?

2819 Same objection.

A. Nothing.
Q. And Mr. Bodine?

Same objection.

A. No, Mr. Bodine is not an officer of that company.
Q. Mr. Pearson?

Same objection.

A. No.
Q. Mr. Lilley?

Same objection.

A. Mr. Lilley is treasurer.
Q. Now this company that I am just asking about, is it a gas company, the Connecticut Railway & Lighting Company?

Same objection.

A. In part, yes.
Q. What relation does the United Gas Improvement Company bear to it?

Same objection.

A. It owns the majority of the stock.
Q. Has it so owned the majority of the stock ever since you have been secretary?

Same objection.

A. Yes.
Q. The Konshohaken Gas Light Company, are you secretary of that concern?

Same objection.

A. I don't recall now whether I am or not.
Q. What relation does the United Gas Improvement Company bear to that Company?

Same objection.

A. Owns the majority of the stock.
2820 Q. That means all of it?

Same objection.

A. No.
Q. How much in a general way is not held by the company, more than a share or two?

Same objection.

A. I couldn't tell you.
Q. A very small part of it, if any?

Same objection.

A. In that particular case, probably a very small part if any.
Q. The Consumers' Gas Company, Reading, Pa. You are secretary of that company?

Same objection.

A. Yes.
Q. Mr. Pearson is the purchasing agent?

Same objection.

A. Yes.
Q. Mr. Clark is the president?

Same objection.

A. No.
Q. What is his official title?

Same objection.

A. Vice president.
Q. Who is the president?

Same objection.

A. A Mr. Custer.
Q. Mr. Lilley is treasurer?

Same objection.

A. Yes.
Q. What relation does the United Gas Improvement Company bear to that concern?

2821 Same objection.

A. It owns the minority stock.
Q. Who owns the balance, do you know?

Same objection.

A. Quite a number of people.
Q. Do you have stock in it?

Same objection.

A. No.
Q. What is your salary?

Same objection.

A. Nothing.
Q. You got no pay there?

Same objection.

A. No.
Q. You don't have any stock?

Same objection.

A. No.
Q. Yet you are an officer in the company?

Same objection.

A. Yes.
Q. How large a concern is it?

Same objection.

A. I think it has got about 100 miles of mains.
Q. Does the United Gas Improvement Company get monthly reports from that concern?

Same objection.

A. Yes.
Q. You look them over?

Same objection.

A. Yes.
Q. And perform the same kind of service that you do to
2822 the Des Moines Gas Company?

Same objection.

A. In part, yes.
Q. But you get no salary?

Same objection.

A. No.
Q. Now, the Dauphin County Gas Company, are you secretary of that Company?

Same objection.

A. I think not.
Q. Mr. Clark is president or vice president?

Same objection.

A. I don't recall.
Q. Mr. Lilley is treasurer, isn't he?

Same objection.

A. I am not sure of that.
Q. Mr. Pearson is the purchasing agent?

Same objection.

A. No, I think not. May I tell you why?
Q. If you wish.
A. The Dauphin County Gas Company property is leased to the Harrisburg Gas Company and it is not an active corporation.
Q. Is the stock owned by the United Gas Improvement Company?

Same objection.

A. The United Gas Improvement Company owns the majority.
Q. It is a live concern?

Same objection.

A. Yes, but not operating its property.

Q. It makes regular reports for its receipts and expenditures?

Same objection.

A. Its reports are very simple; simply consist of collecting rent for the property.

2823 Q. And reporting to the United Gas Improvement Company?

Same objection.

A. Yes, to its own officers.

Q. The Equitable Illuminating Gas Light Company of Philadelphia, you are secretary of that Company?

Same objection.

A. No.

Q. It seems to be so given?

Same objection.

A. That is a mistake.

Q. You are a director?

Same objection.

A. Yes.

Q. Is that a live company furnishing gas?

Same objection.

A. Yes.

Q. And what relation does it bear to the United Gas Improvement Company?

Same objection.

A. The United Gas Improvement Company owns the majority of stock.

Q. In this case that means substantially all?

Same objection.

A. No, I think in this case, decidedly not.

Q. Do you have stock in this company?

Same objection.

A. No.

Q. The Essex & Hudson Gas Company of Newark, N. J., are you secretary of that concern?

Same objection.

A. Yes.

2824 Q. What kind of a company is that, what does it do?

Same objection.

A. Owns the gas works.

Q. About how large an institution is it as to miles of main, capacity, or anything like that?

Same objection.

A. I don't know that I can give you those things. I can tell you in another way, if you desire, about the size of the property.

Q. About what is the population?

Same objection.

A. The City of Newark is, I think, upwards of 200,000; and then this company also supplies numerous suburbs like Orange, Mt. Claire, these suburban towns to the west and north of Newark; so I expect it supplies a population of from 300,000 to 400,000.

Q. So that the output would be quite large?

Same objection.

A. Yes.

Q. Who is the president of that company?

Same objection.

A. A Mr. John F. Shanley.

Q. Who is the vice president?

Same objection.

A. I think Mr. Clark and Mr. Lilley are both vice presidents of that company.

Q. Does Mr. Pearson act as purchasing agent for that company?

Same objection.

A. No.

Q. Are there any salaries paid there to yourself and Mr. Clark and Lilley?

Same objection.

2825 A. No, that is also a leased company and is not in active operation of its property.

Q. All it does then is to collect its rent and report, as the Equitable?

Same objection.

A. No, as the Dauphin County Company.

Q. Now the Fulton County Gas Electric Company—this Essex and Hudson Gas Company, who owns the stock in that concern?

Same objection.

A. The United Gas Improvement Company owns the majority.

Q. Does that mean substantially all of it?

Same objection.

A. Decidedly not.

Q. The Georgia Railway & Electric Company of Atlanta, Ga., what is the business of that corporation?

Same objection.

A. What its name indicates, railway and electric.

Q. Does it make gas?

Same objection.

A. I don't think that company itself makes gas. My under-

standing is it owns a large majority of the stock in the Atlanta Gas Light Company, which does make gas.

Q. What relation if any does the United Gas Improvement Company bear to the Atlanta Company?

Same objection.

A. To the Georgia Railway & Electric—it owns a minority of the stock.

Q. Are you an officer of the company?

Same objection.

A. No.

Q. Now, the Harrisburg Gas Company of Harrisburg,
2826 Pa., what is the business of that concern?

Same objection.

A. Manufacturing and furnishing gas.

Q. It is not a leased concern?

Same objection.

A. No.

Q. It is alive?

Same objection.

A. Yes.

Q. Mr. Bodine is president?

Same objection.

A. Yes, I think he is.

Q. Mr. Lilley is treasurer?

Same objection.

A. I think so.

Q. You are secretary?

Same objection.

A. Yes.

Q. Mr. Pearson is purchasing agent?

Same objection.

A. Yes.

Q. How much of a concern is that in mains or population?

Same objection.

A. My recollection is that Harrisburg is a place of between 60 and 90 thousand.

Q. This is the only gas company there?

Same objection.

A. Yes.

Q. How long have you been secretary of that company?

Same objection.

A. I guess three or four years, possibly longer.

2827 Q. What relation does the United Gas Improvement Company bear to that concern?

Same objection.

A. It owns the majority of the stock.

Q. Does that mean practically all of it?

Same objection.

A. No.

Q. Now what salary do you get there?

Same objection.

A. I don't recall whether I get any or not.

Q. And does that company make regular reports to the United Gas Improvement Company?

Same objection.

A. Yes.

Q. Has it been ever since you were secretary?

Same objection.

A. Yes.

Q. You have assisted in examining them and checking them up and all that sort of thing?

Same objection.

A. Yes.

Q. Doing substantially the same work with respect to those reports that you have in Des Moines?

Same objection.

A. With respect to the reports, yes.

Q. Do you know what Mr. Pearson's salary is?

Same objection.

A. I don't.

Q. Do you object to telling me what Mr. Pearson's salary is with the United Gas Improvement Company?

Same objection.

2828 A. I don't know what it is.

Q. That matter has not come under your supervision, or even been called to your attention in any way through your labor as accountant or in examining the books, or in the votes of the directors, or anything of that kind?

Same objection.

A. I may have known what Mr. Pearson's salary was at some time I don't know now.

Q. It is all fixed by these directors at these several meetings?

Same objection.

A. Oh, yes.

Q. So that you must have known at some time what the salaries were?

Same objection.

A. He has been in the employ of the company a great deal longer than I have and his salary was fixed before my time; whether it has been changed since that time I don't recall. If it has been, I very likely made a record of it.

Q. Will you tell us just how you make the record of the directors' meetings of the Des Moines Gas Company; how the business of the meeting is carried on and what you do?

Same objection.

A. Well, the principal business at most of the meetings is the consideration of appropriations for expenditures for betterments. They come before the board and they are examined, and if the expenditures for laying additional mains or for any betterments or improvement appear to be necessary and proper and wise, they are authorized, and the entry is made on the minutes; that constitutes a pretty large part of the business of the board; we go into these matters pretty carefully.

Q. Let us take a concrete case; suppose Mr. Haines de-
2829 cides that he ought to have a new generator, I wish you would just tell now in as brief way as you can and yet give us the information just how that generator would be provided for?

Same objection.

A. Mr. Haines would take the matter up with Mr. Walton Clark or with some member of Mr. Clark's engineering organization and they would consider the matter, and if they agreed with Mr. Haines or Mr. Vincent that the apparatus was reasonably necessary, they would then bring the matter before the board and present their reasons and a statement of the estimated cost and the board would determine the matter.

Q. Well, now, would this correspondence be with Mr. Clark or with you?

Same objection.

A. In the case you mention, being an engineering matter, it would be with Mr. Clark.

Q. And Mr. Clark is vice president of the Des Moines Company and one of the vice presidents of the United Gas Improvement Company?

Same objection.

A. Yes, he is second vice president of the Des Moines Gas Company and third vice president of the United Gas Improvement Company, and he is the head of the operating department, as we call it, which includes construction and engineering and all the matters incident to the operation of the properties in an engineering sense.

Q. How long has Mr. Clark occupied that relation to the United Gas Improvement Company?

Same objection.

A. Well, it ante-dates my connection with the company.

Q. Do I understand you had no connection with the com-
2830 pany prior to your election as secretary?

Same objection.

A. Yes, I was in the employ of the company prior to my election as secretary.

Q. And for how many years?

Same objection.

A. I can best answer you by giving you the date I entered the employment of the company, which was November 1, 1902. I know Mr. Clark was at the head of the operating department at that time, and I know from what I have learned since I have been in the employ of the company, he was at the head of the operating department at least ten years prior to that time.

Q. Mr. Clark was also one of the officers of the Capital City Gas Light Company, was he not?

Same objection.

A. Whether Mr. Clark was actually an officer of the Capital City Gas Light Company, I don't know; but in any event he was an officer of the United Gas Improvement Company at the time when that company owned a majority of the stock in the Capital City Gas Light Company.

Q. Now I wish you would bring with you this afternoon the minute books of the Capital City Gas Light Company and the Des Moines Gas Company.

At this time an adjournment was taken until 1:30 P. M.

2831 1:30 P. M. WEDNESDAY, *August* 23, 1911.

W. F. DOUTHIRT being continued on direct examination by Hon. H. W. Byers, testified as follows:

Q. What is the title or name of the officer or position with the United Gas Improvement Co., the person who *adutis* the accounts of these several companies who represents the U. G. I. in auditing?

Same objection.

A. The man who visits the different companies in which the United Gas Improvement Company is interested and actually does the work of auditing is called a traveling auditor.

Q. Is there some person in that department that supervises the work generally?

Same objection.

A. There are a number of traveling auditors and they report to the general auditor.

Q. Who is the general auditor?

Same objection.

A. Mr. R. C. James.

Q. Do you know the name of the auditor that has been visiting the Des Moines Gas plant in recent years?

Same objection.

A. Well I think the same auditor never makes two consecutive visits to the same company. They are changed every time I think.

Q. Do you know the name of the man who was here last?

Same objection.

A. I do not.

Q. The one that was here in 1910?

Same objection.

2832 A. I do not.

Q. Did you bring in the minute books of the stockholders and directors in the Des Moines Gas Company?

Same objection.

A. They are here, yes.

Q. I wish you would—I think that book has been identified once before by Mr. Haines, I am not sure that is the one.

A. T-is is marked Des Moines Gas Company No. 1 stockholders and directors minutes.

Q. I wish you would turn to the record if there is any such in that book that was made at the time these salaries I have been inquiring about were provided for?

A. Yes, I have it.

Q. Is this all the record that was made upon that question of salaries, I am reading from page 185 in the book you have just turned to "Salaries officers, approved payment of salaries to the following officers at the following rates per year *a*ffective November 1, 1909, president $2,500, second vice president $1,800 treasurer $1,600 Secretary $1,600, purchasing agent $2,500. Is that all the record that was made with respect to these matters?

Same objection.

A. Does anything follow it on the page you are reading under the same heading?

Q. The next heading is betterment statement.

A. Then that is all the record which was made.

Q. Is this all the record that was made anywhere in any book?

Same objection.

A. Yes, sir.

Q. Do you know who proposed this list of salaries, how it got in here or why you have written it?

Same objection.

2833 A. Will you look at the beginning of the minutes of that meeting and tell me who was present?

Q. It says present President Bodine and directors Lilley and Thompson constituting a quorum.

A. You want me to give my recollection of how the whole matter of these salaries originated, my recollection outside of the record.

Q. Well the record don't show anything about it as far as you have it.

Same objection.

A. The record shows they were authorizes.

Q. If you have any recollection about it I would like to have it?

Same objection.

A. I recall that the matter was discussed by, first, I think by Mr. Lilley and myself and in view of the fact that the whole organization of the United Gas Improvement Company including its engineering department have been for a number of years rendering services to the Des Moines Gas Company we thought it was proper that some compensation should be made for these services after that time especially as the company had then reached a point where it was more able to pay properly for these services than it had been in the past. We considered that a total of about $10,000 a year was a proper sum to pay, for the Des Moines Gas Company to pay for all of the services of the whole U. G. I. organization and we thought that a proper way to pay it would be for the Des Moines company to appropriate salaries to those of the U. G. I. Officials who were its officers. I think Mr. Lilley and I worked out the different amounts per annum specific there making up the total of $10,000 then we talked it over with Mr. Bodine and Mr. Clarke and they agreed to it, then at the time for the next regular meeting of the board it was put before the board as appears by the record
2834 and approvee, authorized.

Q. Were you present at the meeting?

Same objection.

A. It appears by the record I was not.

Q. What you have been telling *you* then was something which occurred prior to the meeting?

Same objection.

A. Yes, sir.

Q. Not at the meeting?

Same objection.

A. Not at the meeting.

Q. All worked out before the meeting?

Same objection.

A. Yes, sir.

Q. When was it that it was first talked about?

Same objection.

A. My recollection is it was first talked about as much as three years before it was finally done.

Q. Well when was it first talked about with respect to—I don't mean at some years prior, but how long before this meeting had you talked about it and worked it out so it was ready to be approved by the board?

Same objection.

A. Well my recollection is that Mr. Lilley and I had talked about it as I say for at least three years before the date of that meeting and we have talked about the sum of $10,000 as being a proper amount. When we got down to the detail of splitting the $10,000 up into the several sums mentioned there I could not tell you.

Q. Well it didn't make any difference about that did it?

Same objection.

A. Oh no.

2835 Q. Since you didn't get any part of it?

Same objection.

A. Oh no, didn't make any difference about that.

Q. Been just the same if you had allowed it all to one officer as to divide it up among other officers?

Same objection.

A. So far as the final result to the United Gas was concerned, yes.

Q. Now going back to that question of just how the Des Moines Gas Company carries on its business, taking up that same question that I put to you before dinner of the purchase of a new generator. If I understood you correctly the request for the generator would be forwarded to the company, the U. G. I., at Philadelphia by Mr. Haines?

Same objection.

A. Technically the correspondence would be between Mr. Haines as manager which he was up to early this month of the Des Moines Gas Company and Mr. Clark as second vice president of the Des Moines Gas Company. They would correspond about *wht* wisdom and appropriateness or necessity of additional apparatus, probably the correspondence would originate with Mr. Haines.

Q. You don't mean probably it would originate with him, you mean don't you that if it came from here at all it would come from him.

Same objection.

A. Yes, but the probabilities are that he would originate the matter himself. He knows what the requirements of the plant are. He knows what the future is likely to be and as a general rule all correspondence relating to betterment expenditures would originate in Des Moines.

Q. Well now then after the matter had reached Philadel-
2836 phia and was received there by somebody on behalf of the United Gas Improvement Company what would be the next step taken with respect to that generator?

Same objection and also because the uestion assumes that this correspondence is received on behalf of the U. G. I. Company when it reaches Philadelphia.

A. The correspondence which would be addressed to Mr. Clark as an officer of the Des Moines Gas Company would be by him referred to some one or more of the members of the United Gas Improvement Company's engineering department for their consideration and their report thereon to Mr. Clark.

Q. Then what would Mr. Clarke do with it?

Same objection.

A. If Mr. Clark after receiving the reports mentioned thought the expenditure wise and judicious he would then take some early opportunity to lay it before the board of directors.

Q. And that would be at a regular monthly meeting of the board?

Same objection.

A. Yes, sir.

Q. And what action would then be taken?

Same objection.

A. Well that would depend upon whether the board agreed with Mr. Clark or not. If they agree with him they would authorize the expenditure and a record would be made of it.

Q. And if they did not authorize if then what?

Same objections.

A. Then it would not be authorized.

Q. Well would any record be made of that?

Same objection.

A. No.

2837 Q. Would not appear on the record at all?

Same objection.

A. Would not appear on the minutes, no.

Q. So that the minutes will only show the actual authorization of expenditures?

Same objection.

A. Yes, and I may say that in general the minutes will show only affirmative action, not negative action.

Q. Now in the case we are talking about, the generator, if the board of directors approve the expenditure then what is done?

Same objection.

A. Then the generator is built and paid for.

Q. Is that all there is to it, how does Mr. Haines find out what has been done?

Same objection.

A. Well Mr. Clark or some one for him would notify Mr. Haines.
Q. In what way?

Same objection.

A. Probably by letter.
Q. And do you have any special blank that you use in this case?

Same objection.

A. Yes, I think Mr. Clark has a blank that he uses in that case.
Q. That blank is fillee up either by him or somebody in the office there for him?

Same objection.

A. Yes, sir.
Q. And forwarded here to the Des Moines office? Is that right?

Same objection.

A. I would say so yes.

Q. And the Des Moines office then proceeds upon the au-
2838 thority that is covered by that blank filee out.

Same objection.

A. Yes, sir.
Q. Now can you give us some piece of apparatus or important part of this machinery down here that has been purchasee in the last three or four years?

Same objection.

A. Let me have the book and I can no doubt pick out some.
Q. Find the most important piece that has been authorized recently within say a year and a half or two years?

Same objection.

A. Shall I commence that for example the beginning of 1909, that would be about a year and a half.
Q. Yes, begin at that time if you wish to.
A. You said a year and a half and that occurred to me as about that. In the period commencing January 1, 1909, the largest single item I find is one of $12,000.
Q. What was that for?

Same objection.

A. That was for installing derrick coke tank and so forth which was approved at the meeting of April 25, 1910. Then I find at the meeting of January 24, 1910, an item of $10,000.
Q. What is that for?

Same objection.

A. Erect one 300,000 gallon oil tank in brick pit including steam oil connections, etc.

Q. Right at that point, that item you have just read, I wish you would produce for me or have some one for the company produce the correspondence that passes between the U. G. I. Company and the Des Moines Gas Company with respect to that item and
2839 the authorization that was *g*inally sent here, that was forwarded from the United Gas Improvement Company to the Des Moines Gas Company. Now I wish you would find for me in that year and a half if you *a* can without too much trouble the gas pipe, gas mains in considerable *w*uantities that were disposed of in the same way?

Same objection.

A. At the meeting of May 23, 1910, there is a list of twenty seven different runs of mains amounting in the aggregate to an estimated cost of $12,305.45.

Q. What is the date of that meeting?

Same objection.

A. May 23, 1910.

Q. I want you to produce the correspondence that passed between Mr. Haines, manager of the Des Moines Gas Co., and the United Gas Improvement Company or any of its officers covering that pipe you have just referred to and the authorization, if any.

Same objection.

A. There will be no such correspondence.

Q. Why not?

Same objection.

A. Because the correspondence will not be either with United Gas Improvement Company or with anyone who is not an officer of the Des Moines Gas Co.

Q. Well is that exactly correct?

Same objection.

A. I think so.

Q. I just wondered if you were sure about it?

Same objection.

A. Reasonably so.

Q. Do you remember just how the correspondence from
2840 the Philadelphia end is signed?

Same objection.

A. Oh not exactly no.

Q. Do you still think you are correct?

Same objection.

A. I think so, yes.

Q. Then let's put it the way that suits you best, the correspondence between Mr. Haines or anyone else for the Des Moines Gas Com-

pany and Mr. Clarke or Mr. Bodine or Mr. Lilley or yourself with respect to that item that you have just referred to in the record book?

A. The 27 items?

Q. Yes, 27 items and the authorization or authorizations as the case may be that were sent here covering that list of items. Are there any other items there?

Same objection.

A. Directors' meeting June 27, 1910, twenty one runs of main.

Q. Does it show what kind of main this is?

A. Four inch, six inch, four inch, eight inch, four inch, four inch, four inch, four inch, four inch, eight inch, four inch, four inch, four inch, six inch eight inch, four inch, four inch. Twenty one runs of main estimated to cost in the aggregate $5,756.66.

Q. What page is that please?

A. Directors' meeting June 27, 1910.

Q. Where was the meeting held?

Same objection.

A. Philadelphia.

Q. Are the stockholders' and directors' meetings all held in Philadelphia?

Same objection.

2841 A. No.

Q. When have the directors had a meeting in Des Moines?

Same objection.

A. You said stockholders' and directors' meeting.

Q. I am not talking about directors.

Same objection.

A. Oh I think all directors' meetings are held in Philadelphia, but not stockholders'.

Q. When have the stockholders had a meeting in Des Moines and who was present?

Same objection.

A. The last meeting was April 4, 1911.

Q. Who was present?

Same objection.

A. Mr. R. W. Cunningham and Mr. Haines.

Q. Who is Mr. R. W. Cunningham?

Same objection.

Q. He is one of the men in the office upon Seventh street.

Q. An office boy?

Same objection.

A. Oh no.

Q. Is Mr. Haines a stockholder?

Same objection.

A. No I think not.
Q. Is Mr. Cunningham a stockholder?

Same objection.

A. I think not.
Q. What is Mr. Cunningham's business?

Same objection.

A. Why he is one of the principal men in the office up there.
2842 Q. What does he do?

Same objection.

A. Receives customers, attends to their wants, and receives orders of all kinds.
Q. Who does he work for?

Same objection.

A. Des Moines Gas Company.
Q. Is he one of their bookkeepers?

Same objection.

A. If I recollect correctly Mr. Cunningham is not a bookkeeper I think he has charge of the floor in front of the office.
Q. Just one of the salaried men in the office isn't he?

Same objection.

A. Yes, sir.
Q. About $75.00 a month?

Same objection.

A. I don't know and I would not tell you if I did.
Q. Perhaps he would if we would ask him.

Same objection.

A. He might.
Q. Who is the head bookkeeper if there is any such man for the Des Moines Gas Co.?

Same objection.

A. Mr. Sherman is chief clerk.
Q. If we should want some man from the gas company for which you are secretary who could identify the entries in the books of the Des Moines Gas Co., who would we call upon?
A. I think Mr. Sherman would be the man.
Q. What is his first name?

Same objection.

A. I don't know.
2843 Q. Is he now working for the gas company?

Same objection.

A. Yes, sir.
Q. And you don't know his first name?

Same objection.

A. No.
Q. Do you know his initials?

Same objection.

A. No.
Q. How long has he been with the company?

Same objection.

A. I think he has been there twenty years.
Q. And he would know about the entry in the books would he?
A. Yes, sir.
Q. Now this stockholders' annual meeting here that you have referred to appears on page 239 of this book Des Moines Gas Company No. 1 stockholders' and directors' meetings, was held at that time was it?

Same objection.

A. I assume that the record is true.
Q. Well who made the record?

Same objection.

A. Tell we who signed it and I will——
Q. Were you present?

Same objection.

A. No, I was not there.
Q. You was not here at all?

Same objection.

A. No, I was not here.
Q. That is a meeting you did not attend as secretary?

Same objection.

2844 A. Yes, sir.
Q. Did you attend the stockholders' meetings in Des Moines?

Same objection.

A. No, I don't recall I ever attended one of them.
Q. Can you give us the date of a single meeting that has been held in Des Moines since 1906 when a stockholder was here personally?

Same objection.

A. No.
Q. Can you give us the date of a single meeting when you were here personally yourself?

Same objection.

A. No.

Q. Now where else in this book will I find a record of the stockholders' meetings?

Same objection.

A. Let me have it and I will point it out to you. On page 1, you will find a meeting of the incorpo-ators and stock holders commencing on page 1, the date of which was March 1, 1906. On page 91 the minutes of the annual stockholders' meeting held April 2, 1907. Page 129 annual stock holders' meeting held April 7, 1908. Page 166 annual stock holders' meeting April 6, 1909. Page 204, annual stockholders' meeting April 5, 1910.

Q. And the other one was the meeting for 1911?

A. Yes, sir.

Q. And the pages that you have just referree to start with the beginning of the book and end with the last page of this book do they not?

Same objection.

A. Start with page 1 but do not end——

Q. The last page upon which there is an entry?

2845 Same objection.

A. No, I think there are some entries subsequent to the stockholder's meeting of 1911. Perhaps I am wrong about that. The stockholders' meeting of 1911 is recorded on pages 239 and 240 and there appears to be nothing later than that, but here are the minutes of the later meeting which have not yet been recorded in the book.

Q. I will get those later on, I am getting at what is in this book.

A. I have here directors' meeting April 24, 1911, May 27, 1911, June 26, 1911, July 24, 1911, but they have not been entered in the book yet.

Q. These are not stockholders' meetings?

Same objection.

A. No, these are all directors' meetings.

Q. I am talking about stockholders' meetings.

Same objection.

A. Been no stockholders' meetings since the meeting of April 14, 1911.

Q. Now the first meeting that you refer to is on page 1 of the book just identified and that was held March 1, 1906.

Same objection.

A. That is my recollection, you have the book before you.

Q. At the stockholders meeting held on the 2d day of April, 1907, there were no stockholders present were there?

Same objection.

A. You have the record before you.

Q. Nobody present but Mr. Haines and Mr. Keffer was there.

Same objection.

A. It appears that all of the stockholders of record were present by proxy.

Q. I am talking about stockholders that were present in person.

2846 Same objection.

A. No, there appear to have been none present in person, they all sent in their proxies.

Q. And the meeting was held by Mr. Haines and Mr. Keffer.

Same objection.

A. Yes, sir.

Q. And who was Mr. Keffer?

Same objection.

A. Mr. Keffer was at that time and still is I think, I know assistant secretary of the Des Moines Gas Co.

Q. He is not an officer in any way of the U. G. I.?

Same objection.

A. No.

Q. But he was assistant secretary of the Des Moines Gas Co.?

Same objection.

A. Yes, sir.

Q. Now as to all these other stockholders' meetings the same thing is true, there were no stockholders present in person were there

Same objection.

A. It appears by the record of the annual stockholders' meeting April 7, 1908, which is recordee on pages 129 and 130 that all of the stockholders were present by proxy but none in person.

Q. How about the next meeting held, were any of them here in person.

Same objection.

A. At the opening there were conducting that meeting, Mr. Jansen Haines callee the meeting to order and on motion was chosen chairman of the meeting. Mr. Free P. Carr was chosen secretary of the meeting.

Q. *Were* there were no stockholders present any way?

Same objection.

2847 A. They were all present by proxy.

Q. I mean in person.

Same objection.

A. Not personally, no.

Q. 166 is the next page.

A. 166 stockholders' annual meting held April 6, 1909, it appears that all stockholders were present by proxy but none present in person.

Q. Who conducted the meeting?

Same objection.

A. I read from the record, Mr. Jansen Haines called the meeting to order and on motion was chosen chairman of the meeting. Mr. Fred P. Carr was chosen secretary of the meeting.

Q. I suppose Mr. Carr was attorney for some of the stockholders and Mr. Jansen Haines was an employé of the company?

Same objection.

A. Mr. Carr I believe is Judge Carr's son and a member of his firm and the firm are attorneys for the Des Moines Gas Company.

Q. Mr. Haines was an employé of the company?

Same objection.

A. Yes, sir. And Mr. Carr was a member of the firm who are attorneys for the company.

Q. Now how is it with Mr. Keffer, was he a stockholder?

Same objection.

A. No he is not a stockholder.

Q. Never was?

Same objection.

A. Not to my knowledge.

Q. Now the next meeting.

Same objection.

2848 A. Page 204 annual stockholders' meeting April 5, 1910.

Q. Any of the stockholders present in person?

Same objection.

A. Yes, sir.

Q. Who was present in person?

Same objection.

A. George H. Carr.

Q. Anybody else?

Same objection.

A. No all the rest present by proxy.

Q. Now the next one.

Same objection.

A. Page 239 annual stockholders' meeting April 4, 1911.

Q. Now as to all of these meetings the business of the meeting with the exception of one where you say a stockholder was present in person and the meeting of March 1906 was conducted by employés of the company here in Des Moines?

Same objection.

A. Or attorneys, yes.

Q. Now I wish you would turn to the record if there is any such in that book covering the approval of the purchase of holder No. 20 I think it is.

Same objection.

A. I don't think I know which holder that is.
Q. It is the large one. You have it?
A. No, I don't find any such record.
Q. Now within the last five years say, what part of this apparatus down here has been authorized by the stockholders or directors, the important part as shown by your book you have before you.

Same objection.

2849 A. The authorizations in the period you mention are principally for extensions of mains. I did not find any very large pieces of apparatus in that time.
Q. Did you find anything said about holder No. 20.

Same objection.

A. No.
Q. I wish you would take the other book, Capital City Gas Light Co. minute book and turn to 1901 and 1902 and see if you can find holder No. 20 in there or anywhere since that date?

Same objection.

A. No I don't find anything in the minute book of the capital city gas light company minute book No. 2. I commenced with meeting of January 16, 1901 and ran through to the last meeting in the book which is February 28, 1906.
Q. You found no record of it there?

Same objection.

A. No.
Q. And none in the record book since 1906?
A. No.
Q. Now take up another matter a moment, at what meeting was Mr. Haines elected president of this company?

Same objection.

A. At the meeting held early in July the minutes of which I have in my room at the hotel but they have not been recordee yet. I don't remember the exact date, it was early in July, quite early in July.
Q. Where was the meeting held?

Same objection.

A. Philadelphia.
Q. And why was the change made?

Same objection.

2850 A. Because the directors thought that Mr. Haines' management of the property, his good work in the city of which

by the way Dr. Marks has spoken, merited promotion.

Q. Have you given us the real and only reason?

Same objection.

A. Yes, sir.

Q. And what was done about the salary?

Same objection.

A. Action was had at that meeting making Mr. Haines' salary as president the same as his salary as manager had been.

Q. That -s there was no change in the salary?

Same objection.

A. No change in the salary.

Q. How about this salary that was voted to Bodine, does that go on just the same?

Same objection.

A. He was made I think 1st vice president and the salary which he had heretofore received as president was continued to his office as first vice president.

Q. Moved him down a notch or two but left his salary at the same point?

Same objection.

A. Yes, sir.

Q. Was it about the time these several salaries were voted that there was a general raise in the salaries up at the office, was that all done about the same time?

A. That was November 1909 wasn't it?

Q. The memorandum I have here is commencing November 1, 1909, I don't have the memorandum as to the date of the meeting.

A. That was at the meeting of October 20, 1909.

2851 Q. That was about a month preceding the time when these salaries were voted to the Philadelphia gentlemen?

Same objection.

A. No, you misunderstood me. The salaries to which you have reference were authorized at the meeting of October 20, 1909, the salaries became effective November 1, 1909.

Q. It was then at the same time that you had this matter up generally as to all these salaries that the raise was made up in the office.

Same objection.

A. No. That was acted on as I said at the meeting October 20, 1909 and what I suppose you refer to as a general raise in the office salaries was acted on at the meeting of February 28, 1910, and that was retroactive and the increase went into effect as of January 1, 1910.

Q. What do you mean — retroactive, that is you decided they ought to have had this raise sooner?

Same objection.

A. Well I will read you the minute- from the meeting of February 28, 1910. Approves increase in salaries amounting to $3,340 per year effective January 1, 1910, as follows: Then follows a list of the names, occupation, and the old rate per month and the new rate per month, total amount of $3,340 per year.

Q. So as a matter of fact beginning about January 1, 1910, the total increase in the salary list up here of the Des Moines Gas Company was upwards of $13,000?

Same objection.

A. Yes, $13,040.

Q. And you say that the company was actuated in its liberality in that direction by the fact that the gas company here at

2852 Des Moines was getting prosperous and could afford it.

Same objection.

A. Oh no I didn't say that.

Q. Well, what did you say about that?

Same objection.

A. In its liberality in increasing these salaries in an amount or total of $3,340 a year?

Q. No, all of it, $13,340?

Same objection.

A. With respect to the total of $10,000 a year I think I did say that the services of the United Gas Company's organization had been given for a great many years without compensation, and that it was thought that the company had at that ti-e reachee a point where it could afford to pay an appropriate compensation for these services. With respect to this increase amounting to $3,340 a year which was distributed between fourteen different employés I said no such thing but I would say however, that these increases were give- because merited by the services that the employés had rendered.

Q. What per cent was the increase of the particular salaries that are covered in that $3,300.

Same objection.

A. If I have calculatee it correctly a shade over 12 per cent.

Q. How much.

A. A little over 12 per cent.

Q. Now without going into the particular salaries what was the total salary list of the Des Moines Gas Co. before these raises and before this $10,000?

A. I can't tell you.

Q. You must have had it there ti figure that per cent.

2853 Same objection.

A. This is not the total salary list this is the salary of the 14 employés.

Q. I am talking about salary and not wages, men that were drawing salary and whose pay was increased?

Same objection.

A. Well there were other- whose pay was not increased at this time, this is not the full salary list.

Q. What was the total of the list there before the increased were made?

Same objection.

A. As I made it, the total in this list was $1,446.67 a month and it was increased by this action to $1,725 a month.

Q. Do you know what the tota- salary list of the office was, I don't mean boys that you would call working for wages, but the salary list as distinguished from the wage list?

Same objection.

A. I do not.

COURT: Does that include the parties that the $10,000 was voted to?

A. No, sir.

COURT: Just employés of the company?

A. Officers and employés of the company other than the parties to whom the $10,000 was voted.

Q. Just give us, not the names of the persons, but the title?

Same objection.

A. Manager, commercial agent, head salesman, five salesmen, demonstrator, saleswoman, two clerks in the new business department cadet engineer and night fireman.

Q. When you say two clerks does that mean two additional clerks or does it mean the salary of two clerks was increasee?

Same objection.

2854 A. Means salary of two clerks was increased, one was increased from $35 to $45 a month and the other from $25 to $335 per month, an increase of $10 a month in each case.

Q. You mean the $3,000 and a fraction that you give me there represents increases altogether and no new salaries, that is I mean no new independent salaries.

Same objection.

A. Yes, all increases.

Q. Now was the force increased largely about that time?

Same objection.

A. I don't know, it does not appear from this record that it was.

Q. Do you know independently of the record that it was or was not?

A. I beg your pardon, I see on the minutes of this same meeting on the same page that they authorized the employment of two additional solicitors and one special lighting man.

Q. How many solicitors had they just prior to that?

Same objection.

A. I don't know.

Q. Could you find out right away from the record there?

Same objection.

A. No, I think not.

Q. Now these solicitors, what is their business?

Same objection.

A. Briefly expressed they canvass for new business, they go out on the streets and go from house to house trying to interest the people in gas for cooking or if people are not using gas for lighting they try to interest them in that or if they find a house where gas is not being used for any purpose they try to interest the householder in the use of gas for as many purposes as they can. In general they are soliciting new business and endeavoring
2855 to retain old business as against the competition of other forms of lighting and other fuels.

Q. On this page or in this minute book beginning on page 199 are found here if I understand your testimony so far correctly the minutes of the directors' meetings held in Philadelphia on the 28th day of February 1910 and at which Mr. Lewis Lilley acted as secretary, is that right?

Same objection.

A. You have the book before you general, I can't see it from here.

Q. I wondered if you had noticed the record sufficiently so you could state that?

Same objection.

A. No.

Q. Were you present at that meeting do you remember?

Same objection.

A. Will you tell me from the record whether it appears I was there.

Q. Your name is not in the list of those present?

A. Then I was not there

Q. It says vice president Clark and directors Lilley and Thompson.

A. Then I was not there.

Q. Were the salaries of all these people to date from January first or only these increases?

Same objection.

A. Will you please read me what the record says?

Q. It says approved increases of salaries amounting to $3,340 per year effective January 1, 1910, as follows; and then follows the parties.

Same objection.

A. That means that the increases were to date from January 1, 1910.

Q. But does not apply to any of these other persons that were authorized at that time as additional employés?

2856 Same objection.

A. Oh no.

Q. Now I notice it says here two additional solicitors $75 each and one special lighting man $100 and then follows $3,000. Does that mean the total salaries for the three persons is $3,000?

Same objection.

A. If you let me see it I will answer you. Yes, that means that the total salary for the three persons is $3,000 a year.

Q. Now these additional employés, the additional solicitors and this additional or this special lighting man were they authorized because of the increases and drawing business of the company?

Same objection.

A. No, I should say they were authorized to try to increase the business.

Q. That was the porpose of it rather than to meet any depressing demand for them at the time, is that right?

Same objection.

A. These solicitors and special lighting man are employed as employés who seek to increase the business.

Q. What does the special lighting man do, what is his business.

Same objection.

A. He is much the same as a solicitor only he is rather a higher class man and he would occupy himself pretty largely with what we call commercial lighting as distinguished from domestic lighting. That is store lighting, he would canvas- among the business houses and try to get them to use gas in arc lamps or inverted incandescence for lighting their places of business, try to persuade them it was better or cheaper than electricity so it required rather a high class man to do that, higher than a man who did house to house canvassing in the residence parts of the city.

2857 Q. You dropped a remark once or twice in your answers in explaining this new salary list that the United Gas Improvement Co. had never had any compensation for services rendered to the Des Moines Gas Company. Is that exactly correct?

Same objection.

A. Well speaking in the large it is. There may have been some —in fact I noticed in reading the minute book of the old Capital City Gas Light Company that there was a payment made back in 1901 or 1902 I think. It appears to have been a payment in part for money advanced and in part for services. But since the organization of the Des Moines Gas Company there have been no compensation of any kind for the services of the organization.

Q. Perhaps I don't know just what you mean by the term in the large. Do you know just how the United Gas Improvement Company got the sto-k of the Des Moines Gas Company?

Same objection.

A. Yes sir.

Q. Didn't pay anything for it did it?

Same objection.

A. It is difficult or would perhaps be impossible to fix a price per share.

Q. I am not asking you that. Didn't pay anything for it, any of it by share or any other way.

Same objection.

A. Oh yes.

Q. What did it pay for it?

Same objection.

A. When the Des Moines Gas Company was organized as appears by the minute book it issued practically its entire capital stock and certain other securities for the property and assets of the Capital City Gas Light Company and for certain other properties and
2858 assets all of which had cost their owners considerable sums.

Q. What owners?

Same objection.

A. Well the property and assets of the Capital City Gas Light Company were owned by that company and a large majority of that stock was owned by the United Gas Improvement Company.

Q. Yes, all of it wasn't it?

Same objection.

A. It appears by the minutes of the last meeting of the Capital City Gas Light Company that the stockholders were Samuel T. Bodine, George Fuller, Trustee, W. A. McEwen, Louis Lilley, A. B. Cummins, Jansen Haines, and W. B. Keffer.

Q. These men didn't own any stock did they?

Same objection.

A. I think substantially all of it was owned by the United Gas Improvement Company.

Q. And the truth is isn't it that the United Gas Improvement Company acquired the ownership of the 22,500 shares of stock of the so-called Des Moines Gas Company without paying one single dollar for it.

Same objection.

A. No, I would not say that was true.

Q. Will you tell me where they paid one cent or where the Master or counsel can find the record of their having given a single dollar in money for that stock?

Same objection.

A. The United Gas Improvement Company owned a very large majority of the stock of the Capital City Gas Light Company and when the Capital City Gas Light Company distributed the proceeds of the sale of this property after it had sold out to the Des
2859 Moines Gas company this stock with other securities came into the possession of the United Gas Improvement Company as its distributive share of the proceeds of the sale by the Capital City Gas Light Company so that whatever investment the United Gas Improvement Company might have theretofore had or did theretofore have in the securities of the Capital City Gas Light Company was converted into stock and other securities of the Des Moines Gas Company.

Q. Yes, but they didn't have any.

Same objection.

A. Oh yes.

Q. Isn't this what they did when that reorganization took place, every dollar of the value of the property that was represented by the assets of the Capital City Gas Light Company was covered by preferred stock of some $800,000, I have forgotten exactly the amount and by some bonds or securities amounting to $300,000 or more and the 22,500 shares of stock were simply issued by the Des Moines Gas Company and turned over to the United Gas Improvement Company which owned the Capital City Gas Light Company and was distributed in the form of dividends to the United Gas Improvement Company.

Same objection.

A. No, I would not say that was so.

Q. Do you say it is not so?

Same objection.

A. Yes, sir.

Q. At the time the transfer was made was there a single dollar of real money put into the transaction?

Same objection.

A. There was——

2860 Q. You can answer that question yes or no can't you?

Same objection.

A. Yes, I can answer it yes or no.

Q. Will you do that please?

Same objection.

A. You mean cash?

Q. I mean cash, yes.

Same objection.

A. No.

Q. Now Mr. Douthirt the Capital City Gas Light Company was capitalized for how much?

Same objection.

A. My recollection is it was 600,000 and 400,000 bonds.

Q. And what was the amount of preferred stock that was issued by the Des Moines Gas Company to take care of the obligations of the Capital City Gas Light Company that represented the money that had gone into it?

Same objection.

A. I can't answer that question for two reasons.

Q. Can you turn to the book there and see?

Same objection.

A. No.

Q. Why not?

Same objection.

A. Well because one reason is you put on to the end of your question the expression "That represented the money that had gone into it.

Q. What is wrong with that, did it represent more than the money?

Same objection.

A. It assumes a certain amount of money as having gone
2861 into the Capital City Gas Light Company.

Q. Well what is the matter with the assumption, isn't it sound?

A. I don't think so.

Q. Well if that is your trouble we will leave off that assumption and you then tell us what was the amount of the preferred stock that was issued and used in this reorganization, where it went to and what the money was used for?

Same objection.

A. If I answer your question categorically it would lead to a misapprehension.

Q. Well I don't want anything of that kind to happen.

A. Well with that as a preliminary I will say there was no preferred stock issued.

Q. Was there any authorized?

Same objection.

A. No.

Q. None at all?

Same objection.

A. No.

Q. And none has been since?

Same objection.

A. No.

Q. Well was there any other stock except the 22,500 shares issued

Same objection.

A. No. Now you are leading to the misapprehension which I fearee would follow.

Q. I think I know wher- you think the trouble is. If you have any e-planation to make to that transaction which the question does now permit you to make, you may make it in your own way.

Same objection.

2862 A. The securities which you refer to as preferred stock and which amounted to $800,000 is not preferred stock. That is the misapprehension I feared might come up.

Q. I don't understand the high finance of it and do not understand the right term. You use such terms as you want to and tell us about it.

Same objection.

A. There was $800,000 face value issued in what for want of a better name was denominated preferred stock contracts.

Q. Then my trouble was in not adding to the preferred stock the contract part of it. Now there is not a bit of difference between preferred stock contracts and preferred stock as the terms are used generally among business men is there?

Same objection.

A. Yes, I think there is.

Q. There is a contract in both instances is there not?

Same objection.

A. I think there is a decided difference.

Q. Well we won't quarrel about that. There was $800,000 of these preferred stock contracts issued, that is right is it?

Same objection.

A. That is right.

Q. What became of that?

Same objection.

A. That followed the same course as the 22,500 shares of stock.

Q. Who got it?

Same objection.

A. United Gas Improvement Company.

Q. And what rate of interest did it draw?

Same objection.

A. Six per cent.

2863 Q. Have you one of these stock contracts handy?

Same objection.

A. Yes, sir.

Q. I wish you would have one of them with the other papers I am going to ask you for as we go along?

A. If you will give me the minute book I will show you one.

Q. One in the minute book?

Same objection.

A. Yes, sir. May I read it to the reporter so it may appear in the record.

Q. I would be glad to *here* one of these things read, I have not read it yet.

Same objection.

Des Moines Gas Company.

This contract will entitle —— —— to — shares of the par value of $100 each of preferred capital stock of the Des Moines Gas Company, a corporation organized under the laws of the state of Iowa for which certificates in due form will be issued (upon surrender of this contract) whenever the company shall be authorized by law to issue such preferred stock and the holder hereof shall demand the same. And in the meantime the holder of this contract shall be entitled to all the benefits of a preferred stockholder except the right to vote and shall be paid interest at the rate of six per cent per annum upon a sum equal to the face value of said shares from March 1, 1905, payable semi-annually on the dates and in the manner following, viz:

This contract is transferable only on the books of the company upon its surrender by the registered owner in person or by attorney at the office of the company. Said books will be closed and no transfers will be made thereon from the 1st to the 13th days, both inclusive, of September and March in each year. On the 15th day of each September interest for the half year ended the last day of August last preceding and on the 15th day of each March interest for the half year ended the last day of February last preceding will be paid to the registered owner.

The said preferred stock when issued will entitle the holder thereof to be paid dividends thereon at the rate of six per centum per annum from the date to which interest was last paid under this contract in preference or prior to any dividends to be paid to holders of any other class of stock of the company and this right to dividends shall be cumulative.

Said preferred stock when issued will also entitle the holder thereof in the event of any liquidation or winding up whether
2864 voluntary or involuntary of the assets and affairs of the company to be paid the par value of such preferred stock out of such assets of the proceeds thereof before any part of the same shall be distributed to the holders of stock of any other class.

Having previously given thirty days' notice in writing to the holder thereof by mailing same to his last post office address on its books the company may on any 15th day of September or any 15th day of March at its option relieve and discharge itself in whole or in part from the obligations of this contract upon paying to the holder hereof cash at the rate of $100 per share for the said preferred stock or such part thereof as the company may elect to which the holder hereof is under the conditions hereof entitled: Provided that when making any such payments the company shall treat the holders of all similar contracts then outstanding alike, that is to say the company shall also on the same date make payment of the

same relative sums to the holders of all such contracts then outstanding.

Nothing herein contained shall prevent the issue of further and additional contracts of similar import.

In witness whereof, etc.

Q. There is a term used there that I don't know that I understand it and I would be glad to have you enlighten me if you will, something about cumulative dividends, what does that mean?

Same objection.

A. Cumulative dividends is an expression quite ordinarily used in connection with expressing the rates or preference of any class of stock or other security that may have other stocks or securities junior to it and it means that if the dividend is not paid in any one year it may accumulate, that is, the company may have to pay it in some succeeding year before the company is free to declare or pay dividends on junior classes of securities. This preference of preferred stock, speaking generally may be either cumulative or non cumulative.

Q. Well in plain language it means don't it that if the
2865 dividend is not paid that then dividends on that dividend at the same rate that the share of stock draws shall be paid, isn't that what it means?

Same objection.

A. Not ordinarily, no.

Q. Isn't that what it means here?

Same objection.

A. No.

Q. I mean dividends on the unpaid dividend. For instance suppose there was a thousand dollars due and unpaid and it was carried over unpaid for a year, when your interest there for the next year would be payable it would be six per cent on the principal and six per cent on the deferred dividend wouldn't it?

Same objection.

A. No.

Q. Now isn't that exactly what it means?

Same objection.

A. No. I have known of securities of that class or rather securities possessed of characteristics you are describing, but cumulative dividends never carry interest in case they are unpaid unless it is so specified in the instrument under which the security is created.

Q. Well in this case here it would not be cumulative unless there was something to add to it would it?

Same objection.

A. Oh yes.

Q. In what way?

Same objection.

A. I can perhaps explain it best in this way, a non-cumulative preferred stock is one in which if the dividend is not earned
2866 and paid in a given year the stock is entitled to dividend for that year. A cumulative stock is one in which if the dividend is not earned and paid in a particular year the dividend itself but not any further interest or dividends on the dividend must be declared and paid before anything can be paid on a junior security.

Q. What I am trying to get at is just what the earning power of a certificate like that would be and if I understand you now it would simply be the six per cent that it provides for.

Same objection.

A. Yes, sir.

Q. And that cumulative does not mean anything except that the dividend if not paid when due must be paid at some later date.

Same objection.

A. Yes, before anything can be paid on any junior security.

Q. So that the share of stock that you just read would earn six per cent and no more?

Same objection.

A. The share of stock which might be issued under the contract which I have just read might earn six per cent and no more.

Q. Now there was $800,000 of that kind of stock issued.

Same objection.

A. That sort of contract. I don't want to quibble about the terms with you, general, but I don't think it is proper to call it stock.

Q. Well let's call it stock contract.

A. All right, I will agree with that.

Q. Turned over to the U. G. I.?

Same objection.

A. Ultimately reached there.

2867 Q. Oh well, ultimately, they were there to receive it?

Same objection.

A. Yes, sir.

Q. Now what sort of security or evidence of indebtedness was issued for the 300 and some thousand dollars in addition to that $800,000?

Same objection.

A. I think the most concise answer I can make to your question is to read you from the minutes exactly what was done.

Q. Well you can tell me without doing that can't you, or if you prefer to read it I don't care.

Same objection.

A. The record is the best evidence I think.

Q. Well sir it is very interesting to me, you can take time to read it if you wish.

Same objection.

A. There was an offer made——

Q. Now don't put anything in, you are reading what is there.

A. —.

PHILADELPHIA, *February* 26, 1906.

Des Moines Gas Company, Des Moines, Iowa.

GENTLEMEN: I am able to procure the conveyance to you of valuable real estate in the city of Des Moines, and in the town of Valley Junction, Polk county, Iowa, and I am also able to procure the conveyance and transfer to your company of the property assets, business and franchises of the Capital City Gas Light Company (except its franchise to be a corporation) as well as the property assets, business and franchise of Jansen Haines and William B. Keffer in the town of Valley Junction, Iowa. The output general business, and earning capacity of said plants are well known to your company. The present bonded indebtedness of the Capital City Gas Light Company consists of Four Hundred thousand dollars ($400,000) at par of first mortgage six per cent gold bonds secured by mortgage upon the property of the company to the Union Trust Company of New York as trustee which bonds are due January 1, 1907.

I hereby make the following proposition to you:

First. To procure the conveyance, sale and transfer to your company subject to existing contracts and free from all debts and liability except said Four Hundred Thousand dollars ($400,-
2868 000) at par of said first mortgage gold bonds, accrued interest thereon and current liabilities, of the entire plant property, real and personal, business, rights, privileges and franchises of the Capital City Gas Light Company, except its franchise to be a corporation.

Second. To procure a conveyance to your company of all these certain lots of ground situate in the city of Des Moines, Polk county, Iowa, and described as follows: Lots numbered three (3) and four (4) in Block K and Lots numbered nine (9) and ten (10) in Block M in Scott & Dean's Addition to the town of Fort Des Moines, now included in the corporate limits of the city of Des Moines.

Third. To procure a sale, conveyance and transfer to your company subject to existing contracts except a certain contract between Jansen Haines and William B. Keffer and George J. Roberts, dated May 1, 1905, for laying mains, etc., the payments under which I hereby agree to make and free from all debts and liability, the entire plant, property real and personal business, rights, privileges and franchises of Jansen Haines and William B. Keffer in the town of Valley Junction, Iowa, including the following real estate situated in said town, Lot numbered nine (9) in Block Fifteen (15) in the First Addition to Valley Junction.

The consideration to be paid by your company to be as follows:
(*a*) First mortgage five per cent twenty year gold coupon bonds of your company redeemable on any interest date at one hundred five (105) per centum and interest to the amount of Two Hundred and eighty five thousand Dollars ($285,000) at par being part of an issue of One Million Five Hundred Thousand Dollars ($1,500,000) at par of said bonds to be authorized by your company to be secured by mortgage upon the entire property and franchises of your company including all of the same acquired by your company under this proposition as well as that hereafter acquired. Of the remaining One million Two hundred and fifteen thousand dollars ($1,215,000) at par of said bonds, Four Hundred Thousand Dollars ($400,000) at par thereof shall be retained by the trustee uncertified until required to purchase or pay for or take up, exchange or replace, said first mortgage bonds of the Capital City Gas Light Company now outstanding and the balance thereof, to-wit, Eight Hundred and Fifteen Thousand Dollars ($815,000) at par shall be retained by the trustee uncertified and used by the company from time to time only for the purpose of making additions to or extensions or betterments of its plants and for acquiring other plants or property real or personal.

(*b*) Twenty two Thousand Four Hundred and ninety (22,490) shares of the par value of One Hundred Dollars ($100.00) out of the authorized issue of Twenty two thousand five hundred (22,500) shares of the capital stock of your company issued to me or upon my order fully paid and non-assessable.

(*c*) Preferred stock contracts of your company bearing
2869 interest at the rate of six per cent per annum to the total amount of Eight Hundred Thousand Dollars (800,000) at par, said contracts to be in the form herewith submitted.

Respectfully submitted,

W. H. MARSHALL.

Q. Now right at that point, who was W. H. Marshall in his palmy days?

Same objection.

A. If you will eliminate the palmy days——

Q. All right, cut that out.

A. Mr. Marshall is an officer of the United Gas Improvement Co.

Q. Mr. Marshal at that time was an employé of the United Gas Improvement Company?

Same objection.

A. Yes, sir.

Q. And he is yet.

Same objection.

A. Yes, sir.

Q. And his employment is not very important in its nature is it?

Same objection.

A. Well——

Q. He was an office boy at that time wasn't he?

Same objection.

A. Oh by no means.

Q. What was his work?

Same objection.

A. One of the principal accountants of the company

Q. Working for the company on a salary.

Same objection.

2870 A. Yes, sir.

Q. How much of a salary?

A. I don't know.

Q. About how much?

Same objection.

A. I don't know.

Q. Where is he now?

Same objection.

A. I think he is in Philadelphia, he was here last week.

Q. Still working for the U. G. I.?

Same objection.

A. Yes, sir.

Q. On a salary?

Same objection.

A. Yes, sir.

Q. This whole business was carried on in his name, the stock was actually issued to him wasn't it?

Same objection.

A. I don't recall as to that, the stock under the proposition was to be issued to him or upon his order, whether it was issued to him or whether he gave an order to issue it to somebody else, I don't recall.

Q. You know as a matter of fact *he* was actually issued to him and they carried the play to the extent of issuing it to Marshall?

Same objection.

A. I don't know, I can look here and see if there is anything here to indicate it. I would say you were right because — the minutes of the annual stockholders' meeting held April 2, 1907, it appears there were 22,490 shares in the name of W. H. Marshall.

Q. I was not only right, but so far as the books of the Des
2871 Moines gas company is concerned, he still owns it?

Same objection.

A. No, I think not. I think it stands in the name of the United Gas Improvement Company now.

Q. Where do you think that appears on the books of the Des Moines Gas Company?

Same objection.

A. By the minutes of the annual stockholders' meeting held April 6, 1909, which commences on page 166 it appears that the United Gas Improvement Company was the owner of 22,490 shares.

Q. In what way does it appear?

Same objection.

A. Here is a list of the stockholders present by proxy, it appears that Mr. Fred P. Carr held the proxies of Messrs. George H. Carr, Rollin Norris, Earl Thompson and myself. It appears Mr. Jansen Haines held proxies of Mr. Lewis Lilley, Samuel T. Bodine, Walton Clark, United Gas Improvement Company and Randolph Morgan and the number of shares standing in each of these names is specified.

Q. You were never a stockholder were you?

Same objection.

A. There was evidently a share standing in my name.

Q. You didn't even know that a little while ago did you?

Same objection.

A. Probably not.

Q. As a matter of fact you never owned a share in the company did you?

Same objection.

A. No, I never owned a share.

Q. That is true as to several of these names you just read
2872 isn't it?

Same objection.

A. Very likely. By the minutes of the annual stockholders' meeting held April 5, 1910, the record of which commences on page 204 it appears that the United Gas Improvement Company held 22,490 shares which were represented by Mr. Haines as proxy and voted by him.

Q. The name United Gas Improvement Company, don't appear there at all does it?

Same objection.

A. Yes, sir.

Q. On that page you have just read?

Same objection.

A. Yes, sir.

Q. As represented by these names you read?

Same objection.

A. No, the name United Gas Improvement Company appears right here.

Q. As the owner of this stock?

Same objection.

A. Yes, sir.

Q. Is there any other book in this company that shows that that you know of?

Same objection.

A. Yes, sir.
Q. What other book?
A. The stock certificate book and stock ledger show that.
Q. Where are they?

Same objection.

A. They are in Philadelphia I think.
Q. Either of them here?

Same objection.

2873 A. I think not, both in Philadelphia.
Q. What other books in Philadelphia that have in them accounts of the Des Moines Gas Co.?

Same objection and because of the use there of "other" and the assumption that this stock certificate book and stock ledger had accounts between the U. G. I. Company and the D. M. Gas Company.

A. That book would simply have an account on it showing the number of shares of record in each name.
Q. Now to get back to the question what other books or records are kept in Philadelphia that involve the business of the Des Moines Gas Company other than the stock books and other books you have just referred to.

Same objection.

A. My impression is that we have there a ledger which would be an exact duplicate of the ledgers in the office here.
Q. In other words you have in Philadelphia a set of books that involved the business of the Des Moines Gas Company, that is right isn't it?

Same objection.

A. Why yes, the journal entries are sent on from here every month one of the 26 things Mr. Haines tried to tell you about.
Q. Mr. Haines didn't try to tell me about any books in Philadelphia.

Same objection.

A. Perhaps Mr. Haines didn't know about them. Information is sent by Mr. Haines or his subordinates to Philadelphia from which it is possible to reproduce in Philadelphia the general ledger that is here.

Q. If I were to go to Philadelphia next week and want to
2874 take the deposition of the officers of the United Gas Improvement Company with respect to the business of the Des Moines Company they could produce the records and books there couldn't they to show just what was going on in Des Moines?

Same objection.

A. In a general way, yes.

Q. Now to get back to this interesting document and communication that you read from Mr. Marshall, I notice that he refers in there to some property at Valley Junction said to belong to Jansen Haines and W. B. Keffer. They didn't own any property in Valley Junction did they?

Same objection.

A. Only they had legal title of it, that was all.

Q. Well it belonged to the United Gas Improvement Company did it not?

Same objection.

A. The United Gas Improvement Company furnished the money to put in the distribution system out there.

Q. Not only furnished it, but it was done for them by their employes here in Des Moines was it not, purchased by them?

Mr. GUERNSEY: Who is them, the United Gas Improvement Company or Des Moines Gas Company?

(Question withdrawn.)

Q. Mr. Jansen Haines and Mr. W. B. Keffer were not in the gas business — Valley Junction on their own account were they?

A. No, they were simply conducting it there until such time as the Des Moines Gas Co. could be organized and issue securities and raise the money which was necessary to make the installation out there.

Q. They didn't get any $45,000 did they for their inter-
2875 est in that business?

Same objection.

A. Oh no.

Q. They didn't get anything did they?

Same objection.

A. No, they didn't get anything.

Q. The books indicate they did don't they?

Same objection.

A. Well the books indicate I suppose that something was paid to them as the holders of the legal title of property out there.

Q. But as a matter of fact there was not a dollar paid was there?

Same objection.

A. Oh I think so.

Q. To them?

Same objection.

A. To them or their order.

Q. Well where did it go to, that is what I want to know.

Same objection.

A. Oh of course it finally came back to the same old place.

Q. It finally didn't get anywhere did it, it never started, isn't that the truth of it? Take this $285,000 that you referred to there,

there was $45,000 in addition to that to cover the Valley Junction business.

Same objection.

Q. Well was the 45,000 included in the $285,000?
A. I don't know what 45,000 you are talking about.
Q. You ought to know, you were a stockholder and were represented at the meeting that disposed of it wasn't you, or did your proxy do that?

Same objection.

A. No, I was not even a nominal stockholder at that time.
2876 Q. What became of the $285,000 you refer to, — a record there how it was distributed?

Same objection.

A. That would appear in the record of—the record of the Des Moines Gas Company of course would show nothing about that distribution.
Q. I don't care which record you use.
A. You have got hold of the figure $45,000 that I don't understand.
Q. It will be clear before we get through with the examination I hope. What became of the 285,000, can you tell us?

Same objection.

A. The $285,000 to which you refer was in the form of bonds.
Q. I know, but how was it distributed, how were the bonds distributed, who got them.

Same objection.

A. It appears by the record of the director's meeting of the Capital City Gas Light Company held February 28, 1906, which commences on page 183 of Volume 2, that the Capital City Gas Light Company got $240,000 out of the $285,000 of bonds.
Q. Now where did the $45,000 go.

Same objection.

A. It does not appear by the record of either company, but my recollection is that that went to Messrs. Haines and Keffer for the Valley Junction property.
Q. That is it did on paper you mean?

Same objection.

A. Yes, sir.
Q. As a matter of fact they didn't get any part of these bonds did they?

Same objection.

A. Oh no.
2877 Q. They were never issued were they?

Same objection.

A. Oh yes, they were issued.
Q. They were actually issued?

Same objection.

A. Oh yes.
Q. And who got them, the parties that issued them?

Same objection.

A. No, they were issued by the Des Moines Gas Co.
Q. Well who got them?

Same objection.

A. They went in the first instance according to my best recollection to Haines and Keffer and from them to the United Gas Improvement Co.
Q. So that $45,000 now don't seem mysterious to you?

Same objection.

A. No, I see where it comes in now, the difference between 240 and 285.
Q. The $45,000 you think was distributed through Haines and Keffer and finally to the United Gas Improvement Company and what became of the $240,000?

Same objection.

A. May I say first with respect to the 45,000 that is simply my recollection, not a matter of record here.
Q. Is it a matter of record anywhere you know of?

Same objection.

A. I don't know, very likely is.
Q. If it is not there where would we find it. You are secretary of the company, maybe you can help us located —.

Same objection.

A. I think you would probably find it on some of the
2878 books in Philadelphia.
Q. How will we get that on some of the books in Philadelphia, do you know anyway we can get them here?
A. No, I think you will have to go there.
Q. Didn't you think it quite important to have them here?

Same objection.

A. Didn't occur to me so no.
Q. You know you were coming out here to try a very important law suit that involved your gas company or the gas company in which you are an employé or officer didn't you?
A. Yes, sir.
Q. And you are a practicing attorney aren't you?
A. No.
Q. I thought you said here this morning you we- a member of three bars.

Same objection.

A. I am.

Q. But you do not practice, is that what you mean?

Same objection.

A. That is what I mean, yes.

Q. You are a nonactive member?

A. Yes, you might put it that way.

Q. You say now you didn't think it was important to bring out the records that would open up this entire transaction so that everybody would understand it as well as you do?

Same objection.

A. No, I didn't think it was important.

Q. Well what part of the business of these concerns did you think ought to be suppressed and covered up.

Same objection.

A. None of it.

2879 Q. Well how did you expect the court or Master or anybody else to know whether your property the company property was taken without fair compensation unless the Master knew something about your property and how you got it, what was involved in it?

Same objection.

A. My thought was that was by proper testimony the Master would find the reasonable present value of the property which is devoted to the public use, which could be ascertained by proper testimony without any regard whatever to what securities are outstanding against that property and further, that the Master could find by proper testimony from the books which are here in Des Moines all about the operating expenses of the company and the net revenues and with full information before him with respect to these matters he would be able to determine.

Q. You have dictated in a sense have you not the plan of this entire trial, you have been in it from the beginning have you not, I mean the complainant's side of it?

Same objection.

A. I have helped all I could but I would not assume to say that I have dictated the plan of the entire trial.

Q. Is it not true Mr. Louthirt that from the very beginning you have been active and busy in the preparation of this law suit and in having it presented to the Master in the way it has been presented?

Same objection.

A. Yes, that is true.

Q. You commenced that work a long long time ago didn't you?

Same objection.

A. Yes; I commenced to be very actively interested in the situation as long ago as last November.

2880 Q. Yes, and longer ago than that didn't you?

Same objection.

A. No, because it didn't arise, there was nothing to indicate it before that time.

Q. Didn't you begin to get ready for this very law suit longer ago than the 1st of last November?

Same objection.

A. No.

Q. Didn't you begin to build up this method of fixing the values of the complainant's property longer ago than the 1st of last November?

Same objection.

A. No.

Q. When you left Philadelphia to come out here was it your thought that you could properly try and present this case to the court and to the Master without producing all of the books that involved all of the transactions of the Des Moines Gas Company.

Same objection.

A. I thought it would be proper to produce all of the books that involved all of the transaction- of the Des Moines Gas Company.

Q. Yes, now there are part of them in Philadelphia.

Same objection.

A. No. Well the stock ledger, yes, is in Philadelphia.

Q. That is all that is there is it?

Same objection.

A. All of the books that involves transactions of the Des Moines Gas Co.

Q. How about this $240,000, where is the book that shows what became of that, of the $240,000 of bonds?

Same objection.

A. Books of the Capital City Gas Light Co. show it I think.

2881 Q. Do they show it?

A. I think so.

Q. Is there a diplicate set of the Capital City Gas Light Company's books in Philadelphia?

Same objection.

A. I don't know whether a duplicate or not, the originals are in Des Moines.

Q. You say you don't know whether there is a duplicate set or not.

A. No, I do not.

Q. What is the name of the comptroller that is here at this trial?

A. You mean Mr. Curran?

Q. What is his business.

A. He is comptroller of the United Gas Improvement Company.

Q. As such what is his work?

Same objection.

A. He has general charge of all the accounts, general supervision I would rather say of the accounting of the various companies in which the United Gas Improvement Company is interested and he has also some to do with the detail*a* accounting of the United Gas Improvement Co.

Q. I want to say to you at this point that we want to use Mr. Curran before this case is closed as a witness so we expect him to be here. I find on page 201 of this Des Moines Gas Company stockholders' and directors' minutes No. 1, the following language: Sub-head, title Betterment system. The vice president submitted a statement prepared by the treasurer showing that the company had expended in making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal from March 1, 1906 to December 21, 1909, the sum of $63,-
2882 567.07 and showing the various items comprising this sum which statement was read and ordere*e* spread upon the minutes and is as follows: Expenditures made for additions to extensions or betterments of plants of the Des Moines Gas Company or for acquiring other plants or property real or personal from March 1, 1906, to December 31 , 1909, real estate $438.61 extension and improvement of works, $59,045.26 street lamp extensions $2,039.65, street mains $192,479.34, meters $55,649.88; services $53,914.33; Total $363,567.07. Were you present at the meeting when that statement was presented?

Same objection.

A. Will you refer to the record and see if I was?

Q. The record is signed by Lewis Lilley and on page 201 it gives as present Vice president Clark, directors' Lilley and Thomson.

A. Then I was not there.

Q. Is that the only way you have of knowing you were not there?

Same objection.

A. Yes, sir. Well I could look at my diary and see whether I was in Philadelphia on that date.

Q. You knew that record existed didn't you?

Same objection.

A. Oh I suppose so, yes.

Q. Why was all this agitation here the other morning about letting us have this book, do you know?

Same objection.

A. No.

Q. Do you know why that record was not introduce*e* in evidence by the complainant?

Same objection.

A. No I don't know.

2883 Q. Can you think of any reason why it was not offered?

Same objection.

A. Yes, I can think of a reason.

Q. Why?

Same objection.

A. Well the figures which you have just read can be very easily checkee up and verified from the books right here in Des Moines and the city's accountants have been working on them since July.

Q. Was that the reason?

A. You asked me if I could imagine a reason?

Q. Was that the reason you didn't have them offered?

Same objection.

A. You asked me if I could think of a reason.

Q. Was that your reason, was that your reason for not having these records introduced?

Same objection.

A. Why no, I never thought of introducing the records, never thought of it one way or the other, so I could not have had any reason.

Q. You have just stated that these figures are on the books of the Des Moines Gas Co., that is not so is it?

A. I didn't state that.

Q. That is the city might spend speveral months in checking through the separate items of your books.

A. No, I mean that an accountant could probably verify these figures from the books in less than an hour.

Q. Can you now give us any reason why you did not want this book offeree and turnee over to us a day or two ago when we asked for it, or even the city's counsel allowee to look it over?

Same objection.

2884 A. No, I cannot.

Q. You remember this Mr. Cook that was on the witness stand a few days ago from Chicago?

A. Yes, sir.

Q. You remember his testimony about bonds and the N. W. Harris & Company's refusal to do business in Iowa, that is in a general way, you remember that testimony?

Same objection.

A. I have heard so much testimony I would not want to say that I had a very concise recollection of it without reading it.

Q. Who bought the last issue of the bonds of the Des Moines Gas Co.?

Same objection.

A. If you will give me the book you have there.

Q. It was the N. W. Harris company was it not?

A. Oh no. They have not bought any bonds, never did buy any bonds of the Des Moines Gas Company.

Q. Never at any time?

Same objection.

A. No.
Q. They haven't any now?

Same objection.

A. Not that I know of.
Mr. Byers: I wish you would produce for us in the morning the contract that the Des Moines Gas Company had with Mr. William Brereton covering one of the buildings down here at the plant, you can find — can you not?
A. I don't know.

(Des Moines Gas Company minute book marked defend-
2885 ant's Exhibit No. 27.)

Q. The book I hold in my hand called Capital City Gas Light Co. No. 1, stockholders' and directors' minutes is the minute book of that company beginning some time in the 70's?
A. Beginning with the meeting held first September 20, 1875.

Mr. Byers: Defendant at this time /ffers in evidence Exhibit 25 and 26 being stockholders' and directors' minute book of the Capital City Gas Light Company Nos. 1 and 2.
Objected to as irrelevant and immaterial because having no bearing whatever upon the ultimate questions that are involved in this controversy.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

2886 Thursday Forenoon Session.

August 24, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

Henry I. Lea, re-called for further cross examination, examined by Hon. H. W. Byers, testified:

Q. Mr. Lea, one of the matters that you were asked to furnish was the figures, memoranda, with the figures upon which you based your table of averages on page 12 of your report, the meters on the installment basis.
A. That is all shown in Exhibit 8; that is the only information I have on the meters.
Q. Just what was shown there?
A. Yes.
Q. That is where you got the figures?
A. That is the only source of my information of the age of the mains, services or meters, just those three pages in Exhibit 8.
Q. Now on page 1274 of your examination, you were to furnish me the *the* figures showing the estimated growth of the business from 1910 to 1918 with gas at 90 cents—did you work that out?
A. No, I have not done that.

Q. That was to be worked out on the plan of one of your curved sheets, if you remember, but you haven't done that?

A. No, I have not done that.

Q. And did you get your report from your office, the Beatrice report?

A. I think so.

Q. I have had this one certified, maybe by glancing over it you can tell about it. (Report handed to witness.)

A. I had mine sent out here, but I don't have it with me this mor-.

2887 Q. You will notice here that the City Clerk has certified this is an exact copy af the report as it is filed there?

A. Yes, this looks like a copy of my report.

Q. Now, where did you get your base figures, if that is the correct term, for your cast iron valuations in the report that has been filed here and marked Exhibit 20?

A. That would appear in my details, but I haven't that here.

Q. Can you tell me where you got your base figures for your cast iron valuations in that report?

A. I don't remember any of the details; I would have to get that from my office.

Q. I mean from what sources did you get the prices?

A. From probably the United States Cast Iron Pipe Foundry Company.

Q. Is that where you got them?

A. I wouldn't say without my notes.

Q. Didn't you get that information out of Exhibit 8?

A. Certainly not. I used Exhibit 8 in absolutely no way except to abstract three pages showing ages of mains, meters and services.

Q. Do you have the figures somewhere in the memoranda that shows where you got your cast iron pipe from?

A. They must be in my notes.

Q. I wish you would send them here—you won't need to come back to bring them.

A. All you want to know is the source——

Q. I want the memoranda you used making up your cast iron pipe valuations.

A. Do you wish the pipe by itself?

Q. As I remember it, you show the cost—for instance, here is the way you- report is made up, reading from page 89, under the table sub-headed "Depreciation system street mains, size 2½ inches

2888 and under 35,527 feet?

A. That means the average taken as 2 inch pipe; I have taken 2½ inch and under.

Q. And you have 25,527 feet in length here and the net construction cost of the pipe laid in unpaved streets. Under that table you have $5,373. Now that represents the net construction cost of the pipe laid; is that what you mean to show by the report?

A. You are referring to the 2½ inch and under, 25,527, and no pavement?

Q. No pavement, no.

A. That pipe is totaled .2105 per foot.
Q. Do you mean 21 cents?
A. Yes.
Q. Just a minute there, please. Read the question, Mr. Reporter.

(Question beginning with line 4 read.)

A. Yes.
Q. So that that covers the cost of the pipe, construction cost, and the cost of laying it?
A. It does, *s*object to some errors which I discovered in the unit prices of the 3 inch pipe, in the brick on concrete.
Q. I haven't got to that now—I am dealing entirely now with the pipe that is not under pavement as shown in your report; I am talking about this size now.
A. That is correct. $5,373 represents net construction cost of pipe and labor, finished job in the street, no pavement.
Q. Now how much would that be a ton or a pound?
A. Well that pipe weighs 3.61 pounds per foot. The cost of the pipe based on Crane & Company's price list, less 78.2 per cent, 7.85 cents.
2889 Q. A pound? *Q*. I want to know what it is per ton.
A. We don't buy that by the ton ordinarily.
Q. I find that it appears here by the ton in some of the records and I want to see what it is by the ton.
A. We can get it. (Witness makes computation.) Per ton of 2,000 pounds that pipe is $43.48. That is 2 inch wrought pipe, not cast iron.
Q. Well, is that what you intended it to represent here in your report, wrought iron?
A. Not wrought iron; wrought pipe.
Q. Well it is not so stated.
A. That is always understood among gas men; we don't have to specify, because there is no cast iron pipe made of that size; 4 inch is the smallest cast iron pipe made for gas uses.
Q. Well we are not gas men here. That is $43.48 a ton, and how much did you say a foot?
A. 7.85 cents.
The MASTER: What was the 21 cents?
A. That was the total cost for pipe, fittings, store room, labor, laying, excavation, etc.
Q. So that the labor then and overhead charges, whatever they are in that item, represent about in round numbers 14 cents?
A. I would rather give it to you in items.
Q. All right.
A. Pipe weighs 3.61 pounds per lineal foot; pipe itself would cost f. o. b. Des Moines 7.85 per lineal foot; the fittings cost 4½ per cent of the cost of the pipe alone or .35 of one cent; store room cost would be 2½ of the combined cost of pipe and fittings or .21 of a cent per lineal foot. The cost of hauling and handling would be ½ of a cent.

2890 Q. You are reading from some memoranda?

A. Yes, I am reading from my report. I said ½ of a cent for hauling and handling, and labor in laying 1.3 cents, cost of excavation and refilling, which is based on a trench of the width of 22 inches with an average depth of 36 inches 45 cents per cubic yard for excavation and refilling 9.16 cents, and the miscellaneous items composed of tools, 4 per cent, cutting pipe 3 per cent, lumber and incidental supplies 3 per cent, delays 5 per cent, making a total of 15 per cent, which is added to all the above items, except pipe and fittings, making a total for miscellaneous of 1.68 cents which added to the previous amounts gives you a total of 21.05 cents per lineal foot.

Q. What is the total of the amount less the pipe?

A. That would be pipe fittings 7.81 cents, for pipe; fittings .35 cents, total 8.3 per lineal foot, total cost of pipe laid 21.05 cents, from which you deduct 8.2 cents, leaving 12.85 cents per lineal foot to cover the cost to put in the wrought iron pipe laid in unpaved streets, after you had deducted from the total cost of pipe and fittings.

Mr. GUERNSEY: I would like to ask you again for those items.

A. Pipe 7.85; fittings 1.35; store room .21; hauling and handling .50 labor laying 1.3; excavation refilling 9.16; miscellaneous 1.68.

Q. Now you have proceeded with that same method, with that same substantial addition to the cost of the pipe and fittings throughout the distribution system where the pipe is not under paving?

A. Yes.

Q. And all of these base figures, as I understand you, were furnished to you by somebody for the Company?

A. No, sir; none of them were.

Q. Where did you get them?

2891 A. From my own records and experience. I got no figures as to the cost of main laying from the company; hadn't seen any until my work was done.

Q. You mentioned a moment ago Crane & Company; is Crane & Company in business in Des Moines?

A. I don't know; they have some jobbing houses.

Q. They have the western headquarters at Omaha?

A. Yes, I think so.

Q. Do they handle this class of pipe?

A. They make it.

Q. Is that true of all these sizes?

A. No, they do not make any cast iron. They make wrought iron of larger sizes than we have here, but that is for steam use.

Q. Now take the 3 inch wrought iron, wouldn't it be higher than the 2 inch?

A. In cost you mean?

Q. Yes.

A. Certainly.

Q. What per cent difference?

A. It would be over twice as expensive.

Q. It would be no more expensive as to the other items?

A. Certainly; it is very much harder to put together.
Q. Takes a larger ditch?
A. No, but it is hard to put together.
Q. You used the same substantial method and you figure out how much more it would cost to put it together?
A. Yes, figure each of the items.
Q. And that represented your judgment about it and not figures furnished you?
A. Not by the Des Moines Gas Company.
2892 Q. By anybody?
A. I wouldn't say that; I have obtained figures from a great many people.
Q. I mean as to these figures?
A. Oh, no.
Q. In 4 inch cast iron, the difference there too would be largely——
A. While you are on that, let me point out an error I discovered. The 3 inch wrought iron pipe under brick on concrete pavement was figured 80.32 cents for the pavement alone; the total cost was given as 1.114 cents, which should have been 1.4 cents.
Q. A mistake of ten cents?
A. Yes, under brick on concrete. Then there was another mistake on that 3 inch. An even dollar was dropped out of the record on the inch and a quarter under wood block on concrete.
The MASTER: What difference does that make?
A. A total difference of about $560, against the company as the total of these errors which I found. I found those on the 3 inch pipe.
Q. That one item you had figured 10 cents too high?
A. Yes, 10 cents too high.

The MASTER:

Q. That is the difference in two mistakes?
A. Yes, two or three.
Q. Now, going past the wrought iron to the first cast iron pipe of 4 inch you have 350,664 feet at $195,074. Now do you know where you got your value or the price of cast iron for that item and when you got it?
A. Yes.
Q. Where did you get it?
A. I got it by looking up the records of the fluctuation of cast iron pipe prices for a good many years.
2893 Q. What record did you look up?
A. The records as shown in the Iron Age.
Q. For what year?
A. A great many years; I have forgotten how many, all tabulated by Mr. Alvord some time ago.
Q. Mr. Alvord's tabulation was on water pipe?
A. Yes.
Q. What did you add?

A. One dollar ton.

Q. You used Mr. Alvord's water pipe schedule he used in the water case?

A. No, that is one of the things to which I referred.

Q. That is one of the things you had upon which you based your judgment?

A. Yes, showing 4 inch pipe quotations for the first week in each month, as taken from the Iron Age, beginning with the 1st of January 1885 and carried up to March 1911. That also shows 16 inch and larger pipe quotations, and also shows the average prices of lettings in Chicago and vicinity and the average price of southern coated #1 pig iron quotations.

Q. So that if two engineers were to take the Iron Age and Alvord's table and get at the average price of that class of pipe and add a dollar to it, there ought not to be any difference in their results?

A. Not with that result. I am not saying that is the figure I used.

Q. It is the figure you used?

A. I don't think so.

Q. Just take the 4 inch pipe, what did Mr. Alvord price it here in Des Moines at the time of the Des Moines Water case?

A. I don't know.

2994 Q. You have his schedule here?

A. I have his schedule here, but that is not the price in Des Moines. I have Benezet Williams' price in Des Moines.

Q. What was his price on 4 inch cast iron?

A What year?

Q. The year the case was tried, in 1910?

A. The average cost per ton for a good many years back, I don't remember how many, the average cost per ton was $30.17 in 1910.

Q. It is a good deal less now?

A. Yes.

Q. It was a good deal less the 1st of January this year?

A. I think so.

Q. How much less?

A. I don't know what it was.

Q. It was four or five dollars less than that?

A. It was probably $27.

Q. Even less than that?

A. I am not sure, it might have been $26.

Q. The average for how many years, you say?

A. Apparently from 1871.

Q. To 1910?

A. It appears from this table to be the period covered.

Q. $30?

A. $30.77.

Q. You have a memorandum there you used in February this year to give the quotations on 4 inch cast iron pipe?

A. Yes.

Q. Look at it and see what it was at that time?

A. In February 1911?

Q. Yes.

2895 A. The quotation for 4 inch water pipe was in the neighborhood of $25.50, making it $26.50 for gas pipe.

Q. Is that for Des Moines or Chicago?

A. That is Chicago.

Q. Twenty-five what?

A. $25.50 in Chicago for water pipe.

Q. What would be the difference, if any, between Chicago prices and Des Moines prices?

A. I don't remember what the difference would be.

Q. There isn't any?

A. I think there is some, yes.

Q. You figured it out to find out?

A. I did but haven't it here.

Q. Do you remember the price you put on this kind of pipe at Beatrice, Nebraska?

A. I don't remember it now.

Q. You didn't make any differences between the Chicago price and Beatrice or Omaha price?

A. I don't remember.

Q. There isn't any substantial difference?

A. I believe there is——

Q. Isn't that class of pipe quoted exactly the same in Omaha as in Chicago?

A. I don't believe it.

Q. Anyhow, it was $25.50 in February?

A. Yes.

Q. It was less than that even the 1st of January, wasn't it?

A. Yes, it was $25 the first week in January. There was no pipe moving at that time of the year; you generally find the prices down in January.

2896 Q. Now, 6 inch pipe?

A. What do you want on that, the price per ton?

Q. Yes.

A. $30.

Q. What was that average per year?

A. That is my judgment as to what I would have to pay for pipe if I would come down to put in this system at that time.

Q. And pay for it here in Des Moines?

A. Yes.

Q. What was that pipe on January 1st?

A. I can't say from this chart, because it jumps from 4 inch to 16 inch and larger.

Q. What was it here in February?

A. I haven't it on this chart. I have what I used. I took 6 inch and larger and at $1 less than 4 inch pipe throughout.

Q. You have the 4 inch at what?

A. $31 f. o. b. Des Moines.

Q. I am talking about Beatrice now?

A. I don't know anything — Beatrice now.

Q. You figured at Des Moines even $30.

A. $31 for the 4 inch and $30 for the 6 inch or larger f. o. b. Des Moines all the cast iron pipe in Des Moines.

Q. $30?

A. $30 6 in and larger.

Q. You did that all through your distribution system?

A. Yes, sir.

Q. Now, another thing—you were to furnish me with figures showing the items of expenditures that you stated would have to be made in the next few years here in your total of a million dollars, in the next seven years.

2897 A. I told you I had made some rough figures which run over a million dollars. As I remember it you wanted me to make an itemized statement that involved the preparation of at least some rough sketches and a large amount of detail work which I have not been able to do.

Q. Another thing I asked you about was the memoranda and figures from which the table on pages 10 and 12 of your report was made; you say that was taken from Exhibit 8?

A. Yes.

Q. Another thing was the memoranda which you said you had at the Chicago office furnished by the Des Moines Gas Company, from which the totals on page 1 and 11 of your report were made?

A. What do you mean by page one—organization and legal expenses?

Q. Yes.

A. Certainly not. Page 11 is one of the 3 pages we have been talking about as showing the composite age. All of the data on page 11 is one of the 3 pages I used in Exhibit 8.

Q. Now the figures shown on page 1 is the memoranda that was furnished you by the company covering that?

A. Do you mean what is called page 1 of my report?

Q. Yes.

A. That shows the organization and legal expenses.

Q. Were those figures furnished you?

A. No, sir.

Q. You made those up without any memoranda from the company?

A. Yes.

Q. Now, Mr. Lea, another matter I wanted *tou* to figure out for me—I asked you to furnish to the Master and counsel the figures in separate items, showing the amount that you have allowed in your report in values added to the property, in value, over and

2898 above the reproduction cost of the material itself and labor.

A. I furnished that some time ago. I think I still have it. It was discussed here one day, I remember.

Q. I don't remember seeing it myself.

A. (Witness produces figures). This is it here, showing the total in dollars for engineering, etc., taxes during construction, and loss of interest during construction. You will remember we had that; we were making some figures here.

Q. You can give me from that what I want now. First give me

the amount that you have allowed and as shown by your report, covering contingencies.

A. I have the contingencies here only as a part of the 15 per cent covering engineering, supervision, contingencies and omissions.

Q. How much is that?

A. $232,481.

Q. Now, that covers contingencies, engineering and supervision——

The MASTER: Is that the present value?

A. That is the amount which appears in the reproduction value.

The MASTER: Not the amount which appears in the present value?

A. No.

Q. It gets into the present value all right?

A. Sure it does.

Q. It covers contingencies, engineering, supervision and omissions?

A. Yes—now wait a minute—I gave you $232,481.

Q. Yes; that is for the distribution system alone?

A. The total including $5,000 on real estate, $12,858 for buildings; $63,072 for works equipment; and $232,481, engineering, etc., is $313,411; that is the total amount included under my 15 per cent addition.

Q. Now a little more than half of that represents omissions?

2899 A. Yes, 8 per cent.

Q. It would be divided in the ratio of 8 to 7?

A. It would be 8/15—no, before you get that you would have to deduct your $5,000 which goes in on real estate.

Q. What was that?

A. That was for sinking test holes and engineering.

Q. Anyhow, you make these items $313,411?

A. Yes.

Q. Now, then take legal and organization expenses?

A. That is shown in the report.

Q. Just give me the amount?

A. You want the total allowance for organization and legal expenses?

Q. As you have it.

A. That is shown in the report, of course, page 1 shows the total organization and legal expenses $68,023.

Q. Is that the total that enters into your final figures?

A. Yes, $68,023 in that sum is included $1,429 for taxes during construction, and $4,594 for loss of interest during construction.

Q. So that there are in addition to legal expenses and organization these two items of taxes and interest?

A. Yes, shown on page 1 there. I think if you want to get the — straight, you had better take the net construction.

Q. No, this is what I want. I want it for the purpose of comparison with these other reports. What rate of interest did you figure during the construction that is included in this?

A. I figured at the rate of 2¼ per cent per year, where the material was subject to taxation for the full year.

Q. What rate of interest I said?

A. 6 per cent.

Q. You figured it for the full year?

2900 A. Where the money was in use the full year. Where for instance a thousand dollars was put in during the year, that would be figured at six per cent for one half year.

Q. Now take the four items you have mentioned, legal expense and organization, taxes and interest during construction, etc., and the total is what?

A. $68,023.

The MASTER: Is that the amount of interest on the organization expenses or the whole interest you allow?

A. That is the interest on organization expenses, for that purpose up to the time when gas is beginning to be manufactured.

Q. The same thing is true of the taxes?

A. Yes, sir.

Q. In other words, those four items, legal expenses and organization, taxes and interest are all involved in one item?

A. The legal organization is ahead of my report, to which I have added the other items.

Q. Exactly. You have taken what you thought, without respect to any figures furnished to you by the company or anybody else, what you thought would be necessary for legal charges or expenditures and organization expenditures, and what you thought ought to be on hand at the beginning of the construction?

A. Yes.

Q. And then upon that sum figured out in your way, without any basis being furnished by the company, you allowed interest during a part of the time on some of this money that was laid aside for legal organization, and also the tax on some of it.

A. That is correct.

Q. But not all of it?

A. The tax on all of it subject to taxation. For instance

2901 if you spend a thousand dollars this year on your organization and legal expenses, that thousand dollars must be added to your capital and the tax must at the same time be paid on that; they tax the property plus that, but in my report I had to handle it separately.

Q. You simply increased your organization and legal expenses by the amount that you allow for interest and taxes and the total makes $68,023.

A. That is right.

Q. And the total taxes covered by your report find their way into the valuation of the property?

A. The total amount of tax, including $1,429. added to organization and legal expenses.

Q. I want you to leave that out.

A. The total amount included in my reproduction values for the item of tax during construction is $72,759, from which for your pur-

pose you deduct $1,429. I have already given you under the head of organization and legal expense, and you have $71,330. left.

Q. The total amount of interest that you have figured that finally found its way into the value of the property?

A. The total amount of loss of interest during construction entering into my reproduction totals is $196,529. from which you deduct for your purpose $4,594. previously explained as belonging under organization and legal expense, and you have $191,935.

Q. Now, the total amount of going value you have got in.

A. $583,000. That appears in both reproduction and present value.

Q. Now the amount of capital?

A. Working capital, the net construction equivalent of working capital I have $142,000. but the actual amount as shown in my report when segregated as to the working capital, would
2902 have to include from the figures previously given to you $2,412. for taxes during construction and $6,484. for loss of interest during construction, properly chargeable to working capital.

Q. That would make in round numbers $150,000?

A. Whatever my report shows.

Q. But you have it there at $142,000.

A. That is without taxes or interest.

Q. Now the total amount that you have allowed for mains under pavements that finally finds its way into your total present value?

A. For the item of paving alone over mains and over services, I have included in my reproduction cost a total of $49,584. for engineering, casualty liability, supervision, omissions and contingencies, making up the 15 per cent previously explained, and $10,279. making up the total taxes during construction chargeable to paving, and $27,662. for loss of interest during construction. The total of the 15 per cent representing engineering, etc., and all the tax during construction, and all the loss of interest during construction which I have added in my reproduction cost to my net construction cost of tearing up and replacing pavement over mains and services is $87,525.

Q. But that is not the total I want.

A. That is the total for that head.

Q. I want the total amount that enters into your report under the head of paving as shown.

A. To this $87,525. you would have to add the net construction cost of paving, the net construction cost of paving over mains $277,574. of paving over house services $48,276. of paving lamp services, $4,708. or a total net construction cost covered by the item of paving of $330,558. Adding to this latter amount the total for engineering, etc., and taxes and loss of interest during con-
2903 struction, the figure $87,525. previously given, you have the total amount $418,083. appearing in my total reproduction cost under the head of paving.

Q. Well, I don't think you are giving that to me just as I wanted it. This figure $418,000 would be duplicating some of those other items?

A. $418,000 is the total which I understood you to ask for.
Q. I have already got the total taxes.
A. The net construction is $330,558.
Q. The engineering as I understand it, is all up in this other item?
A. Yes.
Q. That item $313,411. covered all the engineering?
A. Yes, whatever place you may find it.
The MASTER: I figured on $277,000; I think it was about 61.1 per cent per lineal foot for the pavement on an average.

A. The total included in the reproduction covering all the overhead the final figure appearing in the reproduction cost for paving is $418,083. You reduce that to the foot basis and I don't know where that would be.
Q. Where did you get your unit price for paving, say take asphalt, in Des Moines?
A. I got some figures here and compared them with figures in other cities.
Q. What was the figure you got here?
A. Street paving, asphalt, on 5 inches concrete, the price I got here ranged from $2 to $2.50 per square yard.
Q. That lowest price you have there is about 30 per cent higher than it is being done for right now?
A. Not as I understand it.
Q. Who did you get those figures from?
2904 A. There are four figures here from three firms.
Q. Who are the firms?
A. J. C. Mardis——
Q. He is not in the paving business.
A. I don't know his business, except that he is a contractor and he gives a price of $2.25 per square yard, all on large work.
Q. Mardis is a builder?
A. All right.
Q. Who else?
A. W. H. Brereton. He gives it at $2. to $2.50 per square yard. Charles Weitz & Sons, at $2.10 per square yard.
Q. They are not in the paving business?
A. I don't know.
Q. Neither is Brereton?
A. I don't know.
Q. You knew who was paving here?
A. I did not.
Q. You didn't make any inquiry of people that were in the business?
A. I supposed those people were. All I wanted to know was whether those prices were used here.
Q. In other words, you didn't care who gave you the prices: you would rely on it no matter whether they knew what they were talking about or not?
A. Is that what you gather from my remark? That is not what I said.

Q. What is your total Mr. Lea, of these items you just so kindly gave me without any evidence?

A. I don't know what you want now.

Q. I started with the $311,411.

A. That is the total for engineering, etc.

Q. Give me the total now of all those figures, engineering,
2905 legal organization—if you will just follow me and put the items down—contingencies, engineering and supervision and omissions $313,411.

A. Yes.

Q. Taxes and interest $68,023.

A. Yes; legal organization including taxes and interest.

Q. Taxes $71,330.

A. Yes.

Q. Interest during construction $191,935.

A. Yes.

Q. Going value $583,000.

A. Yes.

Q. Working capital, less taxes and interest, $142,000.

A. Yes.

Q. Paving $303,558. Now add those together.

A. (Witness computes). The total of these items is $1,700,257

Q. Now does that amount enter into the reproduction cost before the depreciation is taken off?

A. Yes, the depreciation is not taken out until the total reproduction cost is arrived at.

Q. Then the total reproduction cost as shown here on the first page of your report Exhibit 20, is what?

A. $3,641,714.

Q. Then if we reduce that amount by the $1,700,257 we get your reproduction cost of the property?

A. You certainly do not.

Q. What do you get?

A. You can only get my reproduction cost of the property by taking the total $3,641,714.

Q. I meant the net construction cost?

2906 A. You would have the net construction cost of the physical equipment alone, including real estate.

Q. That is what I am trying to get at, and that result worked out would be $1,941,457.

A. Yes, sir; that is right.

Q. Now, Mr. Lea, just a word or two and then I am through. You stated in your examination before, and quite emphatically too, that no engineer would undertake to place a value on property of this kind without considering omissions and allowing a certain per cent for omissions; you still adhere to that, do you?

A. Yes.

Q. You did not do it at Beatrice?

A. At Beatrice the case was radically different. At Beatrice I was not expected to render a detailed appraisement of the property except on such matters as were provided for in the agreement. Both

parties had agreed as to a very great many facts in the case, and they presented them to me to pass on.

Q. You made up for them what you claim a replacement value of the property?

A. Yes.

Q. And you say this: The replacement value of all the foregoing, with the exception of the real estate and the lease, must be added 15 per cent to cover the following items: engineering 5 per cent; interest during construction 5 per cent; legal and organization expense 3 per cent; casualty liability 2 per cent; total 15 per cent. You used the same figure exactly, 15 per cent, but you have nothing in it for omissions?

A. Yes.

Q. Could you take your report and give us the details with
2907 respect to prices on concrete and paving and excavation?

A. Yes.

Q. Your base figures?

A. Yes.

Q. Where did you get them?

A. I didn't get them all in one place; I have been over all parts of the United States and have been gathering this stuff for fifteen years.

Q. Whatever figures you got, whatever valuation you placed upon local prices, was due to either a party furnishing them to you or your approval of them in comparing them with what you knew in a general way over the country?

A. It was the latter in every case.

Q. So that your figures are made up in exactly the same way that engineers usually get at the value of a given piece of work in a locality?

A. Yes, sir.

Q. They are not based in any case upon exact prices for the locality where the property is?

A. That would be physically impossible, as you can see, by referring to the local contractors here; they do not agree on anything themselves as to the price of lumber etc. I got as to the details that enter into the buildings figures from three leading contractors, and they do not agree at all.

Q. So that what you have to do and what you did do, you took such prices as you could get?

A. I didn't take the highest nor the lowest.

Q. You took such prices as you could get locally and then you compared them with similar work in other places and similar prices
that you had verified, and if the local prices did not appeal
2908 to your judgment, if you thought they were too low, you did not accept them; if you thought they were too high, you did not accept them, and from them and all this other information you have, worked out what you thought would be a fair figure for the particular job?

A. That is true, if you put this addition to it; if a local price appeared too low to me, I wanted to know why; if there could be no

satisfactory reason given to me, I assumed the price was abnormal and I didn't use it.

Q. If it seemed too low you concluded it was not at all the general range of prices for that work but was a price which was probably affected by some local condition temporarily?

A. That applies also where the price is too high. I did not want to base a report on an abnormal condition on either side.

Q. Then in getting your unit values, if I understand you, you were obliged to rely upon quotations and statements of prices, locally and at other places, and such figures as were furnished to you, if any were furnished by the local company, and in that general way you fixed your unit prices?

A. I wouldn't want to leave it on as flimsy a basis as you have it. My figures are very largely from actual contracts, actual construction and actual quotations made.

Q. I am afraid we are getting into deep water there, because actual contracts here you actually ignored?

A. Certainly.

Q. If you had taken the actual contracts here some of your prices would have been a good deal different?

A. They would.

Q. If you had gone to the books of the company you would find actual contracts at a very recent date that did not compare
2909 with your figures?

A. If that is true, that is caused by an abnormal condition existing here.

Q. No, it was not abnormal either. It is safe to say is it not, in getting at these unit prices you were compelled to rely largely on quotations and on prices that you in the past had verified as being about reasonable for that class of work?

A. I was not compelled—I presume the company would have given me access to the books, but I did not want to know what the company said it was worth.

Q. Aside from that then, you take, as I understand you, you take such quotations as you can get, and such information as you got from Alvord's chart or schedule, and then use your own judgment finally to strike what you thought was a fair figure?

A. Alvord's chart played a very insignificant part in my estimates. I obtained that chart after I had arrived at my unit cost of pipe.

Q. It happened to agree?

A. It happened to show that my judgment had been all right as to the range of prices in the past.

Q. Of course, it wouldn't be fair to suggest even that finally your figures happened to coincide with Alvord's and that therefore you took them from Alvord's?

A. They do not coincide with Alvord's at all.

Q. Are they higher or lower?

A. I think they are higher; they should be.

Q. Just one thing further and I think I am through. You stated did you not that you made a report over at Taylorville?

A. I believe I said I made a report, a verbal report; I did make

a report to the company; I did make a written report to the
2910 Company.

Q. Have you got it here with you?

A. I am not sure. No I got to Taylorville and had to make a hurried report there, and my report was just a pencil memoranda which I dated, addressed, filled out and signed.

Q. You better look that up a little more.

A. I am very sure about it; I remember it distinctly, that is all there was in the way of a report at Taylorville.

Q. There was no trial there, as you said?

A. I didn't mean a trial before the court; I think I said before the board of arbitration.

Q. Were you present?

A. I certainly was present.

Q. For how long?

A. I think two days.

Redirect examination by Mr. GUERNSEY:

Q. In the first place, Mr. Marks complained more or less because he was furnished a blue print of these drawings instead of a white print. I would like to have you state whether the company furnished to you blue prints of these drawings or white prints?

A. No, they furnished blue prints.

Mr. BYERS: In connection with this cross-examination the defendants offer in evidence the Defendants' Exhibit No. 6.

Objected to on part of complainant as irrelevant and immaterial so far as this case is concerned.

Mr. GUERNSEY: Now one other thing. Will you at your convenience make up and file with the Master a memorandum
2911 showing as to each size of pipe the factors going into your unit price, and the unit price, including the cost per ton of pipe, which you took, f. o. b. Des Moines, the weight per foot, and then each item which you used to make up your unit price, and the unit prices?

A. Yes, sir.

Mr. BYERS: Of course if that is to be offered, we would want to examine the witness with reference to it.

Mr. GUERNSEY: I simply thought we would save a little time in doing this.

The WITNESS: I can make it now if you want it.

Mr. BYERS: The defendants at the close of the cross-examination of the witness Lea, with respect to his report which had been marked in this Complainant's Exhibit 20, in addition to the objections heretofore urged to the report, now object to it because it fully appears from the testimony of the witness himself that it is a mere memoranda of conclusions, arrived at by the witness by the use of other and different memoranda, quotations and tables of figures and prices, which has not been identified and which are not offered as evidence in this case. We further object to the exhibit for the

reason that it is largely hearsay and purports to give a record of operations of the complainant company's business, which is mere hearsay, it has not been identified by any witness, is not the best evidence and is incompetent and immaterial. And we move to strike the report from the record for all the above reasons.

Excused.

2912 W. F. DOUTHIRT, continuing his direct examination, examined by Mr. Byers, testified:

Q. You stated yesterday, Mr. Douthirt, as one reason for the allowance of the $10,000 so-called salary, which goes into the treasury of the United Gas Improvement Company, one reason for which you justified it, was because that corporation had performed services for the Des Moines Company it had never been compensated for; do you know just what compensation the United Gas Improvement Company has had out of the Des Moines business? I will hand you the minute books of the stockholders' meetings and let me see if you can tell me from them what dividends the United Gas Improvement Company has taken out of this business before 1906?

Same objection.

A. Well, without looking at the books, I would say that dividends are a return on capital and not a compensation for services.

Q. I know it is a return on capital. I want to have some idea what you considered a fair return on capital, and then what you think how much ought to be allowed?

Same objection.

A. The matter of a fair return on capital is probably a question of law——

The MASTER: Answer the question.

Q. I want to know what dividends the U. G. I. got from the Capital City Gas Light Company.

Same objection.

A. From the investment in stock of the Capital City Gas Light Company?

Q. Yes; I don't care how they got it.

Same objection.

A. How far back do you want me to go.

2913 Q. Well back to 1895 or '96, along there?

Same objection.

A. (Witness examines books.) I think I have found upon the minutes of the Capital City Gas Light Company the matter to which you refer. It is in volume 2 of the stockholders' and directors' minutes of the Capital City Gas Light Company, commencing about the middle of page 17 and is as follows:

Q. Is that the only thing you find where dividends have been declared?

Same objection.

A. The only place in the years 1895 and 1896.

Q. Well, I did not limit you to that; any time from that time on down to 1906?

Same objection.

A. I am not prepared to say that is the only place, except it is the only place down to 1897.

Q. Of course, I intended to cover all from 1895 down; but let us have that.

Same objection.

A. "Thereupon A. B. Cummins offered the following preamble and resolution:

Whereas, prior to this meeting the authorized capital stock of the Capital City Gas Light Company was Three Thousand (3,000) shares of One Hundred Dollars ($100.) each aggregating Three Hundred Thousand Dollars ($300,000.), and

Whereas the capital stock has been increased by amendment duly passed and adopted to six thousand (6,000) shares of One Hundred Dollars ($100.) each, aggregating Six Hundred Thousand Dollars ($600,000.) and

Whereas, the property of this company, real and personal, including its rights, franchises, privileges, contracts, immunities, is of the fair value of Six Hundred Thousand Dollars ($600,000.) after deducting its indebtedness, and

Whereas, the present stockholders are entitled to the said increase in capital stock;

Now, Therefore, be it resolved and the board of directors is authorized and directed to make a stock dividend of the said increased capital stock, to-wit: of three thousand (3,000)
2914 shares and to cause to be issued and delivered to each of the stockholders according to his holdings, as appears from the books of the company, his ratable proportion of the said increase of capital stock, which capital stock shall be issued fully paid up and non-assessable.

Whereupon A. B. Cummins moved the adoption of this resolution, which motion was duly seconded by W. B. Keffer and after being duly considered by the stockholders of the corporation was adopted by the affirmative vote of all the stockholders. Whereupon the presiding officer declared the resolution to have been unanimously passed and adopted."

Q. At that point, who owned the stock of the Capital City Gas Light Company at that time?

Same objection.

A. I can only refer to the record. While I was not in the employ of the United Gas Improvement Company at that time, I suppose they did.

Q. You know that; there is no supposition about it?

Same objection.

A. I am morally certain, yes.
Q. Mr. Cummins, he was simply the attorney.
Same objection.

A. Yes.
Q. That record means that at the time the United Gas Improvement Company received a dividend in amount and in value of the sum of whatever that three hundred thousand dollars in stock was worth?

Same objection.

A. No, I wouldn't say that.
Q. What would you say?

Same objection.

A. If the United Gas Improvement Company owned all the stock before the increase and then got all of the increase, I wouldn't say they had any more in value than they had before; simply
2915 the value was represented by more shares.
Q. How would it be when they come to figure returns and when they sell the property?

Same objection.

A. When they come to figure the returns, I don't think it would make any difference at all, because as I understand the matter, a return is figured on the present worth of the property and assets, irrespective of whether it is capitalized for two or three times that present worth, or whether it is capitalized for only a fraction of that present worth.
Q. Was this capitalized for more than its present worth?
Same objection.

A. To what do you refer?
Q. This property of the Gas Light Company at that time, when this increase of capital was voted.

Same objection.

A. Why, this was in 1896. I have no knowledge of the worth of the then present worth of the property and assets of the Capital City Gas Light Company, further than what appears upon the record.
Q. Would there be any difference between what they did at that time, except in the character of the property, between what was done there and the distribution of the $300,000 surplus, if they had it laying in the bank in dividends?

Same objection.

A. Decidedly.
Q. What would be the difference?

Same objection.

A. In the case of a distribution of a surplus lying in the bank, the stockholders would get cash and the assets of the company would be reduced by that amount.

2916 Q. How about this stock; did that affect the company in any way?

Same objection.

A. That did not affect the company, did not affect the assets of the company; it neither increased nor reduced the assets of the company. It simply resulted—

Q. Did it affect the liabilities in any way?

Same objection.

A. No; in a bookkeeping sense it doubled the liability on account of capital stock, but as a capital stock liability is carried in bookkeeping it is a liability which does not have to be paid.

Q. What was that stock worth in your judgment at that time?

Same objection.

A. I have no judgment on the subject.

Q. What was it finally worth?

Same objection.

A. I have no judgment.

Q. What did they finally get for it?

Same objection.

A. For the $300,000 then issued, or for the total $600,000 that was outstanding after the issue?

Q. Well, either way.

Same objection.

A. Well, specify please.

Q. Well, take it first the $600,000.

Same objection.

A. According to my best knowledge that stock was held until March 1, 1906, when the Des Moines Gas Company was organized, and then the Des Moines Gas Company paid out certain securities to the Capital City Gas Light Company in payment for its property and assets.

2917 Those securities were ultimately distributed to the owners of the $600,000 of stock of the Capital City Gas Light Company.

Q. How much did they get for the $600,000 in stock?

Same objection.

A. In what?

Q. In anything—money, property or bonds or whatever it was?

Same objection.

A. I will give these amounts in just as little time as possible. I want to take them from the record.

Q. You have some recollection about it without the record haven't you—I will not quarrel about that—if you prefer to take it from the record you may do so.

Same objection.

A. It all appears upon the record and it would seem to me the best way to answer the question would be to read part of the record.

Q. I want to get the amount in the concrete form; the amount now that the books show. They ought to show what was paid either in money or stock or bonds or security of the Capital City Gas Light Company for the property that we have been talking about and which is covered by their stock of $600,000?

Same objection.

A. By the records of the Capital City Gas Light Company stockholders' and directors' minutes, volume 2, and especially by the minutes of the directors' meeting of February 28, 1906, which commenced on page 123, it appears that the Capital City Gas Light Company received for the sale of its property and assets to the Des Moines Gas Company, subject to $400,000 bonds then outstanding, the following securities of the Des Moines Gas Company: $2,249,-
000. face value stock; $800,000 face value preferred stock con-
2917a tracts; $240,000 face value bonds of the Des Moines Gas Company. It further appears by the minutes of the same meeting that the Capital City Gas Light Company used $120,000 face value of the $240,000 face value of bonds of the Des Moines Gas Company in settling the indebtedness of the Capital City Gas Light Company, other than its $400,000. of mortgage bonds then outstanding, which indebtedness according to the records amounted to $105,526.49. So that after settling this indebtedness the Capital City Gas Light Company appears to have had on hand as the net proceeds of the sale of its property the following securities of the Des Moines Gas Company: $2,249,000. stock; $800,000. preferred stock contracts; $120,000. bonds.

Q. Of course I did not ask you to confuse that statement with that debt. I simply wanted the amount of the property bought. Of course, I can figure that out afterwards. The debt, as I understand it, was the debt of the Capital City Gas Light Company?

Same objection.

A. The $105,526.49 was the entire indebtedness of the Capital City Gas Light Company other than its $400,000. outstanding mortgage bonds; a part of the proceeds of the sale of its property it applied to the liquidation of that debt; and the balance of the proceeds remaining on hand were distributed to the stockholders.

Q. That did not reduce the amount it received?

Same objection.

A. But did reduce the amount finally distributed to the stockholders.

Q. Well, the total amount of these items that you have just given there is $3,289,000.

Same objection.

A. The total amount of the three items which were received as consideration for the property was $3,289,000.

2917*b* Q. Now, then, that was the amount in securities and stocks that the Capital City Gas Light Company received from the Des Moines Gas Company in March or February 1906?

Same objection.

A. Yes, and——

Q. Just a minute—out of that they paid a debt of $105,000?

Same objection.

A. Yes, $105,526.49.

Q. And that was a debt to the U. G. I.?

Same objection.

A. Yes.

Q. And they paid that with $120,000 of these bonds which were subject only to $400,000. issued ahead of it?

Same objection.

A. Yes.

Q. And the U. G. I. took $120,000. to pay its debt of $105,000.?

Same objection.

A. Yes.

Q. That left $3,169,000?

Same objection.

A. Yes, that is right.

Q. At that time the stock of the Des Moines Gas Company was all owned by the U. G. I. wasn't it?

Same objection.

A. Why, no.

Q. Who did own it?

Same objection.

A. It was owned at that time by the Capital City Gas Light Company.

Q. They didn't own the stock in the Des Moines Gas Company?

Same objection.

2918 A. Yes, they received it from the Des Moines Gas Company.

Q. After the transfer, but who owned it before?

Same objection.

A. Nobody owned it before.

Q. There was none issued—it was issued and transferred at once, was it?

Same objection.

A. Yes.

Q. Nobody owned it before?

Same objection.

A. No.

Q. And the U. C. I. owned it immediately upon its issue?

Same objection.

A. No, the Capital City Gas Light Company.

Q. I know, but the U. G. I. owned the stock back of the whole business?

Same objection.

A. Yes.

Q. And this $3,169,000. of securities that were turned over to the so-called Capital City Gas Light Company was distributed in the form of dividends, stock dividends to the U. G. I. Company?

Same objection.

A. I think the record is the best evidence of that.

Q. Isn't that so?

Same objection.

A. It appears by the record as follows: Resolved that upon receipt by this company of the shares of stock, bonds and preferred stock contracts to be delivered in payment for the property, real, personal and mixed, and the franchises of this company, the same, except as is required to pay and discharge the debts of the
2919 company, as set forth in the resolution next preceding, be distributed pro rata to or upon the order of the stockholders of the company, as a dividend in liquidation, such dividend being this day hereby declared and ordered paid as aforesaid.

Q. You just told the Master, Mr. Douthirt, you were at that time, as I understand you, a member of the board of directors of this corporation?

Same objection.

A. Which corporation?

Q. The Des Moines Gas Company?

Same objection.

A. No.

Q. You were secretary of the U. G. I.?

Same objection.

A. Yes.

Q. Now you tell the Master, will you, Mr. Douthirt, at that time when you say the record shows that the resolution passed directing the distribution, who it was finally distributed to and who got it?

Same objection.

A. The United Gas Improvement Company.

Q. Now, how much did they get?

Same objection.

A. They got $2,249,000. face value stock of the Des Moines Gas Company; $800,000. face value preferred stock contracts of the company; $120,000. face value of bonds in the same company, making the total which you have mentioned of $3,169,000. securities of all character.

Q. And it received also a $15,000 margin on its debt of $105,000?

Same objection.

2920 A. Well, if you want to put it that way.
Q. That is right, isn't it?

Same objection.

A. No, I wouldn't say so.
Q. Wasn't that $120,000. it got gilt edge security?

Same objection.

A. Will you define gilt edge?
Q. Well, worth a hundred cents on the dollar?

Same objection.

A. No, I don't think so.
Q. Why not, why wasn't it?

Same objection.

A. Well, I can only give you my personal judgment; I wouldn't pay that for it.
Q. What property was behing it—security—what do you say was the value of the property behind as security?

Same objection.

A. I express no opinion as to that; I entertain no opinion as to that.
Q. Why?

Same objection.

A. Simply because I don't.
Q. You know what property the Capital City Gas Light Company had?

Same objection.

A. Yes.
Q. Do you mean to say that the property of the Copital City Gas Light Company was not sufficient value at the time that transfer was made to make a $240,000. issue of gold bonds, subject only to $400,000. worth par?

Same objection.

A. It would depend on——
2921 Q. No, just answer that question.

Same objection.

A. Five per cent bonds—no.
Q. All right. Now this $3,169,000. of securities that the Capital City Gas Light Company received from the Des Moines Gas Company included in it 2,249 shares of stock that were issued over and above the preferred stock and the $240,000. in gold bonds?

Same objection.

A. You got your figures wrong: 22,490 shares.
Q. All right; so that whatever they may be said to have been

worth this bunch of securities, that is what the U. G. I. finally got out of its investment in the Capital City Gas Light Company up to March 1, 1906, isn't that so?

Same objection.

A. On February 28, 1906, the U. G. I. investment in the Capital City Gas Light Company was represented by $600,000. Capital City Gas Light Company stock. On March 1, the next day, that same investment was represented by these other securities; there was no change in the investment or property. Simply a change in the securities which represented whatever it was.

Q. Why was the change made, why was the book value of this property, counting the stock as having some book value, increased from $600,000 to over $3,000,000. over night, what was the purpose of doing that?

Same objection.

A. The Capital City Gas Light Company was capitalized as follows: $600,000. worth of stock; $400,000. worth of bonds; all were issued and outstanding. You will note there is a ratio of two-thirds which is the limit of indebtedness permitted by the
2922 laws of Iowa. There was no way in which the Capital City Gas Light Company could issue any bonds to raise money for additional improvements. The City of Des Moines was growing rapidly, and large sums were required for additions, betterments and extensions, and I may say in passing, one of the most important problems in the management of these public utilities in a rapidly growing city like yours, is the financing of their natural requirements for betterments and extensions and to keep pace with the growth of the town and reasonably meet the public demand for service. This old corporation, the Capital City Gas Light Company, was in a situation where it could not issue bonds to raise money for the purposes I have mentioned. Therefore, this reorganization was planned, the principal reason being, to provide in the course of the reorganization a new issue of bonds which would take care of the requirements of the future for some reasonable length of time. So this authorized issue of $1,500,000. was provided, of which $400,000. were set apart to retire the then existing bonds of the Capital City Gas Light Company which were not due and could not be paid until about two years or more later. $285,000. of bonds were issued to take care of certain construction, which is in part mentioned in the minutes, which had therefore been made—the million foot holder had been erected by the Capital City Gas Light Company, and had no means of paying for it, so the United Gas Improvement Company had advanced the money and carried it for the Capital City Gas Light Company. The Valley Junction property had been built, or certain real estate had been acquired, by the Capital City Gas Light Company, and that had to be carried by the United Gas Improvement Company. Other apparatus which I cannot describe in detail had been installed and were carried by the United
2923 Gas Improvement Company, because the Capital City Gas Light Company had no means of paying for it. All of these

things were paid for out of this $285,000. of bonds which was the only amount of bonds issued by the Des Moines Gas Company at the time of its organization; that with the $400,000. bonds set aside to take care of the outstanding bonds of the Capital City Gas Light Company, makes $685,000. Those $400,000. bonds have since matured and have been met out of the new bonds reserved for that purpose. The authorized issue of bonds of the Des Moines Gas Company was $1,500,000. of which $685,000. was issued or appropriated at the time of the organization, leaving a balance of $185,000. available for future betterments under the terms of the mortgage; and the principal purpose in planning this whole reorganization was to get the matter in shape where there would be securities of a salable character available for issue to take care of the requirements of the property, for improvement and betterments, to meet the demands of the public service.

Q. Why didn't the U. G. I. do that by increasing the stock and paying for its stock?

Same objection.

A. Because the U. G. I. like any other concern, has to get, in some way, from the companies in which it is interested a security which it can market and sell. It cannot and no other concern can go on indefinitely advancing money to companies in which it is interested and receive from those companies only an unmarketable security. It must receive at least a substantial portion of the advance which it makes in the security which is marketable, out of which it can recoup itself for the advances.

Q. Was there anything added to the value of that prop-
2924 erty in that over-night transaction?

Same objection.

A. Not a dollar.

Q. It was worth no more afterwards than before?

Same objection.

A. No, except it was probably put in shape where its security issues were such that it could be more readily provided for the future; whatever that was worth, added to the value.

Q. That is to say, you had put $22,490 shares of stock which did not represent a dollar in money, into circulation somewhere?

Same objection.

A. Well, I can't say that; we sometimes call that watering. I can't say that the securities in the aggregate, outstanding on the morning of March 1, 1906, were worth any more in the aggregate than the securities outstanding on February 28, 1906, except to this extent, that they were then in a condition where part of them could be realized upon, and further than that a provision was made in the authorized mortgage for the issue of the additional securities in the future, which would probably be marketable, to obtain the moneys required for betterments. What over that change may have added to the property was added; other than that there was none.

Q. In other words, by that transaction you were able to increase the obligations of the concern without furnishing any further property security; that's right, isn't it?

Same objection.

A. Do you include capital stock as an obligation?
Q. Everything.

Same objection.

A. Then I will answer your question yes.

2925 The MASTER: I have my doubts about it being an obligation. The Supreme Court has decided it both ways.

Q. If I understand you Mr. Douthirt, coming down to this moment, the United Gas Improvement Company received in exchange for its property, whatever it was, you say it was the night before this transfer, what represented $600,000.

Same objection.

A. I say it was represented by $600,000 worth of stock and entertain no opinion as to its value.

Q. The United Gas Improvement Company received for that property in addition to whatever it got out of the preferred stock and the bonds that were issued, the 22,490 shares of stock in the Des Moines Gas Company, that is right, isn't it?

Same objection.

A. That assumes that it got something out of the preferred stock contracts and the bonds.
Q. Well, did it?

Same objection.

A. You mean were they sold at that time?
Q. Did the United Gas Improvement Company get them?

Same objection.

A. It got them.

Q. Now, let me put it in another way. In addition to whatever it received of the $800,000 preferred stock contracts, and whatever, if anything, it received out of this $240,000 gold bonds, it received 22,490 shares of stock of the Des Moines Gas Company?

Same objection.

A. I think there is a little confusion in the language of that question; I don't mean to say it is intentional, but I think there is.

2926 Q. I don't catch it just now myself. What I mean is the United Gas Improvement Company got these 22,490 shares of stock in addition to the other items, whatever they were?

Same objection.

A. Yes, it got 22,490 shares of stock in addition to $800,000 of preferred stock contracts and $120,000 bonds.

Q. And it still has that stock?

Same objection.

A. Yes.

Q. Now, what is the Capital City Gas Light Company's stock worth, what was it worth on the day before this transfer to the Des Moines Gas Company?

Same objection.

A. I entertain no opinion.

Q. Was it worth anything?

Same objection.

A. I have no doubt it was worth something.

Q. Give us your judgment as to what it was worth?

Same objection.

A. I have no judgment.

Q. What was its book value?

Same objection.

A. I have no knowledge.

Q. Haven't you looked that up?

Same objection.

A. No. You mean its book value on the books of the Capital City Gas Light Company?

Q. Yes, sir.

Same objection.

A. No, I haven't looked that up.

2927 Q. What is that stock worth now?

Same objection.

A. Of the Capital City Gas Light Company?

Q. No, the Des Moines Gas Company stock?

Same objection.

A. I entertain no opinion on that.

Q. Is it quoted anywhere

Same objection.

A. It is not.

Q. Is it for sale any where?

Same objection.

A. No.

Q. It is all owned by the United Gas Improvement Company?

Same objection.

A. Yes.

Q. You are the secretary of the company?

Same objection.

A. Yes.

Q. And a director?

Same objection.

A. No.

Q. When did you cease to be a director?

Same objection.

A. I never have been a director in the United Gas Improvement Company.

Q. You are a director however in the Des Moines Gas Company?

Same objection.

A. Yes.

Q. And the secretary of the Des Moines Gas Company?

Same objection.

A. Yes.

2928 Q. And you can't give the Master any idea of the value of those 22,490 shares of your company's stock?

Same objection.

A. I said I never formed any opinion.

Q. You haven't any opinion about it now?

Same objection.

A. No.

Q. You don't know whether it is worth any more or less than in 1906?

Same objection.

A. I should say it was worth more now than then.

Q. How much more?

Same objection.

A. I don't know.

Q. A thousand dollars more?

Same objection.

A. I don't know.

Q. Ten thousand dollars more?

Same objection.

A. I don't know.

Q. A million more?

Same objection.

A. I don't know.

Q. Now, Mr. Douthirt, I wish you would tell me how your company manages its finances in this respect. If I should want to know just how much money went into the treasury of the United Gas Improvement Company from the Des Moines Gas Company each year, where would I go to ascertain that fact?

Same objection.

A. The books of the Des Moines Gas Company.

2929 Q. Would they show it?

Same objection.

A. Yes.

Q. In what way do they show it?

Same objection.

A. Any payment made to the United Gas Improvement Company will show there.

Q. Payments, what do you mean, what for, what way?

Same objection.

A. There is on the books I think a running account between the two companies—something like standard forms of stationery supplies, and of that nature.

Q. This company here can't spend any money at all except in small sums, $50 or under, without the authorization from the Philadelphia Company—where is the money that has been received by the Des Moines Gas Company from its sales of gas in the last five years?

Same objection.

A. Where is it?

Q. Yes; where will it appear on the books as having finally gone into somebody's account other than the Des Moines Gas Company?

Same objection.

A. Its ultimate disposition will appear on the books of the Des Moines Gas Company.

Q. In what way—suppose the Des Moines Gas Company on the 31st day of last December had $135,000 in money, what would it do with it?

Same objection.

A. Why, if it had bills that were due and were to be paid, it would pay them. If they had any other——

Q. What do you mean by bills?

Same objection.

2930 A. Bills for materials.

Q. I mean after the payment of all local charges had been taken care of and they had $125,000 left, what would they do with it?

Same objection.

A. If they had no debts of any kind that were proper to be paid, they would keep it.

Q. Would they keep it here or send it to the United Gas Improvement Company?

Same objection.

A. Oh, I see what you mean now. They would send it to the United Gas Improvement Company.

Q. What would they do with it?

Same objection.

A. The treasurer of the Des Moines Gas Company has a bank account in Philadelphia in the name of the Des Moines Gas Company, and sometimes funds are transferred to that account, especially when the period is approached for the payment of interest on bonds or something of that sort. The money is payable at a Trust Company in Philadelphia, for interest on bonds. The practice of the treasurer is to accumulate in the Des Moines Company's bank account in Philadelphia——

Q. Mr. Lilley is the treasurer of the Des Moines Gas Company and he is the treasurer of the United Gas Improvement Company of Philadelphia?

Same objection.

A. Yes, sir.

At this time an adjournment was taken until 1:30 P. M.

2931 130 P. M., THURSDAY, *August* 24, 1911.

W. F. DOUTHIRT being continued on direct examination by Hon. H. W. Byers, testified as follows:

Duplicate copies of defendant's exhibits numbered 2, 9, 10, and 11 are marked and identified and these duplicate copies may be used by either party with the same force and effect as the originals and are to be considered in evidence as fully as the originals.

Q. Will you turn to page 171 I think it is in that minute book No. 2, stockholders' and directors' and tell me whether on that page there is anything there about pipe. I am not sure that is the book.

Same objection.

A. Yes, sir.

Q. I wish you would read those items, that is where it begins four inch pipe $31.40, six inch pipe $30.45.

Same objection.

A. Yes, sir.

Q. And 8 inch $30.45?

Same objection.

A. Yes, sir.

Q. Does that mean that was the price of that kind of pipe at that time?

Same objection.

A. I think the best I can do is to read the minute to you.

Q. I wondered if you know independent of that?

Same objection.

2932 A. No, I don't keep track of the price of pipe.

Q. Do you suppose you can tell either by reading that

entry or that meeting whether that represented the cost of that sized pipe at that time either here or somewhere else?

Same objection.

A. The best I can do is to read you the entry.
Q. Will you read it into the record?

Same objection.

A. Volume 2, stockholders' and directors' minutes Capital City Gas Light Company, directors' meeting of January 22d, 1906, contains the following, there is a heading here cast iron pipe, 1906 requirements. Then follows, approved action of officers in contracting with United States cast iron pipe and Foundry Co., for 60,000 feet, four inch cast iron pipe at $31.45 per ton and 20,000 feet six inch at $30.45 and 10,000 eight inch at $30.45 amounting to approximately $33,303.75.
Q. That probably meant laid down here didn't it?

Same objection.

A. I don't know.
Q. Is there any way you can tell that from the minutes?

Same objection.

A. No.
Q. You have no independent recollection about when you passed upon it if you did pass upon them?

Same objection.

A. No, I was not personally at that meeting and I have no recollection of that.
Q. I suppose these contracts probably are in existence so that we can get them and ascertain that fact or if you will have someone ascertain it for us.

2933 Same objection.

A. I have no doubt the contracts or documents bearing on the transaction are in existence.
Q. And will show whether that is the price laid down here or whether it was the price f. o. b. somewhere else?

Same objection.

A. I would think the contracts would show that.
Q. You didn't take the time or have anyone else take the time to make me up a statement covering the donations and contributions of the last four or five years?

Same objection.

A. I made some inquiries about that and learned or understood that the city's accountants had covered the matter very fully and I did not—it occurred to me perhaps you did not know that and when you did it would be unnecessary to duplicate the work.
Q. It must have be-n then the last day that the young man was here?

A. I don't know, I simply thought perhaps you did not know that and when you did know it you would not want to have unnecessary — performed so went no further.

Q. Now in going through the book there last night after court adjourned it seems that, if we can read the record right, that practically all donations and contributions and in fact the lodge dues in the different lodges of Mr. Haines are paid out of the operating expenses of the gas company, for instance, $500 to the Des Moines Club and $50 dues to some other organization all that class of personal expenses of Mr. Haines and contributions of that kind have been charged to the cost of making gas have they not?

Same objection.

2934 A. I would have to read the record to see what is there on that subject.

Q. Haven't you looked that over?

Same objection.

A. Not with that in view, I would be glad to do it if you liked.

Q. I have been assuming most of these minutes you either helped make them or wrote them up or approved of it afterwards?

Same objection.

A. That is true, but it is also true with a good many other companies and I have made no effort to carry these details in mind because they are always where I can refer to them.

Q. What is your judgment or personal opinion about the justness of that sort of a charge?

A. My judgment of course is that they are proper charges otherwise I would not have voted for them at directors' meetings which I no doubt have done as the records will disclose.

Q. What is the salary of the president of the Des Moines Gas Company now?

Same objection.

A. It appears by the—oh yes, I recall $10,000 a year.

Q. So there was some raise in it and you were mistaken yesterday in stating no change was made in his salary from manager to president?

Same objection.

A. No, I think not. I think his salary as manager was fixed at the same figure some months ago.

Q. When was it changed from $7,500

Same objection.

A. If you will let me have the records perhaps I can find it. Here it is at the meeting of February 27, 1911.

2935 Q. Up to January 1, 1911, Mr. Haines' salary was $7,500 was it not?

Same objection.

A. That is my recollection. The book you have before you will show.

Q. Well $625 a month?

Same objection.

A. That would be $7,500 a year, yes.

Q. And in February of this year it was increased $2,500, the increase to be effective from and after January 1, 1911.

Same objection.

A. Yes, that is my recollection, I see you are reading the record there.

Q. So that at the time then that Mr. Haines was elected president or about that time this change was made in his salary?

Same objection.

A. No, Mr. Haines was not elected president until July 1, 1911.

Q. So the raise was made before he was elected president?

Same objection.

A. Yes, sir.

Q. When that $2,500 was added to his salary to begin on the first of January did Mr. Bodine's $2,500 continue?

Same objection.

A. Yes, sir.

Q. Didn't make any change in that?

Same objection.

A. No.

Q. Now to get back to what I was trying to figure out, I don't find the exact item, but I will state it as I remember it the $500 fee to the club here in Des Moines, Mr. Haines' membership in a
2936 club not a public club in any sense, but a sort of a private club, is it your notion that a charge like that ought to be paid by the gas consumers and charged to operating expenses?

Same objection.

A. Let me see the record please.

Q. I told you I did not have it right there, I have lost the page but I know it is there.

A. Do you remember about the date?

Q. Well I think it is within a year or year and a half anyway. I can get another one there that will answer my purpose if you can't find that one. On page 192 here is a record like this authorize a donation of $1,000 towards the Young Men's Christian Association, $150,000 building, fund to be transferred from the unexpended balance of $2,000 approved as donation to the Methodist and Mercy hospital. Now is it your notion that a donation of that kind is proper to be charged to the cost of making gas to be paid by the consumers?

Same objection.

A. Yes, that is generally recognized in the classification of accounts by the—that is so generally recognized that it appears in the classification of accounts of the Wisconsin commission and the American Gas Institute.

Q. Of course that was not what I asked you, I simply wa-ted *yo* know your notion about it, your judgment about it and the reason that you have pursued that method. Now do you have the same notion about lodge dues and club fees and the personal expenses of your manager of that kind, is that proper to be charged to operating expenses?

Same objection.

A. I would put the matter of lodge dues and fees to clubs
2937 on rather a different basis but my notion as you express it would be the same.

Q. What different basis would you put it on?

Same objection.

A. This basis that one of the things that a public utility should strive to do is to create as far as possible a kindly feeling towards it on the part of the community and one of the means to that end is for its principal officer to meet and become acquainted with as many people in the community as is possible.

Q. To make himself popul-r?

Same objection.

A. And a means to that end is the joining of such organizations as you have mentioned.

Q. And I suppose one of the reasons is that that will give him a standing and popularity in the community as a manager.

Same objection.

A. The more friends a manager of a public utility can have the wider his acquaintance can be the better it is apt to be for the utility.

Q. And it was partly on that account he was given this extra $2,500 salary too I suppose and that is charged to the consumers in the cost of making gas?

Same objection.

A. No, he was given that extra $2500 salary because the directors thought he was earning it.

Q. Earning it how, by getting customers?

Same objection.

A. Earning it in the management of the property of which Dr. Marks has spoken so highly.

Q. You mean in getting business for the concern?

2938 Same objection.

A. No, everything that goes to good management. Good management consists in operating a property as economically as is consistne *tiwh* good results, giving the good service of which Dr. Marks Spoke and also in increasing business as much as can be eone along proper and legitimate lines.

Q. Well Dr. Marks was talking about his ability as a commercial manager more particularly wasn't he?

Same objection.

A. Yes, and he is also very efficient as an operating man. His early training was scientific and I think he would be regardee as a very efficient operating man aside from his abilities in a commercial di-ection.

Q. It is safe to say any way is it not that all of the contributions that have been authorized and appear upon Exhibit No. 27 for the last five years in the way of contributions to organizations in Des Moines, both charitable and others and such lodge dues and club fees as are authorized here were all chargee up to operating expenses and went into the cost of making gas?

Same objection.

A. Yes, sir.

Q. And all such items as this very recent one here that is found in your record signed by yourself, or rather signed with your name under date of June 26, 1911, an authorizee contribution of $200 a year to the convention fund of the Commercial Club of Des Moines, all such things as that would be charged to operating expenses.

Same objection.

A. Yes, the classification provides for that.

2939 Q. Now I wish you would take what the reporter has marked defendant's exhibit 28, containing ten typewritten pages written on but one side of the page and under date beginning with directors' meeting April 24, 1911, and covering directors' meeting of the Des Moines Gas Company May 22, 1911, June 26, 1911 July 10, 1911, and July 24, 1911, and state if you will what that exhibit contains in a general way a-d what it is, I don't mean to give the contents of it, but in a general way descriptive of it.

Same objection.

A. It contains the draft of minutes of the directors' meetings of the Des Moines Gas company held on the dates mentioned which have not yet been entered of record in the minute book.

Q. So that Exhibit 28 taken in connection with Exhibit 27, comprises all of the records of the me-tings of the stockholders of the Des Moines Gas company and the board of directors of the Des Moines Gas company from the begij-ing of its existence in March 1906 to and including the last meeting of the board of directors in July 1911.

Same objection.

A. July 24, 1911, yes, sir.

Q. I have the items here I could not find a moment ago and one of them is on page 172 of the book here under May 19, 1909, and is a $500 contribution to the Y. W. C. A. building and other is a subscription of $500 to some club during the first five years, do you know what club that refers to? That was Mr. Haines' personal membership in *th*the club here was it not?

Same objection.

A. Well I don't know what significance you attach to the adja-tive personal.

2940 Q. Well it was his membership, the U. G. I. or Des Moines Gas Company did not join the club, did it?

Same objection.

A. No, Mr. Haines did.

Q. It also covered his annual dues of $50 a year in addition to the $500?

Same objection.

A. Yes, I think it says there the 500 is to be paid during the period of the first five years, that would be a hundred dollars a year I suppose or at least might be spread over five years.

Q. Unless he paid it all at once, I suppose you don't know as to that?

Same objection.

A. Yes, I know in a general way.

Q. That he did not?

Same objection.

A. I think it has not all been paid yet, because I have talked to some of the gentlemen who are interested in building the club and I understand that the subscriptions are not all called in but I have not examined the books of the company to see about that.

Q. Now in this book defendant's exhibit 27 and Exhibit 28 wherever the entry is made authorizing the expenditure of money for some stated purpose by the Des Moines Gas Company, does that mean that sum of money referred to in the statements represents the estimated costs of the improvement or the actual cost?

Same objection.

A. Represents the estimated cost of material and labor.

Q. And after the work is completed and the exact cost ascertained then that item is carried on into the books and shows finally
2941 the exact cost does it not?

Same objection.

A. Books of account, yes.

Q. And reports are made to the treasurer of the United Gas Improvement Company who is also the treasurer of the Des Moines gas company showing the actual amount of money expended for these different things that are covered by the entries in these two exhibits?

Same objection.

A. No.

Q. In what respect am I in error in that question.

Same objection.

A. I think that no such reports are made to the treasurer.

Q. I notice all through the book here that the report to the Des Moines Gas company of expenditures are made by the treasurer of the company is that right?

Same objection.

A. Oh yes I see what you mean. You mean the betterment statements that are made up of the issues of bonds. Yes, sir.

Q. Well whatever they are made up for?

A. Yes, sir.

Q. These statements are based upon the actual cost of the improvements and betterments that have all theretofore been authorized.

Same objection.

A. Cost of material and labor.

Q. Yes, I meant cost of material and labor.

Same objection.

A. But the treasurer's statements to which you refer are prepared from statements sent to him from the books of account and not from any reports on completion of the work.

2942 Q. The trouble with my question was that in it I stated the reports were made to the treasurer, was that the objection to the question?

A. Yes, sir.

Q. Well I suppose reports are made to the treasurer, aren't they?

Same objection.

A. Not the sort of reports that are covered by the question.

Q. Reports of expenditures, aren't they made to the treasurer?

Same objection.

A. Well the expenditures are recorded in the books of account and then——

Q. You have at both ends so the treasurer there does not need a report made up from the records because he has, as I understand you a duplicate ledger there at Philadelphia?

Same objection.

A. Well, yes, it is a duplicate ledger, what we call a trial balance ledger so kept he can get from it the information necessary to make up these reports of betterment expenditures which he makes to the board.

Q. Under date of April 24, 1911, in the minutes of the meeting of the board of directors for that day on page 2 of Exhibit 28, I find this statement, approved authorizations for expenditures amounting to $25,423.26 as follows: Then follows the words street mains, length, size, street and then follows a large number of items beginning with 96 feet four inch-, day, name of the street, $70.04. While you are here I would like to have you explain to the Master just what is involved in that item 96 feet four inch main, $70.04. I have had that worked out here and it gives us 72.95 cents a foot.

Same objection.

2943 A. What was involved in that particular run of main I could not tell from what appears on the record.

Q. What I am trying to get at is, that it would not be either safe or proper to conclude from an entry of that kind that the cost of hat pipe alone was $70.04?

Same objection.

A. Cost of the pipe alone?
Q. Yes, unlaid.

Same objection.

A. Unlaid, oh no.
Q. That is what I am trying to get at just what it does cover in addition to the probable cost of the pipe?

Same objection.

A. Well it no doubt covers the cost of laying too.
Q. And specials if there are any?

Same objection.

A. Specials if there are any yes.
Q. And all of these other items of expenses like cartage, storage and that class of expenses?

Same objection.

A. Yes, I think it would include all of that. All of the expenses which may properly be called material and labor.
Q. In other words where these authorizations are shown through Exhibit 27 and Exhibit 28 and the amount authorized to be expended appears the amount is simply the estimated cost of the finished job.

Same objection.

The estimated cost of the material and labor necessary to finish the job.

Q. And that is true is it of the pipe that appears on Ex-
2944 hibit 28 under date June 26, 1911, where it says approved authorization for expenditures amounting to $11,074.60 and then under the heads of mains and size it shows 8 inch mains, that is shows some 8 inch mains, some 12 inch mains, some 2 and 3 inch, some 6, some 10 and some 20.

Same objection.

A. In the list which you have last mentioned which appears in the directors' meeting of June 26, 1911, you will note that some of the items are different, for example the item 450 feet 2 and 3 inch main on west Second street $30.00 does not mean cost of laying that main, but cost of barring over as indicated on the face of the record, which means to go over that stretch of main and drive a crow bar down occasionally to see if there are any leaks there. That does not mean laying main, could not lay 450 feet of main for $30.00. In the next item 2000 feet of four inch main on 38th street $200, that is marked there lowering, that means changing the grade or position of that run of main and the same thing applies to 850 feet of ten inch main on University street $625. That is not the cost of laying the main, that is the cost of lowering the main probably to conform to a changed grade of the street, something of that sort. Then here is another item 2,250 feet of 20 inch, four inch,

six inch and three inch on Mulberry street $115. That is simply barring for leaks over there.

Q. Now as to all the other items the question would be answered in the affirmative would it not?

Same objection.

A. I would think so, yes, sir.

Mr. BYERS: Defendant offers defendants' Exhibit 28 in evidence in connection with Exhibit 27.

2945 Exhibit 27 is the book heretofore referred to as the Des Moines Gas company No. 1 stockholders' and directors' minutes beginning with the entry under date of March 1, 1906 and ending with the entries under date of April 4, 1911.

Cross-examination by N. T. GUERNSEY, Esq.:

Q. Mr. Douthirt you sta-ted to explain why a 5 per cent bond of the Des Moines Gas company in 1906 although the company was not bonded for an amount that was large would not be worth par and you were interrupted. Will you complete that explanation?

A. Because many other elements or considerations besides the property security back of the bond enter into and influence its market value. One of the most important considerations is the rate of interest. Another is the length of time the bond has to run. Another is the provisions of the mortgage or deed of trust regarding future issue of bonds of the same authorized issue. Another is whether or not there are any prior liens. Another is the character of the property which is security for the mortgage and the use to which that property is devoted. Taking all of these things into consideration I was of the opinion and still am that the $285,000 bonds of the Des Moines Gas company at the time they were issued were not worth par in the market.

Q. In several questions that have related to these extraordinary expenses,—expenses extraordinary as they are classified here, General Byers has referred to lodge dues. Now as a matter of fact are there any lodge dues so far as you know included in these

2946 items?

A. Not so far as I know. I assume that General Byers was reading correctly from the record.

Mr. BYERS: I did not claim to read any lodge dues from the record.

Q. I find this in the classification of accounts of the American Gas Light Association, account D-4, expenses extraordinary, the heading, and following that "This account is intended to cover the cost of all donations and unusual expenses." I will ask you whether generally that these public service corporations in their management and operation such expenses as these which General Byers has referred to are incurred.

A. My experience is that they are.

Q. And they are also incurred by other business in other communities?

A. I think so.

Q. There has been reference here to donations to the Greater Des Moines Committee for instance. Those are donations such as are made by every prominent business concern in Des Moines are they not?

A. I presume so.

Q. And the same way with the Y. M. C. A., or Y. W. C. A. I guess this was?

A. I so understand.

Q. Including public service corporations and other business concerns?

A. That is my information.

Q. And in this classification I find that under the account which referree to D-5 expenses extraordinary, there are the following items indicating things to be charged to that account: "Annual dues to Board of Trade, stoves and other appliances donatec
2947 to churches or charitable organizations including insulation, subscriptions to public enterprises or entertainments, such as fairs, parades, public balls, etc., tickets for church and other benefits, unusual expenses." Now I wish you would state whether or not it is the practice of gas companies usually in the United States to charge these expenses extraordinary to this account as a part of their operating expenses.

A. It is. The classification you hold in your hand is evidence of that.

Q. That is this classification is the standard classification showing how they keep their accounts?

A. It is.

Q. I find in the Wisconsin classification an account headed miscellaneous general expenses and a direction to charge to this account "Subscriptions, donations and gratuity." Do you know whether the Wisconsin Commission recognizes expenses of this kind as a part of the legitimate operating expenses of public utilities?

A. It does and the classification published by the Commission from which you have just quoted is evidence of the fact.

Q. You were asked whether the minute books containee a truthful statement of who owned the stock of these two corporation-, and as I understood you said that the statement there might be correct and might not. How did you mean to be understood there?

A. I meant to be understood in this way that the minute books wou-d show a truthful statement of the stockholders as they appeared of record on the stock ledger of the company but might or might not show whether the persons in whose name the stock was record- were the beneficial owners of the stock. It is not unusual for stock to stand recorded in a name other than that of the
2948 beneficial owner. That was what I meant by that language.

Redirect examination by Hon. H. W. BYERS:

Q. Now Mr. Douthirt you did not understand me to claim that it was not usual for gas companies to charge these expenses to operating expenses or cost of gas, in fact that is just what we do claim, but I wondered if you know what you were talking about when

you said that practically all of the concerns of this town did that or whether you were just speaking general-y without knowing any specific case at all other than your own.

Same objection.

A. I have been told what other concerns of the town are doing and I accepted the statements made to me as true. I have not examined their books.

Q. Mr. Guernsey I suppose told you that was common in public service corporations?

Same objection.

A. No, I heard it from other sources besides Mr. Guernsey.

Q. And so it was on that sort of information that you say that it is common here in Des Moines?

A. Yes, I have heard that.

Q. I wanted to know whether it is common, I would like to know myself?

A. Yes, I have heard these statements made in a way in which I have no reason to question the accuracy and therefore accept them as true.

Recross-examination by N. T. GUERNSEY, Esq.:

Q. It appears that these things were authorized by the board of directors. Now is my assumption that before action by the
2949 board of directors this matter was submitted with recommendations one way or the other, correct?

A. It is.

Q. Now what is the fact as to whether the manager when he submitted these things to you in order to induce the board to approve them advisee the board that other like concerns in Des Moines and other business concerns in Des Moines generally were contributing to these objects or doing the same thing?

A. I have a very distinct recollection in that respect about one of the important contributions mentioned there. That is the subscription to the Greater Des Moines Committee. I remember—I have a decided impression that when the manager recommended that contribution to the board of directors he informed the board of a number of other contributions being made to the same committee and gave the names of some of the concerns making them.

Q. In the analysis of the accounts that has been introducee in evidence of the operating expenses, the actual amounts paid on these accounts will appear opposite the heading expenses extra, will it not?

A. In the classification of accounts followed by the Des Moines Gas Company which is the American Gas Light Association classification such payments would be charged to the account entitled expenses extraordinary as appears from the classification which has been quoted here this afternoon so that the account expenses extraordinary or as it is abbreviated in the exhibits expenses extra, would

show the amounts expended each year for all purchases under that account for all purposes mentioned in the classification would come under that account.

2950 Redirect examination by Hon. H. W. BYERS:

Q. Just one thing further while you are here, what is the capital of the United Gas Improvement Co.?

Same objection.

A. You mean the capital stock outstanding?
Q. Yes?

Same objection.

A. It is an odd amount and therefore I cannot give it to you exactly, but it is in the neighborhood of 55 millions.
Q. And can you give us without going into the details and without the names of each one the number of gas light companies in which it is interested?

Same objection.

A. I have never counted them general, I would have to go over the list and count them up.

Witness excused.

Here the further hearing of the case was adjourned until 9:30 a. m. Monday September 11, 1911.

2951 Monday Forenoon Session.

SEPTEMBER 11, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of Defendants resumed as follows:

GEORGE D. DOBSON, sworn on part of defendants, examined by R. L. Brennan, Esq., testified:

Q. Where is your residence?
A. In Des Moines.
Q. How long have you lived in Des Moines?
A. Since 1892, practically all the time, with the exception of a few intervals when I have been out of the city on engineering work or in obtaining my education.
Q. What is your profession?
A. Civil engineer.
Q. How long have you been practicing your profession?
A. About eight or nine years.
Q. Are you a graduate of any school?
A. I am; of the engineering department of Cornell College.
Q. When were you graduated?
A. In the spring of 1903.
Q. Have you practiced your profession in and about the city of Des Moines since that time?
A. Most of the time.

Q. Have you held any official position in the city, and if so, tell the Master what position you have held.

A. I have. At the present time I am in charge of the bridge work of the city, bridge engineer; and for two years, from 1906 to 1908, I believe are the dates, I was City Engineer. Previous to
2952 that time I was employed in various positions in the city engineer's department.

Q. Was that work such that you came in contact with street construction to any extent?

A. It was.

Q. Tell the Master in a general way what experience you gained in that direction prior to the time you became city engineer in the city of Des Moines?

A. The major portion of the work prior to the time I became city engineer was not directly concerned in the street improvements of the city. The major portion of it perhaps was of concrete construction—bridge and culvert, and the street work was the smaller portion of that work. After I became city engineer I of course had full charge of the preparation of plans and specifications for all public improvements which the city of Des Moines had to make, and in a general way had charge of all the improvements made in the streets of the city.

Q. And the improvements to which you refer included sewers, paving, curbing and public improvements of that character?

A. Yes.

Q. Now, from 1906 until 1908, during your term of office as city engineer, did the city to any extent improve its streets?

A. Yes, there was fully an average amount of public improvements if not more than the average at that time.

Q. Were any of the principal streets of the city improved during that period, if so, tell us what streets were improved?

A. As I recall it we paved West Locust Street from Second street to about Ninth street with creosote wood blocks.

Q. On what kind of foundation?

A. On concrete foundation; that is to say, we did not re-
2953 move the old foundation which existed; that consisted of natural cement. We cleaned that off and resurfaced it with Portland concrete to bring it to a true grade and laid the new work on the new surfaced foundation. We paved portions of Walnut Street, as I recall, from Eighth to Tenth or Ninth to Eleventh, about two blocks, at the upper end of the business district, and resurfaced what had been brick pavement with asphalt, bringing it up to grade in the same manner I have referred to in reference to the creosote wood block. We paved Court Avenue from the river to the county court house with brick block, resurfacing the old natural cement concrete base and in some places a macadam base with Portland cement concrete, and laying on top of that the brick block pavement with Portland cement filler. We also paved East Walnut Street with the same class of pavement from the river to East Fourth or Fifth Street, as I recall; and Second Street, I believe, in East Des

Moines from Grand Avenue north for several blocks; and Des Moines Street from about First street to Third or Fourth with brick block pavement. That was all new work on a Portland cement concrete base, as I recall it. We paved Kingman Boulevard, I believe, from Twenty-fourth Street to Park Lane, which corresponds with about Forty-seventh Street with Asphalt pavement. We paved Ascension street from Fourth street to Sixth street with tar macadam.

Q. Tar macadam laid on what kind of foundation?

A. Cinders; that is to say, the construction consisted of six inches of cinders, four inches of coarse crushed stone and two inches of wearing surface or binder stone, mixed with tar.

Q. Was any portion of Woodland Avenue paved during your administration?

A. We paved, as I recall it, Woodland Avenue from the east entrance of the cemetery west to Twenty-eighth or Twenty-
2954 ninth streets, though I am not positive in regard to that. I know we had made certain improvements on the street preparatory to paving, such as curbing and grading, but I would not be positive that we had actually laid the paving on that street.

Q. Now with regard to the curbing and guttering of streets in the city during the time you have been connected with the city, what has been the character of the material which has been used in the construction of curbs and gutters?

A. The curbs and gutters have been constructed of Portland cement concrete altogether, so far as I recall. Some were laid on a gravel foundation and some of them were setting directly on the natural soil.

Q. Have you used to any extent what is termed as a combination curb and gutter?

A. Yes, that is used a good deal.

Q. That consists of concrete, does it not?

A. That is of concrete, sometimes surfaced on the top of the gutter with a richer mixture, and sometimes it is all built of the same mixture.

Q. What is the proportion?

A. For one course mixture it is one part cement to three parts of sand and gravel. If they use two course work they generally use about one of cement and four of gravel, with a one to two or two and a half face, but that sometimes varies, depending on conditions.

Q. You are familiar with the specifications for a concrete base for street improvements, are you, in the city of Des Moines?

A. Yes, I am in a general way familiar with the concrete specifications on the base of pavements.

Q. What is the thickness of the concrete base that is ordi-
2955 narily used and usually used in the City of Des Moines for street improvements on the principal business streets?

A. Six inches is the ordinary thickness of base for new work on our business streets.

Q. And in the residence sections of the city?

A. At the present time five inches is considered standard thickness for the residence streets.

Q. How long has the five inch concrete base been used in the residence section of the city?

A. Probably not over four years. It may have been used to a certain extent before that, but for a great many years six inches was the universal standard in both residence and business districts.

Q. What proportions are used in making a concrete base?

A. For Portland cement, one portion of cement, three parts of sand and six parts of crushed stone; or one part of cement and six parts of properly graded gravel and sand mixed—what is sometimes called concrete mixture, which is obtained from the sand pumps at the river.

Q. In what manner is a street brought to grade, is that done usually by the public or the contractor who has the contract for the pavement or is it done by the city?

A. The city does the preliminary grading, putting the street approximately to grade with the finished pavement. It is then turned over to the contractor and he removes the same amount of dirt that is replaced with the pavement; that is to say, the pavement displaces a certain amount of dirt, and that is the dirt the contractor removes.

Q. Have you had experience in grading streets and constructing excavations and things of that sort?

A. Yes, I have had engineering charge of those details.

2956 Q. How extensive have the improvements been during your connection with the city with respect to sewer construction?

A. We built, I believe, about 20 or 30 miles of sewer while I was city engineer.

Q. And in what portions of the city were those sewers constructed?

A. There was a very large system built in Grand View, which is the northeast portion of the city. That was I believe a system of four or five miles; I couldn't recall the exact length, because it has been quite a number of years since we built it and those figures are given from memory, without having refreshed my memory recently. We also built what is called the northwest sewer system, lying in the northern part, in University Place.

Q. The Grand View system to which you have referred is that in the northeast section of the city?

A. Yes, sir.

Q. In the vicinity of Union Park?

A. Yes, it lies principally east and north of Union Park.

Q. The last system you mentioned is in the northwest portion of the city?

A. The northwest sewer system lies principally north of University Avenue and west of Twenty-fourth Street. There was one or two extensions to the Ingersoll run sewer system, including the district, as I recall, west of Thirty-first street and between Ingersoll run and University Avenue, some of it extending as far west as Pack Lane, I believe, on Kingman Boulevard; and the center Boulevard sewer system lying south of Grand Avenue in the vicinity, as I recall

it, between Thirty-fifth and Thirty-sixth and Forty-second Street; I don't recall the exact boundaries now.

Q. Do the systems which you have described include the
2957 laterals which were constructed?

A. Yes, they include, as far as we were able to do so, all the principal laterals that would be demanded on those systems, in order to spread the cost of the main trunk of sewers over the district to which it belonged.

Q. To what depth do you ordinarily go in constructing a sewer?

A. That varies from a few feet—just enough to cover the sewer to protect it from travel and frost—four or five feet, down to 22 and 23 feet. Of course that is an extraordinary depth, and is merely at points where we cross a ridge. Generally where a street has not been brought to grade there will be some deep cutting and shallow filling. But the ordinary depth might be safe to place at 8 to 10 feet on the laterals. The trunk sewers would probably range two or three feet deeper. The contractors who had the northwest sewer system and the center boulevard sewer system and the extension of the Ingersoll run sewer system, used machines, ditching machines, which would cut to a depth of 20 feet, and as wide as five or six feet, if necessary. The rest of the sewers were built at that time, I believe, with hand work.

Q. Were they constructed of pipe or brick?

A. The principal portion of the systems were vitrified pipe, and some small portions of the Ingersoll run extension was reinforced concrete. I do not recall that we built any brick sewers.

Q. What is the reinforced concrete reinforced with?

A. Steel bars. The type designed was similar to a box culvert, approximately square and had a flat slab roof and flat sides, and the invert with the depression in the center so as to hold the minimum flow in the center in dry seasons. Of course they flay slab roof and flat sides had to be reinforced with steel to give them strength.

2958 The MASTER: Are vitrified pipe made of the same material vitrified brick are?

A. Quite similar. I never got into the chemistry of either brick or pipe manufacture, but the shale is to a great extent similar and the- manufacture pipe and brick from the same shale pits here.

The MASTER: They are manufactured here?

A. Yes, there are several factories in the city.

Q. The Iowa Pipe & Tile Company is one of the concerns which manufactures sewer pipe?

A. Yes.

Q. And the Flint Brick Company, do they manufacture any tile or pipe?

A. As to that I am not positive, I do not recall that they do.

Q. Have you made observations, Mr. Dobson, with respect to the character of the soil and soil formations in the city of Des Moines?

A. Yes, in a general way I had to familiarize myself with the classes of soil and the character of soil in different portions of the

city in which we expected to make sewer improvements, both before the sewers were built and during the construction of these sewers.

Q. I wish you would describe in a general way the character of the soil in and about the city of Des Moines where sewers have been constructed or other public improvements have been constructed.

A. The soil in the down town district in West Des Moines is principally of a sandy and gravelly composition, indicating that it is river washed material. Apparently this bottom was subject to overflow and washing from the river. We *winf* the sand and gravel at various depths, ranging from almost the surface down to several feet in depth in the business districts of West Des Moines. The soil in the business district of the east portion of the city has a
2959 great amount of sand in it, but it seems to be of a finer character and has more silt mixed in with it. It is a class of material that will stand in a trench with less shoring than the materials in west Des Moines. The material in West Des Moines in the business district requires tight sheathing in a large portion of the district. In the residence portion of the city, the west and northwest, the material is more of a clay, except for the top soil of three or four feet. That is of a first class nature for trenching, except in rare cases where we get what we call sea mud at quite a depth. For instance on Twenty-third street from Cottage Grove south we had a deep sewer, 18 to 20 feet deep, and had a great deal of trouble there with sea mud, which has very little stability.

Q. At what depth was that encountered?

A. I believe we encountered that at a depth of 16 to 18 feet. I do not recall of ever encountering that character of material close to the surface, unless there was some along Ingersoll run in small spots. The district in Grand View or northeast Des Moines is more of a sandy nature; some considerable portions of clay, but there is a great deal of sandy soil there, with spots of quick sand, that according to my recollection ranges from five to ten or twelve feet in depth. These beds are very irregular, running very often in very small pockets; that is to say, a pocket of quick sand may only extend a rod along the line of the trench, and you may encounter it for two or three hundred feet.

Q. And at what depth below the surface do you find it?

A. I don't recall ever*y* finding it any closer than five or six feet from the surface. Most of it that I do recall seemed to be at a depth of ten feet or more.

The MASTER: Is the clay hard pan or joint clay?

2960 A. I don't recall ever finding any hard pan. Most of the clay is yellow clay, easily handled with a spade. We find other colored clays at a greater depth—blue clay and some white clay. It all seems to be most easily handled with an Italian spade. On the south side of the river, take for instance south Ninth Street, I believe there is a harder formation of clay, ranging into shale. I don't recall the depth at which you find the shale along south Ninth, but I know it is very close to the surface in spots south of the river. That is true also with certain places in north Des Moines along the

edges of the bluffs, say in the vicinity of Sixth Avenue bridge. You will also find some shale along the vicinity of Arlington Avenue and State Street. High*ahlu* Park has principally clay on top of the hill, and down on the bottoms it is sand and gravel, very similar to the west Des Moines business district, being river washed or first and second bottom of the river.

Q. Now, you spoke of the character of the soil in the business section of west Des Moines being such that it required shoring or sheathing in constructing trenches?

A. Yes.

Q. To what depth do you ordinarily go before you are required to use sheathing or shoring?

A. That of course depends on the character of the soil. If y u strike the sand and gravel right at the surface in one of these down town business streets, it would probably be advisable to close sheathe from the surface down for a trench more than two or three feet in depth, because you would be subject to inundation from heavy rains and it might cause the trench to cave. So that it is hard to state just what percentage of the down town district would have to be tight sheathed and what would not. For instance, when we
2961 built the West Locust storm water sewer from the river to Ninth street, as I recall, probably two-thirds of that was tight sheat-ed work that went to a depth of ten to fourteen feet. Of course, it being a deep trench, it would not do to take the chances that we would take in a shallower trench.

Q. Have you seen gas pipes being placed in the ground in the city of Des Moines at different points and different times?

A. Yes.

Q. Do you know what their practice is with respect to sheathing or shoring?

A. Yes, in a general way.

Q. To what extent *to* they use sheathing and shoring?

A. Well, I do not recall now seeing them lay any gas mains in the business district recently. I have seen them lay gas mains in the suburban districts quite a number of times without any shoring at all, and their practice would not be materially different from that in a shallow sewer. It is a question of the judgment of the foreman as to whether the material they are going through will stand for one or two days or whatever length of time it is necessary to have the trench open, and each particular class of soil is to be sized up by the foreman in charge.

Q. I was asking about your personal observation.

A. That is my observation; their practice does not materially differ from our shallow sewer practice.

Q. Is there any substantial difference in the depth of the trench for a gas main or water main?

A. According to my observations the water mains are laid somewhat deeper than the gas mains; perhaps one or two feet. However, as to that I am not accurately informed as to the exact depth.

Q. Have you seen gas mains repaired or replaced in the
2962 business section, and if so, what is the character of the trench used for the purpose of making repairs and replacements?

A. I cannot at this instance recall seeing any gas main trenches in the business district.

Q. Have you seen any water mains repaired or replaced in the business section?

A. Yes, I have seen water mains repaired on account of broken mains, but I do not recall any great amount of general water main work in the business district.

Q. Do you recall anything with regard to the trenches that were made for the purpose of making these repairs?

A. Whenever there was a broken water main, the soil naturally was saturated with water, making the condition not at all ordinary so that the trench almost invariably had to be sheathed.

Q. Now, Mr. Dobson, I want to ask you about rock formations. Do you know of any in the city of Des Moines which would be encountered to a depth of from three to six feet?

A. I don't recall of encountering any rock or shale, which is sometimes classed as rock, at such depth in our sewer work.

Q. You have encountered rock in your sewer work?

A. Yes.

Q. At what depth?

A. As I recall it, we found rock or shale on Sixth street and Arlington Avenue in the vicinity of the Sixth Avenue bridge at a depth of from 10 to 12 feet, though I would not be positive as to that depth.

Q. Now, I want you to give the Master some notion of the cost of paving streets in the city of Des Moines—take for instance brick block laid upon five or six inch concrete?

Objected to on part of complainant as being immaterial,
2963 because the cost of paving streets the way it is ordinarily done is not a fair criterion to the cost of repairing paving over mains.

A. The cost of brick pavement for the last year or two in Des Moines had ranged in the neighborhood of two dollars,—rather above two dollars perhaps than below.

Q. That is two dollars per square yard?

A. Yes.

Q. What does that include?

A. That includes all the grading necessary, to remove the dirt from the finished grade of the pavement down to the subgrade, smoothing off, leveling, rolling and laying the concrete base, furnishing and spreading the sand cushion, furnishing and laying the brick wearing surface——

The MASTER: What depth of sand cushion do you use?

A. Generally two inches. And furnishing and laying brick wearing surface and pouring the pitch or cement or sand filler, cleaning up and removing all rubbish.

Q. And furnishing all materials and labor for that work?

A. Yes.

Q. Does that include the contractor's profit?

A. That includes the contractor's profit and such discounts as are

necessary in cashing improvement certificat-on by the contractor as pay for the work.

The MASTER: Does that apply to all kinds of paving?

A. Yes, all of our street improvements in the city of Des Moines are assessed to the abutting property and that cost is spread over a period of six or seven years.

Q. The MASTER: Does that include asphalt and brick?

A. You mean the price?

2964 The MASTER: Yes.

Mr. BRENNAN: I was asking about brick first.

A. The price is for brick alone on a concrete base. We have not been doing a great deal of brick paving in Des Moines this year. It has been mostly small contracts, two or three thousand yards, small jobs here and there, an alley paved, and things like that, where the size of the contract is not very large.

Q. Do you lay any brick on said foundations in the city?

A. Yes, there has been what we call two course work, on a four inch sand bed, with the old style paving brick, which is very similar in size to building brick, laid flat, and then two inches of sand cushion on top of that, and a wearing surface of paving brick laid on edge, and generaly a sand filler swept into the interstices between the brick, but that is practically abandoned now.

Q. Can you tell the Master about how many streets or portions of the city is represented by pavement of that character?

A. Well, it would be a little difficult to say off-hand. There is quite a little bit of that. That was one of the earlier type of brick pavement. Where the traffic has not been too severe and the foundation good those pavements are still in existence. Take for instance Arlington Avenue, in North Des Moines, is still in a pretty fair state of preservation. That was laid I suppose fifteen year ago. There are quite a number of streets of that character.

Q. Now, you spoke of creosote wood blocks laid on concrete base. Have we considerable pavement of that character?

A. Yes, there is a large amount of creosote wood blocks on concrete base in the business district.

Q. West Locust Street, for instance?

2965 A. West Locust Street is paved with that character of material, and East Locust, from West Twelfth, I believe, to East Sixteenth, it is paved with creosote wood blocks.

Q. Are those blocks laid upon a six inch base or a five inch base?

A. Those blocks are laid on a base varying in thickness probably more than six inches in average depth, because the original pavement consisted of brick was about four inches thick and two inches of a sand cushion and about six inches of natural cement concrete. The creosote blocks mostly are three and a half inches thick and they are laid on a sand cushion of about one inch thick; so that it was necessary to bring the old concrete base to a higher grade in order to leave the finished grade of the street at approximately the same grade as the old brick pavement, the difference being two to two and a half inches on an average of concrete on the top of the old base.

Q. I wish you would tell the Master what the city has paid for pav-

ing of that character, for the workmanship and material, including all the items, contractor's profits, etc.

A. For a brand new pavement on a concrete base where the contractor prepares the street grade by removing the dirt, the price has ranged as I recall it from $2.80 per square yard to about $2.90 and possibly as high as $3. We have not done a great deal of creosote block work on new foundations. The creosote block on the old foundation, resurfacing the old foundation, ranges around, I believe, $2.25; that is my recollection.

The MASTER: On the new foundation?

A. On the old foundation.

Q. What other streets have you in the city that you recall aside from Locust Street that are paved by creosote blocks?

A. Sixth Avenue from the Union Depot north to Grand
2966 Avenue, I believe, is paved with creosote wood block. Fifth Street from the Union depot north to Grand Avenue I believe is paved with the same material. West Eighth Street I believe has quite a bit of creosote wood block in the business district. The Sixth Avenue bridge, which is a concrete bridge with an earth fill, is paved with creosote wood blocks, and the north approach of that bridge is also paved for a distance of about a thousand feet with creosote wood block.

Q. That is also true with the East Locust Street bridge?

A. Yes. I don't recall any more now.

Q. Now, going to the pavement consisting of asphalt laid upon a concrete base with a two or three inch binder, whatever is used, tell the Master what the contract price for that class of pavement has been?

A. That has ranged from $1.58 per square yard up to $2.15 cents per square yard I believe. The price where it has ranged over $2 has not been under competitive bidding. Up to the time that the Mayer Brothers Construction Company came into the city and began bidding on our work within the last year, has generally ranged around $2 with only one paving concern bidding on the work practically all the time. Since competition was introduced the price has dropped until it is down to $1.58 per square yard at the present time.

Q. What does that $1.58 include?

A. That includes all materials, labor and expenses necessary in the construction of asphalt pavement. As I recall it that price of $1.58 was bid on two streets recently with a one inch binder and a one and a half inch wearing surface and a five inch Portland cement concrete base. That is a residence district class of pavement.

2967 *Q.* The MASTER: The concrete base is broken rock and cement?

A. Yes, ordinary concrete, either crushed stone or sand and gravel mixed with cement in proportion to one-sixth of cement and the rest sand a gravel or sand and rock. That is mixed in a mixing machine the same as any other concrete and then spread out on the ground.

Q. The practice in Des Moines with regard to intersections has

been to consider them a part of the street improvement and assess the cost thereof to the abutting property?

A. Yes, the practice in Des Moines has been to assume the entire cost of the pavement of any one street to the abutting property along that street, including intersections, streets and alleys, inspection, clerical work, official advertisement, etc.

Q. Back 150 feet from the line of the work?

A. Yes.

Q. Except where otherwise waived by the property owners?

A. Yes.

Q. I take it that the prices which you have given the Master covering the cost of construction of pavements does not include inspector's fees and these incidentals you have mentioned?

A. No, it does not.

Q. These inspectors are in the work representing the city to see that the contract is performed?

A. Yes.

Q. They are not employed by the contractor in any sense?

A. No.

Q. And the clerical work to which you refer means the work necessary in the city clerk's office and engineer's office?

A. Yes, the preparation of the plans and the assessment schedules and other incidental clerical work.

2968 Q. I will ask you what the fact is as to the manner of paying contractors, whether they are paid in cash or whether the contractor is usually paid in assessment certificates?

A. It is practically all improvement certificates. Of course, some of the property owners pay cash, preferring to pay cash instead of letting it run at a six per cent rate of interest.

Q. I mean in the first instance, as between the city, and the contractor, what is the fact as to the manner in which payments are provided?

A. Paving certificates against the abutting property.

Q. You spoke of discounts. I would like to have you explain to the Master just what you meant by that?

A. The general contractor does not carry sufficient capitalization to be able to carry these improvement certificates until they mature, and so he must go to a banker or some investment company and sell them for what he can realize on them in order to go on with the additional work. That discount in Des Moines runs from two to three cents on the dollar ordinarily, according to the best information which I have available.

Q. And that is considered by the successful bidder in making his bids?

A. Yes.

Q. Have you familiarized yourself with the unit prices of materials and labor in the city of Des Moines in connection with street improvements or in connection with public buildings?

A. Yes, in a general way I am familiar with the unit prices of material and labor.

Q. Are you acquainted with the unit prices for excavations in the city, say trenches three to five feet in depth?

A. Yes.

2969 Q. And what would you say, Mr. Dobson, would represent the reasonable price per cubic yard for constructing trenches of the character to which I have called your attention?

A. That would range in the vicinity of 25 to 30 cents per cubic yard with the material removed, where there was no shoring to amount to anything.

Q. I want you to keep in mind a trench sufficiently wide to permit a six inch gas main or a three or eight inch gas main.

A. As I recall the width of trenches which are used in work of that character, 18 inches would be about the minimum width for a man to work conveniently in a trench of five feet deep and 18 inches wide. The cost of removing the dirt would be about seven cents per lineal foot according to my estimates.

Q. It would be how much?

A. Seven cents per lineal foot for a trench of 18 inches wide and five feet deep. The cost of trenching varies in the soil almost directly with the amount of dirt removed down to a depth of about five feet. If you go any deeper than that, the cost will increase and a straight yard basis is ordinarily a fair basis for estimating a trench from three to five feet in depth.

Q. As you go below five feet it involves additional labor?

A. Yes, the size of the spoil bank along the trench becomes so great that it has to be handled twice to keep it from getting back into the trench.

The MASTER: How much did you say per foot?

A. Seven cents per lineal foot. 25 to 30 cents per cubic yard. The back filling of a trench like that is very rapid and ordinarily in our sewer work is being done with a horse and scraper of some form, the horse being on one side of the trench and the scraper on the other, working back and forth. Of course if it

2970 is in a paved street the material has to be put in slower and tamped to prevent the pavement from settling, or flushed with water, and the trench either left open or the pavement merely put in temporarily, and then after the trench has settled completely, the pavement is relaid permanently.

Q. What do you estimate the price of the back filling to be?

A. I don't recall now that I have ever kept any data of the back filling of paved streets where it is tamped carefully from the bottom of the trench up. My recollection in regard to that filling, where it is put in by scraper and then flushed, is about ten cents per cubic yard.

The MASTER: Where there is no pavement?

A. Yes, on streets where no pavement are to be replaced.

Q. Now, if you had to have a trench some wider than that, what would be the increase in proportion to the width?

A. That would increase almost directly with the amount of dirt removed.

Q. Are you familiar with the prices of material used in concrete work?

A. I am.

Q. I wish you would tell the Master what the range of price is for work of that kind?

A. The price of material?

Q. Yes.

A. The cement on board cars in Des Moines at the present time is selling for about $1.13 per barrel. I believe it has been bought lower than that by some contractors, and some perhaps are paying a little bit more than that, depending upon their ability as
2971 purchasing men. The price of sand is about 35 cents per cubic yard, I believe, if you buy it from the sand pumps.

The MASTER: Where is that at?

A. Along the river. There is an abundance of sand and gravel to be obtained at the present time by driving the wagons directly into the river and loading it up and it has been so all the time for the last two years. For instance at the Walnut Street bridge they have been buying sand and gravel mixed as it lays in the bars along the river, for from 50 to 65 cents per cubic yard. The screened gravel from which the sand has been mostly separated sells for about 80 cents per cubic yard at the sand pumps. Crushed stone brings about $1.35 per cubic yard on board cars in the city. The cost of getting those materials to the paving depends on the location of the paving in the various portions of the city and the distance from the track or from the river where the material is obtained to the location of the paving.

Q. Now, in doing repair work, or for instance you are going to remove the pavement for the purpose of laying the pipe in the streets, can you use any of the material in replacing the pavement?

A. Yes, it is commonly done. For instance, in removing the concrete base it is shattered so that it is practically reduced to its original size, not entirely, but to a great extent. If proper care is taken in depositing that along the side of the trench so that it does not become mixed with the dirt there is no reason why that material cannot be used again and mixed with fresh cement and as much sand as is necessary to fill the voids and make the concrete base of the same material. The brick pavement has a great
2972 deal of salvage in it, the wearing surface, depending on the character of the cementing material or filler that was put in the original paving. Two course brick work you might say is practically all salvage—the sand cushion the sand base and brick. There is no reason at all why any material amount of new materials will have to be brought on the job for replacing two course brick pavement. The tar filled brick pavement would have less salvage, depending on the time of year that the paving is removed. When the tar is cold it has a very tenacious grip or cementing quality and there is quite often a very material breakage in removing the brick. If the pavement is lifted during the warm weather when the tar is soft, there is very little damage done. With the cement filler there is quite often a heavy loss of material and in replacing

the wearing surface it is quite often necessary to bring new material on to the job.

Q. By the way, what is the constitutent element of this cement filler?

A. The ordinary mixture is one part of Portland cement to one part of finely screened sand, so that it will fill the interstices between the brick.

The MASTER: That makes a very hard cement?

A. Yes, that should under proper conditions make a very hard cementing material and when first class work has been done those joints should wear very nearly as good as vitrified brick. As a matter of actual practice there are a good many conditions which enter into the obtaining of a successful piece of work. A good many of our cement filled streets have not come up to the expectations.

The MASTER: It is not due to the ignorance of the contractor?

A. Sometimes it might be laid to the intent of the con-
2973 tractor or carelessness of the inspector, and sometimes unfor-seen climatic conditions—a very severe rain in the evening after the work is completed may wash out a material portion of the cement filler, or if the brick are very dry and hot and this cement filler is poured, it might sap the life out of the cement, absorbing too much of the moisture.

Q. I want you to tell what other salvage might be used.

A. In creosote block paving, with careful lifting of the pavement the major portion of the wearing surface should be salvage. That varies also with the time of the year in which the pavement is lifted, the strength of the tar and binder having a great deal of effect on the ease with which we get the blocks out whole.

The MASTER: Do you fill them again with tar?

A. Yes. Asphalt pavement, the wearing surface can be mixed again with new material and relaid again. The binder is probably all lost; you might say it is all wasted; you will have to use a new binder.

The MASTER: What do you mean by binder?

A. Asphalt pavement as laid in Des Moines consists of three courses; the concrete base, composed of Portland cement, sand and gravel, and a binder course about one inch thick, of small crushed stone or gravel mixed with asphalt—sometimes called asphalt concrete—then on top of that is the wearing surface of sand and Portland cement mixed with asphalt and rolled out. The bonder course has to be spread and rolled before the wearing surface is put on. It is the intent of the binder to bind the wearing surface to the base and give it a better grip or bond, more stability, so that it won't become wavy under traffic and disintegrate in that way.

The MASTER: You say the bonder would be destroyed?

2974 A. It is very likely there would be very little salvage to the binder. It is so thin a layer and the cost of it is much less, and the trouble and labor of trying to separate it from the wearing surface and keeping it clean and gathering it up would probably off-set the value of it.

The MASTER: How about the top?

A. The top is generally removed in larger sheets. The value of the wearing surface is such that you can afford to spend some time on it in mixing new material with it on account of the value of the material in it. It possibly might be done on the bonder, although it is a question in my mind whether there would be any material saving.

Q. Would it be practical in a case of that kind where you are lifting a strip of pavement three or four feet in width to have your equipment on the ground to take care of the wearing surface and protect the salvage?

A. I believe there is a form of street machine that is sometimes used for that purpose. We never used it in Des Moines. My only knowledge of that is from reports of other people in regard to that. I can see no reason why it would not be feasible to do that. I know in laying pavement now it is quite often mixed at the plant and shipped possibly from one town to another and then heated in pans or machines along the line of work to the proper temperature and then spread and raked out and rolled.

Q. Mr. Dobson, in that connection I wish you would tell the Master who are some of the principal paving contractors in the city of Des Moines, or who have performed work of that kind in the past.

A. The principal asphalt contractors are the Bryant-McLaughlin Construction Company with headquarters, I believe, at
2975 Waterloo. They maintain a branch office here. The Mayer Brothers of Erie, Pa., I believe, is their home office, have a branch office here. These are the only two firms bidding on asphalt work in Des Moines at the present time. As to the creosote block work there is O. P. Herrick, who has laid some of the pavement. He is a Des Moines contractor. Jack Campbell laid quite a bit of it, and James Horrabin has laid considerable pavement here I believe.

Q. Is the Christie Construction Company engaged in that class of work?

A. The Christie Construction Company does principally concrete work. I do not recall whether they have laid any creosote block pavement in Des Moines. There may be others who have laid creosote blocks here, but I do not recall at the present time.

Q. There is a firm at Minneapolis that has done some?

A. Yes, the Republic Creosoting Company of Minneapolis and the Kettle River Quarries Company. In the brick paving line there are the J. W. Turner Improvement Company, J. L. Hansman, O. P. Herrick, James Horrabin, Jack Campbell, George King and the Cook Construction Company.

Q. I will ask you if Charles Weitz Sons Company has to your knowledge and experience in the city of Des Moines constructed any pavement for the city?

A. I never heard of them as paving contractors.

Q. Do you know of J. C. Mardis contracting any public improvement of that nature?

A. Not under my supervision or experience, so far as I recall.

Q. Mardis and Weitz Company are engaged in building construction, are they not?

A. Yes, I understood they confined themselves entirely to
2976 general building construction.

Q. Are you familiar, Mr. Dobson, with the price or cost rather per cubic yard of concrete, say for foundation work?

A. Yes.

Q. In a general way, tell the Master what in your judgment would be the reasonable cost per cubic foot of concrete used in buildings for foundation work and also in street pavement?

A. If you take crushed stone for your aggregate, the price of stone on board of cars, as I stated will be, $1.35 per cubic yard, and taking into account wastage and shrinkage it will take almost a yard of crushed stone for every yard of concrete. We will say for instance where the mixture of sand is 50 per cent of the bulk or crushed stone, or say 1-2 ½-5, or 1-3-6, or 1-2-4. So that if you have to haul crushed stone from the car to your building site by wagon, say a half mile, it will cost you about 30 cents a cubic yard to get it delivered at the spot where you want to use it. That will bring the cost of the stone up to $1.65 per cubic yard. Under present conditions you can get sand & gravel delivered within a half mile of the river for 50 and 65 cents per cubic yard—we will say 65 cents at the outside figure—use a half a yard of that for a yard of concrete, allow 33 cents for the sand in the yard of concrete; the amount of cement varies of course with the mixture. A 1-3-6 mixture will take about 1.1 barrels of cement and a 1-2 ½-5 mixture, which would be as rich as there would be any excuse for making any kind of building foundation, would require about 1¼ barrels cement. That cement is being purchased for as low as $1.08 cents per barrel. But we will say it costs $1.15 and if you haul it a half a mile it will take about five cents a barrel to deliver that and that would bring the
2977 price of cement to $1.20 delivered at the job, the cost of mixing and placing varies widely with the efficiency of the foreman in charge and the conditions under which he is laboring. It has been mixed and placed in foundations, building foundations, that is, under conditions similar to building foundations for 50 cents per cubic yard; but if I were going to estimate the cost of foundations I believe I would allow a dollar a cubic yard for mixing and placing to allow for unexpected difficulties.

Q. Then what would be the aggregate of your estimate?

A. So that you would have as an aggregate $1 for the mixing and placing, and for the mixture of 1-2 ½-5 you would have a barrel and a quarter of cement at $1.20; that would be $1.50 for cement and the sand would cost 33 cents; the crushed stone would cost you $1.65, making a total cost of $4.48 for the material in place under ordinary conditions. It would cost you far less than that if you just had to dump it into an open trench without forms.

Q. Does this $4.48 include the use of forms?

A. That would include the ordinary range of conditions, sometimes with forms and sometimes without. As I stated the cost of

mixing and placing at $1 a yard allows a very large percentage to cover anything like the cost of placing forms. Of course the forms on foundations are of the crudest and roughest character.

Q. If your buildings under construction were located in close proximity to railroads and sidings, would the unit price be limited on account of that?

A. Yes. For instance, if you had a railroad spur or siding in the same block with your building, we will say erecting a build-
2978 ing in this block and there is a railroad spur on which a car can be spotted in the street adjacent, you can wheel direct from the car to the mixer and effect a *forg* material saving in that way. Of course a car of stone only contains about 30 to 40 cubic yards. You would probably use several cars in a day. Of course the sand and gravel, if you obtained it from the river, would be hauled directly on the job and dumped as closely to the mixer as the conditions might allow. That price might perhaps be reduced a little bit if you were closer than a half a mile, although the cost of getting the material on the wagon out of the river is quite an important item. The cost of a few blocks additional haul, considering a half mile haul, one or two blocks wouldn't make very much difference. If it was only a quarter of a mile you would possibly reduce it 25 per cent.

Q. What means of hauling have we here in the city of Des Moines outside of wagons; in other words, does the street Railway Company or Interurban Railway Company haul materials?

A. They do to a certain extent.

Q. To what extent?

A. I couldn't say to what extent, because as I understand it the major portion of that work is done at night after the general traffic is off the street, between the hours of twelve mid night and five A. M., so that it does not conflict with the ordinary traffic; but I am not sufficiently posted to be able to state to what extent that is carried on, though I am informed——

Complainant objects to what the witness is informed as being hearsay and secondary.

Q. They do carry on some freight business in connection with their other business?

A. Yes.

2979 Q. And that is true of the Interurbans is it not?

A. Yes.

Q. Then we have the Des Moines Union and the Des — Terminal Company?

A. Yes.

Q. Delivering cars to sidings and things of that kind?

A. Yes.

Q. Were you in the court room, Mr. Dobson, when Professor Marks was describing some concrete work with respect to the purifying house of the Des Moines Gas Company?

A. I believe I was.

Q. Something was said about the manner in which the forms were used there, what would be your notion of carrying construction of that character?

A. As I recall the particular piece of construction it was a form of curbing or coping somewhat similar to the ordinary street curbing used in paving work. I do not recall the exact height of it. I think about two feet perhaps and six or eight inches thick and approximately the same size; had a little finer finish on it than our curbing work for street purposes. The method of handling that small piece of work would differ a little bit from a piece of curbing work, because in organizing a gang for *for* a long stretch of curbing it is economical to use a large number of forms so that you can keep them going and busy practically the entire day filling forms, and for the next day's work perhaps move the entire set of forms forward; so that the forms are left in place perhaps a half day after the cement is put in place. In putting in a small piece of coping it is quite common to put the concrete in very dry and tamp it hard so that it has enough stability and that it will stand on the immediate removal of the forms—something similar to the ordinary build-
2980 ing block which is made in a mould and the mould immediately removed. It is the same way with this class of coping under ordinary conditions, and that would be the economical and ordinary method of building such coping.

Q. I will ask you what connection you had with the construction of the bridge across the Des Moines river at its intersection with Locust Street?

A. I designed the bridge and as city engineer was in charge of the general inspection of the work from some time about the 1st of September of one year until the 1st of April of the next year, and then for a period of about two month- I was the engineer in charge or inspector of the bridge personally.

Q. What is the character of the construction of that bridge?

A. That is a type of construction called reinforced concrete. It consists of five arches of reinforced concrete ranging from 72 feet in length to 92 feet in length on concrete piers and abutments and contains about 10,000 cubic yards of concrete, as I recall it.

Q. What connection have you had with the bridge now under construction over the Des Moines river at Walnut street?

A. As engineer of bridges I have had direct charge of the Walnut Street bridge.

Q. Is that the same type of bridge we have over Locust Street?

A. It is the same type of bridge, having six spans of shorter length, instead of five.

Q. About the same amount of concrete?

A. About 25 per cent greater; the street is wider.

The MASTER: Is the bridge wider?

A. Yes, both bridges are street wide. The Locust street bridge is
66 feet and Walnut street at that point is 82½ feet on the west side of the river; the width of the street on the east side is greater.

2981 Q. The Walnut street bridge is being constructed by what firm?

A. The John Wheeler Construction Company of Geneva, Illinois, I believe, is the home office.

Q. Do you remember what the contract price is for the bridge.

Objected to on part of complainant as irrelevant and immaterial to any matter in controversy here.

A. The original price was about $169,000; that was afterwards slightly reduced.

Q. And the Locust Street Bridge, do you remember the contract price for that?

A. That $124,800.

The MASTER: The Locust Street bridge is the first one built?

A. Yes, that is the upstream bridge; the one building now is the Walnut street bridge.

Q. Do you remember, Mr. Dobson, the terms of the contract between the city and some paving company for the repair of pavements in the city of Des Moines?

A. No, I have no personal recollection or knowledge of that.

Q. Do you know how the cost of repairing pavements corresponds with the original cost?

Objected to on part of complainant because if it is a matter of contract it is secondary and not the best evidence.

A. My knowledge on that is not direct.

The MASTER: The Locust Street bridge cost $12.48 per yard?

A. Yes, if 10,000 yards is the exact amount, that would be the price.

Q. What would be the difference in concrete work of that character and foundation work for buildings?

A. There is a vast difference, on account of the foundations
2982 and the risk of floods and ice. Take for instance our foundations go down to a depth of about eleven feet below extreme low water and in going down to that depth we encounter all manner of drift and sometimes large boulders submerged logs and old debris and wreckage of all kinds which is imbedded in the river.

Q. Of what material are the piers and abutments constructed?

A. Of concrete.

Q. What iron is used in connection with reinforcing?

A. The arches are heavily reinforced with steel. While I could not say off-hand, but I believe there are about 100 tons of steel in the Locust Street bridge.

Q. In constructing a bridge of that character and type, is it necessary to have special forms?

A. Yes. The form work is rather careful, close construction. The construction of a bridge of that type calls for careful work in the construction of the forms and in the finish of the surface that is exposed to view, and that of course makes quite a considerable item in the cost of any concrete work.

Q. A great deal of ballustrade work and things of that sort?

A. Yes. There is something like a thousand piling driven into the

bed of the stream for excavation to set the piers on. These piling cost an average of ten dollars a piece making about ten thousand dollars as the cost of driving the piling. The cost of centering for the arches would be a great item. For instance you have to drive bents of piling about every fifteen or sixteen feet in spaces eight or ten feet up and down stream. The price of that centering is probably three or four times as great as the cost of forms for ordinary concrete construction on land.

The MASTER: You did not go to bed rock then in the con-
2983 struction of the Locust street bridge?

A. No, bed rock is about thirty feet below the surface of the water, as I recall it. We attempted to drive the piling to the bed rock.

Q. What is the character of the finish of the work?

A. The most of the cement surface was gone over after the forms were removed and rubbed with either block of wood or a block of carborundum, depending on the freshness of the concrete.

Q. And with a stipple finish?

A. Nom the Locust street bridge was not stippled; there is no stippling or bush hammering as I recall on the Locust Street bridge.

Q. Mr. Dobson, in order to have it pretty fully in the record as to the experience which you have had in this city in connection with concrete work and public improvements in general, I wish you would state a little more in detail as to what other contract work you have been supervisor of or engineer or foreman or an inspector?

A. I designed and supervised the construction of culverts, concrete converts in the vicinity of Twenty-fourth and East Grand Avenue, and Twenty-eight and East Walnut, Twenty-eighth and East Dean, Twentieth and Easton Boulevard, on Sixth and Hartford on the south side, on Forty-first street in the vicinity of Forest Avenue, the north two arches of the Sixth Avenue bridge, and recently completed a design of small bridge across Four Mile creek at North Avenue, and one across the Des Moines river at North Avenue.

Q. Above or below these bridges?

A. That is about a mile above Locust Street bridhe and two miles below the Sixth Avenue bridge. I have had personal charge of the curbing work as foreman——

2984 Q. What kind of curbing work?

A. Combined curb and gutter work principally, some sidewalk work, or rather pavements, leading from the street to the lot line in connection with the curbing work.

Q. Just what was involved on your part in the performance of your duties in connection with this work?

A. The bridge work which I have mentioned I was the designing engineer of all of it and sometimes the inspector in charge or general engineer in charge with the inspector under me at times. In the curbing work I have mentioned I was the foreman in charge of the construction gang. In addition to that there was a great deal of work done under my general charge as city engineer, but I was not on the work daily from morning till night but attempted to make the rounds of the work practically every day and to spend as much time on the work as I could spare from my office duties.

Q. Have you been called upon in connection with your duties as city engineer or foreman or consulting engineer to make estimates of the cost of prospective work?

A. Yes.

Q. For whom have you made such estimates?

A. In connection with my city work I have made many estimates for the city. In connection with my work as consulting engineer I made many preliminary estimates for the Western Land & Irrigation Company of Wyoming, with which I was chief engineer; and for the Marsh Engineering Company of Des Moines; the Inter State Realty Company of Des Moines.

Q. Did these estimates which you made from time to time involve a knowledge of the unit prices of materials and the cost of labor?

A. They did.

2985 Q. In the city of Des Moines and in the other places where you were engaged?

A. Yes.

Q. You have devoted all of your time practically since 1893 on this class of work?

A. 1903, yes. The principal part of my work has been devoted to construction work, either in connection with designing or supervising.

Cross-examination by N. T. GUERNSEY, Esq.:

Q. What is the Western Land & Irrigation Company?

A. That was or is a company organized for the purpose of irrigating certain tracts of land in the state of Wyoming.

Q. Who is the president of it?

A. The president of it is W. B. Martin of Des Moines.

Q. Former secretary of state?

A. Former secretary of the state of Iowa.

Q. Who is the secretary?

A. The secretary is W. H. Harwood of Des Moines, who is also I believe secretary of the Interstate Realty Company of Des Moines.

Q. What work did you do for the Western Land & Irrigation Company?

A. The work which I did for them was making surveys for the purpose of locating irrigation ditches and reservoirs and estimating the cost of ditches and reservoirs, dams, head gates, spill ways, and such other things as might be involved in the designing or construction of the irrigation system.

Q. When was this irrigation system constructed?

A. It was not constructed. I said my work was in the survey and *and* location and designing and estimating the cost of construction.

2986 Q. Nothing was done after that?

A. No.

Q. When was this estimating done?

A. The estimating was done, as I recall, in 1908 and 1909.

Q. The work has not been commenced yet?

A. No.

Q. Do they ever expect to begin it?

A. They have hopes, if they are able to get into the bond market.

Q. If they can get somebody to put up the money?

A. That is what I understand.

The MASTER: Where is that?

A. Their land is situated in Carbon County, Wyoming, in the southern tier of counties in the central portion of the state; my headquarters were at Saratoga, Wyoming.

The MASTER: Is the cement made out there?

A. No the cement I used for the purpose of estimating the cost was made in Colorado, at Portland, Colorado, and I believe I got quotations from other firms. There is no cement made in the state of Wyoming that I have knowledge of.

Q. Now what work did you do for the Interstate Realty Company?

A. I did some work for them at various times in connection with their construction of street improvements in Gilmar Park, which is an addition in the vicinity of Forty-second and Ingersoll Avenue, that involved the designing of a sewer system, curbing and paving work.

Q. That is comparatively a new addition out west here?

A. Yes.

Q. They laid out some streets and put in sewers and curbs and cement walk and things like that?

A. Yes, it has been laid out within the last three years I should judge.

2987 Q. The Marsh Engineering Company, what is that concern?

A. That is a concern that build reinforced concrete bridges; they have headquarters in Des Moines.

Q. Are you consulting engineer for that concern?

A. No. I am not connected with the Marsh Engineering Company.

Q. I thought you mentioned it as one of the concerns for which you were consulting engineer?

A. Mr. Brennan asked me to name the work I had done for the city and as consulting engineer, and I mentioned in connection with that that during the period I was not connected with the city I did such work as came my way, either bridge or other engineering work.

Q. When was it you were employed by the Marsh Engineering Company?

A. I do not recall the exact date; I had occasion to make plans during the winter of 1909, I believe.

Q. How long were you employed by the Marsh Engineering Company?

A. I was not employed steadily by them and did not do a great deal of work for them; did a little work for them.

Q. Did some drafting and that sort of thing?

A. Well, you might call it drafting; I made some original designs in competition with the best designs they have been able to get

out and they were adopted by the Marsh Engineering Company, because the designs were more economical than those they had been using.

Q. You told us the Locust Street bridge cost $124,800?

A. Yes, that was the contract price.

Q. Is that what it cost?

A. There were no extras involved; the only additional cost would be engineering which would amount to probably I should say $2,000.

Q. You stated you designed that bridge?

2988 A. Yes.

Q. Do you know who the Thatcher Engineering Company is?

A. The firm you refer to I presume is the Concrete Steel Engineering Company of New York City of which Mr. Thatcher is president.

Q. What did they have to do with that bridge?

A. The principal thing he had to do, he came out and looked over my plans and threatened me with a suit for infringement of patents. I told him I would be glad to assist him in any way and if he could find any infringement the city of Des Moines would be glad to make it good.

Q. You adopted his plans?

A. No. Evaded his patents and did not adopt his plans in any manner or shape. Mr. Thatcher did not get a penny's worth of money or credit from the Locust Street bridge design.

Q. The contractor failed, didn't he?

A. I believe they failed during the construction of the work.

Q. Who was the contractor?

A. The Marsh Bridge Company of Des Moines.

Q. Was it related in any way to the Marsh Engineering Company?

A. The same men who are operating the Marsh Engineering Company were connected with the Marsh Bridge Company at that time.

Q. The Marsh Engineering Company was a sort of reorganization after the failure of the Marsh Bridge Company?

A. That is my understanding.

Q. After the Bridge Company failed, who completed the work?

A. The receiver I believe, as is customary.

Q. Did the city do any part of it?

A. As to that I couldn't state positively. My connection with the city was severed before that time.

Q. I had an impression the city finished up a part of the work?

2989 A. They may have finished a portion of it, I could not state positively; but it is my best judgment that the Marsh Bridge Company did not fail on account of liabilities incurred in that bridge.

Q. I didn't ask you anything about that. I suppose that would involve going into the finances of that concern.

Mr. BRENNAN: You wouldn't want that inference to be drawn then?

Mr. GUERNSEY: My purpose in asking the question was to get at the fact. The price of $124,000 does not necessarily indicate what it cost.

Q. So that you do not know whether $124,800 represents the cost of the bridge or not?

A. Not positively.

The MASTER: I understand you that was the contract price?

A. That was the contract price, and they had a first class bond up and the bond company and the receiver completed the work; that is to say, the receiver completed the work, and if there was any additional expense, the bond company stood between them and the city.

Q. Which is the more economical so far as making concrete and placing it is concerned, doing it in large masses or small masses?

A. Large mass work is always more economical, other conditions being the same.

Q. Not only in the matter of placing the concrete, but in the matter of forms and everything of that kind?

A. The organization of your whole construction gang is more economical for large work.

Q. What kind of mixers do they use in those large jobs?

A. They vary——

Q. I don't mean the name, but what type?

A. There are two distinct types principally used; one is
2990 the continuous and the other the batch mixer; there is also in contra-distinction of these two the gravity mixer.

Q. They do not use these gravity mixers here?

A. Not to any extent. We did on the Sixth Avenue bridge.

Q. These mechanical mixers on large jobs are operated by steam?

A. Steam or gasoline, and sometimes by electricity.

Q. Where have they been operated here by electricity?

A. On Walnut Street bridge.

Q. Of course it is not economy to operate by steam or gasoline a mixer on small jobs?

A. Why not?

Q. Suppose you get a small job of concrete, only 20 or 30 yards, how much does it cost to set up your machine?

A. They have very economical machines that weigh only about four or five hundred pounds and you can wheel them on to a job and mix a batch of three or four yards and two or three men can get hold of it and move it on.

Q. Tell us some jobs in which those machines have been used here?

A. You take the general run of curbing work and you may have noticed a little type of machine that is a continuous mixer; they throw the sand and gravel and cement into the hoppers continuously and that feeds with a set screw.

Q. We don't care how you operate the machine; I asked you to name some jobs in Des Moines?

A. The city of Des Moines is doing that every day during the construction season on side walk construction. J. L. Hansman is *is* one of the contractors who uses one of the same type of machines the city does. While I could not attempt to state what any contractor in the city of Des Moines uses, it is so common that there isn't anything to be gained by quibbling over it.

2991 Q. So you don't want to quibble over it?

A. The less you go into that the more you will gain.

Q. I thank you for your instruction, but we will have to go into that ourselves. Take your ordinary job, what is the smallest curbing contract that has been let within the last three or four years say?

A. Oh, I couldn't state what the smallest contract is.

Q. I want to get the smallest job on which you used these things, give us the smallest curbing contract you can recall here.

A. I doubt if I could give you any information off-hand, without referring to the city records, because my personal information as to the size of curbing contracts is limited.

At this time an adjournment was taken until 1:30 P. M.

2992 1.30 P. M., MONDAY, *September* 11, 1911,

GEORGE E. DOBSON being continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. You said you graduated in 1903?

A. Yes, sir.

Q. From Cornell University?

A. From the engineering department of Cornell College, Iowa.

Q. Where is it located?

A. Mt. Vernon, Iowa.

Q. And since you graduated you have been in the employ of the city how much of the time?

A. Probably fifty per cent of the time.

Q. When were you first employed by the city?

A. In the spring of 1904 I believe.

Q. The year after you graduated?

A. Yes, sir.

Q. Did you remain continuously in the employ of the city until after the termination of your term as city engineer?

A. Not exactly. In a sense I was, I was with them on a salary basis for quite a length of time up to the completion of the construction of the Sixth Avenue bridge. After that my work for the city consisted of the designing of the Locust street bridge which was done on a contract basis and soon after the completion of that piece of designing I was elected city engineer, so that in a sense I have been continuously in the employ of the city since 1904 with the exception of about two years. About half of 1908, all of 1909 and the early part of 1910 I was not employed by the city.

2993 Q. During those two years how were you employed?

A. A portion of the time I was engaged in work for the Western Land & Irrigation Company. A portion of the time I was secretary and engineer for the Iowa State Drainage, Waterways &

Conservation commission. A part of the time I was engaged in general practice in the city of Des Moines.

Q. Now you said a number of streets were paved, west Locust, Second to Ninth. Walnut west to Ninth or Tenth street; Court Avenue from the river to the Court house; east Walnut street part of it and then some on Second north of Grand. All of that paving was renewal of old paving, all I have mentioned to you?

A. I believe it was.

Q. The streets had been paved and the paving was torn out and new paving was laid?

A. Yes, sir.

Q. Kingman Boulevard and Des Moines street were new?

A. Yes, those were new pavements.

Q. And on Kingman Boulevard there was a concrete foundation.

A. Yes, sir.

Q. Des Moines street there was too wasn't there?

A. Yes, sir.

Q. And this Ascension street experiment did not have concrete?

A. No.

Q. That didn't work out very well?

A. No; we regretted experimenting.

Q. Now this work, how much of this work that you have referred to has been done by the city itself and how much of it has been done under contract?

A. The paving work probably was all done under contract so far as I recall. There may have been odd jobs of repair work, but at that time there was a very low limit to the amount of work
2994 that the city might do itself by day labor and so you might say practically all of it was done under contract, all the street improvement.

Q. That included the sewering, curbing and sidewalks?

A. Yes, sir.

Q. What bridge work has the city done itself not under contract?

A. The principal work that they have done in the bridge department is smaller culverts, ranging up to a $1,000 or $1,500 in cost. I can give you a statement of some of them if you wish. There was one on St. John's road which we recently completed this year, that was in the vicinity of 37th street. Another on Forty first street north of Forest Avenue. One on Dean Avenue I believe in east Des Moines, on the corner of 28th I believe and Dean Avenue, right next to the Hosiery mills. One on the south side at Sixth and Hartford, one out on the lower—well it is the bottom road south of Raccoon road and east of Eighteenth about a quarter of a mile.

Q. East of Eighteenth?

A. Did I say east, I should have said west.

Q. These are all relatively small jobs?

A. Yes, sir.

Q. They have all been done within the last year or two?

A. Yes, those I have mentioned.

Q. What other bridge work is there that the city has done that that you know of?

A. Those are the only ones that they have done under my supervision as engineer. There are other bridges perhaps.

Q. Those are the ones you have personal knowledge of?

A. Yes, sir.

Q. They have all been done within the last year?

2995 A. Within the last eighteen months at the outside. It might be less than that time but not over eighteen months.

Q. Now on those jobs have you kept accounts of the costs?

A. The records are kept on all of those city jobs and the total is footed up when the work is completed. That is to say all the items that enter into the cost of a bridge or culvert is placed on the records.

Q. Now what records show those costs?

A. Well the record in the department of streets and public improvements. The actual clerical work of keeping that book, I don't know what the record book itself or volume is. It is kept by one of the clerks in Mr. MacVicar's office.

Q. But what I want to get at is, where these records are that give you your information as to unit prices based on your experience. Can you describe these books so we can find them?

A. No, I don't know that I could give you the name of the book. Most of the data which I keep for my own use has been general data in regard to——

Q. I didn't ask you that, I asked you if you could describe the books. Now then can you bring in here the figures showing actual cost say of this culvert on the St. John's Road?

A. I believe I can.

Q. Will you do that for us?

A. I will if I can, if I can find the record as I believe I can.

Q. Will that record show what the concrete cost per yard or give information that will enable us to compute that?

A. Not the actual cost of mixing and placing. I don't know that the record was kept in such shape that you can separate all the items in the way that you perhaps have in mind. That is to say the record there shows the cost in account of cement, the

2996 amount of sand and gravel, the amount of steel, the amount of lumber and the total cost of labor that was employed on the city record book.

Q. Of course you haven't any detailed costs on this work that was done by contract and not done by the city?

A. I know—if you mean by detailed estimates no book records on any or all of this contract work.

Q. The contractors don't file with the city do they their figures showing in detail the cost of doing the work?

A. They very often file with the city an estimate sheet for the purpose of getting estimates. That is detailed to the extent of separating the various classes of work such as foundation excavation wet and dry, cost of pile driving, cost of putting in cofferdams, cost of centering, cost of frames.

Q. That is all bridges you are talking about now?

A. Yes, sir. The assessment work, paving, sewers and curbing have no such estimate sheets filed with them.

Q. On these two big large bridges then there have been some detailed estimate sheets filed?

A. Yes, sir.

Q. And where are they?

A. I have a record of those, there are probably several of them on file in the city hall. There is one in the department of civil engineer and I have one in my possession. A very easy thing to produce those if you care to look them over.

Q. Now then what work is there, take work you have been in charge of or been personally concerned with it where you have kept the costs in detail so that you have some actual costs?

A. Well the work on the Locust street bridge and Walnut street bridge and practically every other piece of work that I have
2997 been on as inspector and engineer I have made investigation from time to time as to the actual——

Q. That don't answer my question. I asked you what work where you yourself was personally concerned with it, I don't mean work contracted to somebody, but where the city has been doing the work or you have been doing the work that was being done or where you had charge of these matters, what work is there of that kind where you had an opportunity to analyze the cost?

A. The curbing work which was done in Gilmar Park I was required to keep a quite close estimate of cost there, and that was submitted to the owners on that from time to time to show how the work was progressing, to show whether we were keeping within the preliminary estimates we had set for the cost of the work and so far as my own records go I do not recall where I could lay my hands on detailed estimates of various classes of work that you refer to. A great deal of this matter is worked out—that is my own personal work. The cost is worked out on a unit basis under different conditions and so far as keeping a complete journal and jotting down items, elements that go to make up this cost I have not done that to any extent, but I have familiarized myself with practically every job I have been connected with or associated with, I have familiarized myself with the average cost of working under various conditions so that I am able to figure on an ordinary piece of construction work similar to the kind I have been engaged in what the cost would be.

Q. Now then what all intelligent contractors do is to keep account of these things on actual jobs and in that way ascertain just what the cost is, that is a fact isn't it?

A. I believe most contractors do keep a complete record.

Q. And they do not theorize about it, but they predicate
2998 their conclusions on their actual experience, isn't that a fact?

A. They do to a great extent the same as I say I have.

Q. Now what experience of that kind have you had, what job did you ever do at mixing concrete for instance. There is one thing you have referred to, that is hauling stone. Now tell us how many jobs you have done this where you kept an actual record of the cost of delivering the stone from the cars on the job?

A. I don't recall that I ever personally kept that.

Q. Now how many jobs have you done where you kept a record of the actual cost of the labor in mixing and placing concrete?

A. There have been numerous jobs where I kept these records either continuously or at intervals. The Locust street bridge.

Q. Give us one of them?

A. The Locust street bridge.

Q. That is a job where the contractor is doing it. Does the contractor furnish his books to you or do you ask his books to find out what he pays out and take his vouchers for cement or for hauling stone, do you do that sort of work with the contractor's books?

A. Yes those vouchers are filed with the city.

Q. All the vouchers filed with the city?

A. The receipted bills, the pay roll is receipted and filed with the city and cement and steel and stone and gravel bills.

Q. To protect you against mechanics' liens you have some sort of statement of that kind.

A. Yes, so that we have access to their records.

Q. It is from these statements filed with the city you have made up these things?

A. Not altogether. Taking into account these facts which I have been able to get access to and which I have verified to a sufficient extent to satisfy myself.

2999

Q. So that we can take these statements filed with the city as to the Locust street bridge and compute these things from them can we?

A. No the records on the Locust street bridge were not complete. The records on the Walnut street bridge are very complete.

Q. Such records are filed with the city as will enable us to find out how much the cement in a yard of concrete costs?

A. No, sir; not these records alone, but in conjunction——

Q. That answers the question. Now will they enable us to tell what the labor in a yard of concrete is?

A. Not necessarily.

Q. Well will they unnecessarily?

A. Probably not.

Q. Don't you know whether they will or won't. Didn't you just tell us those were the records from which you made up your estimates?

A. No, I didn't just say that.

Q. Now will they show you how much the cost in a yard of concrete is on account of tools and machiery and that sort of thing?

A. They will not.

Q. Will they show you or will they enable you to compute the cost of any item that goes to a yard of concrete in place?

A. These records alone will not be sufficiently accurate.

Q. Now to get back to my question, where is the job of work you have ever kept these records so it will enable you to compute the detailed cost of a yard of concrete in place, basing it on your experience, not on what somebody told you.

A. I have kept records as I have stated and repeated before on

numerous jobs under normal conditions. The St. John's
3000 bridge was one and the curbing in Gilmar Park and the mixing and placing of concrete on the Walnut street bridge, the Sixth Avenue bridge and the Locust street bridge.

Q. In the Walnut, Sixth Avenue and Locust street bridges you have just said you did not have this information in detail as I understand it.

A. I said the records and vouchers filed with the city were not in such shape a person could go to them, that is in all probablity — be very nearly impossible to pick out these items, but in conjunction with my personal knowledge of the work and record and investigation of the number of men employed in handling a certain amount of concrete that these records are of assistance in arriving at a fair cost.

Q. But that is not the question I asked you at all. I am starting out with a proposition that as to what would be a fair cost ought to be predicated on experience.

A. Yes, sir.

Q. That is sound isn't it?

A. Yes, sir.

Q. A man don't know what a thing costs him himself in doing work unless he keeps accounts carefully and accurately analyzes them, that is sound isn't it?

A. Yes, that is fairly sound.

Q. Now on what job of work have you kept the accounts in that way?

A. I have kept accounts as I stated before on every job I have been concerned with so that I can keep a sufficiently accurate estimate of the cost of the work as it is going in from time to time, the different classifications of work. But so far as having these records all in my office at the present time I have not got them, but that does not prevent a man from knowing full well the cost of
3001 these various items and being concerned with that class of work day after day and carrying that class of work in his head and is just as reliable for certain classes of work as though you had it in a note book and could only figure the cost of a bridge by referring to what it had actually cost on the last job.

Q. The question I asked you was to specify the job on which you had kept a detailed estimate. Now will you please specify that job, just give me one. Don't give us generalities, and don't give the Locust street bridge or Walnut street because we have been through them.

A. According to your theory then an engineer or inspector on a piece of work——

Q. I didn't ask you anything about that. Answer the question please.

(Question read.)

A. The Gilmar Park curbing.

Q. Now did you keep there a separate account of the cost of cement and cost of stone. Did you use broken stone?

A. Used gravel there.

Q. Didn't use any broken stone?
A. No.
Q. And cost of labor, cost of tools, and things like that?
A. Yes, I recall we kept everything itemized, labor, cement and excavation and tools lumber for forms, itemized it completely as possible.
Q. Now on what other job did you do that?
A. I don't recall at the present time any job where I itemized it as completely as I did on that personally.
Q. What did the cement cost you per cubic yard there?
A. I don't recall at the present time just what it did cost.
3002 Q. Do you recall what any item that went into concrete in place on that job cost?
A. Yes. It cost us as I recall approximately 75 cents a cubic yard to mix and place the cement, concrete.
Q. That was on curbing?
A. That was on curbing work.
Q. Do you recall any other item there?
A. The cost of excavation.
Q. For curbing you mean?
A. Yes. It was shallow excavation ranged from six inches to 12 inches in depth and 24 inches in width, that ranged around 16 or 17 cents a cubic yard as I recall.
Q. How did you excavate it?
A. Excavated it by shovel.
Q. What did you pay your labor a day?
A. We paid as I recall now $2.25 for nine hours.
Q. Sixteen cents a cubic yard, how much would a man, you figure then each man would handle fifteen yards in a day. Isn't that going pretty strong?
A. Well I tried to make them go pretty strong I had to deliver the goods.
Q. Do you know any other job where that has been done?
A. Yes. That is to say I don't know as I can specify any particular job, but a good first class shoveler will handle that much work in that character of work.
Q. Especially easy shoveling was it?
A. No not extraordinarily easy shoveling, it was average.
Q. That would not leave you anything for tools on account of that part of the work would it?
A. The tool account you mean on the excavation? No
3003 that don't include the cost of the tools.
Q. That is one of the factors isn't it?
A. Yes, sir.
Q. So that they must have handled more than fifteen yards a day if you get all of your cost into your sixteen or seventeen cents?
A. No, I think that there is a misund-rstanding as to what I mean. That is to say I do not include the cost of tools in the price per yard of dirt moved.
Q. It is part of the cost of moving it isn't it?

A. It was, but on that job it was kept as a whole on the entire piece of work, that is to say that——

Q. So that factor was omitted then from your concrete work?

A. The cost of tools was not included in the cost of seventy five cents per cubic yard. That was the actual cost of labor and supervision, did not include wear and tear on tools.

Q. Any other factors you omitted?

A. I do not recall now. If you would like some data on the cost of tools for the entire yardage of concrete I can figure that up for you and show the court how much the item of tools on a yard of concrete amounts to. Rather insignificant when you come to distribute it.

Q. Yes, just as seven cents does not look very big for a foot, but if you run into the hundreds of thousands of feet that is a factor and if the contractor omitted it he would probably go broke wouldn't he?

A. Well it would take a good many omissions of the character of tools to break a contractor with the ordinary profit that they figure.

Q. You think that profit is rather large?

A. I don't know that it is beyond reason for the class of work that they do. I would probably want the same profit if I were
3004 doing —.

Q. As a matter of fact it is true isn't it that the profit they figure and the profit they make is very seldom the same?

A. Yes, it is very seldom that the yards will come out and the dollars and cents the same as the contract figures. One time he may make a big cleaning and another time just barely skin through and another time go broke?

Q. That is on account of these contingencies and unforeseen expenses and things like that?

A. Not altogether, unfo-eseen conditions arise such as water, labor trouble or misjudgment on the part of the contractor in regard to a foreman or superintendent on a piece of work and things like that, of course that enters into it. It varies.

Q. The factors vary, you know they are going to be there, but you can't just tell what they are going to be?

A. Yes, ordinarily the contractor allows a certain amount for unforeseen expenses, such as five per sent or ten per cent, take it on a bridge job where you are liable to get floods he may allow as high as ten per cent of the tota- contract for unforseen difficulties. Street work where you work on top of the ground the dangers are not as great and don't have to allow nearly such a large margin.

Q. Have you examined this soil map that is complainant's Exhibit No. 16, if I recall it correctly?

A. I had not examined it before the present time.

Q. Will you look at it hastily and tell us whether it is substantially correct in your judgment?

A. To what depth—is this supposed to be surface or how deep is this soil supposed to lay?

Q. I don't suppose much of it would go over five or six feet.

Objected to as not proper cross examination.

3005 Q. Just assume it would be a depth that would be proper for the laying of gas mains, that is what I presume is what the plat is intended to show.

Objected to as incompetent, assuming a state of facts not shown by the evidence and not proper cross examination.

A. It corresponds in a general way with my information on the soils of the city.

Q. The prices of paving that you gave were the contract prices at which the city had let paving jobs recently were they not?

A. I believe that is what I gave.

Q. They do not purport to cover a period of years or any considerable period?

A. No as I recall they were for the last year or two.

Q. Now then you gave $1.58 for asphalt on concrete?

A. That was the lowest price that I have any knowledge of their ever getting in Des Moines, that was recently.

Q. What is the highest price you know of?

A. I think I stated it ranged over $2.00 some fifteen or twenty cents.

Q. The average would be over $2.00 wouldn't it?

A. Average of $1.58 and $2.00?

Q. Taking into account the amount of work done?

A. The average cost of paving actually laid in the city of Des Moines is probably in the vicinity of $2.00.

Q. You mean asphalt or all pavement?

A. Asphalt, but recently under competitive bidding there has been an enormous break in the price. It is safe to say over ninety per cent of the work done in Des Moines was not under competition.

Q. Now how many contracts have been let at $1.58?

3006 A. Two.

Q. Coverinh how much paving?

A. I don't recall just how many yards. They are in the residence district, not any extraordinary large jobs, rather small as I recall.

Q. And with five inches of concrete?

A. Yes, and with one and one half inches of wearing surface.

Q. How do the ordinary specifications runs, the small amount?

A. The business district we generally use six inches concrete and two inch wearing surface. That makes a more expensive job of paving.

Q. Now this $2.00 a yard includes the payment to the contractor?

A. Yes, sir.

Q. That is all?

A. That is the price that the contractor gets for the work, yes.

Q. It don't include engineering?

A. No.

Q. It does not include the work incident to the letting of the contracts?

A. No. When I say the $2.00 that is not a hard and fast average at all.

Q. I understand that, but we are taking that as sort of an average price. It does not includ- advertising for bids.

A. No.

Q. It does not include the making of the assesments?

A. No.

Q. It does not include the inspection of the work?

A. No.

Q. It does not include the drawing of the contracts?

A. No.

Q. It does not include the engineering work as the work
3007 progresses, setting*b* stakes and think*s* like that.

A. No.

Q. You said it did include the discounts on the securities?

A. Yes, if there is any.

Q. Well you said ordinarily there was one?

A. That is my information, yes, ranging from two to three cents on the dollar.

Q. These securities are the liens on the abutting property?

A. Yes, sir.

Q. First liens?

—. Yes, sir.

Q. And mature in seven annual installments?

A. Yes, sir.

Q. Drawing interest at the rate of six per cent?

A. Yes, sir.

Q. And they won't take them at par?

A. Apparently not.

Q. They have to be discounted?

A. Apparently.

Q. That is part of the expense of the work, the contractor gets pay for that?

A. Yes, he has to take that into account.

Q. Now how do they pay for the bridges?

A. They pay for the bridges partially in cash and sometimes with paper depending on the condition of the bridge fund. The Locust street bridge contract as I recall was $50,000 cash and the remaining portion of the price was to be paid in three annual installments of $25,000 each and I believe bearing interest at six per cent. The Walnut street brid*he* was I think $20,000 in cash and the remainder
was payable in either $10,000 or $15,000 payment per an-
3008 num, but it was afterwards changed and the price of the contract reduced on account of the city having sold said bridge bonds and having the cash with which to liquidate the indebtedness at the completion of the bridge.

Q. The city sold these bonds did it?

A. I understand they have yes.

Q. These bonds are drawing interest?

A. I presume so if the cash has been delivered.

Q. And I suppose the city has deposited what money it is not using in the banks trying to make it earn something?

A. Presumably.

Q. And the difference between the interest which it has to pay

and the interest it earns there, have you included that in the cost of the bridge or not?

A. At the present time you mean under the new arrangement?

Q. Yes.

A. No, I have not stated anything about the effect that that had on the total cost.

Q. You said it reduced it didn't you, reduced the contract price in consideration of being paid?

A. Yes, the contract price was reduced.

—. Did you offset against that reduction or any part of it the interest which the city was losing?

A. I have not had occasions to figure that at all. I knew that the reduction in the contract price and the bonus which the contractor guaranteed the city on the sale of the bonds amounted to $5,000 or $6,000.

Mr. BRENNAN: About $7,000.

A. I did not know the exact amount.

Q. Do you pay on this bridge any installments as the work
3009 progresses?

A. Monthly estimates, 85 per cent.

Q. So the contractor only has to carry for the entire period fifteen per cent of the cost of the bridge.

A. Yes, when the work is completed he has fifteen per cent hold back.

Q. Now these paving prices, return-ng them are prices for paving done as paving is ordinarily done in jobs that are several blocks long and covering the entire width of the street.

A. Yes, sir.

Q. It is your judgment it would cost less to do the paving necessary to cover a ditch for a gas main for instance, than to do this big job, less per yard I mean?

A. There are certain conditions of street construction here that would be more expensive I believe that relaying pavement in a trench. Now take for instance asphalt, you have the old pavement on each side and you don't have so much care and trouble about getting your grades on the work and the concrete that is there before you all the time, the men worked faster on account of that, do not have to guage the thickness of the concrete or asphalt or wearing surface or take any great amount of time for that and when it comes to rolling you have got a straight away roll and it has got to iron out the same elevation as the asphalt on each side and you can use one big roller instead of a little roller and then a big roller as is done on all paving wor- so it would be my judgment that you could probably lay new asphalt pavement over a trench as cheap or cheaper than you might do u-der ordinary conditions.

Q. Is that judgment based on any experience?

A. Merely observation of the work, not on data which I
3010 have.

Q. And that is your judgment that it would be cheaper per yard.

A. Yes; not taking into account any salvage at all.

COURT: What width do you figure on a main?

A. Well the trench would run from two to three feet in width. I suppose the larger mains would take even wider perhaps than three feet but there would not be any paving less than two feet in width I don't believe because ordinarily the pavement is opened up a little bit wider than the actual width of the trench.

Q. Now with reference to this trench. You make the excavation seven inches a running foot for a trench eighteen inches wide was I recall it?

A. Yes, sir.

Q. That is in what kind of soil?

A. Well that would be average digging, in what you would call average condition here in Des Moines. There are conditions where you had good digging that you would be able to dig a trench cheaper than that and there are classes of soil here it would cost you more but that is my judgment that is a fair average price.

Q. And that is predicated on what actual experience?

A. Well not on any great amount of detailed cost keeping but general investigation of sewer trenching from time to time in order to verify my own opinions and knowledge as to what that work has actually cost or should cost.

Q. Did you ever keep al- the costs in trenching?

A. I don't recall I ever did on any extended amount.

Q. Well did you ever keep any cost of trenching?

A. Yes, sir.

Q. What job?

A. You mean that I was personally in charge of?

3011 Q. Yes, where you had personal charge?

A. Not any as foreman directly in charge I didn't keep any detailed cost.

Q. On one where not directly in charge, where did you ever keep detailed cost. I want the job specified and not an explanation showing why it is not necessary?

A. As I recall it now, I kept fairly close tab on some work which was done under my charge at the fair grounds, some tiling for drainage purposes that was in mostly a black soil.

Q. When was that?

A. That was in 1909 I believe, summer of 1909.

Q. How much work was done, how many miles?

A. I don't recall the exact length, I don't think it run into miles.

Q. Well how many feet?

A. There was several thousand feet of drain tile, four or five thousand possibly, possibly less than that, I don't recall exactly.

Q. How deep was it laid?

A. As I recall it ranged from three to four feet principally.

Q. Have you the figures?

A. I may have them some place in my records, I have not them with me.

Q. Can you remember any specific item of cost there going to make up the aggregate?

A. Of that trenching?

Q. Yes.

A. I recall that—no, I don't know as I could give you the dif-

ference in—that is to separate it into anything as to the cost per lineal foot.

Of course there was a division, that is there was two items
3012 the general cost of labor and a foreman on the work and the cost of staking the work out, but at this time I cannot recall what those individual items came to.

Q. Now then you took 25 or 30 cents for the labor for removing material from the trenches, that much per cubic yard in making your estimate did you?

A. That is my recollection that I gave that figure.

Q. That is for the labor for moving material from the trenches?

A. That would include the supervision, that is all items that would enter in.

Q. What are the items that are included?

A. Well for the price I have hiring the work done you have to have—that is on la*gre -owk* you have to have a foreman in charge and his salary of course has to be distributed over the entre work and a certain amount of wear and tear on tools or loss by theft and cost of maintaining lights and such things as that if you are working in the streets, barricades you might say, to protect the general public.

Q. Well are these all the items?

A. That enter into the cost of trenching?

Q. No, that you considered here and got your 25 or 30 cents. Can you tell us what your 25 cents is made up of?

A. If you had a large enough amount of trenching so that you would employ a force of twenty men which is a sized organization that one man can keep going, that is one foreman would handle twenty men without any difficulty and you paid them at the rate of 25 cents an hour, a foreman on that class of work would get from $3.00 to $4.00 a day, an extra good man might get as high as $4 an average would not be any greater than $3.50 a day and the ordinary wear and tear and loss on tools for all trenching
3013 including by theft and breakage of lanterns, red lights and things like that, in my judgment would not amount to more than 50 cents per day for that size gang. That 25 cents per yard would necessitate the digging of a little over 700 feet of trench with a gang of 20 men. That is figuring the trench a foot and a half wide and five feet deep.

Q. That did not give me what I asked for. Did you there or can you now tell us the various items, how much on account of labor, how much on account of tools, how much on account of incidentals and so on, go to make up that 25 cents.

A. Well I have just stated my judgment on that is in the proportion I gave you twenty men at 25 cents an hour nine hours constitute a day's work would be $45, a foreman at $3.50 and 50 cents for loss of tools would make $49 are the principal items.

Q. What are the other items?

A. Well there are incidentals that might enter into that, for instance you might encounter a boulder that would increase the cost of work in one instance or you might strike a little change in the soil that would cause a cave in where you had figured it would not

require any shoreing. It might run it up to thirty cents, if every thing goes smoothly 25 cents should be ample to cover that but five cents a yard ought to cover all contingencies, unexpected and unforeseen contingencies.

Q. You make it about 20 percent then?

A. That should be ample on trenching, yes; rather large.

Q. Did you ever take some work with a gang of men and keep track of these things so that you know that these figures are right?

A. I never itemized them closely enough on a continuous
3014 job or anything of that nature so that it is based on absolutely daily records. And as I stated that my estimate of the cost of trenching is based on observation of sewer trenching that I have seen done, that is came under my observatio*b* and I have compared that at different times with the water and gas gangs as a matter of curiosity. I have not had occasion to keep tab on the water company or gas company because it is something that don't come under my charge so I didn't keep detailed estimates of that.

Q. Now going back is that seven cents a foot based on the 25 cents or 30 cents a cubic yard?

A. That figures seven cents a foot for 25 cents a yard.

Q. That don't include then that five cents for contingencies?

A. No.

Q. So if you include that contingencies would be one fifth more, be 1.4 making it 8.4 cents wouldn't it?

A. Yes, sir.

Q. That is for an 18 inch ditch, if it was two feet ditch, you would have to add one third to that wouldn't you?

A. I should think so.

Q. That would be 2.8 cents, that is right isn't it?

A. I believe it is.

Q. So that would make the excavation per lineal foot 11.2 cents on a two foot ditch.

A. Apparently.

Q. And the only estimate you made on back filling was scraping it in with a team?

A. That is my recollection, yes.

—. And you put that at 3 cents a foot.

A. Yes, that is scraping back with a team and flushing with water.

3015 Q. And you would have to add one third to that for a two foot trench?

A. I presume so.

Q. So that would make that four cents?

A. Yes, sir.

Q. That would make your excavation and back filling 15.2 cents per lineal foot on a two foot trench on your theory?

A. Yes, according to all the information that I have on that.

Q. Do you know that the charge made by the water company for flushing is 3 cents a foot?

A. My recollection was that it was 2 cents, if I am mistaken in that if that information is not correct I am mistaken, but my recollection was *there* price is 2 cents a foot for back flushing sewers.

Of course sewers as I stated range from eight to twelve feet in depth and the amount of water necessary to flush would vary——

Q. Mr. Haines just tells me the water company charges 3 cents a foot for flushing alone?

A. Of the company's trenches?

Q. Yes.

A. Well he has information on the subject undoubtedly that is authentic.

Objected to as incompetent and mere hearsay.

Q. Your information was hearsay from somebody wasn't it?

A. Yes, as I recall it different times I inquired at the water company's office as to what they charged for back flushing sewers and they have told me of course so you might say it is hearsay, but I supposed it was authentic information, and the cost of flushing an 18 inch trench they would charge just as much for our ten inch sewer, that is where we had a trench narrow enough for a ten inch sewer apparently didn't make any difference in the
3016 size of the sewer, flushing over a 24 inch sewer for the same price that they did for a ten inch so that I don't know whether they have a hard and fast scale or sliding scale for different sized trenches.

COURT: You- understanding is it is two cents or three cents?

A. Two cents.

COURT: Two cents for flushing?

A. Yes, two cents a lineal foot for flushing for back filling.

Q. If as a matter of fact they charge three then you would have to add some more to your estimate?

A. Well I suppose that would enter into this if they flushed all their trenches.

COURT: This 15.2 cents includes the flushing?

A. That would, yes.

Q. That includes two cents for flushing as I understand it?

A. Yes.

Q. Now then most of these mains are laid under pavement are they not?

A. Gas mains?

Q. Yes.

A. It is my judgment most of them are at the present time under paved streets.

Q. Of course they would have back filling on paved streets——

A. If they actually lifted a paving and replaced it——

Q. I am not talking about lifting it and replacing it, I am talking about back filling.

A. On an unpaved street the trench I suppose would be back filled and flushed with water, it might be——

Q. Take the back filling on a paved street this method you describe could not be employed could it?

3017 A. It would not be impossible of course. The ordinary method, however would be tamp if you wanted to replace the paving immediately make a permanent resurfacing.

Q. The ordinances of the city provide you must fill it with sand doesn't it?

A. I don't recall as to that.

Q. Don't you know of that ordinance which provides that where you excavate on a paved street you must refill with sand?

Mr. BRENNAN: That is an old ordinance that is no longer in force has been repealed some time ago.

A. I know that we did have such a clause as that when I was city engineer that on paved streets trenches were supposed to be filled with back sand or gravel.

Q. What is the consequence if when you excavate in a paved street the earth caves or gives a little under the paving at the side of the trench, it is bad for the paving isn't it?

A. It is detrimental to the paving, yes.

Q. And makes it necessary either to take out more paving or to brace the ditch or to do something to preserve that dirt intact at the top of the ditch right immediately under the paving, doesn't it if you want to have a good job.

A. Not always on all kinds of soil.

Q. In a majority of instances you must have a sufficiently good holding soil to obviate the necessity for bracing under such circumstances?

A. No, I don't believe that is exactly correct take the majority of cases. I believe the majority of trenching in the city of Des Moines for trenches five feet in depth will stand in good shape, it is my firm belief that over 50 per cent of the material will stand without bracing.

3018 Q. You don't think bracing would be necessary in more than fifty per cent of the work?

A. No, and while I have not kept any exact data on that I would not be surprised if it would run way over 50 per cent.

Q. Or might run the other way?

A. It might yes, but my judgment is it is fifty per cent or better of the soil is first class.

Q. Of course if that soil is loosened under the pavement that materially affects the pavement?

A. Yes, if it is loosened to any extent it is bound to in time affect the paving. It might not show up for eight or ten years, the pavement might wear out before that will show up.

Q. You estimated two and a half to three cents per running foot as the cost of the back filling. Now with two cents for flushing that meant from one half cent to a cent as the cost of the back filling itself, isn't that the practical result of it per lineal foot?

A. I presume so.

Q. Well don't you know?

A. If I estimated two cents for flushing and two and a half for the entire cost of back filling——

Q. Well isn't that what you said two and a half to two cents for the entire cost of back filling?

A. I was under the impression I said three cents.

Q. Well it was your estimate as a matter of fact?

A. The three cents where you do flush all your trenches would be a fairer figure.

Q. That is assuming it cost two cents for the flushing, for the cater?

A. Yes, sir.

3019 Q. Now then how many men do you require to do that work of back filling that way?

A. One man and a team will ordinarily or one man and a horse sometimes is used, that is scraper on one side and a horse on the other, sometimes where they have a large trench or large amount of work they will put a team and a man in order to facilitate the work, one man work on one side of the trench and one man on the other with a team.

Q. You take two men and a team to do the work under normal conditions don't you. You have got to have a man to drive the team and man to hold the scraper, that is right isn't it?

A. I would not state that was always under normal conditions, but it is done that way I know.

Q. Your man would be $2.25 for a day of nine hours?

A. Yes, sir.

Q. Your team would be how much?

A. Be $4.50 unless the contract- owned their own teams as they ordinarily do.

Q. Does the $4.50 include the driver or not?

A. Oh yes.

Q. That would require these men to back fill 675 feet in one day?

A. Yes, sir.

Q. Just about what your twenty men would shovel out?

A. Yes, sir.

Q. How many yards of dirt would they handle there in that day with that team?

A. That would be about 187 yards if I have not figured wrong.

Q. You divide $6.75 by that you find you are handling that dirt something less than four cents a yard don't you?

A. Yes, sir.

3020 Q. You don't want to revise your figures on that do you?

A. I don't think it is necessary.

Q. Not only handle it at four cents a yard but when you flush these sewers the dirt settles and you go over it how many times?

A. You get practically the entire dirt into the sewer with one handling.

Q. Don't it sink down after you have flushed it?

A. Certainly it does.

Q. Then don't you have to go over it again or do you leave it a hole there?

A. Perhaps be a little bit of dressing up to do. It would not be a very great amount though. The ground is ordinarily mounded up over the trench and allowed to settle into the trench.

Q. That can be done something less than four cents a cubic yard.

A. That is my judgment, yes.

Q. Now did you ever keep any figures on a job of that kind so you predicate this on some actual figures or is this just speculation?

A. This is not based on data I have of any partlcular job, just general information and mental notes I have made from time to time on general sewer work in the city. It might vary considerable in actual practice from that.

Q. When was the last time the city has bought any cement?

A. The city?

Q. Yes.

A. I don't know, they are using it right along on construction work.

Q. What did it pay for the last cement it bought?

A. I don't recall that I have any information on what it bought.

Q. Isn't that work all done in your department?

3021 A. Not all of the construction work no.

Q. Take the building of these bridges, this bridge they just finished out here on St. John's road south of my house there, what did they pay for the cement there?

A. As I recall it, that was $1.40 a barrel delivered though I would have to refresh my memory on that. I think we have a yearly contract for cement with one of the cement dealers here in the city and that would in no way be a fair criterion on what contractors are buying it for.

Q. Don't the city buy things, under the commission form of government don't they run the city on a business basis?

A. It does, but that price is entered into according to law the beginning of the year. As I understand it they advertise for bids for certain material and the low bidder is awarded that contract if a fair price at that time. Cement fluctuates up and down the same as steel and other building materials do and besides that it is possible that there are combinations formed which the city cannot break and which contractors are able to evade. The city to a great extent in my opinion is subject to certain possible combinations, that is to say I have known of contractors being able to buy material much cheaper than the city and just because the city happens to pay a certion price for cement or lumber is not necessarily convincing proof that contractors are not buying it at a less price than that because as I stated the city inherently is subject to certain combinations which they are not able to dodge or evade.

Q. Then you don't think the city can do work as economically as private contractors?

A. I think they can in spite of these additional prices for some materials they buy evade the contractors' overhead charges

3022 and profits and still do the work cheaper if the work is properly handled. You might find particular instances where the city had done work at greater expense than the contractor and on the other hand you might find dozens of instances where the work had been done cheaper.

Q. But as a matter of fact there is no detailed statement of accounts so we can tell is there?

A. There is a record kept of the total cost of these various improvements.

Q. Yes, but it is not analyzed.

A. It is not analyzed in the same way perhaps that a contractor always analyzes his costs, but yet it is analyzed in a general way so that we know whether we are doing work within reason and within the contractors' price.

Q. Now then going back you said this bridge was one of those places or jobs you worked on as giving your unit prices of the various things that went into a yard of concrete didn't you?

A. I stated that I have kept more or less detailed record of the costs of various portions of that work down there the same as I have on all work that I have had supervision of.

Q. You didn't take the actual costs then as I understand it in getting at your estimate, but you deduct something. For instance you say it would not be fair to take what the city is paying for cement to be what somebody else would have to pay for it under like circumstances.

A. I know that you can get a quotation for cement for as low as $1.13 per cubic yard on board cars.

Q. You mean per barrel?

A. Per barrel, yes.

Q. But as I understand the price which the city gets covers
3023 cost of delivery in all portions of the city. Sometimes might be a five mile delivery.

Q. Sometimes might be one block?

A. Possibly, yes.

Q. Now then you say you know you can get quotations on cement, you know that if this gas plant were reproduced it would extend over a period of one or two or three years don't you?

Q. That is my understanding.

Q. So it would not be any fairer to take prices of cement today in figuring on work like that than it would be to ask the city to take it when buying early in the year for the entire season would it?

A. It might be. The city is governed by certain fixed laws, the gas company is not. The gas company can take advantage of the market and if properly managed does take advantage of the market in materials, price of steel or cement or labor and they can build such portions of their work I take it when the market is right and if the market is materially low they could probably rush the letting of the contract for cement or other work. The city does not have the advantage of that.

Q. I don't want to discuss the legal end of it with you, I don't know this law you refer to, there may be one, but I never knew the law required the city to buy all material at one time, but whether there is or is not, I don't think makes any difference. Now then you said there was an abundance of sand and gravel could be obtained now from the river.

A. And for the last two years practically have been.

Q. That is when the river has been very low?

A. Yes; you may say abnormally low.

Q. It is an abnormal condition you base your statement
3024 on?

A. That is based on present conditions or for the last

year or two and it is possibly to a certain extent abnormal. That would not cover the entire year. There are certain periods of the year when the river is up and you can't get out sand and gravel. Then you have to buy from the sand pumps. On the other hand there are certain times of the year when the low water exposes the sand and gravel bars so you can get all the sand and gravel you want from the river without buying from the sand pumps.

Q. What experience have you had putting in concrete foundations?

A. Buildings?

Q. What buildings?

A. Do you mean for buildings?

Q. Yes.

A. I don't recall that I was ever personally in charge of any building foundations.

Q. Now you said concrete had been mixed and placed at 50 cents. That was on what sort of a job?

A. Well it would cover a very wide range of work. That is to say I have had authentic reports of mixing and placing on say buildings of this type over here for as low as 25 cents per cubic yard.

Mr. BRENNAN: You mean the Hewitt Hotel when you say over here?

A. Yes; the hotel over here in this block.

Q. When you say authentic reports do you mean persons who done the work or that you read something of that kind?

A. When I say authentic reports I mean my engineering journals which I regard as authentic reports if the reports are given in such shape and by such engineers in charge of the work that they appear to have had access to the actual facts.

Q. Have you any experience in your own work where it has been done at that figure, 50 cents?

A. Yes.

3025 Q. Where was it?

A. If you won't again object to my referring to the Walnut street bridge.

Q. Well that is not what I call your own experience.

A. Well if you bar an engineer from giving his experience where that has been done directly under his charge as a representative of the party that is paying for it, it would bar an engineer from a great deal of——

Q. I don't understand that on the Walnut street bridge you have actually analyzed accounts of the actual expenditures, is that true or isn't it?

A. I have as——

Q. Have you as a matter of fact had actual analyzed accounts on the Walnut street bridge or not?

A. I have had what purports to be the actual statements of cost for labor and wear and tear on machinery and all other items that enter into the cost of mixing and placing concrete there and I have no reason to believe that the contractor willfully misinformed me

in regard to facts which did not lie within the possibility of my own verification such as wear and tear on the machinery and the salaries that he was paying his foreman in charge of the work and so far as I was able to verify his statements his statements were all correct those that I did verify. For instance when I asked him how much he paid——

Q. He told you how much it cost him?

A. No, sir he did not.

Q. Did you get it from the books?

A. No, sir. I asked him the unit costs of certain items such as how much per day he was paying common labor, how much for foreman, how much for the men that were operaitng the
3026 mixing machine and how much his wear and tear on the machinery would amount to and the price that he was paying for sand and gravel and for stone and for cement delivered on the job and all of these items that I was able to verify I did, such as the item of what he pays the common labor, that is a very simple matter to verify that by asking the laboring men and the cost of getting sand and gravel that is let by sub contracts to——

Q. We are talking about labor incident to putting this stuff in place, you have got on to materials.

A. I stand corrected on that. The matter of keeping tab on the number of cubic yards of material that goes into a day's run is a very simple matter, that is measuring up the actual concrete we have placed when we get through at the end of the day and recording how many men working on that job in connection with mixing and placing is a simple matter. The item of wear and tear on the machine that he uses of course I relied on his statements as I say not working for him and did not have occasion to make up his records on that.

Q. Did not include forms?

A. Mixing and placing don't include forms, no sir.

Q. Nor labor on forms?

A. No, mixing and placing is a separate item from forms.

Q. Now you said this work such as this work in the purifying house here was usually done by ramming it hard and taking the forms right off of it so you could use it immediately for the next section. Give us some instances of jobs where it is done that way?

A. There is a piece of coping being placed at this time in front of the new municipal building on east Second and Locust street-
where that process is being used. Coping there about, I
3027 should say eight inches wide and possibly a foot high.

Q. Laying it in thirteen foot sections and moving the boards just as soon as the concrete is poured so as to not stop the concrete mixer?

A. No, I don't hardly think they are laying it in thirteen foot sections or anything in that nature, but simply done——

Q. How long is the concrete set in place before the forms are removed?

A. It is not necessary to leave it in there more than——

Q. I didn't ask you that, how long is it set as a matter of fact?

A. On that piece of work over there?

Q. On that piece of work?

A. I have not been over there today all the time, but I know I went over by there at noon and a piece of work they had completed during the forenoon had been stripped. Green cement constituting their forenoon's work that had been stripped already. I have seen time and again coping work such as work around lawns which is in the same class of work, thin walls from a foot and a half to two feet in height and the concrete dropped and tamped into that and rammed good and hard and removed immediately. It is just the same as tamping damp earth into a form and removing the mould.

Q. Is this work you have been talking about seeing done water tight work?

A. I don't know for I never had occasion to test it to see if it was.

Q. Do you know whether this work at the purifying house is?

A. I don't know, if it was not naturally water tight it could be made water tight by either treating afterwards or adding water proofing compound to the material as it is mixed.

3028 Redirect examination by R. O. BRENNAN, Esq.:

Q. You spoke about the cost to the city for carrying on some of its public improvements. I will ask you if you recall any variation between the contract price and price at which the city did the work for the grading on west Seventh street from Grand Avenue to Chestnut.

Objected to as irrelevant and immaterial wholly.

A. I recall many instances where the work done by the city showed up much cheaper than that done by the c-ntractors and for instance now this bridge that has been referred to several times St. John's bridge. I was asked by a contractor what it cost us to build that and he commented on the low price in comparison to what they ordinarily got. As I stated before there might be an instance here and there where the price would range higher than the contract would.

Q. I was just calling attention to that street if you recollect that?

A. Yes, I do recall that particular instance as a very wide range in favor of the city.

Q. Now do you know what the Des Moines Gas Company pays its laborers?

A. No, I do not.

Q. Do you know whether they pay them as much as $2.25 a day for nine hours' work?

A. I do not.

Q. The city's employés work how many hours a day?

A. Eight hours.

Q. Now you stated in to tell something about the item of the wear and tear on tools entering into the cost of mixing and

3029 placing a cubic foot of concrete you said it was inconsiderable. Now just how much of a factor is it, that item?

A. You take a mixing machine such as the city uses for small bridge work, sidewalk work and such concrete work as we do and that cost originally probably $350 as I recall. That has been in use three years and according to my information on that has been I think something like $150 of repairs in that time.

Q. In how many years?

A. Three years. Now that machine has been going pretty constantly for the greater portion of the time during the construction season which lasts six months. It is not operating continuously on any one job from morning to night because the nature of the work very often is such that the men will shut down the machine and do form setting or something of that nature while the machine stands idle, but even suppose that machine had been worn out and was in the scrap heap now there is an item of $350, then you have for shovels and wheelbarrows and some lights so that the average amount of machinery and tools used by a construction gang of say fifteen men would perhaps run to $450 and ordinarily that would last fully three years, in all probability a great deal longer and in that time if they were working day after day say six months in a year they would put in one hundred and fifty days of labor so that would be four hundred and fifty days' labor and that gang of fifteen men with a type of machine like that could turn out seventy five yards of concrete.

Q. In what length of time?

A. In eight hours.

Q. Is there anything complicated with respect to the operation of one of these mixers?

A. No, it is simple, the ordinary foreman seems to be able
3030 to pick it up.

Q. Require any high grade mechanics to operate it?

A. No.

Q. Do you know whether they have on the market small portable concrete mixers for small jobs?

A. Yes, they have small portable mixers micing as small as three or four cubic feet to the batch and easily hauled around. Take for instance this mixer that the city used when we are laying sidewalks they set it right in the middle of the sidewalk on a couple of two by eight planks and they run a certain amount of concrete through there and place it back at the back end of the machine, shovel it right into place and when they have laid a section say as long as a two by eight plant sixteen feet long the machine is run forward on to other planks by the men in charge and it does not take but two or three minutes to remove the machine either. That is not the smallest type of machine on the market and with the modern types of machinery that have been perfected and put on the market within the last two or three years, the cost of mixing and placing concrete in small work has been brought down very close to mixing and placing on large work where you have a chance for organizing and operating a large mixing plant and practically all sidewalk and curb contractors now use small portable mixers and move them many times a day.

Q. I wish you would tell us what general data you have collected with regard to the unit prices entering into concrete construction.

A. The item of labor of course ra*b*ges very widely in favorable conditions as I stated it will be mixed and placed for less than 50 cents and you will sometimes under difficult situations—it will run to a dollar a cubic yard though that is not likely with ma-
3031 chine mixing, that is more likely to be the case for hand mixing. The cost of sand and gravel and crushed stone I have had occasion to verify many times in the last month by personal inquiry of the material men that sell those materials and cement the same way. For instance just a few days ago I had occasion as a member of the committee for the Hyperion Club to get prices of cement delivered at the Hyperion Club site and got a price of $1.13 a barrel out there on the Interurban.

Q. Where is that located, how far from the court house?

A. Eleven miles from the court house and takes a fifteen mile haul on the Iowa freight tariff.

Q. Can you tell the Master at this time what Mr. Wheeler is paying for labor on the bridge, that is that class of labor which has to do with the mixing and placing of concrete.

A. He is paying or was the last time I asked him some two weeks ago, 20 cents per hour for general labor on the bridge, common labor such as is used for mixing and placing concrete.

Q. How many hours constitute a day's work?

A. Ten hours, $2.00 per day.

Q. You spoke of having done some work in Gilman Park Addition. Was that work which the city did or which the persons who platted that addition had done by private contract?

A. That was work done by the owners of the addition by day labor and I was the foreman in charge of the construction work and did all the work of checking materials brought on the job and keeping time, staking out the work and running the work myself just the same as though I had been the contractor.

Q. And that work involved grading did it?

A. It involved the excavation of the trench for the curb.
3032 Q. And the construction of the curb?

A. Yes, and the back filling.

Q. Preparing the roadway for the paving?

A. No, I did not have charge of the paving work. That was done under another contract and my work on the paving was of a general nature. That is to say I recommended the type of paving that was adopted and the plans and specifications were prepared under my recommendation and then the contract was let and work done under city inspection.

Q. What is the fact as to these public contractors who are entitled to partial estimates from time to time as the work progresses whether they have in the past which has come to your knowledge filed the pay rolls and the contracts for the materials which have been used in connection with the work and in that way have you become familiar with the cost of labor and material?

A. The matter of filing pay rolls and estimates of material, that is receipted bills for material is one of the requirements on general contract work where they get estimates and those of course have afforded opportunity to get data in regard to cost of material as those were filed and then occasionally on some work I have had access to the contractors' records to a certain extent, that is to say most contractors whose work I have inspected when they are asked for the cost of certain materials have been very free to give me their records of costs, that is to say receipted bills for material. For instance if I wanted to know what steel was costing I have never yet found a contractor who would refuse to show me his bills for material and those are the ways in which I have secured a great deal of the date in regard to cost.

Q. So that you have in connection with your duties fa-
3033 miliarized yourself in that way and kept in touch with the market prices.

A. Yes, sir.

Q. Of labor and materials?

A. Yes, sir.

Q. Now are you called upon from time to time and have you been called upon in connection with your duties as city engineer to prepare and submit estimates of the cost of curbing for instance along streets?

A. Yes, while I was city engineer that was one of my duties.

Q. In making up those estimates for the benefit of the city council what factors were necessary to be considered by you in connection therewith?

A. The location of the work distance of haul, length of haul from the source of supply of materials, the amount of excavation involved and the character of the soil, etc., that would be encountered.

Q. What is the fact so far as you have observed as to the extent which the gas company has laid mains either before the streets were paved or at a time when they were being repaved? Tell us in a general way.

Objected to as irrelevant, immaterial because not asking for present conditions.

A. My recollection of that is that the major portion of their mains that have been laid during my connection with the city were laid on unpaved streets. I do not at this instant recall very many cases where they lifted the pavement.

Q. Since you went in as city engineer in 1906 as I remember your testimony this morning?

A. Yes, sir.

Q. And from that time up to the present Court Avenue
3034 from the river to the Court House, Walnut Street, Locust street and a great portion of Grand Avenue has been repaved and the pavement has been reconstructed during that time?

A. Yes, it is a fact that the west Des Moines business district has practically been repaved since 1905 complete. There are very few

pavements in existence in the business district that were laid according to my recollection prior to 1905.

Q. Do you know about how many times Walnut street from the river, that is in West Des Moines, from the river west to 15th street has been paved or repaved within the last ten years?

A. Well it was repaved with asphalt from Second street west as I recall it in 1905. That extended as far as Tenth street I believe.

Q. What was the character of the pavement just preceding the placing of the asphalt on the street?

A. That was brick pavement.

Q. And do you know how long that brick pavement had been down?

A. Not from personal knowledge that is, I do not recall. Of course the records at the engineer's office show.

Q. Do you know whether the street was at one time paved with cedar blocks?

A. That is what the record shows.

Q. Is that true as to the other streets?

A. Very many of them were paved with cedar blocks.

Q. Was brick afterwards substituted and then asphalt or creosoted wood block substituted for the brick?

A. Yes, sir.

Q. Now with regard to these improvement certificates they are delivered to the contractor in full payment for his work and where the property owner waives of course they are certified up to
3035 the treasurer?

A. Yes, sir.

Q. And collected by the County Treasurer each year in seven annual installments?

A. Yes, sir.

Q. So that the contractors as a rule have been in the habit of selling these securities?

A. Yes, sir.

Q. Have you made any observations with respect to the manner in which crossings are constructed under street railways or steam railways for the purpose of laying pipes or mains?

A. Not to any extent I could not state that I have carefully observed that is except for sewers. For a sewer ordinarily——

Q. There you have to go some depth?

A. Yes, that is a deeper excavation so they can tunnel/ without any difficulty so the width of a street railway track that interferes is only about seven feet or such a matter and for a sewer ten feet deep it is a very simple matter to tunnel under it.

Q. Have you seen them place underground conduits under street railway or steam railways, or have you seen them construct trenches for the purpose of laying gas pipes or water pipes under street railway crossings?

A. I have seen all those operations, but do not recall any unusual feature about them that attracted my attention at the time.

Q. I want to ask you in a general way where a trench is to be excavated to a depth not to exceed five feet could you see any real

occasion for bracing or sheeting in a trench of that size where it is say from eighteen inches to three feet in width and not exceeding five feet in depth?

3036 A. As I have stated a majority of the soil that has come under my observation in the city is such it would not require bracing or sheeting for the depth of trench.

Recross-examination by N. T. GUERNSEY, Esq.:

Q. Do I understand you to say that on the Walnut street bridge they are paying $2.00 a day for ten hours for ordinary labor?

A. That is the last report I had from there.

Q. And what is the city paying for the same kind of labor?

A. I believe the city pays 25 cents per hour—no it is more than that it is $2.25 for eight hours, that is about 28 cents.

Redirect examination by R. O. BRENNAN, Esq.:

Q. Do you know what the ordinary contractor pays for teams?

A. For hiring teams?

Q. A man with a team to do back filling or any work along that line of work?

A. When they hire a man with a team at the present time they pay about 50 cents an hour. Sometimes less than that under certain conditions, as a scarcity of labor, but 50 cents an hour would be a fair average price.

Witness excused.

3037 JAMES PARKER being called on the part of the defendants and sworn and examined — chier by R. O. Brennan, Esq., testified as follows:

Q. Where do you reside?

A. Des Moines, Iowa.

Q. How long have you lived in this city?

A. About 22 years.

Q. What is your official position at the present time?

A. Assessor city of Des Moines.

Q. How long have you been assessor for the city of Des Moines.

A. About three years and a half.

Q. Were you formerly employed in the office of the auditor of Polk county, Iowa.

A. Yes, sir.

Q. And in what capacity and for what length of time?

A. Deputy in charge of the revenue department for about seventeen years, not all that time in charge probably, about twelve or fifteen years in charge of it.

Q. During that time, Mr. Parker did you become familiar with the assessed values of real estate in this city?

A. That department has charge generally of the assessors of the county while we did not particularize at all or specialize in any way we had the overseeing of the work.

Q. You prepared the tax lists for the county treasurer through your office.

A. Yes, personally.

Q. And using the valuation returned by the assessor for the purpose of making up these lists?

A. As equalized, yes.

3038 Q. And from that general experience did you in a general way become familiar with the assessed valuation of the real estate?

A. Yes, sir.

Q. And you have been the city assessor for the past three years or more?

A. Yes, sir.

Q. And during that time have been called upon to make valuation of real estate for the purpose of taxation in the city of Des Moines?

A. Yes, sir.

Q. As assessor of the city of Des Moines, Mr. Parker, have you assessed the real estate in the vicinity of the manufacturing plant of the Des Moines Gas Company?

A. Yes, sir.

Q. And do you recall the years in which you made such an assessment?

A. 1909 and 1911.

Q. So that you have made two assessments on that property and the property in the immediate vicinity?

A. Yes, sir.

Q. You have prepared and produced a plat which the reporter has marked defendant's exhibit No. 29 and I wish you would tell the Master what that plat purports to represent and from what source the information which it purports to give was secured?

A. It shows the assessed value of property from the alley north of Locust street to Raccoon street on the east side and from the river to the west line of Fifth street.

Q. And when was the assessment made from which these figures were taken?

A. 1911.

3039 Q. Does the plat defendant's exhibit No. 29 show the location of the real estate of the Des Moines Gas Company?

A. It does, yes, sir.

Q. And the amount at which it is assessed or was assessed the year 1911?

A. Including all property owned and taxable in the city, yes.

Q. And are the figures shown upon that plat, do they represent the value of the real estate exclusive of the buildings or improvements or do the figures represent the valuation as found by you for the purpose of taxation of the property including buildings and improvements?

A. They include buildings, improvements and all property of the company, mains.

Q. Take the property immediately north of the manufacturing

plant of the Des Moines Gas Company being the property abutting east Court Avenue from First street up to the point indicated by you as shown on the plat and tell the Master the range of prices for valuation as shown by the plat?

Objected to as immaterial, incompetent, the valuation of property for the purpose of taxation is not competent or material on an inquiry such as is here presented nor is such a valuation of other property than that involved in the controversy material.

A. They seem to run from $2,200 upward per lot of 44 feet. This would include improvements.

Q. Including improvements?

A. Yes, sir.

Q. Now in order to get it on the record does the plat, defendant's Exhibit 29, show the block and the number of the block and addition in which the property is situated?

3040 *Q.* It does show the block number, lot number and dimensions in feet of the lot or tract of land assessed.

Q. Now take the property, and you may describe it as shown by the plat lying immediately east of the gas company's property and tell the Master what the valuation of the property is as shown on this plat?

Same objection.

A. Immediately across the street east the lowest valuation I see is $1,500. There is a little increase until you get to Fourth street and there it decreases.

Q. $1,500 what do you mean by that?

Same objection.

A. 66 foot lot.

Q. 66 foot frontage on what street?

Same objection.

A. On Second street.

Q. What is the depth of the lot?

Same objection.

A. 132 feet.

Q. Do you have in mind the particular property which that plat describes?

Same objection.

A. I do not, no sir.

Q. You don't know the character of the improvements at this time on the lot?

Same objection.

A. I do not, no sir.

Q. They run from $1,500 a lot up to how much?

Same objection.

A. $2,000, well there is the buildings, that one up to $7,500 a lot.

3041 Q. Where is that valued at $7,500?

Same objection.

A. Northwest corner of Market and east Third, $15,000 on 132 feet square.

Q. The northwest corner of Third and Market and do you know what that property is or whose property it is?

A. No, I don't recall what it is.

Q. Can you take the map which is complainant's Exhibit No. 6 in connection with your plat, defendant's exhibit 29, and tell us what property is located at the northwest corner of Third and Market street.

A. Nothing seems to be marked here. I don't recall that that is.

Q. I will ask you this Mr. Parker, if the plat, defendant's exhibit No. 29 correctly shows the property adjacent to that of the Des Moines Gas Company and correctly shows the numbers of the lots and the blocks and correctly shows the valuations placed upon the respective properties for the purpose of taxation as made up by you for the year 1911 as city assessor?

Same objection.

A. It does, yes.

Q. When was that plat prepared by you Mr. Parker?

A. Some three or four weeks ago. Just the week that this hearing was adjourned the last time.

COURT: This don't show the valuation of these lots separately?

A. Not unless they were assessed separately.

COURT: It shows the valuation of the whole block?

A. I don't think there is but one block th-re, that belongs to the gas company and that includes all property in the city, made one assessment for the entire property in the city, did not attempt to distribute it.

3042 Q. Does this show the gas company's property.

A. It does. I think it is Block F is it not. The valuations are placed on block C I think and all other property was marked assessed with Block C.

Q. That is to say now you did not take up the property in Block M or Block T Scott & Dean's Addition and show that separately upon this plat?

A. No, sir. Well no separate valuation was placed on it, it was all lumped.

Q. Just where on the plat Exhibit No. 29 is the gas company's property shown?

A. You mean their assessment?

Q. Yes.

A. Their assessment is shown on Block C Scott & Dean's Addition.

Q. And how much is it shown to be?

Same objection.

A. $1,350,000.

Q. And that includes all of the real estate owned by the Des Moines Gas Company?

Same objection.

A. Yes, sir; fixtures and mains.
Q. Manufacturing plant?

Same objection.

A. Yes, sir.
Q. Manufacturing plant and everything of that kind?

Same objection.

A. All their property yes.
Q. I notice some property lying immediately east of Block C indicated as being in Block K lots 5, 6, 7, 8, 1 and 2, seem to have the valuation placed on each lot separately. Do you know
3043 whether that includes the gas company's property in whole or in part?

Same objection.

A. I don't know what property the gas company owns. The gas company furnished me a list of their property and no assessment was extended on any of that property but was extended against Block C as a single piece of property including all the others. I could not answer it because I don't know their itemized list of property, haven't looked at it since.

Q. Take the property in Block 17, lots 1 to 10, both inclusive, I notice on east Vine street the figures 150. Does that indicate the frontage on Vine street?

A. Yes, sir.

Q. And the figures on the plat on Lot 1 of 56 feet does that represent the frontage on Fourth street?

A. It does, yes. The ink figures represents dimensions and lot numbers. The lead pencil figures represent values.

Q. In Block 17 to which I call your attention there are a number of figures in ink 6400 for instance. Lot 2, and they represent the valuation of the lot for the purpose of taxation?

A. Well I will have to correct my testimony, I thought I had the valuation all down in lead pencil but the valuations are there in ink if written across the face of the lot. The ink figurnes on either margin of the lot are the frontage.

Q. So that this plat, Mr. Parker shows the lot and block, the dimensions of the lot or lots and the valuation.

Same objection.

A. Yes, sir.
Q. That was placed on the lot for the purpose of taxation?

Same objection.

A. Yes, sir.

Q. I wish you would give these boundaries embraced within
3044 this district by streets so we can have it here on record?

A. The map covers the territory from the alley north of Locust street to Raccoon on the south and then for a little ways a souple of blocks further and from the river eastward I think to Fifth street.

Q. You say that was a true correct representation of the district and description of the lots, dimensions of the lost and the respective valuations?

Same objection.

A. Yes, sir.

Q. Made against the same?

Same objection.

A. Yes, sir.

Here the further hearing was adjourned until 9:30 o'clock tomorrow morning.

3045 Tuesday Forenoon Session.

SEPTEMBER 12, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of Defendants resumed as follows:

JAMES PARKER, Continuing his direct examination, examined by Mr. Brennan, testified:

Q. Now Mr. Parker, in using the figures which you have used on Defendant's Exhibit 29 to indicate the values of the properties shown on this plat for the purposes of taxation, I will ask you from what source you secured the data or information which appears upon the plat?

A. Well, those assessments were made by a deputy and we worked all together and attempted to get the valuation of the property by any source we can obtain as to real estate values, by inquiring among real estate men as to sales and mortgaging and offers of sales.

Q. What I wanted to know more particularly, Mr. Parker, was if the figures which are shown upon the respective lots indicated on this plat, Exhibit 29, are compared with the figures which appear on the original assessment rolls?

A. Yes, sir; they are copied from the assessment roll of 1911.

Q. And did you personally check them up to ascertain if they were correct?

A. Yes, sir. I did. I made the figures and read them back.

Q. I understand you to state that the valuation which is placed upon the property of the Des Moines Gas Company, as shown upon this Exhibit 29, inclusive the real estate, the buildings and all property, both real and personal, of the Des Moines Gas Company situated in the city of Des Moines, Iowa?

3046 A. It does, yes, sir.

Q. Does that include the Valley Junction property?

A. It does not. It includes the mains to Valley Junction, but not property outside of the limits.

Q. So that the valuation extends over the distribution system as well as over the other property?

A. Yes, sir; it does.

Defendants now offer in evidence Exhibit 29, identified by the witness.

Objected to on part of complainant as being immaterial and incompetent and does not tend to establish the value of the property which would be the basis of the calculations of the return.

The MASTER: Will you tell me under what section you made this valuation?

A. There is a special number—I can't tell you the number just now.

Judge CARR: It is 1323; and there is 1343 that has special provisions as to gas companies.

Mr. BRENNAN: We had better have the bailiff bring in a Code, so that there will not be any misunderstanding.

Cross examination by W. L. READ, Esq.:

Q. What is your age, Mr. Parker?

A. Forty-two.

Q. You have been assessor of the city of Des Moines for how many years?

A. Three years.

Q. You were in the auditor's office of the county prior to
3047 that?

A. Yes, sir.

Q. For how many years?

A. About sixteen or seventeen years.

Q. What had you been prior to going into the auditor's office, what had been your occupation?

A. I had been book keeper for a short time.

Q. Had that been your calling up to that time?

A. Yes, sir.

Q. You had never dealt in real estate or given any special attention to the values of real estate?

A. Not as a business, no sir.

Q. In the auditor's office, what were your particular duties?

A. In the revenue department, making up the tax lists.

Q. That involves the compilation of the tax list from the assessment rolls returned by the assessor?

A. Yes, sir; and since the Code of 1907 the auditor's office has had a sort of an advisory capacity over the assessors of the county.

Q. Since you have been assessor of the city of Des Moines you have had a number of deputies under you?

A. Yes, sir.

Q. How many?

A. About twenty making assessments.

Q. Those deputies are appointed by whom?

A. By myself.

Q. Has it been your practice to appoint men who have engaged in real estate transactions and with special knowledge of that subject?

A. We try to get men with special knowledge of the subjects of assessing and valuations, yes sir, but did not pick out real
3048 estate men.

Q. Will you name some of the deputies?

A. Mr. Higgins, Mr. Voodry, Mr. Campbell, Mr. Montis——

Q. That will do for the present. Now, Mr. Higgins is in what occupation?

A. Gardner and farmer, living in the city.

Q. Mr. Montis is engaged in what occupation?

A. He is an insurance man, an appraiser.

Q. What do you mean by that term, appraiser?

A. Appraiser for the losses.

Q. Mr. Campbell is engaged in what occupation?

A. Mr. Campbell is a retired man; I don't know what his original occupation was.

Q. The other one, Mr. Voodry, what is he?

A. He is a farmer.

Q. Are the four typical of the list of twenty men?

A. Yes, sir; there might be better men I would like to add if you are asking for occupation. All of these men have served for from five to fifteen years as assessor; I do not give that as the occupation as that is not a continuous job.

Q. There has been in the city of Des Moines rather a marked advance in real estate values, inside business property?

A. Yes, sir.

Q. It has been difficult, hasn't it, to have your valuations for taxation keep pace with the real advance or commercial advance in the values of property?

A. It has, yes sir, when it comes to the prices paid in certain districts.

Q. In assessment for taxation, the values for taxation have dragged behind the real advance, haven't you, you have not been able
3049 to have your valuations for assessments coincide with the rapid advance in properties, have you?

A. We do not aim to make our assessments up to the value, the selling price of property where this element of speculation enters into it.

Q. Well, regardless of that, you haven't been able to advance your valuations for taxation purposes and keep pace relatively with the advance in values, have you?

A. Well, it is rather difficult for me to know how to answer that, except in the way I did. Our valuations in the residence. Our valuations in the residence district we think are up to the selling price; but in this business district the price at which properties sell we do not reach in taxation.

Q. The thought I had in mind was this: that the assessments have been made every two years; you started out years and years ago

with a low valuation, because property values have been low in Des Moines, and you started out at a time when the valuation for assessment was only a percentage of the real value, didn't you?

A. In the past, years ago, yes sir.

Q. It has been difficult, hasn't it, to advance the valuation for taxation to the point of the actual value owing to the practice in the past?

A. No, there is no difficulty in bringing it up if we could ascertain or determine that the selling price of today is the actual real value of the property, not considering that element looking towards the future growth of the city. Of course our assessment made in 1911 would be two years behind under any circumstances; we could jerk it up.

Q. You could do it, but are you able to practically, do you succeed in doing that?

3050 A. We succeed to the extent we intend it.

Q. You only intend to express a part of the advance that has occurred, or may have occurred within that two years or in prior years?

A. Yes, sir; as I stated, we aim to be as far under as the element of reproduction or future growth may enter into the real estate.

Q. So that it is true, then, in the main, that your valuations for taxation do not reach the level of the real or commercial value in inside business property at least?

A. In the business property, yes sir, that would be true, and would be true in a different ratio in different places. I might illustrate that with Tenth and Locust. I estimate our assessments are about 60 or 70 per cent of the today selling price, while at Second and Locust—Second and Walnut, I should say—they are within 85 or 95, the element of speculation being much greater in some places than in others.

Q. For instance, what is the valuation for taxation upon the Fleming Block?

A. The valuation fixed by me was $430,000, and it was reduced by the board to $384,000.

Q. Now does that include both improvements and real estate?

A. Both, yes, sir.

Q. Are they separated?

A. They are, yes sir.

Q. What is the real estate?

A. Well, it is a little hard—the real estate is $140,000.

Q. What frontage is there there?

A. 66 feet.

Q. That property is located on the corner of Walnut and Sixth Avenue?

A. Yes, sir.

3051 Q. The southeast corner?

A. The southwest corner.

Q. The improvements then according to that would be valued at $244,000?

A. What did I say the real estate was?

Q. $140,000.

A. Well it was $138,000.

Q. This valuation was placed by you—you valued the property in the first place?

A. I valued the property at $430,000 and it was reduced; my valuation of the building was $290,000.

Q. We do not care about that now. Did you know what the improvements cost?

A. I have heard it variously estimated, yes sir.

Q. Have they been by persons who knew?

A. I never can tell who knows.

Q. How nearly does the figure $240,000 coincide with the cost of the building?

A. It is my information from what I have heard in business circles that the building cost $350,000 and a little upward, I have heard.

Q. The building is a new one, erected within a few years?

A. Yes, sir.

Q. And is a very substantial one?

A. Yes, sir.

Q. Of fire-proof construction?

A. Yes, sir.

Q. Now, the 66 feet of real estate, the valuation of $140,000 is about $2,100 per front foot; do you think that coincides with the commercial or market value?

A. Not taking into consideration the selling speculation.

3052 Q. This valuation is the one made in 1911?

A. Yes, sir.

Q. The property is worth considerable more than $140,000 the ground would be at this time?

A. It would sell for more, yes.

Q. Sell for $3,000 a front foot, or $3,500?

A. I wouldn't put it $3,500; I would say if the ground was clear it would sell for $3,000.

Q. What is the valuation for 1911 of the Citizens Bank Building on the northeast corner?

Objected to on the part of defendants as irrelevant, immaterial and not cross examination.

A. The ground and building, $210,000.

Q. How much for the building and how much for the ground?

A. The ground $90,000; and the building $120,000.

Q. What frontage is there?

A. 44 feet on Walnut street.

Q. That valuation upon real estate is about $2,000 a front foot?

A. Yes, sir; $2,000.

Q. The real present commercial value would be as much as $3,000?

A. It would, yes sir.

Q. Do you know what the building cost?

A. I have been told—I was trying to think—I was thinking it was somewhere in the neighborhood of $130,000 to $140,000; I have forgotten.

Q. At any rate you are satisfied these figures do not coincide with the cost of the buildings?

A. With the Fleming, yes sir; I would not say so with the Citizens National Bank Building, with the exception of $10,000 or $15,000.

Q. What do you mean by that, Mr. Parker?

3053 A. The valuation we placed on the Fleming Building is not its cost, but the other one I think is about its cost.

Q. About $120,000?

A. About $120,000; I think so.

Q. Do you know where the Pritchard property is, on the corner of Eighth and Walnut?

A. Yes, sir.

Q. And the Foster property?

A. Yes, sir.

Q. Do you recall what the valuation for taxation has been upon these properties?

The defendants interpose the same objection last above made, and the further objection that the property inquired about on cross-examination is in an entirely different section of the city from that inquired about on the examination in chief, and therefore is incompetent.

A. I brought my book; I can tell you, it is $75,000.

Q. Each?

A. No, the Pritchard corner is $75,000.

Q. And the other corner?

A. $80,000.

Q. Referring your attention to the Foster property—you know that has been recently leased for a term of years?

A. I know it has, yes sir.

Q. Ninety-nine years is your understanding, Mr. Parker?

A. I have not the terms of the lease yet.

Q. And has been leased on a valuation of $200,000?

A. The Foster property?

Q. Yes, sir.

A. I don't know.

3054 Mr. BRENNAN: Let the record show that these objections are made to all this line of cross-examination, because it relates to an entirely different section of the city than the property in question.

The MASTER: This objection may apply to all the cross-examination.

Q. You also know the Pritchard property has been lately leased for a term of ninety-nine years or some long period on the basis of a $200,000 valuation.

A. I do not know, because we pay no attention to those leases at all until we run down the parties and we have not done that since we closed up our work this year.

Q. Now the valuations you have given in response to the inquiries are fairly typical of the valuations on Walnut Street?

A. They are in that section, from Fifth street to Tenth street, yes sir.

Q. How is it from Fifth Street east?

A. They are much closer to the real selling price of the property.

Q. And there you think they reached what per cent of the real selling value?

A. Oh, they will reach 85 to 90 per cent on Walnut Street, that is, passing Fourth.

Q. That is of course your judgment?

A. Yes, sir.

Q. On the east side, take the Capital City Bank Building, what is the assessment upon that?

A. $130,000.

Q. How nearly does that coincide with the actual selling price, commercial value?

A. I have never heard any figures except those my own
3055 men computed as to the buildings, so I could not reply as to the building itself. The ground value, in the way I know men are carrying the property is perhaps in the neighborhood of 75 or 80 per cent of the value of the vacant ground.

Q. This figure you are giving is the value of the ground and building?

A. Yes, sir.

Q. $130,000.

A. Yes, sir.

Q. And the valuation as placed on the building, what is that?

A. I neglected to take that; that was in another district.

Q. The property just diagonally across the street, the Coberger property, which Mr. Teachout has purchased, what is the valuation of that, can you tell?

A. I can not tell you off-hand, no sir.

Q. Can you recall approximately?

A. Why it is a little over a hundred thousand dollars, I don't remember just what. This is simply a record for the west side.

Q. Just precisely what is shown by that Exhibit 29; what do you purport to show?

A. The blocks, the lots and the streets.

Q. With respect to valuation I mean?

A. I show here the valuation as placed by the assessor for assessing purposes for 1911.

Q. That valuation was made when?

A. Some time in January, February or March of this year.

Q. The value of the ground and improvements are not separated on that?

A. Not on this, no sir.

Q. That valuation was made not by you?

A. Why the valuation was not made by me, but was passed on by me after it was made, lot by lot.

3056 Q. Was that for comparative purposes or for valuation purposes?

A. More to see that the valuations corresponded with my ideas. I check up every real estate valuation in the city that way.

Q. Will you turn to the property on Court Avenue, on the northeast corner of First and Court Avenue, the Bailor property, used to be, and tell us what the valuation placed upon that is?

A. $13,000.

Q. How much frontage is there?

A. 132 feet square.

Q. That is the property lately purchase- by the Bently-Olmsted Company?

A. I do not believe they purchased it; the Ills own it.

Q. That is the property that Lorenz Ill Company is building upon and renting to the Bently-Olmsted Company?

A. Yes, sir.

Q. Do you know upon what valuation?

A. I don't know. I know what valuation they paid for it. I don't know the terms of their lease.

Q. Don't you know that it is upon a valuation of some $220 a front foot?

A. I do not; all I know is the purchase price of the Ill property.

Q. The property across the street, the McDonald property, the Des Moines Manufacturing and Supply Company, what is the valuation upon that?

A. You mean the whole half block?

Q. Yes.

A. $28,800.

Q. That includes the improvements as well?

A. Yes, sir; but not the machinery or fixtures—I mean the machinery or merchandise.

Q. In short, the figures and valuations placed upon the
3057 property shown by Exhibit 29 are such as were placed by the deputy making the list of the property, but examined by you afterwards and approved by you?

A. Yes, sir.

Q. How much of an advance, if any, is made over the previous assessment on those properties?

A. Do you mean individual properties?

Q. As shown by Exhibit 29, has the assessment of them been increased?

A. In some places, for instance on Locust street there was an increase on the neighborhood of 25 per cent. Walnut Street was unchanged because of the closing of the bridge. Court Avenue was perhaps not to exceed a ten per cent raise.

Q. How about Vine Street?

A. From Vine Street on south there was no change.

Q. You say Vine was not changed on the south?

A. No, sir.

Q. Is that true of the whole extent of Vine Street?

A. Oh, yes.

Q. How about Market Street?

A. No change.

Q. There has been a marked advance of properties on East Locust Street since the opening of the bridge?

A. There has been up to Sixth Street, yes sir.

Q. Up to the location of the civic center?

A. Yes.

Q. That would affect Walnut Street also, but you did not make any advance because of the temporary closing of the Walnut Street traffic?

A. Yes, sir.

Q. You have made a slight advance on Court Avenue?

3058 A. Yes, sir.

Q. In all instances or in some only?

A. Well the advance would be on the real estate.

Q. Not on the buildings?

A. No, we do not advance the buildings.

Q. Well, these valuations shown by Exhibit 29 are aimed to be conservative, low?

A. I wouldn't say low, no sir, but they are aimed to be conservative.

Q. They do not probably express the present actual selling value?

A. They do not in any place where there is a demand for property as a business property, they do not represent the present selling value.

Q. By business property you mean for manufacturing or storage or any such uses as that?

A. Yes, sir; where there is a good demand for it.

Q. Do you know what the basis of valuation is of the properties shown by Exhibit 29—I mean how the assessor reached the conclusion that the figures placed by him were correct?

A. Well, we have a system in the office of collecting and tabulating all values, and that is furnished to the field men and they spend in these down town districts—for instance, this assessment is all made by one man; he spends some days in talking with men on the east side especially, and getting such data as he can in addition to what we furnish.

Q. What data do you furnish?

A. All of the sales prices and mortgaging and so on that we have accumulated up to date.

Q. You do not furnish him with any holding values of prices, do you?

A. No sir, we do not; he is expected to get that in the talk with the real estate men.

3059 Q. Who was the man that made the valuations?

A. Mr. Higgins.

Q. That is the gardener?

A. Yes, sir.

Q. Where does he live?

A. About two miles and a half southeast.

Q. On the farm?

A. Yes, sir.

Q. That is, his principal occupation is gardening and farming

and he spends simply such time as may be required in acting as deputy?

A. Well he was placed in charge by me of that district when I first became assessor and he had been assessor I think fourteen years prior.

Q. In the country districts?

A. In that way he keeps track during the summer time of that district, knowing he is going to assess there, although he is not paid in any way.

Q. Do you know whether Mr. Higgins knew whether there has been a very marked advance in holding values or offering values?

A. Why, I know Higgins knows that property and I am quite positive that he knows almost all of the holding values. I know he knew many of them, because we had talked it over. After he has got what information he can then we assess by the front foot and before he begins with the clerical work of appraising, we talk it over ourselves so that I know what information he is acting on, and I also know the assessments before they go down as to the front foot.

Q. Of course, you don't know what information Mr. Higgins had in fact?

A. If he did not tell me all of it, of course I did not know.

3060 Q. Your experience as an assessor does not justify you in the conclusion that the owner of property puts any extravagant value on it?

A. I could not quite agree with you, because the man who holds and wants to hold has a strong incentive of giving a valuation as high as possible and is just as apt to do so as the man who wishes to sell.

Q. That is your conclusion?

A. Yes, sir.

Q. For instance, J. K. Gilchrest Company own property in the neighborhood of Vine Street?

A. Yes, sir.

Q. Have you had any experience with the Gilchrest people in regard to their estimate of the value over there?

A. No, sir; I have not over there.

Q. Do you know Gilchrest?

A. Which Gilchrest?

Q. J. K.

A. Oh yes—no I don't know J. K. I know Charles, the lumberman.

Q. Well, people are not as a rule disposed to increase the amount of taxes they pay; that is not your experience, is it?

A. No sir. I thought of that afterwards——

Q. So that if a man has property that he does not want to sell and it is not in the market and he does not expect to sell it, do you think such a man would be apt to encourage your deputy to place a large valuation upon his property?

A. No sir. I thought of that point afterwards. If you meant expressing a valuation to us of their holdings, that would not be

so, because the valuation they express to us is exactly the opposite.

3061 Q. So that if your deputy would make inquiries of the owners he would be apt to be met with a very low valuation, wouldn't he?

A. Well, I wouldn't admit to that either, because more than likely they would just simply not talk at all.

Q. Well, your conclusion is he would either remain silent or express a low valuation?

A. When he is talking to the assessor at assessing time. I find that outside of the term of assessment people talk to the assessor very freely in regard to valuations.

Q. About other people's property?

A. No, in regard to theirs too.

Q. Now, did Mr. Higgins have any special qualification to determine the value of such a property as the Gas Company, consisting as it does——

A. I valued the Gas Company myself.

Q. Have you any special qualification?

A. No sir, I wouldn't say special qualification.

Q. What qualifications have you, whether special or general?

A. Well, I have known the claims of the Gas Company for several years past as to the value of their property, and I have examined the government reports as to the valuations of that class of property, as collected and classified in their reports, and I have had the benefit of an immense amount of volunteer information.

Q. No doubt about that. That has been persuasive too, I suppose?

A. No, I can't say that it has, because it was generally high.

Q. Mr. Parker, there is some relation between what a thing will cost to reproduce and value, isn't there?

A. Oh, yes sir.

Q. Necessarily so?

3062 A. Necessarily.

Q. What do you know as to what it would cost to reproduce the distribution system of the Gas Company, its mains, services, meters etc.?

A. So far as technical knowledge is concerned, I have none at all.

Q. What knowledge or information have you or did you have with respect to what it would cost to reproduce the plant, the machinery and appliances of the Gas Company?

A. Nothing other than the information that I have had directly or indorectly from the Gas Company itself in past years.

Q. For instance, what would it cost to reproduce the large holder over there?

A. I haven't any idea. I might make a guess at it, because Bi Keffer told me what it cost; I don't recall it now.

Q. So aside from the real estate of the Gas Company of which you may be supposed to have some knowledge concerning its value, you had no knowledge of what it would cost to reproduce or replace?

A. No, sir; not from a technical standpoint; I am not an engineer in any way.

Q. How, then, did you proceed in making this valuation which you have made upon the gas property?

A. Well, it was just the outcome of my best opinion.

Q. Under what sections of the code did you make this valuation?

A. Section 1323 of course was one of them; that is the regular corporation statute, that they should make certain reports, and section 1343 would be the other one.

Q. So sections 1323 and 1343 were the ones you proceeded under?

A. Those were the ones, yes sir. Of course there is a further section relating to the real estate of the company, and there are several sections that might cross—for instance away back
3063 is the section assessing real estate, and then section 1343 requires us to add certain things to the real estate; that is one of the faults we have with the revenue law.

Q. Will you take Exhibit 29 and turn to the gas property upon which you have placed the figures indicating the assessment against the company; what are the figures?

A. $1,350,000. actual value.

Q. What does that include?

A. That includes all the real estate and personal property, machinery, fixtures, buildings, mains, and in fact all the property of the Gas Company assessable in the city.

Q. That is assessed against what?

A. Against the Gas Company and their real estate in Block C of Scott & Dean's Addition.

Q. Under what section of the code did you place that assessment against the real estate?

A. Well, 1343 would come the nearest to it, which requires a certain itemized method of assessment which it seems almost impossible to follow and for that reason, with the consent of the companies in this town we lumped the valuation.

Q. Turning to section 1343, the latter part of it, I wish you would read. You have in mind now section 1323?

A. Yes, sir.

Q. I want to inquire whether or not you are not required to make the assessment against the capital stock?

A. We are in case the capital stock has value in excess of the assessment we place on them as a real estate assessment.

Q. And that is because the real estate is to be deducted from the value of the company's property?

A. Yes, sir.

3064 Q. In this case you did not find any valuation in excess, so you did not deduct it in making the assessment?

A. Yes, sir.

Q. You had some information, as you indicated a moment ago, from the company; the company being a corporation is required to make a report each year, and the company made such report for 1909 1910 and 1911?

A. It did, yes sir.

Q. Have you those reports with you?

A. I have not, no sir. They are here somewhere as an exhibit.

Q. Are those documents present, does anyone know?

Mr. BRENNAN: Here is Defendants' Exhibit No. 1, Mr. Read.

Mr. READ: I asked for 1909, 1910 and 1911.

Q. Recurring for a moment to the assessment, you called the whole thing real estate, did you?

A. Yes, sir.

Q. The buildings, the machinery, the mains, services, meters and the stock and fixtures in the main office building?

A. Merchandise stock, yes sir.

Q. And the cash, you called it all real estate?

A. Yes, sir.

Q. Do you recall what valuation the report made by the company for 1909 placed upon its property?

A. I couldn't say as to 1909, no sir.

Q. Where are those reports, Mr. Parker?

A. They are in the auditor's office. Two of those would be in my office; the ones for 1910 and 1911 would be in my office.

The MASTER: Would there be, excepting real estate, any assessment for 1910?

A. Not in 1910.

The MASTER: The real estate is assessed in odd years?

3065 A. Yes, sir.

Q. Nevertheless, the Company makes a report?

A. They make that report under section 1323 every year. I said there was no assessment in 1908; I think there was an assessment on corporation stock in 1908.

Q. The real estate is to be taxed every two years?

A. Yes, sir.

Q. Now in the alternate years, when the levy is not made against the real estate, against what is it made?

A. The personal property, and the levy is extended against the prior assessment on real estate and the new assessment on the personal.

Q. Is that extended against the corporation stock?

A. No, sir; that is a personal assessment.

The MASTER: You have those reports in your office?

A. Yes sir, for the last two years.

The MASTER: Did the action of the state board of review affect the value of real estate in Des Moines?

A. No, sir; not town lots under which they are assessed.

Q. Do you recall approximately the return of the Company what valuation the Company return placed upon its property for the year 1909?

A. I think it is $1,250,000.

Q. Wasn't it $2,250,000?

A. I think it was somewhere in the neighborhood of $2,000,000.

Q. For the year 1909, do you recall whether the valuation placed by the Company's return upon its property was $2,400,000?

A. Well, it is purely a guess; I wouldn't say it was not.

Q. You must have some general recollection?

A. No, I have not.

Q. What was this year's valuation as shown by the Com-
3066 pany's return to the assessor?

A. In excess of $3,000,000.

Q. $3,300,000?

A. Probably; it may be $3,300,000.

Q. I wish you would send to your office and get those returns, if you can?

A. I could only go myself.

Q. I will ask you to go presently. The Company's return showed a valuation in the year 1911 upwards of $3,000,000?

A. Over $3,000,000 as I recall it.

Q. And you placed the valuation of $1,350,000?

A. Yes, sir.

Q. Why didn't you accept the Company's valuation?

A. Well, because I knew that up to this controversy the Gas Company representatives protested most strongly to the assessment of $1,000,000 and claimed their property was not worth that figure, and I felt at that time, and I had seen no evidence of any such increase in their investments, and for that reason I did not accept their figures in any sense.

Q. You made inquiries, or attempted to ascertain what additions or betterments had been placed by the Company for its property?

A. Yes, sir.

Q. You had?

A. Yes, sir.

Q. Well, now, take your statement in the year 1910, the Company's return showed a valuation of $2,400,000, and assuming that now to be accurate, to be verified later, and the previous year the return showed a valuation of $2,250,000; so that it is not exactly accurate to state that the Company had protested its valuation?

3067 A. I am talking prior to the time I took the office.

Q. But since your incumbency of the office the Company had placed three valuations by its return, for the years 1909, 1910 and 1911, and for the year- 1909 and 1910 the valuation placed by the company had been in excess of $2,000,000?

A. I think that is so, yes sir.

Q. Did you accept the Company's return for those two years and place a valuation that coincided with the Company's valuation?

A. I did not, no sir.

Q. Why did you not?

A. Because I did not consider the plant worth that figure.

Q. Did you have some other ulterior purpose in your mind?

A. No, sir, none at all.

Q. Did you with respect to the Company's return of 1911 have any conversation or conference with any person or persons?

A. No, sir; none at all, excepting representatives of the company.

Q. Did any person or persons aside from representatives of the Company make any suggestions or statements to you?

A. Why there was free volunteer information, yes sir.

Q. Who, what persons?
A. Well, I do recall Mr. Kasson and men like he.
Q. Mr. L. J. Kasson?
A. Yes, sir. There were unquestionable people talking about their own assessments, but I judge from your question you have reference to public officials; if you do, there is none ever spoke to me on the subject.
Q. You are an official of the city of Des Moines?
A. I am, yes sir.
Q. And as such you are supposed to consider it your duty to be alert in looking after the interests of the city?
A. I do, yes, sir.
3068 Q. You say that no other official of the city ever made any suggestion to you and that you never conferred with any other official of the city concerning the valuation placed by the company on its property?
A. I should say, I never talked to any one nor has any one ever talked to me. Well, now, I would correct that in this way; in the past few weeks I have had some talk with different parties.
Q. I mean prior to the placing of the valuation?
A. No, sir; I never received any communication, written or oral in any sense.
Q. You have talked though with people such as Mr. Kasson?
A. Well, the reverse; they talk with me; they come in and volunteer information.
Q. He, I dare say, urged upon you a low valuation?
A. I said Mr. Kasson; I know he has talked in regard to the Water Company; I don't know whether he talked about the Gas Company or not.
Q. You knew there was a controversy on between the city and the company?
A. Not at the time of the 1909 assessment.
Q. When did you make that?
A. Prior to March 1909.
Q. Prior to your 1911 assessment you did?
A. Oh, yes.
Q. You knew the question of the valuation placed on the Company's property was a material one?
A. By me, you mean?
Q. You knew that?
A. I knew that, yes sir.
Q. You knew that a high valuation would be detrimental to the interests of the city?
3069 A. Well, it is hard to answer that. If I may state this: it would probably better explain my position——
Q. Answer my question first.
A. I don't know what you mean by detrimental.
Q. Then answer the question in your own way.
A. In 1909 I was much concerned as to my valuation, and——
Q. Why?
A. We had had trouble continuously with all the companies and

no assessment prior to 1909 had stuck except in 1909, and that stuck simply because of the Des Moines Plan and certain things which I knew had occurred. I did not know whether the companies would any of them stand by my assessment. I had no idea what the council wanted——

Q. That could hardly be true with respect to the Gas Company because it had made a voluntary valuation in excess of $2,000,000, and the question is why didn't you accept it in 1909?

A. Because I did not think it was correct.

Q. You know, of course, that the contract made in the nineties would expire December 31st, 1910?

A. I don't know that I knew it at that time; whether I had that knowledge at that time or not. In 1910 I did have that knowledge I know.

Q. Then why didn't you accept the company's valuation in 1910?

A. Because I considered my valuation high enough.

Q. A similar controversy was pending in 1909 between the city and the Water Company?

A. That I do not recall because I was in no way connected with it.

Q. You was assessor in 1909?

A. Yes, sir; but I was in no way connected with any controversy; I may have known it.

3070 Q. The matter was very much talked of in the newspapers?

A. I say I don't recall it.

Q. You do not now recall whether you had in mind at that time the fact of the Water Company controversy.

A. Yes, sir; I don't know that I remembered it at that time; I don't say I didn't, because I have no recollection.

Q. In the year 1909 the Company in its return and report to you as assessor placed a valuation of $2,250,000 upon its property—we will assume that is correct—why didn't you accept that valuation and return as the assessed valuation of the company's property?

A. Well, I felt it my duty under the law to place my own value as I considered the property worth. I knew in 1907 Mr. Haines had protested the assessment of their company and claimed it was nowhere worth near the valuation placed on it.

Q. Of course, you were no assessor then?

A. No, sir; but I was in full consultation with the assessor or he with me. I assumed that his statement in 1907 was as nearly correct as his statement in 1909.

Q. You don't know what additions and betterments had been added to the property?

A. I thought I knew, yes, sir. I had some general knowledge, having covered the city and knowing of the mains that were put in, and I could see the tangible property on the east side; that there was no exterior display of investment; inside of the building it might have been completely changed for all I knew.

Q. Were you in conference with Mr. Kasson or such men of his ilk in 1906?

A. No, conference with anyone, excepting as I stated that it is

common for people to come in and talk over their assessments
3071 and compare it with somebody else's and unload information.

Q. I want to get at your state of mind, if I can——

A. I only mentioned him but have no recollection of anybody approaching me on the subject of this or any other Company and I have no recollection that he did.

Q. Now, for the year 1909 you were assessor?

A. Yes, sir.

Q. The law required the Gas Company as a corporation to make a valuation and return under oath to you as assessor?

A. No, sir; it did not. The law does not require the company to make any valuation of their property.

Q. The law requires a return to be made?

A. Of the items of real estate.

Q. For the year 1909 the Gas Company did as a matter of fact make a return of the items of its property and also placed a volunteered valuation upon its property?

A. They did, yes sir.

Q. You did not accept the valuation placed by the Gas Company on the property?

A. I did not, no sir.

Q. My particular inquiry to you is why you did not do so?

Objected to on part of defendants because it has been answered two or three times and it is simply taking up time to have him repeat his answer.

A. Because I did not believe it was a correct valuation.

Q. Now was there any other reason or motive or purpose on your part in not accepting the Company's valuation?

A. There was not; no sir.

Q. You suggested a moment ago as a reason that the Company and all companies had protested their assessments; of course
3072 you knew that the Company by making this voluntary valuation had placed itself in a position where it could not protest, so that was not a reason in your mind at that time?

A. No; I have no recollection of that, but I can say that the Company would not protest any valuation of less than that.

Q. So that was not a reason why you rejected the Company's voluntary valuation?

A. Oh, no, I had no fear of a protest.

Q. For the year 1910 the Company also made its return required by law and placed a voluntary valuation upon its property but you did not accept that?

A. No, sir.

Q. For the same reason?

A. Yes, sir.

Q. No other motive or purpose or thought in your mind?

A. None at all, no sir.

Q. You say you didn't know or didn't remember that the company's contract with the city would expire December 31, 1910?

A. I unquestionably knew of it in 1910, yes sir.

Q. Didn't you have in mind the fact that that contract would expire and that there would be probably some regulatory ordinance passed by the city or some rate fixed; didn't you anticipate that?

A. I certainly knew it.

Q. Didn't you anticipate that?

A. The assessment was made with no reference to that. It is immaterial to me what valuation I place upon the company provided I get what I consider the actual value. I did have this in mind; that the object of the Company in placing that value was probably two-fold; first, that they would have a higher ex-
3073 pense bill, and second, if that went through the council at their figures, regardless of my own opinion, that it would have a tendency to bind the council.

Q. So it was to counteract that result that you put that valuation on?

A. No, it was my own valuation.

Q. You say you had that in mind as a motive, or a motive on the part of the Company?

A. Yes, sir.

Q. And it was due to the Company's motive or purpose that you, among other things, scanned and scrutinized the Company's valuation and rejected it.

A. Why no. The fact that I had a suspicion as to why the Company made their report did not enter in any sense into my reason for fixing the valuation. Now I want to make myself clear. I may talk on the side a little, but permit me to illustrate it in this way: In 1909 the Electric Light Company controversy——

Q. I don't care to go to other companies. Now with respect to the return made by the Company in 1911, did not Mr. Haines on behalf of the Company state to you that the Company had had an inventory taken of its property?

A. He may have said so, yes sir.

Q. Did you examine that inventory?

A. I did not, no sir.

Q. Did you make any request to be allowed to examine it?

A. I did not.

Q. Is it not true that in 1910 in connection with the Company's return Mr. Haines made some statement concerning the question of betterments and additions or improvement of the property?

A. He may have, yes sir.

Q. Did you make any effort to ascertain what they were?
3074 A. I did not; not through their books no sir.

Q. Now suffice it to say that you, with no special qualification as to the cost or value of the Company's distribution system, of its machinery and appliances rejected the Company's valuation as voluntarily made and used your own estimate; that is true, isn't it?

Objected to on part of defendants as having been already answered.

A. Not exactly, no sir. I stated I had a knowledge of the claims of the Company prior to 1909. I had no technical knowledge with

reference to that matter. I knew of the claims of their property at that time.

Q. For instance, Mr. Parker, how many miles of mains did the Company have prior to 1909?

A. I don't now know. But in 1909 I asked Mr. Haines the number of miles that he did have. How many it was I don't recollect now, because I kept no track of it.

Q. Do you know what additions to its plant had been made in the intervening years?

A. Not so far as only I could see from the outside.

Q. What changes had been made according to your knowledge?

A. Very little, excepting keeping up around the place and erecting a tank on the further side of Fifth Street.

Q. These claims on the part of the Company that you say you had knowledge of were claims made in 1907?

A. And 1908.

Q. Your assumption is there had been no improvement or betterments to any extent made in the intervening years?

A. Well, of course there was $350,000 or $360,000 worth. These figures with a Gas Company are small, while with the indi-
3075 vidual they are large. I raised their assessment $360,000 over 1907 to 1911.

Q. You made no raise in the meanwhile?

A. I made a raise in 1909 and 1911.

Q. How much?

A. $360,000 in two assessments; just how it is divided I don't recall.

The MASTER: Did you take into consideration the income of the property?

A. Not an excessive income; we do if it is a small income. If a man works his plant at full capacity and makes a small income, it necessarily reduces the value of the property.

The MASTER: I mean the income of the property.

A. For instance, if this Company were making 20 per cent, I would not take it into consideration; but if they were making two or three per cent upon their investment, we would consider it.

The MASTER: You would not consider a high per cent, but you would a low?

A. Yes, sir; I mean to the same extent.

Q. I want you to bring in the report for 1909 and 1910 and 1911?

A. I thought they were here. I have copies of them anyhow.

Q. I want you to satisfy your own mind as to those figures?

A. I am satisfied they are about the figures as I remember them—$2,000,000 and $3,000,000 but I am willing to look it up. I have not seen those figures for years.

Redirect examination by Mr. BRENNAN:

Q. Now, Mr. Parker, you spoke something of some discrepancy made by you in your assessments between the Fleming Build-
3076 ing and the Citizens Bank Building; I want you to clear that up on the record, if there were any reasons why you made any distinction or difference?

A. We always consider an improvement and the ability to utilize that improvement to its full extent. The Fleming Building we never have assessed at anywhere near the cost, because at no time has the Fleming Building been more than two-thirds occupied and if they cannot fill that building it is not worth what it cost, and we take those things into consideration. We make a canvass of the office blocks and ascertain the percentage of empties.

Q. You say at the time that assessment was made the Fleming Block was not fully occupied?

A. No, sir.

Q. What was the fact as to the Citizens National Bank Building?

A. It was practically full.

Q. So that explains any difference in the assessment?

A. That is the principle we pursue.

Q. As I understand you, in making this assessment against the Des Moines Gas Company, as shown upon Exhibit 29, you did not undertake to assess the Capital Stock of the Company?

A. Well, did undertake—that is, I had that in view, but there being in my opinion no valuation of the capital stock in excess of the assessment, I could make none.

Q. You did not proceed under section 1323 to arrive at the value of the capital stock without regard to the property which was back of that stock, as you do ordinarily under section 1323?

A. I did not attempt to value the stock technically, if I understand your question.

Q. There is a section, 1319, which applies to manufacturing corporations?

3077 A. Yes, sir.

Q. And the method pointed out in that section is practically what you followed in this, namely, to get at the value of the tangible property of the concern about to be assessed?

A. Yes, sir; that would be the plan.

Q. Now you have been asked why you rejected the statement made by the Gas Company in the years 1909 and o911. I will ask you if you had the information with respect to the sworn statement by Mr. Haines as manager of the Des Moines Gas Company in the year 1908?

A. I knew of it, yes sir.

Q. And for the purpose of refreshing your recollection on that subject I call your attention to defendant's Exhibit No. 1 and ask you if when you came to make that assessment in the year 1909, you had in mind the information which that statement purports to give?

A. I did. I could say this in regard to these statements; these statements put down here were compulsory; it was not conceded by Mr. Haines that that figure was the valuation. They were placed there at the requirements of Mr. Schramm, known to myself, because of the difficulty Mr. Schramm had had in settling with the companies in prior years. He said that he will make a certain assessment or will agree on an assessment, and if they agreed on the assessment he took that assessment and laid it before the board and it was

always cut down at the request of the company. We looked around for some way to head that off, and the two of us devised a scheme of either making an absolutely arbitrary assessment on the company, or compel them to enter that valuation in this report and sign it up, the idea being if they put it in that report they would not be in a position to appeal from it. I know that it was placed there
3078 and Mr. Haines refused himself to sign it.

Q. Let me ask you if at any time prior to the year 1909 any controversy arose between the assessor and the Gas Company on account of the fact that the assessor was not placing a valuation high enough to suit the Gas Company, or did the controversy grow out of the fact of the assessor placing too high a valuation?

A. It always came out of that controversy and this was done to head that off.

Q. Was the company complaining that the assessment as it was about to be returned was too high?

A. Yes, sir; the company complained so.

Q. Then it was in 1908 that you had Mr. Haines make a sworn statement appearing in Defendants' Exhibit No. 1, so as to have them go upon record under oath as to the value of their property?

A. In 1907 is the one I have reference to: what occurred in 1908 I do not recall. The one that stuck was 1907, the one that passed by the board of review without question.

Q. Had the company in the past made it a practice to appear before the board of review?

A. Yes, sir: in spite of the fact that they had agreed with the assessor on his assessment.

Q. So that in 1909 and in 1911, if I understand you rightly, you undertook to assess the property of the Des Moines Gas Company on a basis which appealed to you as being fair and equitable?

A. Yes, sir.

Q. Taking into account the valuations placed upon other public utilities in this community?

A. Yes, sir. I would like to state this, that the assessor is
3079 continuously importuned to both raise and lower valuations and that the Company property would not be the only property that the people claimed was too low; so that the claim of the Company that their property was too low was not uncommon, excepting as to ownership.

Q. You were asked if you had assumed that the city council would pass a regulatory ordinance after the expiration of the contract. I presume it was fair to assume in view of their past conduct that some change would take place in view of this report which they made to you in 1909 and 1911?

A. That I stated was my opinion of their high valuation in 1910 and 1911. I do not have any recollection what I had in mind in 1909, other than the controversy I had been mixed up with in 1907.

Q. For how many years prior to the year 1909 had you been connected directly or indirectly with the revenue department of the county?

A. Sixteen or seventeen years.

Q. During these sixteen or seventeen years, had you been more or less familiar with the valuations returned by the assessor?

A. Yes, sir.

Q. Did ou confer with him in regard to these assessments?

A. I did in the later years; they conferred with me, especially the larger companies.

Q. Have you in mind any year prior to 1909 that the Des Moines Gas Company or the Capital City Gas Light Company ever appeared or made a statement to the assessor protesting that the assessment was too low?

A. In 1907, 1905 and 1903?

Question repeated.

A. No, sir; I never knew them to. I beg your pardon, I didn't notice the words too low.

3080 Q. Now, Mr. Read asked you something about Mr. Higgins, trying to give out the inference that instead of being an assessor he was engaged almost exclusively in farming. I will ask you if this is Mr. Elsie Higgins to whom you refer?

A. Yes, sir.

Q. For what length of time has he been employed by the county in making assessments of property in the city of Des Moines and elsewhere?

A. I think it will run from 13 to 15 years. He came in under French and served through Mr. Schramm and myself.

Q. And has his district been confined to the remote parts of the city or what we call the farming districts in the county?

A. No, sir; he has been considered one of the best men and has for many years been retained on down town assessments.

Q. Now you were asked concerning the property in the northeast corner of First and Walnut Streets, purchased by the Lawyrence Ill Estate. Do you know at what price that property was purchased?

A. That is First and Court Avenue. Yes sir, about $25,000.

Q. Do you know how much frontage there is on Court Avenue?

A. 132 feet.

Q. How much upon First Street?

A. 132 feet.

Q. Is there an alley in the rear?

A. There is an alley both north and east.

Q. It covers a quarter block?

A. Yes, sir.

Q. And was purchased for $25,000?

A. Yes, sir, $25,000 or $28,000.

Q. Do you know what improvements, if any, were upon this quarter block at the time of the purchase?

3081 A. I don't recall particularly no sir.

Q. Do you recall that there was a brick building about two stories in height running back to the alley?

A. The corner I know was brick two stories high; I think they were all frames east of that.

Q. But there was a substantial bric*j* building upon the premises at the time of the purchase?

A. Substantially in its size, yes.

Recross-examination by Mr. READ:

Q. Deputy assessors are paid two dollars a day?

A. Two fifty.

Q. As a matter of fact, there has been a constant claim for a good many years by some members of the public that the corporations were not assessed enough?

Objected to on part of defendants as irrelevant, immaterial and hearsay.

A. There has been up to recent years at least.

Q. Has that complaint abated any in recent years?

A. I think it has.

Q. Disappeared entirely?

A. No, sir.

Q. It is still claimed?

A. Yes, when you are talking about public remarks.

Q. You said that the Fleming Building was about only two thirds occupied?

A. That was last fall when we took our information on the subject.

Q. This assessment was made in the year 1911?

A. Yes, sir.

3082 Q. Of course somebody told you it was only two-thirds occupied?

A. The Fleming Brothers, together with the fact that we looked around. I sent a man out with the proprietor to try the doors.

Q. This was last fall?

A. Yes, along in November or December.

Q. This assessment for the year 1908 that you agreed to was practically an agreed valuation?

A. I did not make the 1908 assessment.

Q. You were talking about the one Mr. Brennan showed you the return of made by the Company?

A. I had reference especially to 1907.

Q. You don't know anything about the 1908 assessment?

A. I was under the impression there was a little corporation stock in that year.

Q. Your attention was called to Exhibit No. 1, which is the return of the Gas Company made in 1908. Now in answering Mr. Brennan's question, did you speak with reference to that assessment or some other year?

A. I am at a loss to know just what question he asked me.

Q. Did you speak in answering Mr. Brennan with reference to the assessment of the year 1908?

A. The 1907 assessment is clearly in my mind. The 1908, there was little or no controversy and therefore I haven't that so much in mind.

Q. You called attention to the fact that the return for that year was sworn to by Mr. Haines?

A. 1907 is the one I had reference to. There was no valuation in 1908; you were asking about a valuation made.

Q. I am asking about a return.

A. The one I had reference to not being signed by Mr.
3083 Haines was in 1907.

Q. That was signed by Mr. Keffer?

A. Yes, sir.

Q. That was practically an agreed valuation?

A. Yes, sir; it was agreed under protest.

Q. The Company still protesting it was assessed too high, but assenting to it?

A. Yes, sir.

Q. You said that one of the objects was to cut off the protesting of the company against the valuation, that was one thing to be accomplished by having it signed?

A. By having them sign an agreed statement.

Q. If you had been anxious about that, I inquire again why you did not accept the company's valuations for the years 1909, 1910 and 1911?

Objected to on part of defendants as having already been fully answered.

Q. That would cut off any protest?

A. I do not want to assess any man any more than I think he is worth; I can not do it under my oath.

The MASTER: You said these manufacturers were assessed from 60 to 70 per cent of the selling value?

A. From 60 to 70 and 85 to 90—not necessarily manufacturing, more the commercial center.

The MASTER: That would make the selling price of this property 60 per cent of $2,000,000?

A. We are speaking of bare real estate, not commercial enterprises at all.

Redirect examination by Mr. BRENNAN:

3084 Q. In other words, you tried to eliminate the factor of speculation with respect to real estate being bought and sold?

A. Yes, sir.

Q. I call your attention to Defendants' Exhibit No. 1, which purports to be a statement of the Des Moines Gas Company signed by W. B. Keffer, secretary, on the 15th day of February, 1908, and call your attention to the affidavit of Jansen Haines, Manager, executed on the 14th day of March, 1908, and I will ask you if that is the controversy to which you refer?

A. No, sir; it is the report prior to this, 1907. There is no assessment made in 1908 on their property unless they had a new building or new construction. But there was one year in which the assessor to make a raise assessed them on the corporation stock and I was

thinking that was 1908; but I may be mistaken. The one that I said was not signed, as I recall it by Mr. Haines, was the 1907 report, the one in which the controversy of the valuation took place.

Q. In 1907 you requested, or the assessor requested of Mr. Haines that he make a statement similar to that shown in Exhibit 1 which he refused to make?

A. He did not refuse to make it; he did and he did not. He did not want to make it but his assistant was permitted to make it, and we had the verbal statement of Mr. Haines it would go.

Q. That was in 1907?

A. Yes, sir.

Recross-examination by Mr. READ:

Q. Referring to your statement that the valuation of 60
3085 per cent applied to the ground only—you made that statement, didn't you?

A. Yes, sir.

Q. What is the practice as to the valuation of manufacturing appliances and machinery, etc. Is there any different rule in regard to that?

A. Well, take for instance real estate, if it is in a district in which there is in our opinion an element of speculation, we take that into consideration. It may vary from 35 or 40 per cent down to five. Now the buildings are taken for what we consider the cost price and deduct——

Q. My inquiry is as to manufacturing appliances or machinery?

A. Well, we make a discount on machinery.

Q. How much?

A. It varies on machinery as high as 50 per cent.

Q. How much did you discount the machinery of the Gas Company?

A. I made no particular itemization of the discount in theirs.

Q. What does the valuation placed by you contemplate as a discount?

A. I couldn't state any at all, that is, any particular discount in any line.

Q. Probably as much as fifty per cent?

A. Oh no, because what knowledge I would have I would not consider that they had very much investment in manufacturing.

Q. You didn't know enough about it to know what the real value was?

A. I wouldn't want to answer that way. My idea of the value of their plant lay in their distribution system rather than in the manufacturing.

Q. But as to the machinery appliances used in manufacturing it is generally put at 50 per cent?

A. 50 per cent would be the maximum. It would depend
3086 so much upon the nature of the machinery. When I talk about 50 per cent I mean the machinery which will wear rapidly.

Redirect examination by Mr. BRENNAN:

Q. You don't mean to be understood as saying that you have valued this property for the purpose of taxation at 60 per cent of its true value?

A. No, sir.

Q. Or 50 per cent?

A. No, sir.

Q. The $1,350,000 which you returned, what does that purport to represent?

A. The actual value of the property as I considered it.

Recross-examination by Mr. READ:

Q. That answer is made in view of your previous answer that there is a practice to allow a varying per cent on machinery?

A. Yes, sir.

Excused.

JAMES HALL, being first duly sworn, examined in chief by H. W. BYERS, Esq., testified:

Q. Give your name and place of residence to the reporter?

3086½ A. James Hall; residence, Chicago, Illinois.

Q. What is your business?

A. Public accountant.

Q. How long have you been such?

A. I have been at the business 18 years.

Q. And with whom are you associated at this time?

A. A member of the firm of Marwick, Mitchell & Company.

Q. What is the business of Marwick, Mitchell & Company?

A. Public accountants.

Q. Where are their headquarters?

A. In New York.

Q. I wish you would state in a general way the field they cover in their operations as public accountants?

A. They are located in 18 towns in this country, in Paris, France, London, England, and Glasgow, Scotland.

Q. Will you give the names of the cities in this country where they have offices?

A. New York, Washington, D. C., New Orleans, Philadelphia, Boston, Pittsburg, Chicago, St. Louis, Milwaukee, Kansas City, St. Joseph, Mo., Minneapolis and St. Paul, Salt Lake City, Spokane, Montreal and Winnipeg, Canada. The business covers all matters with the accounting and auditing investigations on behalf of bankers, stockholders and directors, and acting as secretary and controllers of companies; generally anything connected in that line.

Q. Does the firm do any work for the Government?

A. Yes, sir; we act on behalf of the Comptroller of the Currency, investigating banks; we have acted for the Secretary of the Navy, installed a system of accounting in all the navy yards in this country.

Q. Now as to your own relation to the company, Mr. Hall,
3087 in what way are you connected with the firm?

A. Partner.

Q. How long have you been such?

A. Five years.

Q. Now, I wish you would state Mr. Hall in your own way as fully as you care to the experience and training you have had to fit you to perform the business or carry on the business of an accountant?

A. I served my articles of apprentice with a firm of accountants in Scotland. After completing it I qualified as a member of the Accountants' Institute; that entitled me to use the designation Chartered Accountant. I had twelve years' experience in various offices in the old country before coming to America; I have been six years here.

Q. Now in Scotland, will you give to the Master in a brief way just the period that is necessary to be occupied over there in fitting yourself to be a chartered accountant?

A. The present period is five years' articles.

Q. What was it when you were there?

A. Four years. Before qualifying attendance must be made at prescribed classes in the University, taking law and political economy, etc.

Q. Are you a certified accountant in any of the states of America?

A. Yes, sir.

Q. What one?

A. Ohio, Minnesota and Missouri.

Q. Is there any examination required?

A. Either an examination or acceptance of previous qualification.

Q. How was it in your case?

A. An acceptance of my qualifications as chartered accountant.

3088 Q. Are you a member of any association or organization?

A. I am a Fellow of the American Association of Public Accountants.

Q. Is that an American association?

A. Yes.

Q. Now I wish you would state the date from which your experience as a public accountant, chartered accountant begins?

A. I commenced my articles in August 1893; qualified as a chartered accountant in December 1900.

Q. Have you been continuously engaged in that profession and business?

A. Ever since, all the time.

Q. Now since 1893, I wish you would take plenty of time now, and state to the Master just what companies you have examined or just what you have done in the way of investigating the books and accounts of operating companies or companies of any kind since 1893. Do it in your own way and take plenty of time.

A. I am afraid that is almost impossible.

Q. As much as you can?

A. Commencing with my period in this country?

Q. Yes, sir.

A. I have examined all the companies connected with the General Motors Company, and acted as comptroller during the period of refinancing. Have examined the accounts of the Studebaker corporation, the Chicago City Railway Company, the Chicago Junction Railway Union Stockyards Company, People's Gas Light & Coke Company of Chicago, Consolidated Gas Company of New York, Cedar Rapids Gas Light Company, Cedar Rapids, Saginaw Gas Light Company, Saginaw. These are the principal ones I can now recall.

Q. When were you occupied in the examination of the People's Gas Light & Coke Company of Chicago?

A. At the close of the year 1905.

3089 Q. How extensive was that investigation?

A. That was an examination of the operating accounts for the year 1905.

Q. And the Consolidated Gas Company of New York, when was that examination made?

A. That was in December 1906.

Q. What was the scope of that examination?

A. It was an examination of the operating accounts for the year 1905, I think, and the construction accounts for a period of about 20 years.

Q. What was the purpose of the examination?

A. An adjustment of rates charged the consumers of New York City.

Q. What if anything did the examination have to do with ascertaining the cost and expenses of manufacturing gas?

A. It had almost all to do with it.

Q. Covered that entire field?

A. The entire field.

Q. When were you engaged in the examination of the Cedar Rapids Gas Light Company?

A. In the fall of 1907.

Q. What was the scope of that examination?

A. So far as I recall, all the accounts for a period of five years, both construction and operating.

Q. What was the purpose of the examination?

A. An adjustment of rates charged the consumers.

Q. Covering the entire field of the cost of manufacture and expense of distributing gas?

A. Yes, sir.

Q. And the Saginaw Gas Light Company, when was that investigation and examination made?

3090 A. In the spring of 1908.

Q. And was the scope of that examination similar to the others?

A. Similar to Cedar Rapids, I think, five years.

Q. Was it also for the purpose of ascertaining the cost and expense of the manufacture of gas?

A. Yes, sir.

Q. In a rate case?

A. Yes, sir.

Q. And in how many of those cases did you make up a complete report?

A. In the New York case, the Cedar Rapids case and the Saginaw case.

Q. In the People's Gas Light & Coke Company, for whom were you employed in that investigation?

A. The city council.

Q. And the Consolidated Gas Company of New York?

A. By the corporation counsel.

Q. And the Cedar Rapids Gas Light Company?

A. The City Attorney.

Q. Now in addition to the examination of the books of accounts of those concerns that we have just mentioned, have you had any other or further experience in the examination of the accounts of gas companies and public utilities?

A. Yes, sir.

Q. In a general way, will you state?

A. Have examined the accounts of public utilities of all kinds, acting on behalf of bankers, stockholders or directors.

Q. I wish you would give us some idea of the business of that firm, Marwick & Mitchell, the number of men employed and what they are *are* doing and whom they serve?

A. At present we have approximately 275 upon the pay roll. They are located in the cities I have mentioned, engaged
3091 almost entirely in making investigations for various purposes and making audits.

Q. Do they have any other business except that of accountant?

A. No other business.

Q. They confine their operations to that class of work?

A. Entirely.

Q. Now, Mr. Hall, have you had anything to do with the examination of the books of accounts of the Des Moines Gas Company?

A. Yes.

Q. Since when?

A. Since July 10th or 12th?

Q. How did you come to be concerned with the examination of the Des Moines Gas Company books?

A. I was retained by the city council or mayor.

Q. About when was the date of your employment?

A. About July 10th of this year.

Q. Have you since that time made an examination and investigation of the books and accounts of the Des Moines Gas Company?

A. Yes.

Q. Over what period did the examination extend?

A. Up to within about two weeks ago, about the end of August.

Q. During that time have you had some assistance?

A. There have been four men on the work.

Q. I wish you would state just how long the four men were engaged in the work?

A. The total time to August 31 was approximately 1040 hours; 940 hours for the four men and about 100 hours for myself.

Q. Now, Mr. Hall, have you made up a report of the investigation and examination?

A. Yes, sir.

3092 Q. And do you have it with you?

A. Yes, sir.

Q. I wish you would hand it to the Master?

(The report handed to the Master is marked Defendant's Exhibit (30).)

Q. I wish now, Mr. Hall, using such memorandum as you care to for the purpose of refreshing your recollectio-, you would first state the scope of the investigation covering the Des Moines Gas Company property?

A. In regard to the operating accounts the examination covered a period of five years to December 31, 1910; it also included a general review of the construction accounts from 1886 to 1910.

Q. Anything further under that head; what if anything was done in the way of ascertaining the actual amount expended?

A. We ascertained the actual amount expended in the plant and property, commencing with the appraisal in 1895 down to date.

Q. Where did you get the appraisal?

A. The app-aisal I think was by Col. Pratt in 1894, at the time of the last suit in this connection.

Q. That was made by Col. Pratt, who was then the manager of the Des Moines Gas Company?

A. As I understand it, yes sir.

Q. Will you state into the record what you ascertained with respect to the history of the company?

A. I ascertained the Des Moines Gas Company was incorporated March 1, 1906, to acquire the properties of the Capital City Gas Light Company, both concerns being owned and operated by the United Gas Improvement Company, the consideration granted by the Des Moines Gas Company for this property, including certain properties at Valley Junction amounted to $3,334,000.

3093 Q. Made up in what way?

A. First mortgage 5% bonds $285,000; 6% preferred stock contracts $800,000; capital stock $2,249,000. In addition the Des Moines Company assumed certain bond obligations of the Capital City Company of $400,000. Of the $285,000 Des Moines Company bonds $45,000 was stated to be issued to Mr. Haines and Mr. Keffer in payment of the Valley Junction properties; and $120,000 was paid over to the United Gas Improvement Company in liquidation of the debt of $105,526.49. The remainder having a face value of $3,169,000. was distributed to the stockholders of the Capital City Company by way of a dividend. Subsequent to March 1, 1906, additional bonds were issued, $400,000. being to redeem the Capital City bonds and the remainder being issued against extensions. The total issue December 31, 1910, was $1,097,000. 5% first mortgage bonds. Of the preferred stock contracts amounting to $800,000 March 1, 1906, $389,000 had been repaid, leaving outstanding December 31, 1910, $411,000. The present capital stock outstanding is $2,250,000.

The MASTER: You call stock indebtedness?

A. It is to the stockholders.

Q. Now that total is how much?

A. $3,758,000, December 31, 1910.

Q. That includes two million and a quarter stock?

A. Yes, sir.

Q. Now on page 4 of your report, Mr. Hall, I wish you would explain for the Master the matter that appears there, just what you claim for it?

A. On page 4 we state the various expenses to be considered in determining whether or not 90 cents per thousand is a rea-
3094 sonable rate of selling gas to the consumer. The first matter to be considered is the cost of manufacturing and distributing gas, before making any payment in respect to interest on bonds or floating indebtedness. The second question to be considered will be one of depreciation, how much should be charged in that regard. We also have got to consider the investment in the business of the company upon which the stockholders are entitled to a return. Then we next consider what capital is invested in the business.

Q. You have set out here a table at the top of page 4, you may state what that represents?

A. The table represents the charge for gas during the period of the ordinance expiring December 31, 1910.

At this time an adjournment was taken until 1:30 P. M.

3095 1:30 P. M., TUESDAY, *September* 12, 1911.

JAMES PARKER recalled for further cross examination by W. L. Read, Esq., testified as follows:

Q. You have obtained and produced copies of the returns made by the Des Moines Gas Co. for the years 1909, 1910 and 1911 have you not?

A. Yes, sir.

Q. These returns are entitled "Statement of the Des Moines Gas Company Des Moines, Iowa, made under section 1323 of the code of Iowa for the purpose of assessment" are they not?

A. Yes, sir.

Q. For the year 1909 the copy is marked complainant's exhibit 45 is it not?

A. Yes, sir.

Q. For the year 1910 it is marked complainant's exhibit 46?

A. Yes, sir.

Q. And for the year 1911 complainant's Exhibit 47?

A. Yes, sir.

Q. These returns are upon blanks prepared by the assessor?

A. Yes, sir.

Q. And furnished to the gas company?

A. Yes, sir.

Mr. READ: Complainant o-fers in evidence Exhibits 45, 46 and 47 as part of the cross examination.

Mr. BRENNAN: To which offers and to each thereof the defendants object for the reason the same are incompetent, irrelevant and immaterial and for the further reason that they are mere self serving declarations of the complainant.

3096 Mr. READ: You do not make any objection that these are copies of the original?

Mr. BRENNAN: I want to find out first. I will if Mr. Parker has the original.

Redirect examination by R. O. BRENNAN, Esq.:

Q. Are these exhibits, Mr. Parker, made from the originals filed in your office?

A. Yes, sir.

Q. And have been compared by you?

A. They have, yes, sir.

Mr. BRENNAN: Then the objection that the offers are not competent does not go to the form in which the offer is made, that is to say the defendants do not object to the fact that the copies are offered instead of originals.

Q. Do you recall whether you requested any statement of the company during these years or did they volunteer these statements?

A. I requested the statements. Not as to that statement of valuation I requested the information required by — 1323 of the code.

Witness excused.

3097 JAMES HALL being continued on direct examination by Hon. H. W. Byers, testified as follows:

Q. Referring again Mr. Hall to some of your answers before dinner, if I understood you correctly the consideration as shown by the books of the Des Moines Gas Company for the property of the Capital City Gas Light Company as set out in the books, actual book entries of the Des Moines Gas Company showed a total of $3,335,000 made up of the following items: $285,000 of first mortgage five per cent 20 year gold bonds, dated March 1, 1906, being a part of a total authorized issue of $1,500,000, $800,000 of six per cent preferred stock contracts and 22,490 shares of $100 of the capital stock of the company out of a total authorized issue of 22,500 shares making $2,249,000 in stock, is that correct?

A. Yes, subject to the correction that the total was $3,334,000.

Q. And these figures appear upon the books of the company do they?

A. Yes, sir.

Q. In that entry was the Valley Junction plant included?

A. Yes, sir; $45,000.

Q. Now later on you stated that the bonded indebtedness as shown by the books of the Des Moines Gas Company, the five per cent bonded indebtedness had increased to $1,097,000 up to the 31st day of December, 1910. That of the six per cent preferred stock

contracts there remained unpaid at that date $411,000 and at that date there was outstanding 22,500 shares of stock making a total of $3,758,000. Is that shown by the books of the Des Moines Gas Company.

A. Yes, sir.

Q. What do you have to say as to whether or not this
3098 $3,758,000 represented the total indebtedness of the company on December 31st, 1910?

A. It is the total indebtedness to the bond holders and the stock holders.

Q. Counting the stock?

A. Yes, sir.

Q. Then if I understand you up to this point without reference to any memorandum, if I understand your testimony up to this point, the Des Moines Gas Company at the beginning of its existence after its organization and the issuance of its stock, the Des Moines Gas Company started out with an indeb-edness of $3,334,000.

A. Plus an indebtedness of $400,000 first mortgage bonds of the Capital City Company.

Q. Which it had assumed, but the securities that it actually issued at the beginning of its existence as shown by the books of the company if I understand your testimony is $3,334,000.

A. Yes, sir.

Q. And at that date the beginning of its existence it owned or had whatever assets the Capital City Gas Light Company had transferred?

A. Yes, sir.

Q. And no more?

A. No more.

Q. You stated before dinner that there was several things involved in the question of the reasonableness of a given rate per thousand feet of gas. I wish you would state now, taking all the time you need, your conclusions upon these several questions that you stated before dinner and how you arrive at it?

A. The first consideration is the cost of manufacturing and distributing gas in the city of Des Moines. I made up the state-
3099 ment on page 5, showing the cost of manufacturing and distributing gas leaving out of consideration all interest and bonded and floating indebtedness, depreciation of the plant, also several items of an extraordinary nature not chargeable to the operations of the gas plant and to *ge* considered separately and the results are that for the two months to February 28, 1906, the cost of manufacturing and distributing in Des Moines excluding depreciation and all interest was 67.13 cents per thousand cubic feet. For the year to February 28, 1907, the cost was 64.86 cents. For the next year to February 29, 1908, 63.49 cents. For the year to February 28, 1909, 59.73. For the ten months December 31, 1909, 52.92 cents, giving an average for the four year period of 62.79. For the year to December 31, 1910, the cost was 65.19 cents with an average for the five years of 63.34 cents.

Q. Now you may state what the fact is as to whether these figures

which are the basis of your final averages are shown and were taken from the books of the company, actual operatio*j*s of the company?

A. In all cases subject to one or two minor adjustments.

Q. What were those minor adjustments?

A. The elimination of a charge made by the company for the expense of regulating rates in the city. The company charged that expense as an operating charge and I exclude it on the ground that it has nothing to do with the consumer.

COURT: The expense of what?

A. Making the appraisal and rate regulation cost.

Q. It is that item of $5,000 and some dollars?

A. $5,935 I think is the exact figure.

Q. Is your other answer answer exactly correct Mr. Hall, is it not fair or truthful for me to say that all of these figures as they
3100 appear here were taken from the books?

A. In all cases, yes.

Q. I mean in these tables from which you arrive at these averages of cost of manufacturing and distributing gas on page five?

A. In all cases, they were taken from the books.

Q. What you mean is that the books show in addition to what you have set out here and figures that you use a claimed expense of operation of something like $5,000 which was paid for work in this law suit?

A. Yes, sir.

Q. Getting ready for this lawsuit?

A. Yes, sir.

Q. That you have not included in these figures for the purpose of arriving at these averages?

A. I have not. I have excluded this figure and included another figure which they do not have in the books.

Q. What item is that?

A. The item of federal tax applicable to the year 1910 and not paid until 1911. It is a proper charge against 1910 and I so entered it.

Q. Now was there any other elimination?

A. Yes, in the two months' period to February 28, 1906, I eliminated all accident claims applicable to the prior period.

Q. Then what do you have to say as to whether the figures that you used as the basis for these tables and averages being figures that actually appear upon the books of the company and cover the operations of the company for the years stated with the one exception of what you may term expense of this litigation?

A. They do.

Q. Now will you give your conclusion on the next proposition if you were through with this one?
3101

A. Not quite. The figures given on page 5 as representing the actual expense of manufacturing and distributing have been adjusted to give effect to the tax *pable* to the city in the event of this ordinance passing, that is 2/10 of a cent. That is found on page 6. The tax payable to the city I believe is two per cent of the gross earnings of the company.

Q. Then I wish you would proceed and give the Master the adjusted cost with that change?

A. For the two months to February 28, 1906, 66.93 cents per thousand cubic feet. For the year to February 28, 1907, 64.66 cents. For the next year to February 28, 1908, 63.29 cents. For the year to February 28, 1909, 59.53 cents. For the ten months to December 31, 1909, 62.72. Average for four years to December 31, 1909, 62.59. For the year to December 31, 1910, 64.99 cents. Average for the five years to December 31, 1910, 63.14 cents.

Q. Now if you will, just proceed with the working out of your conclusions just as you have stated them.

A. I adjusted this report to give effect to the allowance in respect to depreciation covering the wear and tear and probable inadequacy and obsele-cence. In that connection I may say no regular depreciation charge is put through the books of the company but they are undoubtedly entitled to one, consequently I added six cents per thousand cubic feet of sales.

Q. Right at that point, you say if I understood you a moment ago that the books do not contain any regular continuous charge for depreciation.

A. They do not.

Q. Go on in your own way with your explanation?

A. I enter an allowance of six cents per thousand cubic
3102 feet for each period after I have the adjusted allowances making for the two months ending February 28, 1906, 72.93 cents.

Q. Including the six cents, allowance for depreciation?

A. Yes, sir. For the year ending February 28, 1907, 70.66 cents. For the year to February 29, 1908, 69.29 cents. For the year to February 28, 1909, 65.53 cents. For the ten months to December 31, 1909, 68.72. Average for four years to December 31, 1909, 68.59 cents. For the year to December 31, 1910, 70.99 cents. Average for five years to December 31, 1910, 69.14 cents.

Q. Now if you will proceed with your adjustment and give the effect as you say to the ninety cent gas rate?

A. The next question to be determined was what profit would accrue to the company applying these adjusted costs assuming a ninety cents rate for gas in Des Moines. The sales were not known for 1911 consequently I placed the 1910 sales on a basis of ninety cents and applied the adjusted costs including six cents for depreciation.

Q. How did you arrive at that definite figure of six cents for depreciation?

A. Being in my judgment a reasonable sum to cover the wear and tear and probable inadequacy and obsolescence of the plant.

Q. On what does your judgment rest, experience?

A. Experience of having examined accounts of similar companies and consultations with various engineers.

Q. Have you tested out that rate well enough so you are willing to state it here as a fair allowance?

A. In my opinion it is a fair allowance.

Q. All right go on.

A. The adjustment statement is given on page 7. In the
3103 first column I entered the sales in Des Moines, Valley Junction and the used at works. In the second column the results stated in dollars and cents accepting the company's operating expenses as shown on the previous page. The net revenue on this basis available for interest and other charges would be $192,107.65. That is on the basis of dollar gas.

Q. The basis on which they are operating now?

A. Yes, sir. Apply the same figures for Des Moines on the basis of ninety cents.

Q. Without any increased sales?

A. Without any increased sales or increased expense, giving effect to the allowance for depreciation, have a net revenue available for interest and other charges of $104,884.98 made up of the sales in Des Moines 521,486,354 feet at 90 cents or $469,337.72. The Valley Junction sales on the basis of the actual receipts during 1910 $10,579.02. The used at works I enter at a dollar and treated the figure at the same rate in the expenses, makes no difference in the rate, $3,615.60. The total sales of $483,532.34. I deduct for discount applicable to the Valley Junction sales, $1,000.

Q. Why did you do that?

A. Well they have to give a discount for prompt payment there. I understand the new ordinance here does not provide for discount.

Q. You deduct that amount because of that fact?

A. Yes, sir; and I might say that a thousand dollars is good and high.

Q. It is plenty anyway?

A. It is plenty anyway. Gives $482,532.34. The operating expenses are $377,647.36, leaving a net revenue of $104,884.98. That return is equivalent to 19.71 cents per thousand cubic feet
3104 sold.

Q. That is this $104,884.98 is equivalent to the net return?

A. Net return available for interest and other charges of 19.71 cents.

Q. I wish you would explain to the Master the method adopted by you and the basis upon which you adjust operating expenses.

A. I accepted the operating expenses as actually recorded in the books subject to the deduction for the rate expenses and the addition of taxes and enter them at $346,785.35. Added depreciation six cents per thousand on sales of 531,991,234, that is equivalent to $31,919.46. From that I deduct the 2/10 of one cent adjustment in respect of the city taxes.

Q. What city tax do you refer to?

A. Payable to the corporation two per cent on gross sales in Des Moines, $1,057.45 giving the adjusted operating expenses of $377,-647.38.

COURT: How do you come to deduct that tax?

A. At the present rate on dollar gas the company pays the city two cents. On ninety cent gas two per cent of ninety cents would

be 1.8 cents, would be a corresponding deduction, the amount payable the city is two per cent of the gross receipts.

Q. As I understand that proposition up to that point, the books of the company show and these figures are taken from the books by you and your men, that the net revenue at the present rate of gas for interest and other charges for 1910 was $192,107.65.

A. Yes, sir.

Q. And then you take as a basis the same sales knowing the sales and figure out the net revenue available for the same purposes at the ninety cent rate and increase the expenditures the difference between $346,785.35 as shown by the books of the company
3105 and your adjusted amount of $377,647.36.

A. Yes, sir.

Q. Which represents what you have added to the operating expenses under the ninety cent rate?

A. Yes, sir.

Q. And it works out a net revenue available for interest and other charges of $104,884.98 or the equivalent to a return of 19.71 cents per thousand cubic feet of gas sold.

A. Yes, sir.

Q. Did you find the operating expenses of this company for the year 1910 to be usual and o-dinary or were they abnormal?

A. They seemed to be abnormal.

Q. And how were the four preceding years?

A. They appeared to be quite normal.

Q. I notice you state here that adopting results which you have adjusted and including depreciation gas at a sale price of 90 cents in Des Moines you have a net revenue available for interest and other charges of $145,173.06. Does that come in a later computation?

A. Yes, it does. I might say I prepared computations on a basis of average operating expenses for four years preceding in order to determine the true working conditions of the company.

Q. Now if you will, take up the fourth proposition and work that out for the Master explaining it to him as it appears on page nine?

A. The table on page 9 is a statement showing the net return as previously determined on a basis of ninety cent gas assuming an actual expense for 1910. The second table is prepared on a basis of ninety cent gas assuming the manufacturing expense for 1910 together with the average distribution expenses for four pre-
3106 ceding years while the third table is on the ba-is of actual manufacturing expenses plus the average distribution charges of five years to December 31, 1910. I then state the return per thousand cubic feet of gas sold to the Capital on the basis of various rates of interest running from five to eight per cent.

Q. Now if you will just take the first row of figures in your table opposite your five cent figure and explain that to the Master as you go through. I don't believe I quite catch all of that. Take the first figure there.

A. On the basis of the revenues set forth on page 6 adopting as a basis ninety cent gas and adjusted expenses, we would have a return

available for interest and dividends of $104,884.98. On a basis of a return of five per cent to the company for a capital of $2,097,701.60.

Q. In other words the return of $104,884.98 as you figure it out under ninety cent gas would bring a return of five per cent upon a valuation of $2,097,701.60.

A. Yes, sir.

COURT: You ascertain that by dividing $104,884.98 by five?

A. Yes, sir. This table is simply a guide. On the basis of a return of five and one half per cent the investment would be $1,907,001.45. On a basis of six per cent the capital would be $1,748,084.66. On a basis of six and a half per cent the capital would be $1,613,616.61. On the basis of seven per cent the capital would be $1,498,358.30. On a basis of a return of seven and a half per cent the capital would be $1,398,467.73. While on an eight per cent basis the capital would be $1,311,063.50.

Q. The second column represents what?

A. The estimated net revenue assuming a ninety cent gas and adjusted expenses on the basis of the four preceding years.

3107 That would give a return of $145,173.06 equivalent to 27.28 cents per thousand feet sold.

Q. That column represents the same method of computation that the first one does on the five, five and a half, six and so forth per cent?

A. Yes, sir.

Q. And the third column?

A. The return is ascertained on the basis of ninety cent gas less actual manufacturing for 1910 and average distribution for five years to December 31, 1910, including last year?

Q. Which you say is an abnormal year?

A. Yes, sir.

Q. That would figure a return of $135,863.22?

A. Yes, sir.

Q. Or 25.53 cents for each thousand feet of gas sold.

A. Yes, sir.

Q. That is a profit?

A. Yes, sir.

Q. The column of figures then below you worked out in the same way you did the first two columns?

A. Exactly.

Q. Did you ascertain from the books the per cent of increase in sales made this year as compared with 1910?

A. Yes, sir. For the first seven months of 1911, compared with the first seven months of 1910 there was an increase of 6.16 per cent or 18,000,000 feet, 18,141 x 180 feet.

Q. And how did you ascertain that fact?

A. From the book records.

Q. From the books of the Des Moines Gas Company?

A. From the books of the company, yes.

Q. The figures with respect to the increase were taken

3108 from the books. We took the actual sales for both periods and ourselves figured out in the increase.

COURT: In getting that $145,173.43 what did you exclude?

A. I consider the operating distribution expense of 1910 to be abnormal and to get a fair estimate of the expense I took the actual expenses of the four preceding years.

COURT: Then you did not exempt anything there?

A. No, rejected nothing.

COURT: Just took the average?

A. Took the average.

Mr. BYERS: For four years?

A. Four years.

Q. That would be——

A. 1906, 7, 8 and 9.

Q. Working that out to get that result you accepted the entires on the complainants' books just as they appeared?

A. In all cases except as previously mentioned rate expenses.

COURT: How did you get the $135,000?

A. I took the average expenses of the five years including the abnormal year of 1910.

Q. Did you ascertain from the books of the company the exact amount of the investment in the Des Moines Gas Company plant?

A. I did.

Q. I wish you would state to the Master what you found it to be and give him the items?

A. The investment or actual cost of this plant accepting the appraisal of 1894 as a basis and deducting the six cents of depreciation already referred to gives an actual investment of $1,481,813.67 in physical properties and in working capital of $68,952.91, a total of $1,550,766.58.

3109 Q. That is for instance that statement $1,550,766.58 represents the total investment of the Des Moines Gas Company less the depreciation which you dedict?

A. Yes, sir.

Q. What is the total depreciation?

Mr. BYERS: That comes a little further over. We might as well have it right there.

A. The total physical property, pages 20 and 21, excluding depreciation and based on an appraisal of 1894, is $1,727,675.67.

Q. Now what does that figure actually represent, that $1,727,675.67?

A. It represents an appraisal of January 1, 1895, prepared by Col. Pratt, $429,426.83, additions shown by the books from January 1, 1895, to December 31, 1910, $1,133,248.84, the cost of the Valley Junction property paid in bonds $45,000, an item not recorded on the books but which appears to be in the plant of a holder, a gas holder I enter $120,000 for.

Q. That is the gas holder which is paid for by the United Gas Improvement Company with $120,000 of bonds.

A. That is the same holder, but we do not know who paid for it or anything about it, no one can tell us.

COURT: You have got it back here $105,000?

A. No, sir; that was another thing, that $105,000 was debt due by the Capital City Company to the United Gas Improvement Company which the Capital City Company paid for in $120,000 of bonds by the Des Moines Company. This other $120,000 in respect to the holder in the works that does not appear in the books of the Capital City Company or Des Moines Company claims was paid for by some one, we can't find who paid for it or anything about it; I put — in at $120,000.

Q. Did you make inquiry of the officers of the company to
3110 furnish you information with respect to that holder?

A. Asked about it several times.

Q. Were you given any?

A. I was given to understand the records were not available.

Q. So if I understand you then you allowed them in making up the total investment in the property you allowed them $120,000 for that hold-r?

A. Yes, sir.

Q. Out of these items you get a total of $1,727,675.67.

A. Yes, sir.

Q. If I understand you that is the amount as shown by the books that was actually put into this property in money barring two items which is the appraisal of $429,426.83, you took that just as it was made by Col. Pratt.

A. Yes, sir.

Q. And $120,000 that you assume to be the fair value of the holder and allowed it?

A. Yes, sir.

Q. And with those two items it makes a total investment in the Des Moines Gas Company, that is all of the money that has gone into it from the beginning up to the 31st day of December, 1910, of $1,727,675.67.

COURT: You don't know whether that represents the money or not in 1895, but includes the appraisement of 1895?

Mr. BYERS: I was barring that item, I take it he assumes that to represent the value up to that time.

A. Yes, that is so.

Q. Now going back where we were. Explain right there and complete that testimony in the record *how* you reduce this amount shown on page 20, $1,727,675.67 to $1,550,766.58, used by
3111 you here in your fifth proposition as capital invested?

A. By deducting the allowance covering depreciation $245,-862.00. That depreciation that showed against the operations of the company and credit the investment account——

Q. That we will find as we go on, how you arrive at that item.

A. Yes, sir.

Q. The difference between $1,550,766.58 and the other figure on page 20 is represented by your depreciation?

A. Yes, sir.

Q. And that total, what do you have to say as to whether that

covers not only the investment in the Des Moines gas plant, but also the investment in the Valley Junction gas plant?

A. It covers them both. The total investment of the company here so far as shown by the books.

Q. When you say here——

A. I mean Des Moines and vicinity, Des Moines and Valley Junction as operated by this company.

Q. In connection with your former answer just what is the figure as shown by the books that represents the Valley Junction investment?

A. $45,000.

Q. Now applying the net revenues referred to by you in your solution four, I wish you would explain to the Master just what returns have been earned by this company on that valuation as you figure them out?

A. On the basis of ninety cent gas and the actual manufacturing and operating expenses for 1910, including an allowance of six cents for depreciation the net revenue would be $104,884.98 equivalent to 6.76 per cent on an investment of $1,550,766.58. Assuming a basis for sales and the actual manufacturing expenses for 1910 and
3112 the averaging operating expenses for the four years 1906 to 1909——

Q. Those are the same four years again and you take them because you find them to be normal average years?

A. Yes, sir.

Q. All right, go on.

A. The net revenue would be $145,173.06, a return upon that investment of 9.36 per cent on an investment of $1,550,766.58.

Q. That is the net investment with depreciation out?

A. Yes, sir. On a basis of ninety cent sales and actual manufacturing expenses for 1910 and the averaging operating expenses for the five years 1906 to 1910, plus the usual depreciation of six cents the net revenue would be $135,863.22 equivalent to a return of 8.76 per cent on an investment of $1,550,766.58.

Q. Now take the expense for 1909 and 1910 as I understand you made some additions to what is shown on the books?

A. Yes, sir. I charged to the expense of the year 1909 the federal tax paid in 1910. I eliminated from 1910 that same tax and added the federal tax paid in 1911.

Q. Then there was a federal tax paid in 1909?

A. Oh yes. Paid in 1910 for 1909.

Q. Paid in 1910 for 1909?

A. Yes, sir.

Q. And that item when found upon the books for 1910 would indicate that it was measured by the income of 1909, is that right?

A. Yes, one per cent of the income of 1909 subject to certain deductions $5000 is the statutory deduction and the interest on bonds and floating debt.

Q. And depreciation?

3113 A. And depreciation if any.

Q. The same would be true if you found in the books of

this company a charge in 1911 for federal tax that would represent the amount due the government from the company for the year 1910?

A. Yes, sir.

Q. And would be measured by the sworn statement of the company to the government as to its gross net income, is that right?

A. Yes, sir.

Q. Now I wish you would go through this summary on page 11 and explain it to the Master just as you have explained the tables that preceded it?

A. That is a statement in cents per thousand cubic feet manufactured of the cost of manufacture at the works less deductions in respect to the proceeds from residuals. The total cost of manufacturing less the residuals for the two months to February 28, 1906, was 36.82 cents per thousand. For the year February 28, 1907, 36.89 cents per thousand feet. For the year February 29, 1908, 35.13 cents per thousand. For the year February 28, 1909, 32.98 cents per thousand. For the ten months December 31, 1909, 30.75 cents per thousand. Average for the four years to December 31, 1909, 34.02 cents per thousand. For the year December 31, 1910, 29.76 cents per thousand. With an average for the five years to December 31, 1910, of 33.04 cents per thousand.

Q. Where did you get the basis of these computations?

A. From the books.

Q. From the books of the Des Moines Gas Company?

A. Yes; unadjusted.

Q. Now what adjustment do you refer to?

3114 A. I made no adjustment on the books.

Q. So that this manufacturing cost as it appears here is taken from the books of the Des Moines Gas Company?

A. Entirely.

Q. And is correctly set forth here as it appears on the books of the company?

A. It is.

Q. Checked up by you?

A. Yes, sir.

Q. And in making up the figures you have assumed that the entries in the books represent the cost of the several items?

A. I have.

Q. Now did you find anything unusual in the way of repairs in 1910 or any extraordinary repairs of any kind?

A. They seemed quite heavy as compared to the preceding years.

Q. What did you find with respect to that?

A. In 1910 the repairs cost 2.55 cents per thousand as compared with an average for the preceding four years of 1.71 per cent per thousand, for 1.91 per thousand for the ten months to December, 1909, 1.21 per cent per thousand for the year to February 28, 1909, 1.46 cents per thousand for the year February 28, 1908, 2.32 cents for the year to February 28, 1907, and 2.05 for the two months to February 28, 1906, an average for the five years to December 31,

1910, of 1.09 cents per thousand as compared with 2.55 cents for the year 1910.

Q. That is the average of repairs?

A. Average in repairs.

Q. Now again in dollars and cents the total amount, what did you find it to be for these years you have used in getting at your average?

3115 A. For the two months, February 28, 1906 $1,370.91. For the year to February 28, 1907, $9,699.99. For the year February 29, 1908, $6,875.23. For the year February 23, 1909, $5,966.71. For the ten months December 31, 1909, $8,213.18. For the year December 31, 1910, $14,193.78. A total of $46,279.80.

Q. And that amount was distributed over the plant generally or was it used largely in some particular part of it?

A. No it appears to be quite largely used on remodeling the water gas apparatus and coke shed apparatus.

Q. Just what proportion of it was used at the plant I mean down here on the east side of the river?

A. The actual works?

Q. Yes.

A. All the expenses just mentioned were used in the plant, the manufacturing plant.

Q. And were these items taken from the books of the company?

A. Entirely.

Q. Now if you will go through the dist-ibution in the same way Mr. Hall was rapidly as you can and do the matter justice?

A. The distribution expense includes complaints, distribution office expense gratuities, works repairs to the mains services and meters, setting and removing meters street mains store room and stable expense. Total for the two months February 28, 1906, 5.82 cents per thousand sold. For the year February 28, 1907, 4.67 cents per thousand. For the year February 29, 1908, 5.44 per thousand. In all cases sales. For the year February 28, 1909, 5.32 per thousand. Ten months to December 31, 1909, 6.60 cents per thousand. Average for the four years 5.52 cents per thousand. For the year December 31, 1910, 8.49 cents per thousand. Aver-

3116 age for five years to Decembe- 31, 1910, 6.21 cents per thou-snd.

Q. Now commercial expenses?

A. Commercial expense includes expense of collection and of-ice expense, office salaries and proportion of the general management and was a total for the two months to February 28, 1906, of 7.92 cents per thousand feet sold. The year to February 28 1907, 7.56 per thousand. The year February 29, 1908 7.31 cents per thousand. For the year February 28 1909, 7.57 cents per thousand. The ten months December 31, 1909, 8.34 cents per thousand. Average four years to December 31, 1909, 7.67 cents per thousand. For the year to December 31, 1910, 9.01 cents per thousand. The average for five years to December 31, 1910, 7.98 cents.

Q. Was this expense increased quite considerably during the year 1910 over the average of the former years?

A. Yes, it goes up quite a good deal, 9.01 cents in 1910 as against an average of 7.67 an increase of 1.34 cents.

Q. How was that additional expense apparently absorced, how did it show on the books what it was covered by?

A. Just a general increase in the running expenses of the office a more liberal policy.

Q. Any increase in the salary list?

A. Yes, my recollection is that in 1910 the sal-ries went up right down the line, all salaries went up, increases to every one in 1910, or almost everyone. I might say that the expense for 1910 included the cost of an added machine and a calculatin- machine.

Q. And what did they cost?

A. The adding machine $623.64 and the calculating machine $225.

Q. These figures covering commercial expense do they cor-
3117 rectly show just what the Des Moines Gas Books show unadjusted?

A. Exactly as their books unadjusted.

Q. No additions or subst-actions?

A. No additions and no deductions.

Q. Now the new business.

A. The new business includes the expense of advertising appliances, demonstrations, expenses soliciting, gas appliances, gas engine expenses, house fitting expenses, etc., including an allowance for general management, cost the two months ending February 28, 1906 4.38 cents, the year to February 28, 1907 4.76 per thouasnd sold for the year to February 28, 1908 4.36 cents per thousand sold the year to February 28, 1909 2.96 per thousand the ten months to December 31, 1909, 3.93 cents. Average for the four years 3.98 cents. For the year to December 31, 1910, 4.54 cents. For the five years an average of 4.11 cents per thousand sold.

Q. Now was there any adjustment made by you in respect to any of these expenses?

A. None.

Q. Just as they appear on the books of the company?

A. Just as they appear.

Q. The total averages you have given are correct averages?

A. They are.

Q. Based on the sales as shown by the books of the company.

A. Yes, sir.

Q. Now the advertising expense you find to be considerable increased do you not?

A. Yes, sir.

Q. No the year 1910, how was that shown on the books?

A. By general increase in the expense of advertising, sala-
3118 ries and other expenses including very considerable payments to the U. G. I. for advertising literature.

Q. The United Gas Improvement Company of Philadelphia?

A. Yes, sir.

Q. And the soliciting expense increased, now how did you find that was accounted for on the books?

A. Due to an increase in salaries, general increase.

Q. In what year?

A. For both 1909 and 1910, beginning about the latter half of 1909 I think.

Q. Do you have any memorandum handy from which you can tell just when the increase in salaries began?

A. We have it, I can get it for you. I don't have it beside me now.

Q. Was there any of that prior to the year 1909?

A. No my recollection is that the years before that was somewhat more normal increase in the way of salary raises.

Q. Now the general expenses.

A. General expenses include accident or damage claims association meetings, general expenses, extra expenses, insurance litigation, street lamp operating and salaries general. The cost for the two months to February 28th, 1906, was 1.36 cents per thousand. For the year to February 28, 1907, 2.68 cents. For the year to February 29, 1908, 2.19 cents. For the year February 28 1909, 2.49 cents, for the ten months to December 31, 3.78. Average for the four years to December 31, 1909, 2.72 cents. For the year to December 31, 1910, 4.90 cents per thousand. The average for the five years December 31, 1910, 3.22 cents per thousand.

3119 Q. I notice from your statement that the total for the year 1910 was over two cents higher than the average for the four preceding years?

A. Yes, sir.

COURT: That includes the $10,000 there does it?

A. It does.

COURT: That is figured in the year for December 31, 1910?

A. Yes, sir.

COURT: Take that $10,000 out, what would it be?

A. 3.02 cents per thousand sold. The 1.88 cents is the $10,000, that is the only item in that.

Q. Then if I understand you the 1.88 is an added expense to the year 1910 and is absorbed entirely by the $10,000 in alleged salaries to the employés of the U. G. I.?

A. Yes, sir.

COURT: I don't understand this fully now. You put salaries there 1.88 in 1910. That is general salaries. Is that an increase or the total salaries?

A. The 1.88 is on the basis of $10,000 per annum to four or five U. G. I. officials.

COURT: That don't mean salaries to the manager?

A. Oh no, excludes the manager and all local officials, covers Mr. Bodine, Mr. Clark, Mr. Lilley, Mr. Douthirt and Mr. Pearson.

Q. You don't include in this list chargeable there the salaries of the men and the manager of the concern do you?

A. No, sir.

Q. Where are those salaries taken care of?

A. They are spread over the business. In the office and commer-

cial expense, monthly distribution, office salaries, they are mostly in distribution and commercial.

3120 Q. In 1909 you have .10 of a cent?

A. That is the average four years to December 31, 1909.

Q. There would be a little there, a month of that $10,000?

A. Two months. 1909 includes two months. Commenced paying salaries November 1, 1909.

Q. This $10,000 extra?

A. Yes, sir.

COURT: What is that .41?

A. That re-resents two months' salaries some officials drew during the year 1909, they commenced paving November 1, 1909.

Q. I was in the wrong column when I asked you about the .10 cents the third column on the end represents the average for the four years?

A. Yes, sir.

Q. And the .41 represents the two months that these extra salaries were paid in the year 1909?

A. Yes, sir.

Q. Now you may give such further explanation as you wish with respect to these extra expenses as you have apparently done on page 15, explain that page to us?

A. There is an average charge during five years December 31, 1910 of .56 per thousand and of .75 per thousand during the year to December 31, 1910 in respect to the account called expense extras, that account covers donations, subscriptions, charities, club subscriptions, bonuses and a few more.

Q. Was there an apparent increase in this during 1909 and '10?

A. Yes, steadily riwing. For the two months February 28, 1906, that cost $27.50. For the year to February 28 1907, that was $1,914.50. For the year to February 29, 1908, it was $1,371.65. For the year to February 28, 1909, cost $2,062.31. Ten

3121 months to December 31, 1909, $3,392.35. For the year to December 31, 1910, cost $3,964.78.

Q. Then if I understand you that class of expense extra for 1909 and 1910, or for 1910, was $3,964.78?

A. Yes, sir.

Q. And what do you say that covered, what is included in these figures. I note you say in one place here bonuses. What do you mean by that?

A. $200 in 1910 was given to a club, club subscriptions. Y. M. C. A. $100. Methodist Hospital $100. Greater Des Moines Committee $2,225. Roadside Settlement $50. Mercy Hospital $400. Sundries including Mr. Haines' expense extra $178.78. Item donation to J. Haines $711.

Q. Those items you have just read are covered by this item here under the year ending December 31, 1910, $3,964.78?

A. Yes, sir.

Q. I wish between adjournment and the coming on of court in the morning you would have these items typewritten and furnished to me on a separate sheet.

A. For one year or five?

Q. Better have it for both years, 1909 and 1910?

A. All right.

Q. Now what further comment, if any, do you care to make or explanation of the salaries general?

A. The salaries were placed on the books in the first instance on November 1, 1909, or from that time, and they carry $10,000 per annum.

Q. Now do any of the persons to whom a credit for salary appears on the books, had they ever drawn salary from the company before, so far as the books show?

3122 A. Not so far as I ascertained.

Q. Did you find in your examination any vouchers showing payment of any of these salaries or of receipt for any of these salaries?

A. My recollection is the salary checks were endorsed each month by these parties.

Q. Their names appear on the salary check?

A. Yes, sir.

Q. And who drew the checks, where were they drawn, here or somewhere else?

A. Here I presume.

Q. Do you know how those entires got on the books? Did you find anything or did your men find anything among the papers of the gas company to show how these entries came to be made on the books here?

A. I don't know that I quite follow you.

Q. Well for instance at the end of the year or whenever the entry was made on the books did you find anything indicating that these entries were directed by letter or communication or otherwise from some person or company?

A. No, they were authorized by minute of directors and are placed on the books monthly just as they pay the ordinary force.

Q. All you found then was the transaction in the directors' or stockholders' minute book and then each month these several persons were credited with——

A. They had a check sent them each month?

Q. You are sure about that are you?

A. Quite certain.

Q. Sure about that that among the vouchers up there will be found checks for these salaries.

3123 A. Checks or vouchers of some kind; voucher checks I think they are.

COURT: Who drew the checks?

A. Drawn by the cashier in the office, I don't know his name.

Q. If you have any doubt about that I would like to have you verify it between adjournment and coming in court in the morning and I would like to have you bring with you if the manager of the gas company will permit you to have them, these vouchers or checks.

COURT: Do you know whether or not they were drawn by S. G. Bodince?

A. Yes, drawn to them individually.
COURT: Did he draw these checks?
A. He did not draw them, but made — payable to Mr. Bodine.
COURT: I know, but did he draw the checks on the treasurer?
A. The treasurer drew them on the Des Moines Company.
COURT: Did the secretary draw them?
A. I could not say which official drew the checks.
COURT: You don't know who signed them?
A. Signed by an official here.
Mr. BYERS: In that expense extra have you tab-lated the expense extra for the several months since the first of January 1911?
A. No.
Q. What I want to know is whether you have made up a table of the extra expenses since January 1911?
A. No.
Q. So that you can't say now whether this increase has been continued?
A. I can't say.

Q. Do you have on that memorandum that you submitted
3124 a moment ago or that you used in refreshing your recollection as to items making up the total of $3,964.78 for 1910, do you have on that memorandum the amount of increase of salary to the manager or president of the company?
A. No.
Q. That does not show there?
A. No, this is simply a record of the extra expense.
Q. Now one further item there so that there will be no question about how you deal with it, on page 16 of your report I wish you would explain a little more fully just what that item included and why you exclude it from your computations in arriving at the cost of manufacturing gas.
A. That item $5,935.18 was in most part paid to the U. G. I. of Philadelphia for the service of draftsmen and engineers preparing the inventory and was worked for the plaintiff here connected with this present suit.
Q. $5,935.18?
A. Yes, sir.
Q. How was that expense entered on the books of the Des Moines Gas Company?
A. It was mostly entered from voucher.
Q. I don't mean the method or manner in which entered, what did they call it, litigation expense, or what?
A. Replacement value, rate regulation expense.
Q. Do you have some memoranda showing that?
A. Not a copy of the account.
Q. You have handed several pages here covering items under the title Des Moines Gas Company, rate litigation expense, 1909, 1910. Is this supposed to be an abstract from the company's books?
A. Yes, sir.
3125 Q. Just as it appears there?
A. Yes, sir.

Q. Defendant's Exhibit No. 31 identified by the reporter is the abstract of the company's books covering this item of $5,935.18?

A. Yes, sir.

Q. Before I go any further there were any of these extra salaries if I may use that term allowed and any item showing any such salaries appearing on the books prior to November 1, 1909?

A. No, none.

Q. Now you may state to the Master further if you care to just why that item $5,935.18 should not be credited up to operating expenses?

A. It should not be charged to operating expenses as it is not an annual recurring charge and is not one directly connected with the operating of the business. It is a special charge and should be specially taken care of.

Q. And for that reason you have excluded it all through your computations?

A. Yes, sir.

Q. Now then taxes?

A. Taxes include general taxes, federal tax and special city tax, covering two months February 28, 1906 amounted to 6.14 cents per thousand. For the year to February 28, 1907, 5.56 per thousand. For the year to February 29, 1908, 6.87 cents per thousand. For the year to February 28, 1909, 6.52 cents. For the ten mon-hs to December 31, 1909, 7.66 cents. Average for four years to December 31, 1909, 6.65 cents. The year ending December 31, 1910 7.22. Average for the five years to December 31, 1910, 6.78.

Q. You don't find any abnormal increase in the tax account?

A. No, the tax account appears to run quite normal.

3126 Q. Have you abstracted the books so far as the tax entries are concerned? Let me put that question in another way, the taxes that you have just stated, the totals are they shown by the books of the company just as you gave them?

A. Yes, subject to the throwing into this expense of the federal tax of 1910 and 11, we take that in as an expense under the head of taxes.

Q. Now leakage?

A. I find the average of leakage for five years 2.04 cents per thousand as compared to 1.35 cents for the year 1910 and 2.26 cents for the four years from 1906 to 1909.

Q. There was less of that kind of leakage in 1910 than usual?

A. Yes, things improved in 1910.

Q. Now take up your conclusion No. 2 and go through that for us if you will?

A. That conclusion stated on page 17 is a summary of the total repairs on the plant and distribution system covering the period of five years from December 31, 1910. The repairs for the two months to February 28, 1906 total 4.82 cents per thousand. For the year February 28, 1907, 4.88 cents per thousand. The year February 29, 1908, 4.61 cents. For the year February 28, 1909 4.45 cents. The ten months to December 31, 1909, 5.73 cents. Average for four

years to December 31, 1909, 4.89 cents. The year to December 31, 1910, 7.42. Average of five years to December 31st, 1910, 5.49 cents.

Q. That represnets the total amount paid out for repairs during that period?

A. Yes, sir.

Q. You add something to that do you?

A. We add six cents per thousand in respect to depreciation.

3127 Q. For each year.

A. For each years, yes.

Q. That changes the totals just to that amount?

A. Yes, six cents greater.

Q. I wish you would explain to the Master just how that six cents works out on this investment as you have extended it up to this point?

A. Six cents per thousand cubic feet sold during the period from January 1, 1895 to December 31, 1910, would give an aggregate depreciation of $245,862.00.

Q. You have a table at the bottom of page 17?

A. Yes, and the amount is in the middle of page 18, $245,862 aggregate depreciation in the sixteen years.

Q. So the total depreciation in the years figured as you figure it at six cents per thousand cubic feet amounts to a total of $245,862.

A. Yes, sir.

Q. And that was the amount that you used to arrive at the figure $1,550,000 of investment?

A. Yes, sir.

COURT: You do not give the six cents a thousand cubic feet of gas in this table on page 18, you do not give the amount of gas manufactured do you?

A. I think I have it here somewheres.

COURT: I suppose dividing that by six would give it?

A. That gives the -igures.

Q. You took the actual amount of gas manufactured each year?

A. Took the actual figure.

Q. Multiplied it by six cents?

A. Yes, sir.

3128 Q. That gave you the figures appearing for each year in this table and the final total $245,862.00?

A. Yes, sir.

Q. That will be found in schedule 4 attached to this report, under general statistics schedule 4 for the years 1895 to 1910?

A. Yes, it is given there the seventh column from the left of the page would give it.

Q. That is the fourth one from the end?

A. Yes, schedule 4, the footing of that would give it.

Q. At any rate Mr. Hall, you took the actual sales as shown by the books of the company and used the figures.

A. Yes, sir.

Q. For the basis of these columns that total $245,862.00?

A. Yes, sir.

Q. And you arrive at the total for each year by multiplying the sales of that year by six cents.

A. Yes, sir.

Q. Now I wish you would explain briefly the last column in that table beginning on page- 17 and 18?

A. That represents the percentage of the depreciation allowance to the investment of the company, to the investment in plant, physical property as at the close of that particular year. For example at the close of the year 1895 the depreciation allowance was equivalent to .0836 per cent of that figure. The allowance was calculated on the closing balance of each year, the last figure of the year irrespective of the fact that the additions only were in use for six months and no account was taken of any residual value at all or any real estate?

Q. If you had taken account of residual value and real estate what difference would that have made?

3129 A. It would have raised the percentage.

Q. Now if you will take up your conclusion No. 3 and work that out for us I would be obliged to you?

A. Conclusion No. 3 sets forth the estimated return to be earned on a basis of the actual expenses of the year 1910, on a basis of the actual manufacturing for 1910 and average distribution expenses for the four years 1906 to 1909 and third, on the actual manufacturing expenses of 1910, and the average distribution for the five years including 1910, including as an expense the depreciation.

Q. And how does it work out?

A. It works out on page 20 giving an estimated net revenue at actual manufacturing for the year 1910, and the distribution for the four years 1906 to 1910, including depreciation, an estimated net revenue of 27.28 cents per thousand feet sold. Assuming ninety cent gas in Des Moines and the usual Valley Junction rates. On the second table assuming the same revenue and the actual manufacturing expense for 1910 and the distribution based on the average for the years 1906 to 1910, including depreciation we have a net revenue available for interest of 25.53 cents per thousand feet sold. Stated in dollars and cents the first estimate, that is on the basis of the average distribution expense for 1906 to 1909 would give a net revenue of $145,173.06.

Q. That appears on page 19?

A. Page 19. While under the second basis of five years' average including 1910 the average distribution gives a net revenue of $135,863.22.

Q. Just a little under $10,000 difference in the two estimates?

A. Yes, sir.

Q. Now conclusion No. 5.

3130 A. Deals with the investment in the property of the company and brings out after making a deduction for depreciation to investment brings $1,550,766.58.

COURT: Did you take the working capital from the books?

A. Yes, sir.

Q. Now what did you include in that?

A. I included all the working assets representing cash on hand inventory of supplies and accounts receivable and deducted the accounts payable and accrued liabilities. That is the liability for bond

interest due and unpaid covering a few months. I refer to that in detail later on.

Q. This item of $68,952.91 was that taken from the books of the company?

A. Yes, sir.

Q. That is the separate items that make up that total are shown on the books of the company?

A. Shown on the balance sheet December 31, 1910.

Q. And shown as working capital for that year?

A. Yes, sir. This statement brings out that investment as by the company's own books after deducting depreciation, that is money invested in physical property or working property.

Q. Now I wish you would go through that a little more in detail and work it out the same you have here in your report with such explanations as you care to make.

A. We started under the appraisement of January 1, 1895, and that appraisal amounted, that is physical property excluding any working assets amounted to $429,426.83 and the company expended for additions between January 1, 1895 and December 31, 1910, $1,133,248.84. They paid for the valley Junction property *in*
$45,000 in bonds. Added allowance for the gas holder not
3131 included in either set of books $120,000.

COURT: Right there I want to get at something. On page 3, you make reference to a payment by delivery of bonds received of $120,000. Now is that the $120,000 which you refer to here?

A. No, sir; it is another additional $120,000.

COURT: This $120,000 was for the gas holder?

A. Perhaps I could explain it better in my own way. The Des Moines Company gave the Capital City Company $285,000 in first mortgage bonds. $45,000 of that $285,000 covered the Valley Junction property. $120,000 of this $240,000 remaining was given by the Capital City Company to the U. G. I. in settlement of a debt of $105,526.49.

COURT: What was that for?

A. For supplies sent by the U. G. I. and moneys advanced by the U. G. I. to the Capital City Company. That $120,000 was in liquidation of a debt. The remaining $120,000 of bonds plus $800,000 preferred contracts, plus the capital stock of the Des Moines company was distributed by the Capital City compa*j*y to its stockholders by way of dividends. That is the $120,000. The question came up when this appraisal was made as to the holder being in the yard and not being on the books and the contention appears to be although it is not fully proven, that this $120,000 of bonds instead of being distributed as dividends was handed to the U. G. I. company in payment of the holder, the other $120,000.

Q. Carrying that a little further, if I understand the situation as you found it, substantially all of the physical property, the important part of it, can be found, can be traced into the books of either the Capital City Gas Light Company or Des Moines Gas Company, except this one holder?

3132 A. I only had the one holder not being in either set of books.

Q. And that holder is the one that you allowed and you figure out that probably the other $120,000 of this $240,000 was to wipe out that indebtedness or rather that credit if it had been on the books, or charged?

A. I understand through I think Mr. Curren comptroller of the U. G. I. that $120,000 was in connection with the holder.

COURT: Mr. Douthirt testified there was $120,000 paid for the holder if I understand it.

A. I confirmed the $120,000 by asking Prof. Bemis if the holder was worth about $120,000 and he said yes, just about the price of it so I passed up the $120,000 on that basis.

Q. Now then if you will go on with your investment in plant and property.

A. The investment in the plant and property on the basis of this appraisal, subsequent additions Valley Junction property and the holder aggregate $1,727,675.67. From that amount we deduct the allowance in respect to depreciation or being equivalent to the wear and tear of the plant, decrease in its value, $245,862.00 leaving the depreciated value of the property at $1,481,813.67.

Q. Then if I understand you at this point you took the total sales of the company for the five years and multiplied them by six to get the depreciation.

A. No, sir; I took the sales for the sixteen years and multiplied it by six. The question was asked a moment ago as to the total sales they were 4,097,700,000 in round figures for sixteen years, page 21.

Q. You multiplied that by six to get the depreciation?

A. Yes, sir.

3133 Q. That produced the figure $1,481,813.67?

A. Yes, sir.

Q. And according to your investigation and examination represents the total amount invested in this property by all of these companies less your depreciation?

A. Yes, sir; accepting the appraisal as the start.

Q. Accepting Col. Pratt's appraisal back in 1895 as the start?

A. Yes, sir.

Q. And why did you do that?

A. That appears to be accepted by all parties at that time as being the price of the property or value of the property as appraised prepared by the company and it was the reasonable assumption that represented the actual facts at that time.

Q. Prepared it themselves?

A. Prepared it themselves and swore to it.

Q. Swore to it as the actual value?

A. Yes, sir.

Q. So you started with that?

A. I started with that, that being the cleanest point to commence.

Q. Does that appraisal appear here?

A. Yes, sir; the following table, page 21 gives a summary of that appraisal.

Q. Where did you get these figures?

A. From a copy of the appraisal on the record.

Q. I wish you would explain a little more fully what is covered by that table?

A. The main sections of the plant here as stated. Then the total investment in each section. The second column is the appraisal of January 1, 1895, the Pratt appraisal. The next column gives the total additions made to the plant subsequent to that date.

3134 The two last columns give the additions for the period January 1, 1895 to 1906 and the last column March 1, 1906 to December 31, 1910.

COURT: What does this total mean?

A. Means the total investment as $1,727,673.67, represents the total of the appraisel value with subsequent additions. The second column is the appraisal of January 1, 1895, the Pratt appraisal.

COURT: These totals are your own figures?

A. My own figures, yes.

COURT: You don't know whether that appraisal represents book value at that time or not?

A. It does not.

COURT: That last column represents the addition between March 1, 1906 and December 31, 1910?

A. Yes, the additions made by the Des Moines Company, the present company.

COURT: The column next to that represents the additions made by what is known as the Capital City Company?

A. Yes, sir.

COURT: After 1895?

A. Yes, sir.

Q. And including 1895?

A. No, the second to the last column represents the additions from January 1, 1895 to February 28, 1906.

COURT: That includes 1895?

A. Includes 1895 yes, I misunderstood you.

MR. BYER: What does the first column include?

A. Represents the total of the plant now with the appraisal as the basis.

Q. And without the depreciation taken out?

3135 A. Without, yes.

Q. And without Valley Junction and without that holder?

A. No with both at the bottom of the page.

Q. When you get down to the bottom, but where you say total as on the books?

A. Yes, without the Valley Junction property and without the holder.

Q. And the second column is the appraisal made in January 1895?

A. Yes, sir.

Q. Which is included in these figures $1,562,675.67 in the first column?

A. Yes, sir.

Q. That is, you do not mean that this table does not indicate that

the total cost as shown by the books was $1,562,675.67 and then the appraisal of $429,426.83 in addition, that is not what it means?

A. No. It means that the figure $1,562,675.67 is the appraisal plus the subsequent additions.

COURT: That is only physical property?

A. Physical property only.

COURT: You did not take into consideration any expense of organization of the Des Moines Company?

A. No, sir.

COURT: This simply gives the actual physical property as represented by investment?

A. Yes, sir.

COURT: Shows the amount actually put into property.

A. Into tangible property.

Q. Represents all that was put in?

A. As shown by the books, yes.

3136 COURT: You mean all if that appraisement is correct?

A. Assuming the appraisement to be correct at the commencement, yes.

Q. Of course I am assuming that all the time in these questions that that is correct. Now the property of the company as shown on the books, Mr. Hall, at the present time, the book entries, $3,853,975.22 which is very greatly in excess of the amount that you say the books show was invested in the property assuming that the appraisal in 1895 was correct. How do you explain that and account for that excess?

A. Partly by the fact that the appraisal of January 1, 1895, was less than the books. Partly by the fact that in 1897 the value of the plant was arbitrarily run up by an appreciation and credit to surplus and finally by the transfer by the Capital City to the Des Moines company at a very considerable enhancement.

Q. I wish you would cover that a little more in detail?

A. The book value of the properties on December 31, 1910, was $3,853,975.22. That figure was determined after taking out depreciation June 30, 1909, $264,108.78. Adding these two figures together would reinstate the book cost of the Des Moines company to the sum of $4,118,084.00. To determine the difference between that sum and the actual cost of the property as already referred to is made up by a difference of the book value at January 1, 1895, in excess of the original appraisal at that time referring especially to the water gas plant and patents shown on the books at $200,000 and appraised at $27,903.06.

Q. That is to say the company itself valued the property that had a book value of $200,000 at $27,903.06?

A. Yes, as I understand it the old company took over the water gas plant and issued bonds against it in the face value of $200,000. The property at the time of this appraisal was entered at $27,903.

January 1, 1895, the construction account appeared on the
3137 books which represented stock issued without consideration another $39,371.22. That made the book value January 1, 1895, $211,468.16 in excess of the appraisal by Col. Pratt. During

the subsequent period to February 28, 1906, the capital account of the Capital City Company was charged with the cost of certain stocks in the Capital City Electric Light Company less dividends received a net figure of $2,553 and also include a charge of $131,744.44 an amount charged to plant account credit to profit and loss and subsequently distributed as stock dividend, $300,000 was distributed as stock dividend May 1, 1897, and include this item. These two items make $134,297.44. When we come down to the transfer of the Capital City Company to the Des Moines Company we find that there was an appreciation there of $2,123,769.91.

Q. Now how did that come about, that appreciation?

A. Oh generally called water. They sold the property at a sum very considerably in excess of its book value at that time. The book value of the plant as appearing on the Des Moines Company's books of March 1, 1906, $3,592,723.24 less the Valley Junction properties $45,000 making a net value paid to the Capital City Gas Light Company $3,547,723.24 against a value appearing on the Capital City books of $1,423,953.33.

Q. That is to say the Des Moines Gas Company issued and changed its securities in the amount of $3,547,723.24 for property of the Capital City Gas Light Company of the value of $1,423,953.33.

A. Of the apparent value of $1,423,953.33 because that value included the previous appreciations we have mentioned, that is a book value only.

Q. So that the actual value would be even less than $1,423,953.

A. Yes, would be subject to a deduction of $211,468.16
3138 and $134,297.44 mostly making up that appreciation. Then to these three items amounting to $2,469,535.51 I added the bond discount and reorganization expense charged to the plant on the Des Moines company books. That represents principally the discount on bonds sold $40,872.82 making a total deduction of $2,510,-408.33 leaving the actual cost of the property as shown by the Des Moines company books, $1,607,675.67.

Q. In other words, you found by your investigation and examination of the Des Moines Gas company books that there was $2,510,-408.33 in water?

A. Yes, sir.

COURT: That is up to the time of the organization of the Des Moines Gas Company?

A. Yes, sir.

COURT: Does that include up to the present time the extension?

A. No, sir; that is purely water or arbitrary additions without tangible value being represented.

Q. What does the $1,607,000 represent?

A. That plus $120,000 on the holder represents the total cost to this company up to this time beginning with the appraisal.

Q. Up to the 31st of December, 1910, or up to this time?

A. Up to December 31, 1910.

Q. When you add to this actual cost of the property $1,607,675.67

the $120,000 that you allow for the holder it brings the total cost up to your former figure $1,727,675.67.

A. Yes, sir.

Q. And that represents the actual cost of the entire property without any deduction for depreciation?

A. Yes, and based on the appraisement.

Q. Based on the appraisal of 1895. Now you have stated
3139 this in another way on this same page 23. I wish you would explain that?

A. The appreciation on the transfer including the other appreciation amounted to $2,510,408.33. The company itself wrote off on June 30, 1909, $264,108.78 while we allow a value for the holder not included on either set of books namely $120,000, take the two items from the appreciation of $2,510,000 we have an appreciation excluded from the accounts of $2,126,299.55. In other words the balance sheet of the company December 31, 1910, is $2,126,299.55 in excess of the amount invested in the plant as we make it out.

Q. Now right at that point did you find or were you able to ascertain just why the amount $264,108.78 was charged off for depreciation?

A. I don't know why it was done.

Q. Do you know how they got at those exact figures?

A. Yes, June 30, 1909, the amount credited to profit and loss account representing surplus earnings from March 1, 1906, to June 30, 1909, after paying all interest charges was $264,108.78 and that figure was taken and transferred to the credit of plant account, the profit and loss account being closed up.

Q. In other words they took their surplus, what appeared to be surplus earnings and wiped it out by charging it up to depreciation?

A. Yes, sir.

COURT: Is that more or less than you figure the same account?

A. Oh very considerably more. That only covered a period of three years and four months.

Q. That would be the amount they would charge since 1906 would it not?

3140 A. From 1906 to June 30, 1909, they closed the account out at that date.

Q. Your depreciation account for the whole sixteen years was only $245,000?

A. Yes, less for the sixteen years than they make for the three years.

Q. They wiped out more in the three years than you did the whole sixteen?

A. Yes, sir.

Q. It happened to be just the amount of surplus owned as shown by the books?

A. Yes, sir.

Q. Was there any other reason given for it to you by anyone for the company?

A. No.

Q. Has that item, that amount been included so far as you have been able to ascertain from the books in any of their statements?

A. Not as an expense, no.

Q. Well as depreciation?

A. Yes, the balance sheet shows that.

Q. But in the sworn statements they have made for the last two years and made since that depreciation charge appeared on the books has it appeared in any of those statements?

A. Not so far as I have seen them.

Q. I mean so far as you have been able to find?

A. No. Certainly has not appeared in the federal tax statement, be no tax to pay if it did.

Q. That would wipe out the tax?

A. Why yes. There would have been something coming back in that event.

3141 Q. They did pay federal tax?

A. Yes.

Q. Quite a considerable sum didn't they?

A. $1237.00 or $1287 for the year 1910. $1287 for the year 1910.

Q. And if they had regarded this $264,108.*00*.78 as a legitimate entry on their books they would not have paid any such sum.

Objected to as argumentative and clearly incompetent, it is not for the witness to say if they regarded this as a legitimate entry or what they would have done if they has so regarded it.

Q. I will put it in another way. If such a charge appeared upon the books of this company at the time the sworn statement to the federal government was made with respect to the income and revenue of that company does the federal statute require that amount to be stated, the depreciation amount to be stated in the blank.

Objected to as clearly incompetent because the federal statute speaks for itself and the witness is not competent to interpret it.

A. The federal statement provides for any depreciation charged as an operating expense being deducted from the net revenue of the company before paying tax.

COURT: Depreciation for that year?

A. The depreciation applicable to the year being reported on, yes.

Q. So when you found a federal tax for the year 1909, paid for the year 1909, and then found this charge for depreciation you were put upon inquiry were you not and made some inquiry about it?

A. I figured the matter out roughly for myself to ascertain if this had been included as an operating expense.

Q. Have you been able to figure out any method of depre-

3142 ciation that would bring about any such item as you find on the books there for those three and a half years?

A. No.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

3143 Wednesday Forenoon Session.

SEPTEMBER 13, 1911—at 9:30 A. M.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JAMES HALL, continuing his direct examination, examined by H. W. Byers, Esq., testified:

The MASTER: Before we begin the further examination of this witness, there are some matters here with reference to these books that I wish to have cleared up. On page 5 of Exhibit 23 I find a table of Mr. Hagenah that shows the book value of this property $1,928,016.65. The basis for that is the alleged book value on June 30, 1886 $295,383.08; adding to that the extensions in various ways up to and including January 1st, as I understand it, I find that up to that time it would amount to $470,173.66. That brings it up to the date now that you begin the valuation and that only makes a difference in your basis of $40,746.83. I find the total difference in the final results of the book value between the two experts is $200,340.98, making a difference in round numbers of $160,000. or about that. Now I would like to know why that difference. It ought not to exist; if your experts can explain that, I would like to have it done.

Mr. BYERS: Mr. Hall can explain that.

The MASTER: All right, I want it explained in order to get at it right.

The WITNESS: I can explain that, I think. In the year ended February 28, 1907, Mr. Hagenah enters the extensions total at $418,914.28. That figure includes the $120,000 paid to the United Gas Improvement Company in settlement of the old debt of $105,000.

3144 The MASTER: That includes the $120,000?

A. Yes, sir. In other words, Mr. Hagenah entered as extension $285,000 bonds issued at the time of the reorganization of the Company, while we only included $165,000. excluding as an extension $120,000 covered in settlement of the old company obligation.

The MASTER: Now just make the figures here showing the difference.

A. I have stated the figures in even thousand dollars.

The MASTER: I got it $200,340.98. Please see whether that is right.

A. That is correct.

The MASTER: Then the difference is $200,340.98. I wish you would take down the amounts as I read them: $295,383.08; $13,393.52; $30,588.09; $11,606.56; $7,462.52; $32,565.24; $68,402.36; $5,615.02; $5,157.27. Now add that, please.

A. $470,173.66.

The MASTER: That is what I have it. Now, Mr. Hagenah, I want to see if I got that correct; that will bring it up to ninety-four. Now should that minus quantity be taken out?

Mr. HAGENAH: Yes, sir.
The MASTER: That should be taken out for 1894?
Mr. HAGENAH: Yes, sir.

The MASTER: Now take from it $149.32.
The WITNESS: $470,024.34.
The MASTER: Your basis now is *is* $429,426.83?
A. $429,426.83.
The MASTER: I wish you would see what the difference is?
A. $40,597.51.

The MASTER: That is what I have it now. That makes a
3145 difference then in the basis of $40,597.51?
A. Yes, sir.
The MASTER: Now take that from the two hundred.
A. I have just the figures to the even cents now and the difference is $201,470.33, made up of the difference of the bonds and the bond discounts; and the unexplained difference is $1,129.35——
Mr. BYERS: Explain that now.
A. The construction on Complainant's Exhibit 23 is $1,928,-016.65. The construction on Defendants' Exhibit 30 is $1,727,-675.67. Complainant's Exhibit being in excess of defendants' $200,340.98. That is partly explained by the difference on January 1, 1895, between the accounts taken from the books $470,024.34 accepted by the complainant, and the Pratt appraisal accepted by the defendant $429,426.83, a difference of $40,597.51. Adding to that the bonds paid to the United Gas Improvement Company by the Capital City Company in settlement of the open account March 1, 1906, $120,000; add to that the bond discount and reorganization expenses for the period from 1906 to 1910, $40,842.82, making a total of $201,470.33. The other exhibit gives $200,340.98, and there is an unexplained difference of $1,129.35.
The MASTER: Between your Exhibit No. 30 and the Complainant's Exhibit No. 23?
A. Yes.

The MASTER: That is all I wanted to know. You might just make that sheet of paper having the figures an exhibit.
Mr. GUERNSEY: Have it copied into the record.
The MASTER: Yes, mark it as an exhibit and copy it.

The paper is marked Defendants' Exhibit 33, and is as follows:

3146 "DEFENDANTS' EXHIBIT 32.

Opening difference at January 1, 1895		$40,000.
Exclusive of amount paid to United Gas Improvement Company in settlement of open account at March 1, 1906		120,000.
Total bond discounts and organization expenses excluded 1906-1910		41,000.
		$201,000
1,928,016.65		
1,727,675.67		
200,340.98		
	295,383.08	
	13,393.52	
	30,588.09	
	11,606.56	
	7,462.52	
	32,565.24	
	68,402.36	
	5,615.02	
	5,157.27	
	470,173.66	
	149.32	
	470,024.34	
	429,426.83	
	40,597.51	
40,597.51 opening difference		
120,000. bonds		
40,872.82 bond discount		
201,470.33		
200,340.98		
1,129.35 difference unexplained."		

Mr. BYERS: Now, Mr. Hall, resuming the examination where we left off last night, I believe we were at page 24. With respect to that $120,000 which you allowed for the holder there, did you have any conversation with any of the officers of the Company with respect to that holder?

A. Yes.

Q. And with whom was that conversation?

A. Mr. Curran, Comptroller of the United Gas Improvement Company.

3147 Q. What explanation did he give you?

Objected to on part of complainant as being incompetent, because it does not appear that Mr. Curran had any authority to represent the complainant or that he was an officer of the complainant or connected with it in any way.

A. I got no explanation beyond the statement that the holder was there and the records in Philadelphia.

Q. Now, in that connection, Mr. Hall, did you find anything among the books and papers of the Company that gave you any information with respect to the holder, or the cost of it?

A. Nothing at all.

Q. Or any direction to make any charge on the books with respect to it?

A. Nothing; no sir.

Q. Or any authorization for its construction?

A. I saw nothing at all, sir.

Q. Now the assets turned over as shown by the books of the Company you stated yesterday was $3,334,000 and were made up of what items?

A. 22,490 shares of capital stock, par value $2,249,000; first mortgage 5% bonds $285,000; preferred stock contracts $800,000; total $3,334,000.

Q. How were those assets or securities disposed of by the Capital City Gas Light Company?

A. May I answer further on the last question.

Q. Yes, sir.

A. The property handed over had a mortgage of $400,000 which was assumed by the Des Moines Company, making the total face value of the plant $3,734,000.

3148 The MASTER: Right there, was there interest accrued on the bonds at that time?

A. My recollection is no—yes sir, there was $4,000.

The MASTER: I mean on the Capital City bonds?

A. Yes, sir; $4,000. Answering your next question, the consideration received by the Capital City Company was in part paid, for the Valley Junction property $45,000 bonds out of the $285,000 being given to Mr. Haines and Mr. Keffer. $120,000 of the remaining $240,000 bonds was handed over to the United Gas Improvement Company in settlement of a debt of $105,526.49; the balance $3,169,000 made up of the remaining bonds, $120,000, preferred stock contracts $800,000 and the capital stock $2,249,000, was according to a general entry on the books of the Capital City Company disposed of as follows: Dividend in liquidation distributed pro rata to the stockholders of this company in the securities of the Des Moines Gas Company these 22,490 shares of capital stock; $120,000 first mortgage gold bonds, $800,000 preferred stock contracts, as authorized by the board of directors at a meeting held February 28, 1906, at three o'clock P. M.

Q. Now, at that time, or about that time, did you find anything in the books of either Company that would furnish us any better explanation of the holder and the other $120,000 than you have already given us?

A. No.

Q. Now, Mr. Hall, on the next page, you refer to an appreciation of $131,744.44 included in the plant account dated May 1st, 1897; I wish you would explain that?

A. The capital stock of the Capital City Company at that time amount- to $300,000. The accumulated profit- subseqient to
3149 1886 and up to that time were $168,255.51. To that amount there was added an appreciation of $131,744.44, to bring the balance of the credit or surplus account up to $300,000. A stock dividend was then declared of $300,000 to the stockholders.

Q. In other words, $131,744.44 was added to the assets, book assets, to cover the depreciation of the property during the period covered by the entry and added to the surplus profits to make the book entry balance with the $300,000 additional stock that was then issued?

A. Yes.

Q. And distributed to the stockholders as a stock dividend?

A. Yes.

Q. That then would bring the capital stock of the Capital City Gas Light Company on that day up to $600,000?

A. Yes, sir.

Q. Is that what the books show with respect to that matter?

A. Yes.

Q. Just as you stated?

A. Yes, sir.

Q. Now, yesterday you said something about depreciation that was charged off in 1909. I wish you would state now just what the books show with reference to that $264,108.78.

A. The $264,108.78 represented the accumulated profits after paying interest and dividends on preferred stock contracts from March 1, 1906, to June 30, 1909, and was transferred from the credit or profit and loss account, to the credit of the property and plant account as of the latter date, June 30, 1909.

Q. Do you have now before you a memoranda showing just the entries as they appear on the books?

A. Yes.

3150 Q. I wish you would read them into the record.

A. In Journal 2, page 244-A, an inserted page, there are two entries dealing with the matter.

Q. Under what date and between what date?

A. June 30, 1909. The first entry is charging accrued profits covering the period of March 1, 1909, to June 30, 1909, and crediting the profit and loss account with $29,656.72.

Mr. GUERNSEY: The witness was asked to state what the books show. The books don't show what you say; the word "charging" is not there, and it don't say accrued profits.

A. Yes, sir.

Mr. GUERNSEY: I have no objection to him stating it in his own way, but it ought not to appear that he is reading a copy from the book.

A. The explanation given to this entry is: "For accrued profits from March 1, 1909, to June 30, 1909," another entry follows that

charging the profit and loss account $264,108.78 and crediting the property and plant account $264,108.78. The explanation given is "to close balance of account."

Q. Now, did you find anything there among the books and papers of the Company explaining how that entry comes to be inserted in the books as of June 30th?

A. Yes.

Q. The entry was not made at that time, was it?

A. No, it was made under instructions by the Philadelphia office under date of December 2, 1909.

Q. Did you read those instructions?

A. Yes, sir.

Q. State them.

A. Quoting from the letter addressed to Mr. Jansen Haines
3151 and signed by E. L. Brundrett, and headed, "Re-Journal entries", the letter reads: "I enclose herewith Journal entries which should be spread on your books under date of June 30, 1909. If there is no blank space in your Journal in which you can enter these entries you can please insert a page which I am sending you in the proper place and post to your Ledger under date of June 30, interlining if necessary to get the posting under that date." Those are the two paragraphs.

Q. What is the date of the letter?

A. December 2, 1909.

Q. So that from your examination of the books, what do you have to say as to whether the page that you found there in the books was made up here or in Philadelphia?

A. It appears to be made up in Philadelphia; it was an inserted page.

Q. Now yesterday, while we were dealing with this same item, $264,108.78, the Master asked you something about the salaries account and you gave some testimony with respect to that. I wish you would cover that again.

A. In regard to the Philadelphia salaries?

Q. Yes, if there is any correction you want to make.

A. I find the salary checks and vouchers are made out in the treasurer's office in Philadelphia and sent here for signature, and after signature returned to Philadelphia and endorsed by the officials there and the money collected. The vouchers are all retained in Philadelphia. The checks are not made out here but a Journal entry is made on the books charging the salaries and crediting the treasurer's account.

Q. So the whole matter is a matter of book entries so far as the books here are concerned?

3152 A. Altogether, yes.

The MASTER: That is different from what you stated yesterday.

A. I made the statement yesterday that the officials here made out the checks, but they are made out in Philadelphia.

Q. Now, there was something said yesterday about the federal tax. Have you made some investigation of that since yesterday?

A. Yes.

Q. I wish you would state into the record just what the books show with respect to the federal tax and how the account would figure out.

A. The books show in 1911 a federal tax covering the fiscal year 1910 was paid on $128,737.13; at 1% that tax is $1,287.37.

Q. You found the item of $1,287.37 in the books, did you?

A. Yes, sir; in 1911.

The MASTER: What was that paid on?

A. $128,737.13.

The MASTER: That was the net?

A. The net earnings.

Q. You made out a statement showing how that figures out from the books?

A. I took their own statement and endeavored to figure it out.

Q. State it into the record as you figured it out.

A. The income account prepared by the Company shows that after charging all interest and dividends on preferred stock contracts, a balance of $106,406.36. To get at the taxable income you have got to *right* back dividends paid on preferred stock contracts, amounting to $27,330.77, leaving a net income for charging dividends of $133,737.13. The government provides a statutory allowance of $5,000 which I have deducted, leaving a net balance of $128,737.13.

3153 Q. So that the charge on the books of $1,287.37 tests out with their book entry as to the net income, after charging interest and dividends on preferred stock contracts?

A. After charging interest on bonded and floating indebtedness, but before charging indebtedness, it checks out.

Q. Now, did you cover 1910 in the same way?

A. That is 1910.

Q. I mean 1909?

A. Yes, I endeavored to check out 1909. I couldn't do so exactly on account of the broken period reported in ten months, to December 31, 1909.

Q. Now, the 1909 federal tax, as you have it figured out, as near as you can get at it, how does it test out?

A. The actual tax paid was on the sum of $144,760.85. At 1% that is $1,447.61. I might explain, that was paid under protest. As near as I can figure their earnings that year were $134,599.94, equivalent to a tax of $1,346. I had to accept as a basis a ten month period to December 31, 1909, and add back one-fifth of that. The difference is explained in the January and February months, being more than one-fifth.

Q. The way you figured it out, using ten months as the basis, the net income over and above the $5,000 exemption, would be $139,599.94?

A. Yes.

Q. And the net income upon which the taxes were figured, as you did, on the basis of the ten months, was $134,599.94, instead of $144,760.87, on which they actually paid taxes?

A. Yes.

The MASTER: Why do you add one-fifth there?

A. The period reported was ten month- and we added one-
3154 fifth to bring up the calendar year.

The MASTER: You could not ascertain that amount?

A. I might if I spent some time on it. I have no doubt if the two months were checked out against the ten, it would run out very closely.

Q. Now, Mr. Hall, you were to get me a statement of the extra expense we were talking about yesterday in the way of donations and subscriptions. Did you get that for me?

A. Yes.

Q. I wish you would state into the record just what the books show with reference to these matters, the items and amounts and the dates.

A. For the period of ten months before December 31, 1910, the extra expense amounted to $3,392.36 and covered subscriptions to the Commercial Club, $265.; to the Y. M. C. A. $100. Material supplied to the Y. M. C. A. $205.25; subscription to the Methodist Hospital $100; to the Greater Des Moines Committee $1,500; to the Coliseum Company, capital stock, $500; to Mr. Haines for Christmas gifts to the staff $655; and for sundries including Mr. Haines' extra expenses $67.11. Total $3,392.36. I would like to explain that yesterday I stated that the Christmas gift went to Mr. Haines; that was a mistake; it should be to the staff; he acted as an intermediary.

For the year ending December 1910 the Commercial Club subscription was $200; the Y. M. C. A. $100; Methodist Hospital $100; Greater Des Moines Committee $2,225; Mercy Hospital $400; Christmas gifts to the staff $711; Roadside Settlement $50; sundries $178.78. Total $3,964.78.

Q. There was no other explanation to the item of sundries?

A. It included Mr. Haines' extra expenses.

3155 Q. Now, this $264,108.78 in that letter that was sent here with the entries that the local managers were directed to place in the books, was there anything in these books here from which you could check up without much trouble the accuracy of the items of credit charged that was in that letter?

A. The method of making up the amount is not clear.

Q. In order to get the final word with respect to these charges where would it be necessary to look for them?

A. At Philadelphia.

Q. In the books of the Philadelphia office?

A. Well, I don't know; the books or the author of the letter would probably know.

Q. There is nothing here to indicate it?

A. There is nothing here to indicate the reasoning in making it up at all.

The MASTER: In your calculations were these items here rejected?

A. No, sir; I included those as expense.

The MASTER: You also included the federal tax?

A. Yes.

Q. I wish you would explain the working capital item in your statement as you have already put it into the record, just how you arrived at the amount of $68,952.91.

A. In arriving at the amount of working capital, we first determine the amount of actual capital involved for all purposes, including the fixed property and work from that. The result is that the deduction of all current and accrued liabilities would bring out a net balance available for working capital.

Q. Is that the proper method?

A. Well I don't know that there is any proper method.

3156 To my knowledge, there has no definition ever been made of working capital or any method by which you can get at it.

Q. Now state how you arrived at the item $68,952.91.

A. I took all the current assets, including account- receivable, inventories, cash on hand, and from that deducted the outstanding liabilities, notes payable——

Q. State the figures as you work it out.

A. The current working assets made up of materials and supplies $77,410.46; accounts receivable $51,858.54; cash in bank and in hand $49,434.15; insurance paid in advance $905.20; or the total working assets $179,608.35. From that figure deduct the bills and accounts payable amounting to $51,838.37, and the accrued taxes and interest $58,817.07, a total deduction of $110,655.44, leaving a balance of net current assets of $68,952.91.

Q. Which you designate as the working capital?

A. Yes; that is the actual amount in the business over and above what they have invested in their plant property.

Q. Well, what do you have to say whether or not that would be a reasonable amount for this concern?

A. It seems to me to be about reasonable.

Q. Would you allow any more?

A. That seems to be ample, looking at the balance sheet.

Q. Do you make that statement having in view what you have observed with respect to the business as shown by the books in the past?

A. Yes, and generally my knowledge of the requirements of all business for working capital.

Q. In these deductions why did you deduct the bills and accounts payable?

A. The bills is an honor demand note and will be met out

3157 of the funds on hand.

Q. I notice quite a little difference between the amount you allowed as working capital and the amount Mr. Hagenah allowed?

A. I think the difference is explained. I have deducted the accrued interest and he has not. If you take this balance sheet and take the date after the payment of taxes and interest, you will find the cash is correspondingly reduced and no liability appears.

Q. You have also taken out the bills and accounts payable?

A. Yes, sir; those are proper deductions.

Q. The accounts payable were not deducted by Mr. Hagenah and that with the accrued interest would account for the difference?

A. Yes. I will say this, these long time bills issued for construc-

tion purposes there would be a justification for excluding them; you cannot lay down any hard and fast rule on it.

Q. The method you adopted here and the amount you allow for working capital in this particular case, you say is reasonable, and all they ought to be allowed?

A. It seems to me quite reasonable, yes.

Q. Now this balance sheet on page 27, I wish you would make whatever explanation with respect to that you want to make and state it in the record.

A. This balance sheet differs from the books of December 31, 1910, to the extent, we reverse for this purpose the entry of depreciation or charge off made June 30, 1909. The fixed assets are $4,118,084, representing the cost to the Des Moines Company of these properties.

Q. In securities?

A. In securities. The current and working assets are $178,703.15. The charges deferred to future operations representing in-
3158 surance paid in advance amount to $905.20. Total assets $4,297,692.35. That is represented by capital stock $2,250,000. Preferred stock contract $411,000, and first mortgage gold bond $1,097,000, giving a total fixed liabilities $3,758,000. Current liabilities are $51,838.37. The accrued liabilities are $58,817.07; and the surplus before charging off what I term depreciation is $429,036.91. The total being $4,297,692.35. The balance sheet at March 1, 1906, has fixed assets of $3,592,723.24, or $525,360.66 less than December 31, 1910. The capital working assets March 1, 1906, amount to $179,527.03, or $823.88 more than December 31, 1910. The charges deferred to future operations March 1, 1906, amount to $993.38 or $88.18 more than December 31, 1910. Total assets March 1, 1906, are $3,773,243.65 or $524,448.70 less than December 31, 1910. The capital stock March 1, 1906, amounted to $2,249,000 or $1,000 less than December 31, 1910. The preferred stock contracts amounted to $800,000 or $389,000 more than December 31, 1910.

Q. Which means that the difference between $389,000 and the $800,000 are still outstanding?

A. Yes, sir.

Q. The others have been taken up?

A. Yes. The first mortgage gold bonds outstanding March 1, 1906, amounted to $685,000 consisting of $400,000 Capital City bonds $285,000 Des Moines Company bonds. These bonds are $412,000 less than December 31, 1910. The current liabilities March 1, 1906, were $18,227.80 or $33,610.57 less than 1910. The accrued liabilities amounted to $21,015.85 or $37,801.22 less than December 1910. There was no surplus account March 1, 1906. The total liabilities at that time were $3,773,243.65.

3159 Q. Now in your capital account, the items that make up $77,410.46 include what particular property?

A. They are represented by stock of tar, gas, fuel, oil, etc.

Q. And a table of that is shown on pages 27 and 28 of Exhibit 30?

A. Yes.

Q. The surplus account showing the credit balance $429,036.91. What does that represent?

A. That represents an adjustment of the surplus accounts shown by the books of the company, and with the statement submitted by me now shows a credit balance on the company's books of $420,036.91.

Q. What relation if any does it have to the accumulated income?

A. That is the accumulated income.

Q. For what period?

A. From March 1, 1906, to December 31, 1910.

Q. For a period of four years and ten months?

A. Yes, sir.

Q. Is that before or after deducting interest?

A. After deducting interest and dividends on preferred stock contracts.

Q. In other words, that is the net surplus accumulated income for that period?

A. Yes.

Q. And is made up of what items?

A. The net income for the year February 28, 1907, $49,454.76. For the year February 29, 1908, the net income is $77,739.26. For the year February 28, 1909, $107,017.04. For the ten months to December 31, 1909, $87,305.06. For the year ending December 31, 1910, $112,168.60. Being a total income of $433,684.72.

3160 Deduct from that the tax omitted by the Company, charged by us, $1,287.37.

Q. That is the federal tax?

A. Yes, for 1910.

Q. I wish you would explain the net income a little further.

A. The net income of the Company was ascertained after charging interest on the bonded debt and dividends on preferred stock contract, but before making any charge covering depreciation of the property.

The MASTER: That is from the time the Des Moines Company took it?

A. Yes.

The MASTER: $429,036.91?

A. Yes.

The MASTER: That is the total net income during that entire period?

A. Yes, sir; subject to the fact that no depreciation was taken out.

Q. Now, how does the bond account, preferred stock account compare with your ascertained cost of physical property?

A. At March 1, 1906?

Q. Yes, and now, December 31, 1910?

A. Taking March 1, 1906, we first find the book value of the Capital City plant February 28, 1906, $1,565,230.09. Deduct the appreciation of 1897, $131,000, and the assets omitted from the appraisal of 1895, $211,000, and we have a deduction of $345,765.60 which leaves a net book value of $1,219,464.49. Add to that the

estimated cost of the gas holder, $120,000, and the Valley Junction properties, $45,000, would give an actual cost February 28, 1906, of $1,384,464.49. That was represented by Capital City Company bonds $400,000, from which I have deducted the water gas
3161 set abandoned, $211,468.16, leaving net $188,531.84. Add Des Moines Company bonds paid for the gas holder and Valley Junction properties $120,000. Add liability to the United Gas Improvement Company paid by the issue of $120,000, $105,526.49. Add surplus earnings from 1886 to 1906, $627,959.16. Add capital stock issued in 1886, $300,000. Deduct the small charge of electric company stock charged to plant and now eliminated $2,553, and we have the same result $1,384,464.49. This appears to have been taken over for the original Capital City Company bonds, $400,000, and the Des Moines Company bonds $165,000, and the additional Des Moines Company bonds $120,000 and the total issue of $285,000 issued at the time of the reorganization, and the preferred stock contracts $800,000, the total being $1,485,000 excluding altogether capital stock.

The MASTER: The interest added to that would make it $1,489,000?

A. Yes, the interest is all taken into account. That makes a par value for these securities of $100,535.51 in excess of what would appear to have been the value of the plant.

Q. In other words, that would indicate that the total cost of the plant had been paid for out of these securities?

A. Yes.

Q. Now as to December 31, 1910, what does it show?

A. In regard to December 31, 1910, the plant was increased by $525,360.76, the additions to the plant account appearing in the balance sheet for the period to December 31, 1910, amounted to $525,360.76. Of that amount $484,487.94 represented actual additions to the physical property; $40,872.82 discount on bonds and similar charges. Against the $484,487.94 the Company has issued further bonds amounting to $412,000.

3162 The MASTER: Where do you find that?

A. Partly on page 21 and partly on page 27; the balance sheet is on page 27.

Q. I have not followed you with the figures, but in a general way, if I understand you, the actual additions to the plant since 1906 up to December 31, 1910, amount in round numbers to about $70,000 more than the bonds issued and sold during that time?

A. Yes, sir.

Q. Do the figures you give represent the face of the bonds or the amount received for the bonds?

A. The face of the bonds.

Q. Was the difference as much as $70,000, was there any change in the value of those securities during that time?

A. I am sorry, I don't understand the question.

Q. I don't know whether I do. How much of a reduction was there in the preferred stock contracts during that period?

A. $389,000.

Q. How do the books indicate that difference was accounted for or taken care of?

A. Partly made out of the surplus earnings.

Q. Or profit?

A. In part.

Q. Is there anything on the books here in Des Moines that indicates any actual money was put into this property during those years other than the earnings and the receipts from bond issues and bond sales?

A. That is all.

Q. Now on the bottom of page 28 and continuing to page 29 you have worked out an annual estimate, and I wish you would explain that to the Master as fully as it needs to be?

3163 A. That statement is one of the estimated investment in the plant commencing with the appraisal of 1895, and adding an allowance in that year and in all subsequent years of $50,000 for working capital and adding the additions made during each year. The third column states the per cent that revenue bears to the investment. The fourth column shows the total revenue on the Company's books. The fifth and last column covers the operating expenses, together with an allowance for depreciation.

Q. And what is your average net result of that method?

A. The average result of the average investment shows a return of 9.56 per cent.

Q. Just take one of those years and work through it, if you please, take December 31, 1895, and explain how you work in your $50,000.

A. The investment on December 31, 1895 is made up of the appraisal of Col. Pratt, amounting to $429,426. To that I add $50,000 covering working capital, and the additions amounting to between $4,000 and $5,000, made during the year 1895, the total bringing out an investment, less depreciation for that year, of $484,664. After taking out six cents for depreciation the net revenue for that year was $36,351.

The MASTER: Six cents on every thousand cubic feet of gas?

A. Yes.

Q. The amount is covered by the preceding page?

A. Yes. $36,351, is the net revenue after taking out in addition to all the Company took out six cents for every thousand cubic feet of gas sold.

Q. In the next column, 7.50, that shows the per cent of return on the amount as you worked it out with your $50,000 capital added?

3164 A. Yes.

Q. Upon the actual operations as shown by the books of the Company for that year or period?

A. Yes.

Q. The only change and the only adjustment you made was to add $50,000 for working capital and deduct from the net revenue your six cents per thousand cubic feet of gas sold for depreciation?

A. Also deducted from the investment the amount of depreciation

added to the expenses. In other words, where I charge operations with an allowance for depreciation, a corresponding credit was made on the investment.

Q. That is proper, is it?

A. Entirely.

Q. You added, I believe, some additions, $2,000 or something like that?

A. In all cases I added the additions, whatever they were.

Q. Why did you allow for that year $50,000 capital; what was your idea about that?

A. $50,000 is simply an arbitrary allowance throughout the table.

Q. Was it your judgment that was a reasonable allowance for that time?

A. I know that was a good liberal figure.

Q. And this table was worked out through all the rest of the years in the same way?

A. Yes.

Q. And represents the books, except that you have added this $50,000 and allowed a depreciation of six cents per thousand cubic feet for gas?

A. Yes; in the last year, the entry carried a working capital, as already shown, of $68,000.

3165 Q. That you added for the last year?

A. Yes.

Q. With that added for the last year, it gave you a return, if I understand your table, on the total investment for the year 1910, figured out under this method, of a little over ten per cent.

A. 10.33 per cent.

Q. Now if you had accepted the Company's books, the figures just as they appear upon the records and without any depreciation entered as I understand you, would the rate of return have been higher than your figures?

A. Yes.

Q. How much?

A. 11.12 per cent or .79 per cent higher than I gave it.

Q. Which would make 11.12 per cent?

A. Yes.

Q. Turning to page 30, now Mr. Hall, did you ascertain from the books of the Capital City Gas Company or from any other record just when the United Gas Improvement Company acquired control of the Capital City Company?

A. July 1, 1886.

Q. How long did it operate the company under the name of the Capital City Gas Company?

A. Until February 28, 1906.

Q. I wish you would state into the record what the books of the Capital City Gas Light Company for the period from July 1, 1886 to July 1906 show with reference to the net income or surplus available for stockholders after payment of all interest charges?

A. For the entire period from July 1, 1886, to February 28, 1906,

the net income after payment of all interest charges appears
3166 to be $640,709.16. That amount is divisible between the periods from July 1, 1886, to December 31, 1896, and which earned $181,005.56. The period from January 1897 to February 28 1906 during which period they earned $459,703.60.

Q. How was this surplus disposed of?

A. The first surplus $181,005.56 was disposed of in part by payment of dividend April 30, 1888, of 4¼ per cent, equivalent to $12,750. That left a net undivided income of $168,255.56, which was in part applied in payment of stock dividends.

Q. Now that $300,000 the increase of the stock of the Capital City Gas Light Company was made about January 1, 1897?

A. Yes.

Q. And at that time the United Gas Improvement Company was the owner of the stock of the Capital City Gas Light Company?

A. As I understad it, yes.

Q. And this surplus, or the accumulated profits from January 1, 1897 to February 28, 1906, what did that amount to?

A. $459,703.60.

Q. At the time just prior to the transfer, how did that item appear, if at all on the books of the Company?

A. Appeared as a credit or surplus of the profit and loss account.

Q. Now you summarized that income before charging the depreciation on page 31. I wish you would explain that, if it needs any explanation?

A. The surplus income for the period of July 1, 1886, to December 31, 1896, amounted to $181,005.56. For the period of January 1, 1897, to February 28, 1906, it amounted to $459,703.60. For the period from March 1, 1906, to December 31, 1910, it amounted to $433,684.72. The total was $1,074,393.88.

Q. I understand that figure to represent the income of the
3167 Company the net income of the company, from July 1, 1886, to December 31, 1910, after meeting all interest charges, but without any depreciation?

A. Yes, sir.

Q. Is that correct?

A. Yes, sir.

Q. Now, as to accident claims, if any, did you consider them and how did you consider them as affecting the situation of this property as you tried to cover it in your investigation?

A. I am advised at the present time there are several accident claims outstanding against the company subject to litigation. No figure has been placed on them.

Q. You set them out on page 31 of your report?

A. Yes.

Q. Following page 32 of your report, I find inserted a sheet; I wish you would explain what that is?

A. That is a chart of the profits as shown on page 29 of this report.

Q. Explain to the Master the method of preparing the sheet and what may be ascertained from it?

A. This statement shows the period from 1895 to 1910. On the left hand column the amounts may be taken to represent the sales of gas in thousand cubic feet or dollars. On the right hand column is shown the percentage of the net revenue of investment as set forth on the page. This table shows an estimated investment less depreciation and shows the revenue from the sale of gas stated in dollars and thousand cubic feet, including an allowance of six cents for depreciation, while the dotted line represents the percentage of the net revenue to the investment.

Q. Now take that sheet, and the first line from the bottom,
3168 beginning opposite the figures 50,000 in the left hand column and running up into the right side of the sheet to the figures 3.7, what does that represent?

A. That represents the operating expenses including allowance for depreciation.

Mr. GUERNSEY: That is operating expenses in what?

A. The operating expenses including all interest——

Mr. GUERNSEY: But designated in what day?

A. By dollars.

Q. The 50,000 represents the dollars?

A. Or cubic feet as the case may be. In this particular line, the operating expenses of this is the year 1895 and appear to be about $57,000; while in the last year they would run up to $378,000 about.

Q. And the second line, beginning opposite 60,000 and running up to opposite the figures 5.3 on the right hand side, what does that represent?

A. That represents the gas sales in thousand cubic feet. The first year that appeared to have been 61 million feet, while in the last year they run up to 531 or 532 million feet.

Q. And the short line beginning opposite the figures 90,000?

A. That represents the revenues stated on a basis of dollars.

Q. What if any significance is there in the apparent widening of the space between those first two lines as you go up?

A. Considerable dumping in of expense in the year- 1909 and 1910, especially 1910, the ratio of the sales appears to have been narrowed down.

Q. The years are shown across the bottom of the sheet?

A. Yes.

Q. What significance, if any, is there in the apparent
3169 widening of the space between the first and third lines?

A. The widening would indicate there is a larger profit to be added, and where they pull together it is smaller.

Q. Now, Exhibit A, attached to your report, explain briefly what that is and what it shows.

A. It is an income and profit and loss account covering the period from January 1, 1906, to December 31, 1910.

Q. The first six columns show the revenue for the several periods covered by the sheet; the last two columns, the second from the end shows the total for four years up to December 31, 1909; and the last column the total for the five years which would include ending December 31, 1910?

A. Yes, sir.

Q. And is merely a detailed statement or summary of the figures that you cover in your report as we have gone over it?

A. Yes.

Q. Now I wish you would state briefly what Exhibit B is and make such explanations as are necessary to make it clear.

A. Exhibit B is an income profit and loss account covering the period of January 1, 1906, to December 31, 1910, stated in cents per thousand cubic feet sold; it is a summary on that basis of Exhibit A.

Q. That is a similar table to the one covered by Exhibit A, except this is worked out in cents per thousand cubic feet?

A. Yes.

Q. Exhibit A is continued on the second page and covers interest on floating debt and interest on bonds and preferred stock, etc.

A. The exhibit has two pages; Exhibit B carries the same summary on one page.

Q. And Exhibit C, I wish you would state what that is and
3170 make such explanation as you care to?

A. It is a statement of the total gross revenue received from the sale of gas for the five years ended December 31, 1910, stated in both cubic feet and dollars and cents.

Q. And Exhibit D?

A. Is a comparative statement of the cost of manufacturing and distributing gas for the five years ending December 31, 1910.

Q. I wish you would go through that briefly and give us that comparison in figures—the totals.

A. Do you wish the total distribution or grand total?

Q. The grand total.

A. The total expense the two months ending February 28, 1906, is $39,650.85. For the year ended February 28, 1907, the expenses were $252,391.29. For the year ended February 28, 1908, the total is $280,579.21. For the year ended February 28, 1909, the total is $278,530.68. For the ten month- ended December 31, 1909, the expenses were $254,495.83. For the year to December 31, 1910, the expenses were $347,222.39. The total expenses for the four years to December 31, 1909, were $1,105,647.86; or for the five years to December 31, 1910, the expenses were, $1,452,870.25.

Q. Now take Exhibit E.

A. Is a summary of Exhibit D stated in cents per thousand cubic feet for the same period, five years.

Q. That is true as to both sheets of Exhibit E?

A. Yes, covering the period.

Q. Take Exhibit F?

A. Is a comparative balance sheet from the compilation of the Des Moines Company from March 1, 1896.

Q. Schedule No. 1 attached to your report, what is that?

3171 A. A statement of the quantity of gas manufactured, sold and used by the Company and unaccounted for for five years up to December 31, 1910.

Q. Where did you get your basis for this schedule?

A. The books of the Company.
Q. Schedule 2, explain that?
A. That is a comparative monthly statement of the quantity of gas accounted for and unaccounted for for the five years.
Q. Where did you get the basis for that schedule?
A. The books of the Company.
Q. No adjustments or additions?
A. No.
Q. Schedule 3?
A. Is a summary of the extensions and improvements to the works and plant from January 1, 1895, to December 31, 1910.
Q. What period does it cover?
A. January 1, 1895, to December 31, 1910; there are two sections of the schedule.
Q. The two sections cover that period?
A. Yes.
Q. Where did you get the basis for this figure?
A. The books of the Company.
Q. Does this represent the actual extensions made as shown by the books during these periods?
A. Yes.
Q. Extensions and improvements?
A. Yes.
The MASTER: That shows the character of the improvements?
A. The character of the improvements at the works.
The MASTER: Over what years?
3172 A. From 1895 to 1910.
Mr. BYERS: It covers two periods, your honor.
The MASTER: 1906 is the time of the Des Moines Gas Company?
A. Yes, this last section covers that period.
Q. And schedule 4, what is shown by that schedule?
A. Certain general statistics in regard to population, meters and services in use, etc.
Q. Is that schedule made up from the books of the Company?
A. Yes, it covers the period from 1895 to 1910.
Q. Schedule 5?
A. Is a summary of the additions to mains, services, meters, street lamps from January 1, 1895, to December 31, 1910.
Q. Where did you get those figures?
A. The books of the company.
Q. Here in Des Moines?
A. Yes.
Q. No adjustments or additions and charges by you?
A. None at all.
Q. Schedule 5 covers several sheets?
A. It covers three sheets.
Q. Schedule 6, what is shown by that?
A. Information in regard to standard prices paid by the Company for fuel, wrought iron pipe, cast iron pipe, etc.
Q. Where did you get the figures for this schedule?

A. From the vouchers of the Company.

Q. Schedule 7, what does that show?

A. A list of the offices salaries and particulars of the pay roll of December 24, 1910, as regards the office, and December 15, 1910, as regards the works.

Q. Where did you get the basis for the table?

3173 A. The books of the Company.

The MASTER: I call your attention to schedule 6, the prices there given are from the books?

A. Yes, sir; from the books and vouchers. The date of the invoice is stated on one side.

The MASTER: That is the price paid for the material?

A. Yes, sir.

Q. Now, Exhibit 30, Mr. Hall, has been referred to during your examination as made up by you, if I understand you correctly and is a complete memoranda made up from your examination and investigation of the books and contents and the facts that you have been giving upon the witness stand here, as you found them from the books, with such extensions or your tables and schedule and figures as seemed to you necessary to make the memoranda clear and intelligible, is that right?

A. Yes, sir.

Q. And you have stated in your examination just what changes or additions or adjustments you have made in the accounts of the company as you found them upon their books?

A. Yes, sir.

Q. And those adjustments and changes, as the case may be, are fully covered in this memoranda or report, Exhibit 30, by proper explanations?

A. Yes, sir.

Q. Is that right?

A. Yes, sir.

Q. How did you find in your examination that the books of this Des Moines Gas Company are kept?

A. They appear to be pretty well kept.

Q. I did not mean in that respect?

3174 A. In what respect?

Q. Take the book keeper, for instance, where did he get his memoranda or data or facts and figures to go upon the books of the company here?

A. They appear to come very largely from Philadelphia.

Q. Did you find anything here from which you could ascertain to your satisfaction the question of contracts for materials and supplies and so on?

A. Yes, we received a copy of the contract purporting to be made by the purchasing agent with the various contractors.

Q. That is to say, you found here among the records copies of contracts that the purchasing agent sent here with respect to contracts he had made for materials and supplies for this office?

A. Yes.

Q. Now was there any way you could ascertain here whether the contracts made—who were those contracts usually made by?

A. By Mr. Pearson, I think, the purchasing agent.

Q. Was there any memoranda here or any books or any records from which you could tell just the basis of those contracts other than what appeared on those copies that were sent here?

A. No, simply what the copies show, was all we had.

Q. You examined the contracts?

A. Yes.

Q. What do you have to say with reference to the price paid for oil as shown by the contracts?

A. The price paid was 2.8 per gallon as shown by the contract.

Q. Was there anything about that price that seemed to be out of the usual and ordinary?

3175 A. I must say I thought it would be some lower.

Q. You thought it ought to be lower?

A. I understood there was a very considerable cut of the price of oil two or three years ago. I thought the price was somewhat high, speaking from recollection.

Q. Did you try to ascertain whether the United Gas Improvement Company had anything to do with those contracts or prices of this oil?

A. All I know, Mr. Pearson, the purchasing agent is identified in some way with the United Gas Improvement Company.

Q. If you as an expert accountant were going to make up a complete and accurate statement of the actual cost of the property of this Des Moines Gas Plant here for the purpose of furnishing a report to your client that would be complete in all its details and would show exactly all materials and all machinery furnished by the U. G. I. to this Company here, could you do it and would you be satisfied to do it from these books alone?

A. No, I would want to see the books of the United Gas Improvement Company.

Q. Especially upon what matters?

A. The question of bonds, the settlement for these bonds; I might want to know something more about these contracts.

Q. To ascertain those facts it would be necessary to have recourse to the books of the United Gas Improvement Company?

A. It would, yes.

Q. And about those salaries?

A. I understand the salaries are absorbed by the United Gas Improvement Company—that is my understanding.

Q. Do the books here show anything about the purchase of these bonds?

3176 A. No, except that the transactions are arranged by the treasurer from his office in Philadelphia.

Q. The people in Philadelphia simply direct the manager here what to put on his books with respect to the bonds?

A. Yes.

The MASTER: Is that done by the directors of the Company or done by the United Gas Improvement Company?

A. It is done by the directors of the Company.

The MASTER: Which Company?

A. This company?

Q. The Des Moines Company?

A. Yes, the treasurer of the Des Moines Company sends the entries through to Philadelphia.

Q. The direction is from an officer of this company who is in Philadelphia and is also one of the officers of the United Gas Improvement Company?

A. I understand he is.

Q. Now is there anything here to show the rate of discount, if any, of the bond sales?

A. There are several bond sales entered at a discount of ten per cent and two sales at five per cent.

Q. When were those two sales entered?

A. The two showing the discount of five per cent in the year 1909 and 1910.

Q. Who got these bonds?

A. There is no record in the books her- to show who bought the bonds. The transaction was made by the treasurer; the final disposition of the bonds is not shown.

The MASTER: The treasurer of the United Gas Improvement Company is also the treasurer of this Company?

3177 A. Yes, he has some position with the United Gas Improvement Company; I don't know what.

Mr. BYERS: I think Mr. Douthirt stated he was also treasurer of the United Gas Improvement Company; Mr. Lillie is the treasurer.

Q. The bond sales which you say the books show a discount of ten per cent, when were they made?

A. In the earlier years, 1906 and 1907.

Q. Do you know who got those bonds?

A. No.

Q. Is there any way to tell from the books here?

A. No; they went down through the treasurer's office, and this office was advised of the sale.

Q. From the Philadelphia end?

A. From the Philadelphia end.

Q. And advise- as to the amount received for the sale?

A. Yes.

Q. And the credit that should be entered on the books?

A. Yes.

Q. Did you have access to the bank-books of the Company here?

A. We did not consider those necessary at all.

Q. Did you make any inquiry about them?

A. No.

Q. Now, Mr. Hall, I wish you would work out for me, take the last year of this Gas Company, the year ending December 31, 1910, and eliminate for us all charges which you think ought to be eliminated and state to the Master just what was the actual cost of manufacturing gas and delivering it to the consumer in the city of Des

Moines for that year, as shown by the books of the Company,
3178 with such elimination as you think ought to be taken out?

A. Eliminating the items about which there may be a reasonable doubt in regard to a proper charge—I refer particularly to the new furniture purchases and expenses extra and salaries general—there is a justification for taking out the new furniture. The extra expenses—there has been a ruling made in regard to those charges under the traction ordinance in the city of Chicago. The Company and the City have a partnership agreement. The City won't permit the Company to charge anything in the way of charity subscriptions, no charges of that nature at all. Accepting the city comptroller's ruling and also eliminating salaries general, we would have adjusted, the revenue for the year 1910 on the basis of 90 cent gas and on the basis of actual distribution expense for that year, $119,698.40, equivalent to 22½ cents per thousand cubic feet sold. That on the investment of $1,550,000, is equivalent to a return of 7.72 per cent. If we go further and accept Mr. Hagenah's elimination of $7,351.92, referred to on page 30 of his report, we would have an adjusted return of 23.88 per thousand feet, which is equivalent to 8.19 per cent on their investment.

Q. That is at 90 cent gas?

A. Yes.

Q. That does not quite answer my question.

A. Applying the same adjustments on the amounts, taking the actual manufacturing expenses for 1910 and the average operating and distribution expenses for four years to 1909, applying them on the 1910 income we would have an adjusted revenue for the year 1910 of 27.88, which is equivalent to 9.56 per cent on the investment. Applying the next table on the basis of the actual
3179 manufacturing expenses for the year 1910 and the distribution expenses based on an average of five years to 1910, including depreciation, and accepting 90 cent gas, we would have an adjusted revenue of 26.63, or 9.13 per cent upon the investment.

Q. What I wanted Mr. Hall, before we got to this, was for you to take the gross revenue of the Company for the year ending December 31, 1910, and after deducting all the different operating expenses I wanted you to state the actual cost without respect to the rate of manufacture and delivery to the consumer per thousand feet of gas in Des Moines for that year?

A. Applying these adjustments?

Q. Yes. First let me ask you about the item of furniture, was that all covered in the year 1910?

A. Yes.

Q. And the entire charge for the furniture was carried into the operating expenses for that year?

A. Yes.

Q. Is that in your judgment a proper way to charge it?

A. No, it should be charged to the furniture account; some people do charge it that way.

Q. If it was charged to operating expenses, should it all go into one year?

A. No, it should go over about ten years.

Q. Without reference to that now, eliminating such items as you think ought to be eliminated and using the actual operations of the Company as shown by their books, what was the actual cost to them for delivering to the consumer a thousand feet of gas in Des Moines for the year 1910?

A. Accepting the eliminations of furniture, extra expenses and salaries general, the total cost would be 62.4 per thousand
3180 during the year 1910.

Q. Now, if you would take the average for the preceding four years for distribution in general, what would be the cost then?

A. Under the basis of actual manufacture for 1910 and the average operating for four years from 1906 to 1910, the cost would be 56.2 per thousand.

Q. Let me see if I understand that. If 1910 had been a normal year as compared with the four preceding years, normal in distribution in general, the actual cost for manufacturing and delivering a thousand feet of gas to the consumers in Des Moines for that year would have been 56.2 cents.

A. No, I wish to correct myself. Under the basis you speak of it would be 62.82 including an allowance for depreciation. My previous answer I would like to correct to the extent of saying that the cost for the year 1910 on actual expenses subject to adjustments, including allowance for depreciation, would be 68.2 per thousand.

Q. I am not as clear now as I was before. I am not talking about depreciation at all; there was no depreciation. I want you to take the Company's books just as they were and handling the matter leaving out depreciation?

A. Then my original answer was correct; 62.4 per thousand for 1910.

Q. If you used the average for the preceding four years, what would it be?

A. 57.02 cents per thousand.

Q. In other words, if I understand you now, if in the year 1910, if the expense of operation as charged by the Company and the expense of distribution had been the same as the average of the preceding four years, the actual cost of manufacturing and
3181 delivering a thousand feet of gas to the consumer in Des Moines would have been a fraction over 57 cents?

A. Yes, sir.

Q. And to that, if you were figuring out the cost, having in mind a reasonable allowance for depreciation, you would add six cents per thousand feet for depreciation?

A. Yes.

Q. What has been done with the surplus profits of this company?

A. Been retained in the business.

Q. Used for any other purpose?

A. They have been applied in repaying preferred stock contracts.

Q. The preferred stock contract account, is that full and complete on the books here?

A. It appears to be.

Q. How is it made up, by instructions from Philadelphia?

A. Yes.

Q. Have any of those bond sales so far as the books show been used to take up preferred stock contracts?

A. At least two of the sales of bonds appear to be made on the same day as the preferred stock contracts were retired.

Q. Were the book entries sent here sufficiently full and complete so that you could tell whether the money was used to take up preferred stock contracts?

A. You couldn't tell what they did with the money; it simply went into the pot.

Q. You couldn't tell whether it was used to take up preferred stock contracts or not?

A. I could not say; but on March 31st, 1909, and October 31st, 1909, they sold bonds and retired preferred stock contracts
3182 the same day.

Q. How much did the bond sales amount to?

A. In total, $92,000.

Q. What was the total preferred stock contracts taken up?

A. $217,910.80.

Q. On the same day?

A. On the same days—two days.

Q. This bond sale, how was it entered on the books up here?

A. The entry is a straight bond sale, the proceeds being charged to the treasury.

Q. Just simply charged to the treasury?

A. Yes.

Q. To ascertain exactly what was done with that, you would have to have the books in Philadelphia?

A. Yes.

Q. And exactly what was done with the money?

A. Yes. The proceeds of the bonds were handled of course by the treasurer in Philadelphia.

The MASTER: Did you find the stock contracts cancelled?

A. At least the Philadelphia records indicate the contracts have been retired.

The MASTER: I mean those that were paid?

A. Yes, they were retired.

At this time and adjournment was taken until 1:30 p. m.

3183 1:30 P. M., WEDNESDAY, *September* 13, 1911.

JAMES HALL continued on direct examination by Hon. H. W. Byers, testified as follows:

Q. In your examination and investigation of the books and records of the Des Moines Gas Company made by yourself and your assistants under your direction I wish you would state to the Master just the scope of that examination, the field you covered, the character of the books, pa-ers and records examined?

A. In regard to the operating accounts the examination covered a general review of the whole situation over five years and a more particular examination of all the entries of 1910 examining vouchers for payments and going into the matter very carefully.

Q. And were the entries as far as it was possible checked up with the vouchers and followed down to the origin of the item if possible?

A. Yes, for one years particularly, 1910.

Q. Now for instance to examine a voucher what is necessary to be done, what ought to be done by the examiner?

A. The man examining a voucher should pay particular attention to several things. First to see the voucher is addressed to the company or proper party, that a proper date is on, that is a date within the period of the examination, that the goods invoiced are in the ordinary course of that company's business, that the prices appear to be reasonable, that the account is properly charged, that is construction work it is charged to investment account, if operating to operating account. That the acknowledgment of the
3184 goods whatever it happens to be is properly O. K'd by a responsible party.

Q. And how long do you say you and your men were engaged in the work?

A. About 1040 hours altogether.

Q. That would be in days about how many counting the time that they put in, the hours?

A. Be about 140 ndays.

Q. What do you have to say about anything like an intelligent examination and investigation of these books and papers being made in say, five or six days?

A. Well I would not take much stock in it myself. I would not place much value on it myself. Personally I could not do it.

COURT: I don't understand that 1040 hours, what is that?

A. That is the time spent by the accountants making the examination of the books of this company.

Q. By yourself and the various men?

A. And the various men I had on the work.

Q. Have you examined complainant's exhibit 26 for the purpose of analyzing it and verifying it?

A. Yes, sir.

COURT: Which one is that?

Mr. BYERS: That is Mr. Hagenah's report, part of his report.

Q. To go back again to the former question, about the vouchers, about how many of these can a man examine in a day?

A. Well it depends for what purpose he is examining. In a case of this kind a man could not consistently examine more than about 250 a day.

Q. About how many were there altogether?

A. They run about 1800 to 2100 a year.

Q. Now then going back to the question with respect to Exhibit 26 I wish you would take that up and explain to the Master just
3185 what criticisms if any or errors if any you found in it and what criticisms you have to make of it?

A. It seems to me in this exhibit there is a fundamental error in the charge side.

Q. I think I stated in a former question that Exhibit 26 was a part of Mr. Hagenah's report. It is a supplemental sheet furnished

and presented here in evidence as I remember it and it is marked Exhibit 26, that is the one I am asking you about?

A. Yes, sir. This exhibit purports to show the annual investment value on an earning basis of eight per cent. It commences with the value of the plant at the beginning of the year, to that there is added eight per cent on value of plant. The addition to the plant during that year including an allowance for working capital. Eight per cent on the additions including working capital for six months, that is four per cent per annum. The operating expenses are added. Depreciation on a basis of two per cent on the depreciable property added making a total. From that is taken off gross earnings leaving investment value at the end of the year. Assuming the argument is all right on the statement the depreciation fund which is here charged should be set off in a fund and comp-unded at 8 per cent per annum and deducted from the investment value.

Q. And what difference would that make in Mr. Hagenah's conclusions?

A. That wo-ld make a difference in Mr. Hagenah's conclusions of $830,103.00.

Q. I wish you would go through that carefully, explain it to the Master how you work it out?

COURT: What interest do you take it at?

A. Eight per cent the same as charged, taking everything
3186 at 8 per cent, $830,103, that is depreciation of $392,662 compounded at 8 per cent the interest being $437,441.00 in round figures.

Q. Have you worked out a table that would show your method as compared with his and the difference in the recults?

A. Yes, sir.

Q. Do you have a copy of it?

A. Yes, sir.

Q. I wish you would take defendant's Exhibit 33 and start with the first table in it and go through it and explain your method and the difference and the reason why you make the corrections if any as you go along?

A. The first table in this statement is a copy of Mr. Hagenah's Exhibit No. 26. With the sole exception that it has been footed and a supplemental statement added to the right showing depreciation reserve compounded on the basis at which it was introduced. At the bottom of the table th-re is a summary showing the reconciliation or adjustment of this whole table. Bringing out the amended figure after deducting that depreciation compounded.

Q. Now will you explain why you adopt that method of adjusting Mr. Hagenah's figures?

A. Because I find that in his computations Mr. Hagenah has charged to operations in the plant with depreciation at 2 per cent per annum and has not built up a depreciation reserve or has not credited the plant or property account for the corresponding amount.

Q. Why is it necessary to do that?

A. Because the annual wear and tear of the plant is charged to the operations naturally decreasing the value of the property.

Q. And so you carry along the depreciation side and figure
3187 the interest on that?

A. Yes, sir.

Q. On the same basis that he adds it to the property?

A. Exactly. He adds to the property the depreciation, in determining his 8 per cent fund here he adds to the property depreciation of 2 per cent omitting the fact altogether that that property is decreasing in value to that amount on the assumption that the allowance is a proper allowance.

COURT: Let me ask you a question or two there. You take the $5,997 and you compound that for how many years.

A. I pass that up for the first year, the time it is entered the first year I pass that up. Then it is compounded until December 31st 1910 or the close of the computation, that is fifteen years.

COURT: Then the next amount for fourteen years?

A. Fourteen, thirteen, twelve and so on.

Q. In doing that you reached this total of $437,341.00?

A. Yes, sir.

COURT: What do you find the value of the plant to be under his plan there in that way?

A. Taking off that credit the value of the plant would be $2,306,-128 shown on the next page.

Q. Assuming that the basis of the Hagenah figures aside from the deduction you have made by carrying off this compounded on the sum depreciated, it would show a valuation, an investment value of $2,306,128?

A. Yes, sir.

Q. Now then what criticism do you have to make of that situation?

A. Referring particularly to this depreciation table?

Q. Yes, to any part of it.

3188 A. I might point out that had this depreciation reserve been set out each year in practice as it is in theory here to replacement or depreciation, charged to that depreciation reserve instead of being used in additions to plant, you would get exactly the same results that I have got now. In other words if the additions or replacement or even expense were charged off to that depreciation reserve the additions and expenses as shown on the debit side of this statement would be correspondingly reduced and the net result would be identically the same.

Q. That is the net result working it out on that plan would be the same as the result you find from your examination of the books?

A. Exactly.

Q. And the investment value as it worked out under your method?

A. Yes, sir.

Q. I notice that the adjusted value as you have worked it out here on defendant's Exhibit 33, is $1,774,913.00.

A. After making that computation for depreciation and interest I looked over the statement to ascertain how it was made up and in my opinion it should begin with the appraisal of 1895, that ap-

praisal having been accepted by both parties in the last suit, at least this is my understanding as a settlement of their troubles and basis for future work. Instead of that Mr. Hagenah goes back to 1886. Adjusting the statement to give effect to that and also eliminating $120,000 of bonds included as capital expended and which was used to pay off an old United Gas Improvement Company indebtedness, eliminating the Capital City Electric Light stock which was erroneously included, and eliminating the bond discount and expense of organization upon an 8 per cent, the same basis at which it went into the statement, these deductions the total result following Exhibit 26 is cut down to $1,774,913.

3189 Q. You stated a moment ago, I don't know whether I quite understood your answer or not, that by adopting your method and in working out Mr. Hagenah's method with your corrections and your addition the result would be the same as shown by your report aas to what the investment value of the plant was, is that what you intended to say?

A. Yes, assuming the investment value of the plant is the correct basis and taking out these additions which I consider erroneous the adjustment value therefore would be $1,774,913.00.

Q. In your own report the investment value is less than that is it not, you give it as less than that?

A. Yes, it is less, it is less for the reason that I have not compounded any loss under eight per cent earnings.

Q. I wish you would explain that to the Master, the difference?

A. The report Exhibit 30, does not capitalize early losses while this report of Mr. Hagenah's does capitalize early losses on a basis of 8 per cent.

Q. That is where the difference comes in between these figures, $1,774,913 and your figures?

A. Yes, sir.

Q. What do you have to say about the correctness of the methods of getting at investment value?

A. Well I hardly think this method is correct but I will say that I think the company is entitled to capitalize its early losses provided the early losses are not in any way attributable to bad management.

Q. And these socalled early losses that Mr. Hagenah has capitalized and compounded at 8 per cent, what do you have to say about that?

A. Well I don't think this is the correct basis.

3190 Q. This table here in Exhibit 33 called criticism of complainant's Exhibit 26, I wish you would explain that a little more fully so that we will all understand just what you are trying to get at in it.

A. That first half of that statement is a summary of exhibit 26 as put in evidence.

Q. That is a summary of the exhibit that you have just been referring to?

A. Yes, sir.

Q. And brings out an investment value of the plant December

31, 1910 $3,136,231.00. The cost of the plant as stated in this Exhibit 26, including working capital is $2,064,118.00. Allowing for working capital and accepting the statement in Exhibit 30 we have an appraisal plus additions of $1,796,528 or a deficiency of $237,490 as compared to this exhibit 26.

Q. And how do you account for that?

A. That appears to be represented by the bonds used to pay off liabilities including $120,000, inclusive of bond discount and organization expenses $40,873, inclusive of the stock of the Capital City Electric Light Company, capitalized erroneously $2,553 and the adjustment of the book value January 1, 1895 over the appraisal of $96,698 and a small difference which I did not look into $7,366 making up a total of $267,490. Now taking that item or these various items compounding them at 8 per cent we find the value of the plant according to Exhibit 26 should be reduced by the aforementioned amounts $267,490, interest on the first three items for four years approximately $55,825, interest on another item fifteen years approximately $207,900 and depreciation $392,662 together with interest compounded at 8 per cent $830,103 a total deduction of $1,361,318 bringing down the investment value of the
3191 plant adjusted to $1,774,913.

COURT: Where do you find that here?

Mr. BYERS: It is on the thirtd sheet of this Exhibit 33.

Q. Have you any question at all about the justice or accuracy of the method you have adopted here in this table in revising Mr. Hagenah's figures to $2,774,913?

A. Assuming Mr. Hagenah's basis to be right that would be the result.

Q. And the proper result?

A. Yes, sir.

Q. Now have you taken Mr. Hagenah's basic figures, if that is a proper term to use, his value of plant the beginning of the several years of the period covered by him and worked it out on the basis of six per cent?

—. No, I accepted our own figures throughout Exhibit 30 and put them up on the same method as Mr. Hagenah and worked it out on the six per cent basis.

Q. I wish you would go through that and explain that to the Master how you get it?

A. That would bring out an investment value of plant on a six per cent basis $941,268.

Q. Worked out in exactly the same way by using your figures as to the value of the plant at the beginning of each year?

A. And the subsequent additions to the corrected revenue allowing six cents for depreciation.

Q. And taking $50,000?

A. At the commencement and right through on to the last year.

COURT: What do you get as the result?

A. $941,268.

Q. That is the investment value on a six per cent basis?

A. Six per cent basis.

3192 With $50,000 working capital charged each year until the last and the last year you charged $68,000?

A. Yes, sir.

Q. Now have you a similar table worked out on a seven per cent basis?

A. Yes, sir. That would give a net investment value of $1,143,505.

Q. That is the following table?

A. Yes, sir.

Q. That is the investment value of the plant on a seven per cent basis?

A. Yes, sir.

Q. Taking the appraisal value to begin with?

A. Adopting the same figures throughout on both tables six and seven per cent.

Q. And taking $50,000 capital each year?

A. Yes, sir.

Q. And your six cents of depreciation?

A. Yes, sir.

Q. Showing an investment value of the plant on a seven per cent basis of $1,143,505?

A. Yes, sir.

Q. Have you the next table proceeding in the same way upon an eight per cent earning basis?

A. Yes, sir.

Q. What does that work out?

A. Brings out an investment value of $1,377,197.

Q. Then if I understand you taking the cost of this property as as shown by the books beginning with the appraisal of 1895 and adding $50,000 as working capital all through until the last year and including your six cents depreciation, working it out

3193 on the same method Mr. Hagenah works his out except as to depreciation there is a difference between the investment value as shown by your method represented by the difference between $1,377,197 and $1,774,913.

A. Yes, sir.

Q. And what would that exact difference be in figures?

A. $397,716.

Q. In other words, the figures you have just given represent the other side of the count that Mr. Hagenah failed to carry on through his computation?

A. Yes, sir.

Q. Referring to Exhibit 23 if you have it before you, page 25, I find this statement on that page "An examination of the vouchers and authorizations of your company shows that it has benefitted very materially by such purchase when it is considered that the accounts of the company have been charged with costs based upon such favorable conditions of purchase the benefit resulting to the construction account and to the operating account is apparent." What do you have to say about any such indicated benefits from any investigation or examination you made.

A. It was not apparent to me.

Q. It goes on and says further "For these services your company has until recently paid no compensation except several small payments incurred for drafting services on particular assignments. During the last year your company has paid for these services at the rate of $10,000 per year. Through the payment of this charge your company is spared the expense of maintaining a large engineering department and decreasing its office staff for executive, accounting and auditing purposes." What do you have to say about
3194 that statement from your examination?

A. Well it may be true to a certain extent but it was not apparent to me.

Q. Was not apparent?

A. No, I don't think it would be necessary myself to increase the office force any if the Philadelphia office did not exist.

Q. That is in your judgment the office force——

A. The present office force could run that place I think.

Q. Is ample?

A. Seems to me so.

Q. And how did you find the fact to be if you found anything about it as to whether or not the U. G. I. made regular and systematic charges for such work as it did do and the expenses that it incurred in auditing and supervision and all that?

A. Well I saw no record of them charging anything in respect to auditing but they did make charges in respect to advertising services and engineering services, rate regulation expenses and a few things of that kind.

Mr. BYERS: Defendant at this time offers in evidence Defendant's Exhibit 30 which is the report of the witness Hall; Defendant's Exhibit No. 31 which is entitled Des Moines Gas Company rate litigation expenses; Defendant's exhibit 32 which is a computation made by Mr. Hall and defendant's Exhibit 33 under the title of Des Moines Gas Company investment value of plant December 31 1910 in which is included the criticisms as stated by the witness of the report of the witness Hagenah.

Mr. GUERNSEY: The complainant object to Defendant's exhibit 30 on the ground that it does not purport to show the value of the property in question and is irrelevant and immaterial and for the further reason that what it contains with reference to earnings
3195 and operating expenses is not predicated upon the actual results at any time of the property in Des Moines or of the business done in the city of Des Moines.

Cross-examination by N. T. GUERNSEY, Esq.

Q. What did you say your vocation is?

A. Public accountant.

Q. Just what is the scope of the duties of a public accountant?

A. Well they are quite wide. They include practically all matters relating to accounts, the auditing of accounts on behalf of directors, stockholders and investors, investigation in cases of this kind or for

any other purpose, investigation on behalf of bankers to determine the earnings of concerns or capital invested for the purpose of floating bonds or preferred stock, acting as secretary, treasurer or comptroller, or acting as receiver in the liquidation or winding up of a company, acting as trustee in bankruptcy or in deceased estates settlements, that is the very broadest interpretation I can give you of it.

Q. What do you mean by auditing accounts?

A. Making a detailed examination of the accounts of every class, scrutinizing all accounts on behalf of stockholders or directors.

Q. Is it necessary on behalf of stockholders or directors?

A. Yes, an audit would be always on behalf of the stockholders or directors.

Q. Suppose it was in behalf of creditors?

A. That would be an investigation and would not embrace in many lines as great detail as an audit.

Q. Suppose a creditor employed you to do the same thing a stockholder or director employed you to do would it still not be an
3196 audit or would be a rose under another name?

A. Call it an audit but advise my client it did not require the making of detailed investigation as I would under an audit, most cases would not, ninety nine out of a hundred would not. That is an audit is almost always an annual occurring event you go in each year and check the accounts over for that year.

Q. That is simply an annual audit?

A. Well there is practically no difference, an audit means practically an annual audit or semi annual or quarterly.

Q. You can examine the books two ways or the accounts two ways can you not. That is, you can make an examination that not only goes to the books, but goes beyond the books?

A. Yes, sor.

Q. And goes to the question whether or not the entries as made on the books are correct?

A. That is the purpose of the examination.

Q. That is an audit isn't it?

A. Yes, sir.

Q. That is what distinguishes an audit, the fact you go back of the books and back of the examination of vouchers and by independent investigation if you please, ascertain whether or not the entries on the books are correct.

A. Yes, the same thing applies in investigations, you endeavor to go behind the books as far as possible.

Q. But that is the distinguishing characteristic of an audit, the fact you do not accept the books, but go behind the books and check to ascertain whether or not the entries made are correct before you draw any conclusions from those entries?

A. Yes, sir.

Q. Now you may also make an examination of books with-
3197 out going behind the entries on the books may you not?

A. Yes, sir.

Q. Now what do you call that?

A. That would be more of an investigation.

Q. That would be an investigation?
A. Yes.
Q. You said that in this work here there had been expended 1040 hours?
A. Yes, sir.
Q. You had a memorandum at which you looked. You kept a memorandum did you not showing the amount of time each person expended upon the work?
A. Yes, sir.
Q. And when?
A. Yes, sir.
Q. Now how much time did you personally devote to this work?
A. I was up to the date that memorandum was prepared 100 hours.
Q. What is the date when that memorandum was prepared?
A. August 31st.
Q. And at what dates did you do this work?
A. I had three or four days in July and the remainder of the time in August the exact dates I can't give you.
Q. Can't you look at the memorandum?
A. The exact dates are not there. That is simply a summary of the time.
Q. Will you furnish these exact dates?
A. I can't do so until I go to Chicago.
Q. Can't you write for it or telegraph?
A. I can do so.
Q. Will you do so?
A. I can get the detailed time sheets if necessary.
3198 Q. I don't care for that.
A. Yes, I can get you that.
Q. Well will you get it?
A. Yes, certainly.
Q. Since the date of that memorandum how many hours have you devoted to this?
A. About forty or forty five hours probably.
Q. And when?
A. Several hours last week in the office on Saturday and each day this week, Monday, Tuesday and Wednesday.
Q. How about Sunday?
A. I was not engaged on that on Sunday.
Q. This report is dated the 19th of August if my recollection is correct. When was it in fact completed?
A. It was completed on or about the 19th day of August.
Q. And on what part of this report then was the work that was done by you after that time done?
A. The work after that time was done on these criticisms of exhibit 26.
Q. And when was that completed?
A. It was completed last Friday.
Q. Now how much of the time that you have devoted to this have you spent in Des Moines?
A. About eighty hours or ninety hours. I spent one complete

week here and I spent three or four days other times. Roughly 80 to 90 hours in Des Moines.

Q. When was that complete week?

A. The week preceding August 19th.

Q. Who directed the scope of this examination?

A. I did.

3199 Q. Without suggestion from anyone else?

A. Entirely.

Q. And who indicated to you the four fundamental question- I believe that you state in the inception of the report?

A. That work is mine.

Q. So that this was your own idea of the work that it was necessary to do in an order to answer those questions?

—. It was.

Q. Of course you yourself have not examined these vouchers?

A. No, sir; I did not.

Q. Now turning to those four questions I notice that you have very frequently throughout your report referred to the amount of stock and bonds issued. I wish you would state upon which one of these questions you regard that as material?

A. I would not regard it as material to the answer of any question but I do regard it as material to a general understanding of the situation.

Q. It would have no bearing would it on the cost of the property?

A. Not a bit.

Q. And it would have no bearing would it on the cost of manufacture?

A. None.

Q. And it would have no bearing on the results from the ninety cent sales?

A. None.

Q. It would have no bearing on the capital investment would it?

A. No, sir.

Q. Now is there any other matter you have treated as prominently in this report as you have this matter that you say is immaterial to these fundamental questions?

A. I didn't know I had given that undue prominence,

3200 that was not my intention.

Q. Is there any other matter which you have treated as prominently in your report as you have this matter which you say is immaterial to the determination of these questions?

A. Yes, I consider I treated the five fundamental questions more prominently than I did that stock question.

Q. Each one of them more prominently?

A. Yes, sir.

Q. Before we go into this further I want to take up a matter you referred to this morning because you referred to it in such a way I could not at least make head or tail out of it. You attempted as I understood it this morning to take the Capital City book value of March 1, 1906, and reconcile it with your conclusions.

A. Yes, sir.

Q. Now will you give us those figures and give them to us slowly so we can put them down and see just what you claim about that?

A. The capital city company had a book value on February 28, 1906, of $1,565,230.09.

Q. Book value of the assets of the Capital City Gas Light Company?

A. Yes, sir.

Q. Now then what is the next step?

A. I deducted the excess of the book value at January 1, 1895, from the appraisal value at that time.

Q. Deducted the difference between the book Value January 1, o895 and appraisal as of that date?

A. Yes, sir.

Q. And what is that amount?

A. $211,468.16.

Q. What is that $211,468.16 made up of?

A. It is made up of the book value of the water gas plant
3201 and patents at January 1, 1895 namely $200,000 over the amount at which they were appraised $27,903.05.

Q. That $211,468.16 is obtained as indicated just above that same amount on page 22 of your report?

A. Yes, sir.

Q. Now, what is the next thing?

A. The next deduction was $134,297.44 also indicated on page 22.

Q. That is the next sub total on page 22 of your report?

A. Yes, sir.

Q. Now what is the next step?

A. I took one from the other, the smaller amount from the greater giving $1,219,464.49.

Q. Now what is that $1,219,464.49?

A. Appeared to be the actual cost of that property accepting the appraisal of the basis up to February 28, 1906.

Q. By actual cost you mean the cost as shown by these books?

A. As shown by these books taking that appraisal as the basis.

Q. Now what is your next step?

A. Add to that the estimated cost of the new gas holder $120,000.

Q. That gives you what?

A. $1,339,464.49.

Q. What is the next step?

A. Add the Valley Junction properties $45,000. Gives an adjusted cost of $1,384,464.49.

Q. That is what it cost January 1, 1906.

A. No, February 28, 1906 accepting the appraisal.

Q. I mean February 28th. Now stopping on that a minute that don't represent the actual cost as a matter of fact does it?

A. No.

3202 Q. And it represents something less than the actual cost?

A. It does.

Q. And you use actual cost as I use it there, that is as shown by the books?

A. As shown by the books, yes.

Q. Who suggested that you start with this appraisal?

A. That is my own idea.
Q. Who told you that there was an appraisal?
A. I looked up the old record.
Q. What record?
A. The troubles you had here about 1894 or '95, I got a copy of the papers through Mr. Brennan including a copy of Col. Pratt's appraisal.
Q. Then Mr. Brennan furnished you a copy of that old record?
A. Yes, sir.
Q. That was shortly after you came here?
A. Yes, sir.
Q. What authority if any did you find in that record for the statement you have made so often that this appraisal was agreed to?
A. That was my understanding of the matter that that appraisal——
Q. I know, but I didn't ask you that, I asked what authority you found in that record for that statement?
A. I don't know whether I found any particular authority in that statement I found the appraisal O. K.'d by Mr. Pratt and accepted it.
Q. Did you go far enough into that record to find out what became of that case?
A. It was compromised I got that length.
Q. Who told you that this appraisement was accepted by both partids at that time?
3203 A. I was not told so. By no one to my recollection.
Q. You just took it for granted?
A. Well yes you charge so. That being submitted by the company I accepted that as the actual record of what happened and what was agreeable to them.
Q. I am not getting at that, but you have stated a great many times in your examination that that was an appraisement that was agreed to at that time.
A. That was my understanding of it.
Q. Where did you get that understanding, who told you that?
A. I don't recall that I was told so.
Q. Well did you find anything in the record that said that?
A. I don't recall seeing that in the record.
Q. You did find out in the record there was a dispute as to the value of the property?
A. I don't know that I did that, I have no recollection of observing that.
Q. How much of the record did you have?
A. That I could not answer very well. I got about the appraisal and accepted it and disregarded the rest. I didn't read it all, didn't attempt to.
Q. Did you have anything except the appraisal?
A. I don't recall seeing anything except the appraisal and a number of statements about earnings which I did not pay any attention to is all I recall seeing.
Q. So you have no authority for the statement you have made

so frequently that this was an agreed appraisal or that this appraisal was accepted by both sides?

A. No, I will amend that by saying that was an appraisal submitted by Col. Pratt and accepted by me.

3204 Q. Now have you given us all of the figures relating to this reconciliation of the book cost with the book value as shown by the books of the Capital City Gas Light Co. February 28, 1906 that you referred to this morning?

A. No.

Q. Will you please?

A. I endeavored to see how that amount was built up.

Q. How which amount was built up?

A. The amount $1,384,464.49.

Q. Let's have those figures?

A. That was built up by Capital City bonds amounting to $400,000.

Q. What do you mean by built up?

A. The investment was derived from the sale of bonds.

Q. Capital City bond- how much?

A. $400,000. Out of the Des Moines Company bonds issued for the gas holder, of the Valley Junction properties or rather assumed to be issued for the holder and Valley Junction properties, $165,000. The liability to the United Gas Improvement Company $105,526.49. The surplus earnings from 1886 to 1906 $627,959.16 and the original capital stock of the Capital City company $300,000.

Q. That gives you a total of what?

A. A total of $1,598,485.65. You take from that the water gas set abandoned $211,468.16 as shown on page 22 and the electric company's stock charged to plant $2,553 and brings you down the result of $1,384,464.49.

Q. There is one thing I don't understand, this Capital City Gas Light Company statement we are working on isn't it?

A. Yes, sir.

3205 Q. How do you get Valley Junction into the Capital City Gas Light company did they ever own it?

A. Now so far as I know, I am quite agreeable to eliminate it on both sides of that statement gives the same result.

Q. Well but is it in the amount $1,565,230.09?

A. It is not no.

Q. And is there a trace of it on the books of the Capital — Gas Light Company?

A. There is not.

Q. Well then upon what theory is that item an item to be taken into account in order to ascertain that reconciliation of book value on the Capital City Gas Light Company's books?

A. It is an endeavor to reconcile the books of the Capital City Company and the Des Moines company is what started us.

Q. February 28, 1906——

A. The Valley Junction properties and gas holder came into existence between midnight February 28, and starting business March 1st.

Q. Do you mean that?

A. As I understand it from the books. I don't know about the actual facts, it is what the books would indicate.

Q. Well, would you expect the books of the Capital City Gas light company which did not own this property to show when it came into existence?

A. I would expect them to show this gas holder.

Q. You would expect the books of the Capital City gas light company which did own this property to show when it came into existence.

A. What do you mean by this property, Valley Junction?

Q. Valley Junction or the holder?

3206 A. In regard to Valley Junction no, in regard to the holder, yes.

Q. Then you assume the Capital City Gas Light Company owned it?

A. My understanding of the matter is so far as my information on the facts that the gas holder was started prior to February 28, 1906 and not completed until subsequent to March first 1906 that is as near as I can get information about that gas holder was commenced and the contract let by the Capital City company.

Q. What basis have you for that statement that the contract was let by the Capital City company?

A. By the Capital City company or by the United Gas Improvement Company one or the other, I don't attempt to say which.

Q. What basis have you for the statement the contract was let by one or the other? As I understand it you are an accountant and deal with facts?

A. As far as I can obtain the facts and I endeavored to obtain the facts from Mr. Curren.

Q. Now I want to know what basis you have in these books or records for the statements you made there if any?

A. There is absolutely nothing in the books about it.

Q. So you have no basis in these books or records for that statement?

A. Not from the books and records, no.

Q. Did Mr. Curren say to you the Capital City Gas Light Company had made the contract for that holder prior to March 1, 1906?

A. He didn't specially say the Capital City, but made the statement the contract had been made for the holder prior to that date.

Q. Do you as an accountant think that that statement warrants you in running this item of $120,000 into the books of the Capital City Gas Light Co.?

3207 A. I am not putting it in their books.

Q. You are using it to reconcile an item found on those books the day before the Des Moines Gas Company went into business?

A. No, sir. Using it in an endeavor to connect up the Capital

City books with the Des Moines Company books at the time it commenced business.

Q. You told me a few moments ago this amount you added to the figures was for the purpose you stated to find how this amount $1,384,164.49 was built up. I asked you what you meant by built up and you told me you meant the securities the Capital City Gas Light Company issued for it.

A. Yes, sir. And if you will permit me to finish the statement I started on you will get the rest of the figures, you have not got them all.

Q. I would prefer to conduct it in my own method. I want to stick to this proposition first. I want to know why you consider as securities building up this item on the books of the Capital City Gas Light Company bonds issued by the Des Moines Gas Company which at the time this item, of course at that time had not been organized and the bonds had not been issued or authorized?

A. I am endeavoring to build up the account of the Capital City Company and get it up with the opening account of the Des Moines company. It is therefore necessary to bring the items into account somewhere.

Q. Well go on with your other figures and see if we can see what you mean?

A. In the $1,384,164.49 the following securities were issued by the Des Moines company.

Q. You are running two things together, now you are
3208 starting in with the Des Moines Company March 1, 1906 aren't you?

A. Yes, sir.

Q. That was the second proposition you put up this morning?

A. It is all part of the same.

Q. All part of the same?

A. So far as I am concerned, yes.

Q. Now then you keep referring all the time to this water gas plant and patents as appear on the books $200,000. What was the cost of these things as shown by the books?

A. As far as I can judge there was an issue of $200,000 bonds issued in payment of the water gas set and the patents.

Q. And your figures do not show that as a part of the cost of the property of this company?

A. They do not. Pardon me, they do to the extent of $27,903.06 as appraised by Col. Pratt.

Q. So that your statements here neither show cost nor value do they?

A. They do not.

Q. Did you do it this way, did you take cost where that was low and value where you could get it where that was low and make a combination of the lows?

A. No, I did not.

Q. Now if you had gone back a little further instead of starting with this so called appraisement your investment would still have been higher wouldn't it?

A. It would have been some higher than the appraisal, yes.
Q. But you didn't do that?
A. No.
Q. You knew from your examination of the books that that was true didn't you before you made this selection?
3209 A. Yes, sir.
Q. And you selected the low one?
A. Yes, sir.
Q. Now I want to go back — page 5 here for a minute. At the bottom of that page you show as I understand it some costs of manufacture not as shown by the books, but as corrected by you?
A. Yes, sir.
Q. Now give us just the items that you added and subtracted.
A. From the two months' period to February 28th, 1906, I took out the charge for accidents and damages $3,685.17.
Q. You took that out because the accident did not occur in the two months.
A. Exactly.
Q. That amount had actually been paid had it not?
A. It had.
Q. And had been paid during that period?
A. Yes, sir.
Q. Now what is the next item?
A. I deduct from the ten months ending December 31, 1909, $333.18 covering replacement value expenses. For the year 1910 I take out $5,602 for the same expense, for replacement values or expense of making an appraisal.
Q. These replacement value expenses are expenses that were incurred by the company in connection with the appraisement of the property in connection with this suit.
A. Yes.
Q. Now what else did you deduct if anything?
A. I deduct the interest on the floating debt.
Q. What year?
3210 A. For each year.
Q. What are the amounts each year?
A. The first two months $487.00. For the year to 1907 $3,590.71. For the year February 29, 1908, $2,308.48. For the year to February 28, 1909, $49.50 and for the year 1910 $690.84.
Q. What do they total?
A. I can't tell you offhand.
Q. Can you total them for me?
A. I can, yes. $16,746.88.
Q. Have you given us all the adjustments?
A. No, sir.
Q. Well all of the deductions?
A. Yes.
Q. Now what additions/ did you make?
A. I added in in the year 1910 the corporation tax paid in 1911 $1,287.37.
Q. Anything else?

A. I reversed your interest charges increasing your expense by $32.40 for the first two months, being February 28, 1906.

Q. Let's have the items?

A. I am giving them as far as I can, I reversed your interest by increasing expenses.

Q. What were the items?

A. Interest charges.

Q. For what?

A. On the treasurer's account, credits on interest and floating debts, miscellaneous credits.

Q. Can you give us these items?

A. The details?

3211 Q. Yes.

A. I can get them for you.

Q. Well will you?

A. Yes.

Q. How much do they amount to in the aggregate?

A. $1,508.54.

Q. I don't understand just exactly just what that interest was that was interest that the company earned on balances?

A. Yes, and it is credited to the expense account.

Q. And that is where the company had earned some interest it had deducted it from the operating?

A. Yes.

Q. You took that out?

A. Yes, increasing expenses by that amount.

Q. Now what other deductions did you make?

A. That is all. I moved the federal tax, the corporation tax back from the year 1910 to the year 1909.

Q. Let's have the items on that?

A. $1,447.61.

Q. That went back to 1909?

A. Yes, sir.

Q. What was the total of these deductions or additions to the operating that you made?

A. I increase your expense by $2,795.91.

Q. Now deduct that from the $16,746.88 will you please?

A. The result is $13,950.97.

Q. That would run between two and a half and three cents a thousand for gas sold?

A. On one year it would be about two and a half cents, yes.

Q. And if you divide it by five it would decrease the operating about half a cent on the average?

3212 A. It would increase operating about half a cent.

Q. You don't increase operating by making these deductions do you?

A. If I put in these various expenses I would increase your expense by about half a cent per thousand over five years.

Q. But these things you put in you take out as a matter of fact?

A. Exactly, I reduce your operating expense by about half a cent over five years.

Q. Now you testified on your direct examination did you not as follows: "Now you may state what the fact is as to whether these figures which are the basis of your final averages are shown and were taken from the books of the company, actual operations of the company. A. In all cases subject to one or two minor adjustments."

A. Yes, sir.

Q. Are these what you refer to as one or two minor adjustments?

A. Yes, sir.

Q. You were not exactly right?

A. Yes, I would call these minor adjustments.

Q. And one or two?

A. Yes, sir.

Q. As a matter of fact you told us then didn't you, you went on as follows: "Q. What were these minor adjustments. A. The elimination of a charge made by the company for the expense of regulating rates in the city. The company charged that expense as an operating charge and I exclude it on the ground that it has nothing to do with the consumer." And then you also specified this item of federal tax and said that these were the two adjustments you had made?

A. And somewhere else in the testimony in regard to expense and in all cases referred to the interest, I said I excluded interest
3213 on bonded and floating indebtedness.

Q. Now what provision did you make for accidents and damages?

A. Made none.

Q. That was not right was it?

A. Yes, under the circumstances. We asked if any accident claims were outstanding and on August 18th, after this report had been prepared I received a list of claims. I inquired what liability attached to the company and got a response that none was admitted. I state in the report that an allowance should be made for accidents, no attempt to dispute that it should be.

Q. Of course there should be something for accidents shouldn't there?

A. Certainly.

Q. Before I forget it, how soon after you made your request about the accidents did you get the information?

A. I can't answer that. Mr. Sangster acting for me made the request several times.

Q. While you were there?

A. No.

Complainant moves to strike out what the witness says as hearsay.

Q. Did you yourself personal-y make any request?

A. No.

Q. Or anybody make any request in your presence?

A. No.

Complainant moves to strike out the testimony of the witness as

to such requests as being hearsay, secondary and not the best evidence.

Q. Now to get at what would be a fair charge for operation
3214 for these years there must be an addition of something made on account of accidents and damages.

A. If any liability exists certainly.

Q. Well you know don't you that whether there is liability today or not that there will be expenses of that kind?

A. Personally to be quite frank I would approve of an allowance being made in the accounts for damages.

Q. It would be a very fair way to put that to allow the amount that would be necessary to buy that insurance wouldn't it?

A. Yes, if you made an allowance equivalent to purchasing protection it would be quite fair.

Q. And that would have to be added to these totals and averages here on page 52x to get at what would be a fair basis to use in connection with the operation of this property wouldn't it?

A. Yes, provided your expense as already charged for accidents and damages is inadequate. You have an allowance——

Q. You have eliminated the accidents and damages?

A. Not altogether, no sir. Only in the first two months. I only eliminate in the first two months the accidents and damages that period applying to a former period.

Q. How much have you left in that you did not eliminate in the way of accidents and damages?

A. I left it all in except $3,685.17.

Q. How much did it amount to in dollars, let's get what that is. You left in didn't you, if you will turn to Exhibit D of your report, $4,506.84 in the five years aside from these two months?

A. No, I left in $8,755.43.

COURT: Where do you find that?

A. In Exhibit "D" second page.

Q. I read the wrong amount there. That covers the five
3215 year period except two months?

A. Yes, sir.

Q. You left claims undisposed of growing out of the operation during this period for how much?

A. $151,500.

Q. Made no provision for them at all?

A. None at all.

Q. Now do you think that that is just exactly right?

A. No, I think a provision should be made for accidents.

Q. Well why didn't you make it then in making estimates of this cost for these various years that you ask us to take as a basis for fixing a rate?

A. I inquired as to what liability attached to these accidents and received no estimate.

Q. You have had some experience about such things haven't you?

A. Yes, sir.

Q. Well then don't you know the only way you can find out the extent of liability is at the end of a law suit unless you adjust it?

A. I do unprofessionally.

Q. You know that the suits would involve expenses even if no liability?

A. That is so.

Q. And you know that something ought to be added to these operating expenses on that account?

A. Yes, and said so on page 31.

Q. But you didn't attempt to make any estimate but made your estimate of what we would earn based on leaving these things out?

A. Yes, if perhaps you will permit an explanation that I received these estimates on August 18th after this report was prepared and I was told I had to testify the following Monday that was
3216 I think August 21st. That would have involved the whole rewriting of this report, recalculating everything, that would have taken ten days.

Q. How soon after that did you learn we had adjourned for two weeks?

A. Several days afterwards.

Q. You still made no attempt to correct this?

A. I was otherwise engaged, had no time to attempt to correct it. I think I did the fair thing by you by stating the claim existed and should be considered.

Q. A fair way to get at that would be to ascertain what liability insurance would have cost for that period of five years there and then deduct from that the amount which we actually paid would it?

A. Yes, that would be very fair.

Q. Now then why didn't you take the general taxes and work them back the way you did the federal taxes?

A. I didn't observe that there was any outstanding liability December 31, 1910.

Q. I know, but you have a statement in here of the amount of taxes each year don't you? What page is that on?

A. 16.

Q. But haven't you these taxes in dollars and cents somewhere in your report?

A. It would be on Exhibit "D" I think.

Q. Now your taxes begin with $13,000 and run up to $27,846 that we paid in the year 1910 don't they?

A. Yes, sir.

Q. It is morally certain those taxes will not be any less isn't it?

A. That I don't know.

Q. You have never observed?

3217 A. They have a tendency to increase, I observe that.

Q. Then if you wanted to get at what would be a fair basis for taxes for instance when we are talking about making figures about the future, it would not do to take this average of four years which shows an increase of something like 100 per cent would it?

A. No, it would not do to take the year 1910 as compared to the year 1907, that would be hardly reasonable.

Q. And it would not do to say where the taxes had gotten up to $27,846.06 in the year 1910 and where in the year 1910 the assessment has been increased enough to bring them up to $31,000

for the taxes of 1910, do you think it is exactly fair in estimating future earnings to take not the existing conditions but the average of four or five years?

A. Yes, I think taking that average in conjunction with other averages it is quite reasonable.

Q. No, but just take that alone by itself. You are morally certain you would be low on the taxes aren't you?

A. That average will be a little low on taxes.

Q. Be too low on taxes?

A. It is liable to be low on taxes.

Q. You say it is liable to be. It is certain to be isn't it?

A. Almost I would say. I don't know local conditions, I would say almost.

Q. So that if we wanted to get something that would afford a fair and accurate basis for an estimate as to the future we ought to revise these tax matters ought we not?

A. No, unless you are prepared to revise all other matters in the same connection.

Q. Now when it came to the tax which the company would
3218 pay to the city on the ninety cent basis where future payments would be reduced you very carefully made that deduction of one fifth of a cent. One fifth of a cent a thousand would amount to about $1,200 a year.

A. About that, yes.

Q. If it is worth while to take that into account where our taxes have increased in the last year from $27,846 to about $31,500 some four times that, and during these four years where you take the average the taxes have gone up from $14,000 to $27,000 do you think that ought to be taken into account too?

A. Yes, I think you are entitled to take into consideration any legitimate expense you show is going to be abnormally increased.

Q. Well don't you think you ought to have done it?

A. I was not aware your taxes were up.

Q. You knew what your report showed?

A. Yes, sir.

Q. You knew the report showed the taxes of $13,978.44 in the year ending February 28, 1907, and the year ending December 31, 1910 they were $27,846.06 just about twice that amount?

A. Yes.

Q. You knew that?

A. Yes, and if you take that in relation to the basis of sales you will find the jump is not in the same ratio.

Q. Oh I don't mean that it is, but what I am getting at is this I wish you would take these amounts here, our taxes for the five years and get the average for the five years, the average in dollars and cents. Don't do that for the present, maybe I can save that work. Turn over to your Exhibit "E" page 2, you will find taxes for the
year ending February 28, 1907, were 3.59 cents per thou-
3219 sand.

A. Yes, sir.

Q. Now for the year 1910 they were 5.24 cents per thousand?

A. Yes, sir.

Q. The difference is about one and three fourths cents, isn't it?

A. Yes, sir.

Q. Do you think it is exactly fair to us to very carefully deduct a decrease in taxes of one fifth of a cent and ignore an increase of one and three quarters?

A. Yes; I don't think it is unreasonable taking the average expense as a whole.

Q. But I am talking about this one item.

A. Well answering that, if I had been dealing with the one ite-, not all the other items, I would have given an increase in all probability.

Q. The only reason you resort to averages is because of the variation of these things up and down isn't it?

A. Yes, sir.

Q. We don't need to do that in the case of taxes where we know the variation is going to be one way.

A. It is not always one way according to this statement.

Q. Don't you understand what makes that difference in the pers there, don't you understand why you get for instance in 1908 6.87, 6.52, 7.66 in 1909 for ten months?

A. I don't know why they drop in 1909 as compared with 1908.

Q. You know they assess once in two years?

A. I didn't know that.

Q. And the first year you pay under your new assessment you would find your actual rate in dollars increased and the rate per thousand would be increased naturally. Then if you stay on
3220 the same assessment and make any increase in sales there would be a little reduction naturally in your rate per thousand the next year?

A. Naturally.

Q. And then go up again. Didn't you know that?

A. No. I thought your assessments were every year as everywhere else.

COURT: These calculations made here are on a thousand cubic feet of gas.

A. Yes, sir.

Q. Now you know don't you that the taxes for the year 1910 are paid in the year 1911 in this state?

A. Yes, sir.

Q. I find here and I think that was shown by the testimony of Mr. Parker that the assessment of the company for taxation made in 1909 was $1,184,200 and that the assessment made in 1911 was $1,385,000. An increase of just about $201,000? Now at the rate of ninety mills which was the old rate of taxation that tax would amount to $31,162.50. I wish you would divide that by the sales in Des Moines, not Valley Junction and so on, but in the city of Des Moines and see what you would get for taxes?

A. 5.98 cents.

Q. Your taxes that are contained in this statement on page 5 include also two cents to the city don't they?

A. Yes, sir.

Q. So we would have to add two cents to that to make a comparison?

A. Yes.

Q. And that would give us 7.98 cents or substantially 8 cents?

A. Yes, sir.

3221 Q. Now the tax that you took in your three estimates that you made of net return were 6.65, 7.22 and 6.78 were they not?

A. Yes.

Q. So that they were all except the year 1910 more than a cent and a half under the present rate?

A. Then if we wanted to get at actual results, if a man was putting his money in he would want to add a cent or so on that score as well as adding something on the personal injury account to really make an estimate that he would want to bank on as to what his operating was going to be wouldn't he?

A. Yes, sir.

Q. And you think it is just as important to do that as it is to deduct the one fifth of a cent that you carefully deduct on page 6?

A. No. If I was investing in your plant I would like to see where I could reduce my expenses.

Q. If you were putting your money in you would want to be very sure however in your estimate of earnings and things of that kind that you had not got operating too low?

A. I would be very careful about it.

Q. Instead of being careful to exclude the doubtful items you would be careful to include them?

A. I would review them both.

Q. Now I want you to turn over if you will to your computation on page 7 for a minute. You base all of your results here on one year don't you?

A. Yes.

Q. And the year that is most favorable to your contention, that is right isn't it?

A. No, I didn't regard it as being the most favorable year. I took it as the last year.

3222 Q. You knew if you took an average of five years that the average net return would be lower than what you got the one year didn't you?

A. No, I did not.

Q. You did not.

A. I did not. I took the last year.

Q. You didn't make any computation of that kind?

A. No, I didn't. Took it for one year.

Q. Now turn to this table here on page 7. In the first place you include Valley Junction as well as Des Moines?

A. Yes.

Q. Of course that increased your net result some because they sell gas at $1.50 in Valley Junction.

A. Yes.

Q. And that makes your calculation on Des Moines to that extent erroneous, that is based on incorrect premises.

A. It is impossible to base it on a correct premise, it is impossible to eliminate Valley Junction.

Q. Didn't you at Cedar Rapids eliminate the outside towns?

A. I have no recollection of what happened at Cedar Rapids.

Q. You could not say you did not?

A. I would not say I did or did not.

Q. How long ago was it?

A. Four years.

Q. You testified there?

A. Yes.

Q. There you eliminated outside towns?

A. I don't know.

Q. Without knowing whether you did or did not do it there, you think still it is impossible to do it.

3223 A. I don't think from judging this case on its own merits you could get a proper premise without Valley Junction.

Q. You have here a heading, total revenue. Now opposite the words total revenue you have—have you the actual revenue at Des Moines, $538.893 or something that is estimated?

A. That is the actual figure.

Q. Taken off the books?

A. Shown by your books, yes.

Q. The $482,532.34 is estimated?

A. Yes.

Q. You have operating expenses under the next line?

A. Yes.

Q. That means one thing in one column and another thing in the nect column?

A. Yes, it does.

Q. Why is that put in there, to confuse?

A. No, not intended that way.

Q. It was done intentionally?

A. Not intended to confuse.

Q. Right opposite that same heading operating expense net you have in the one column operating expense without adding anything for depreciation and the other column operating expense plus depreciation.

A. Yes. The statement is estimated before adjustment and after adjustment.

Q. That adjustment refers to rate don't it?

A. Not altogether, no.

Q. What other adjustments were made?

A. This depreciation was added in as an expense.

Q. Then you have these operating expenses there they are not the actual operating expenses shown on the books are they?

3224 A. $346,000?

Q. Yes.

A. No they are slightly adjusted in 1910.

Q. They are less than the books show?

A. They are I think—yes, they are a little.

Q. And then when you say net revenue available for interest and other charges $192,107.65, that is not correct is it. You would have to take out depreciation first.

A. Yes, you would.

Q. So that you can't look from one of these columns to the other and compare these figures that have the same heading and make a fair comparison can you?

A. Not without reading the context.

Q. You can't anyway compare these figures, you have got to make some computations because net revenue available for interest and other charges as to one column means one thing and another column means another.

A. It does, yes.

Q. There is another thing here I notice that you don't seem to have taken into account. The new ordinance don't provide for a penalty in the event of a failure to promptly pay the bills.

A. There is no penalty.

Q. That will increase the expense of collection won't it or increase the loss on account of bad debts?

A. I don't know that it will.

Q. Have you ever had any experience in the gas business?

A. No.

Q. Have you the remotest idea why the practice is to impose a penalty if bills are not paid promptly.

A. I know there is a penalty imposed in certain towns.

3225 Q. Have you any idea as to why?

A. In order to get the money in promptly.

Q. To decrease loss and decrease the cost of collection, you can't imagine any other reason for it?

A. That is what I would understand would be the reason yes.

Q. When you take that out you have got to add expense haven't you something of that kind?

A. I don't know that would make any appreciable difference to your expense.

Q. Don't you think it would make about as much as one fifth of one cent per thousand which you carefully deducted on account of these taxes?

A. It might. It would all depend on how good a collection department you had. There might be additional loss, it would not be very serious, however.

Q. It is an expense item you have not taken into account?

A. I have not.

Q. And that would have to be taken into account if we want to get a correct conclusion?

A. Provided it can be demonstrated there is an extra expense there.

Q. Have you enough experience *tioh* the gas business to know?

A. I would not like to say definitely, no.

Q. Would you if you were an investor say here I will put my money in and just assume there won't be any expense unless you can demonstrate there will be, is that the attitude of an investor?

A. No, if I was an investor I would look into the matter very carefully.

Q. In other words, you have not made a report here such as you would make to a man that was going to buy some bonds have you?

3226 A. Yes, substantially, in a certain way it is and a certain way it is not.

Q. This is not the kind of report you would make to a man if he wanted to know what he could rely on if he was going to buy some bonds?

A. No, I would not report along the same lines at all.

Q. You would not throw out all these detailed items of operating would you?

A. It would altogether depend, if I was endeavoring to show the man what he could make in operating this business I would proceed very much along the same lines I have here.

Q. Would you deduct from the operating an item like one fifth of a cent and ignire an item like two cents, would you ignore an item like this accident and damage and ignore an item like Valley Junction that would amount to about a cent?

A. I have not ignored the item of accidents and damage.

Q. You have no computation with reference to that part of it?

A. Yes, but I state in the report you are entitled to it.

Q. Valley Junction would amount to another cent wouldn't it?

A. No, I don't think quite. About .7 of a cent is my recollection.

Q. You have made a computation on it?

A. Yes, which I worked out in this report.

Q. Whereabouts will we find that?

A. On page 20.

Q. Your report shows that your estimate on ninety cent gas is that the income will be 90.70 cents?

A. Assuming Valley Junction at $1.50.

Q. Pretty near one per cent.

A. Three fourths of one per cent.

Q. You have added one per cent of ninety cents, that would be what? .9 of a cent?

3227 A. Yes.

Q. So you have added 7/9 of .9 of a cent to the gross revenue then?

A. Yes, sir.

Q. Too much bother to take it out?

A. No.

Q. Have tp come out before we could get an accurate result here wouldn't it?

A. No, I don't think you can disassociate Valley Junction with Des Moines.

Q. Suppose Valley Junction reduces the price and in the mean time you had fixed a rate here relying on excess earnings out at Valley Junction?

A. If Valley Junction reduces the rate you have got to consider that.

Q. Otherwise you can't rely on the excess earnings of Valley Junction to sustain your Des Moines rate, that is what you do in your report.

A. Not to any appreciable extent.

Q. About one per cent?

A. Not if you pro rate your investment between the two properties I don't think you get one per cent on it.

Q. But in your income here?

A. The income is higher on account of Valley Junction certainly.

Q. Who invested this method of using the low items and getting low operating expense for the year that you have adopted here?

A. That is my own.

Q. You invented that?

A. Yes, sir.

3228 Q. Invented this in this case?

A. Yes, sir.

Q. Never tried it before?

A. Not that I recall.

Q. Now will you turn that around for me, pick out the highest things you could get here out of operating, get the highest operating you could get or do you think that would be fair?

A. Distribution.

Q. Well take manufacture what is the highest there?

A. The highest there is 36.89 in 1907.

Q. The highest in the balance is in the year 1910?

A. Yes, sir.

Q. It would be a good thing to put these together wouldn't it?

A. Yes.

Q. That would be fair wouldn't it?

A. No, I don't think it would.

Q. You have just reversed it haven't you?

A. No, I don't think I have exactly.

Q. The expense for the two months to February 28, '06 making up the 67.13 there, 36.82 for manufacturing the balance 30.31 are they not?

A. Yes.

Q. And the next year that balance deducting the manufacturing—take the year 1907 you have 6486 as the total and the balance after deducting the manufacturing is 27.97. That is right isn't it.

A. Yes.

Q. In 1908 your balance of your 63.49 after deducting manufacturing is 28.36?

A. Yes.

3229 Q. And in 1909 the corresponding balance is 26.35?

A. Yes.

Q. And ten months in 1909 32.17?

A. Yes.

Q. Average for the four years to December 31, 1909, 28.77 cents.

A. Yes.

Q. In the year 1910 35.43 cents?

A. Yes.

Q. And for the average of the five years it is 30.30?
A. Yes.
Q. Now then when you came to make your estimate of return here you took that low manufacturing in 1910 the lowest there was in the whole period?
A. Yes.
Q. And then you took the *varage* for the four years up to December 31, 1909, 28.77 which was lower than the manufacturing for the year 1910, and lower than the average for the five years didn't you?
A. Yes.
Q. Now add those two together will you please 29.76 and 28.77.
A. 58.53.
Q. So you took as a basis a cost there that was lower than anything that the company had ever experienced didn't you?
A. Yes, sir.
Q. Thought that was fair didn't you?
A. Yes.
Q. If you were putting your money in that is the way you would do wouldn't you?
A. I would figure that way among others.
Q. You would rely on that if you were making a report
3230 to somebody about somebody you would make your report like that?
A. Yes, I would.
Q. Never did before?
A. Never had occasion to.
Q. Never have done it?
A. Not so far.
Q. You have made reports to people buying bonds or contemplating it?
A. Yes.
Q. Did you ever in estimating operating expenses in such report pick out low items like these and put them together?
A. No, I never had to.
Q. What do you mean by had to, do you mean you had to here in order to get the results you wanted?
A. No, I do not.
Q. Do you know what made that low manufacturing in 1910?
A. Yes, a considerable reduction in the price of oil and other expenses, general improvement in the art.
Q. Your report shows what made it don't it?
A. Yes.
Q. What page?
A. Page 11.
Q. Now then I wish you would tell us what the average cost of oil was per thousand for the four years preceding 1910?
A. 15.75.
Q. What was it in the year 1910?
A. 11.49.
Q. Now what is the difference?
A. 4.26.

Q. I wish you would subtract that difference in the price
3231 of oil from the average manufacturing cost for the five years, what do you get?

A. 28.78 cents. 4.26 from 33.04.

Q. The average cost of oil for the five years ending December 31, 1910 is what as shown by your report?

A 14.78.

Q. The cost in the year 1910 was what?

A. 11.49.

Q. What is the difference?

A. 3.29.

Q. Now subtract that from the cost of manufacture for the five years 33.04, what do you get?

A. 29.75.

Q. Then what do you get as cost of manufacturing in the year 1910.

A. 29.76.

Q. The difference is .01 of a cent isn't it?

A. Yes.

Q. So that the difference between the average cost of manufacture for the five years and the cost of manufacturing for the year 1910 is accounted for by the difference in the cost of oil with the exception of .01 of a cent?

A. Yes.

Q. Now under these circumstances do you say that this average manufacturing costs are abnormal?

A. I don't say so and never did.

Q. The average manufacturing cost for the five years are 33.04 cents aren't they?

A. Yes.

Q. And for the four years ending December 31, 1909, they are about one cent higher?

3232 A. Yes.

Q. Now what is there then that justifies you in taking as the basis this abnormally low manufacturing cost and tying it up to the lowest aggregate of the other costs you could find out of these three columns?

A. The fact that you have been able to reduce manufacturing cost to 29.76 justifies us in taking that figure, that is your actual cost that year.

Q. Then did you apply the same theory, work the same line out or did you take it only where reduced?

A. No, I disregarded the total distribution in 1910 because an abnormal year as compared to preceding years.

Q. If you will take that item of oil out the total cost there of operation for 1910, 65.19?

A. Yes.

Q. Now deduct this difference in the price of oil between that year and the average for the five years which is 3.28?

A. 3.29. Leaves a balance of 60.05 of a cent.

Q. Oh no it don't.

A. Taking 3.29 from 63.94?

Q. But I told you to take it from 65.19?
A. 51.09.
Q. Then if you take this item of oil out of that which was abnormally low that year compared to these other years you find that the year 1910 is lower than any other year that you get there don't you or any other average?
A. Except the year to February 28, 1909.
Q. Now then let's try this one other way. Take the difference between the price of oil for the four years ending December 31, 1909, which was 15.75 cents per thousand cubic feet and its cost
3233 per thousand for the year 1910, 11.49 you have 4.26 cents don't you?
A. Yes.
Q. Now if you deduct that from the expense for the year 1910 you will get a result that is lower than your average for the four years, lower than your average for the five years won't you?
A. Yes.
Q. And this one item is lower for that year than it is for any other period there.
A. Yes.
Q. Now then what was there in these expenses for the preceding four years that made you say that their aggregate as against the aggregate for 1910 was normal?
A. The general appearance, running about an average, running even general appearance would indicate quite normal expenses.
Q. Well general appearance is pretty vague. Did you analyze the expenses of this company for any other of the other years?
A. We investigated them in a general way.
Q. Did you analyze the expenses of this company for any other years of its existence?
A. Only in a general way.
Q. So in saying these were normal you only took one other year to compare them with?
A. Yes.
Q. You called attention to some extraordinary expenses as you called them in 1910 didn't you?
A. Yes.
Q. That is some expenses on account of lowering mains because the city changed the grade of streets?
A. Yes.
3234 Q. That of course would involve changing all the services and would run that item up?
A. Yes.
Q. Now do any of these other years include expenses of that kind?
A. Not so far as I observe them.
Q. They are expenses that may occur?
A. They may yes.
Q. And an average that don't include something on account of those expenses would not be a sound basis for conclusions as to the future would it?

A. No they are reasonable annual expenses.

Q. And the averages you have taken do not include them do they?

A. Don't include any such large items, they include ordinary work connected with mains and services.

Q. If we relied upon such computation when these large items came we would not have any money to pay them with.

A. Oh I don't know; I think you might.

Q. It would be fairer wouldn't it to take an average that included a year that did involve these items as well as years that did not involve them?

A. Yes, that is why I took an average of five years, considered it a fair thing to include that expense in the average.

Q. The fairest way to get at the prospective operating expense is to take an average over a period of time isn't it?

A. Yes.

Q. But that is not the method which you adopted in figuring out your return here is it?

A. Yes, I did take an average over a period of time.

Q. Did you?

A. Yes, in operating expenses.

Q. In which computation, point out the computation
3235 based on an average over a period of time?

A. Page 10 and again on page 20.

Q. Let's take them one at a time. The first computation is based on the year 1910 isn't it?

A. Yes.

Q. The next one is not based on an average for any period is it? It is based on taking the lowest manufacturing cost you could find and then tying that up with an average for four years of 28.77 isn't it?

A. Yes.

Q. So that is not based on an actual average of any series of years?

A. Based on actual average as regards operating, distribution expenses.

Q. And taking the low item for manufacture?

A. Yes.

Q. The next computation there is not based on the average for any term of years?

A. Not as you term average no.

Q. Now is there any computation that there is here in your report that is based on an average for a term of years?

A. Not as you reason averages.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

3236 Thursday Forenoon Session

SEPTEMBER 14, 1911—9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JAMES HALL, continuing his cross examination, examined by N. T. Guernsey, Esq., testified:

Q. Now, yesterday morning on your direct examination, or day before yesterday, Mr. Hall, you referred, on page 3121 of the record, to the item of donation to J. Haines, $711, and afterwards you made some changes. How did you come to make that original mistake.

A. Improper understanding of the entry as it appeared on our notes.

Q. Then you were just testifying from some notes?

A. Exactly.

Q. Did you ever see the voucher yourself?

A. I looked up the voucher after the testimony was given that night.

Q. But prior to that you had never seen the voucher?

A. No, sir.

Q. And that is true of most of those vouchers?

A. It is.

Q. And you are simply testifying from notes made by your subordinates and not from your own information?

A. Yes, sir; that is so.

Q. And you are not testifying from your own information about these vouchers or books?

A. That is so.

Q. Now this voucher showed just exactly what that Haines transaction was, didn't it?

A. Yes.

3237 Q. And it was accompanied by a receipt filed with the voucher, there was a receipt from each person to whom a part of the $711. had been distributed?

A. I didn't check them up: it was accompanied by a number of receipts which I didn't examine.

Q. Well didn't you think to make such an examination as you said was proper it would be necessary to run through and see where that money had gone?

A. No, I did not: to run through in detail, no.

Q. Now you found out when you came to investigate that the Company distributed this amount, giving to each of its employés on Christmas on edollar for each year that the employé had been in the service of the Company?

A. Yes.

Q. And accompanying the voucher, the original voucher for $711. were apparently receipts from each one of the employés for the amount given to him?

A. Yes.

Q. Do you think there was anything improper in that item?
A. I didn't suggest it.
Q. And your original suggestion that it was *was* due to a misapprehension on your part?
A. Entirely.
Q. Now, then——
A. Pardon me, I don't think I ever suggested that the item was irregular at all or improper.
Q. You referred to it in your testimony as a donation, didn't you?
A. I think I referred to it as a bonus.
Q. I will refer to the record and see what you did say. Item "Donation to J. Haines $711."
3238 A. Yes.
Q. Now is that the way it was described on the memorandum from which you were testifying?
A. Yes.
Q. Then of course that memorandum was wrong?
A. It was incomplete.
Q. Well it was wrong?
A. Yes I would call it wrong.
Q. It was grossly wrong in the inference it carried?
A. It was grossly wrong to accept that inference from it, but my inference was corrected; it was partly my own fault accepting that interpretation.
Q. What I am getting at is this: have you checked up this other memorandum from which you are testifying?
A. Yes, a great part of it in totals, yes.
Q. Have you checked this other memorandum from which you are testifying?
A. Not all, no.
Q. Have you checked one per cent of them in detail?
A. I don't think I checked any in detail.
Q. So that there is a possibility of other errors of this same kind in the construction of the items?
A. That is always possible.
Q. That possibility is very much increased where it is second hand; an inference is drawn from an inference of somebody else?
A. There is always that danger, yes.
Q. Did you make any of the figures in this report?
A. Yes, I wrote the report and made the figures.
Q. Well by that you mean, don't you, that you drew conclusions?
A. I drew conclusions—I wrote them up from the state-
3239 ments submitted.
Q. That is, you checked, take for instance these exhibits back here, you didn't make all those figures, did you?
A. No.
Q. And did you make this chart?
A. No.
Q. Who made that?
A. Mr. Sangston.

Q. He was one of your assistants?
A. He was in charge of that work.
Q. In general he did the work on the books, didn't he?
A. Yes.
Q. And made the figures and you made the computations from the figures and drew the conclusions, and so on?
A. Yes.
Q. Now I want to take up these figures here on depreciation for a moment. I think it is on page 17 that I want to refer to. Now you have a total there on the middle of the page?
A. Yes.
Q. And that is intended to justify your six cents as showing that taking into account the other repairs you will get somewhere near from ten to twelve cents, as you said above?
A. Yes.
Q. Where did you get that ten to twelve cents?
A. That is my understanding what a reasonable allowance would be for repairs and up-keep.
Q. Who told you?
A. I don't know that anybody told me in particular in this plant. I discussed the matter with Professor Marks what it should be when we were making this up; and of my own knowledge that is
3240 generally considered in my experience as a fair allowance.
Q. Now Professor Marks suggested that six cents was the right figure, did he?
A. No, I suggested six and we talked it over generally, and he said he thought it was all right.
Q. Your experience in gas cases has been rather limited?
A. You may call it that.
Q. Three or four cases?
A. Three or four cases.
Q. Your experience is not br*oo*d enough to give you a basis for forming a conclusion, is it?
A. I have passed judgment on depreciation as charged in accounts generally.
Q. Well, most of them do not have earnings enough to charge off depreciation?
A. Most of them there is not.
Q. Well, most of them haven't earnings enough——
A. No, most of them claim there is no such thing as depreciation.
Q. Well, we will pass that now. You made up this table on this page?
A. Yes.
Q. Now will you turn to Exhibit E and tell us what the repairs works were for the two months ending February 28, 1906?
A. 2.06 cents.
Q. And what did you put them in on page 17?
A. 2.32.
Q. That increased that and helped to get you up to your average?

A. No, that was the correct average taken on the basis of sales, making a uniform standard.

Q. How does it happen that your repairs works as you state
3241 it on Exhibit E is one figure and as you state it on page 17 it is another?

A. It is got by taking different divisors. In Exhibit E it is the quantity manufactured and on page 17 the divisor is the quantity sold.

Q. Then you do not take the divisor that is ordinarily taken, on page 17?

A. I took the divisor that would bring that up to the standard, the same basis.

Q. The same basis as what?

A. Uniform basis of cents per thousand sold.

Q. Of cents per thousand sold?

A. Yes.

Q. What do you mean—do you mean that over here on Exhibit E you get at your pers for the manufacture, and dividing by one divisor in one case and another in another?

A. I give the cost, taking the quantity manufactured, and the cost of gas distributed, taking the quantity distributed.

Q. When you get back to your Exhibit E, you got your repairs works by dividing the actual amount, which we will find in Exhibit E, by the amount of gas manufactured?

A. Yes.

Q. If you adopted that figure that would have brought your total of six cents and something down lower than you have it?

A. It would, yes.

Q. And it would have been further away from your average, as stated above?

A. Which is upon the wrong premises.

Q. Now do you know of anybody else that has worked out this repairs works in two methods in the same report without
3242 calling attention to the difference so that people won't be misled by it?

A. No, I don't think there is any intention to mislead. I think it is quite clear here. It states it is on the basis of sales.

Q. Now what statement do you refer to, the statement that shows you adopted a different method here?

A. It does not directly point out a different method. It is clear this is made up on the basis of sales.

Q. Tell me the statement contained in your report that points out the difference so that we may know the repair works is pointed out in any one place?

A. It is not pointed out specifically.

Q. Is it pointed out unspecifically, or at all?

A. No, it is quite obvious.

Q. That would make a difference of 2.7 cents there?

A. Yes.

Q. Setting and removing meters, how did you get that into your repairs; that is not a repair item?

A. It is my understanding it is. You take out an old meter and put a new meter in and you are repairing the property.

Q. Will you tell us some classification that warrants that conclusion?

A. I don't think I can.

Q. There isn't any?

A. I haven't seen it.

Q. You never heard of that item being treated that way before?

A. I think I have. It is my understanding from the city engineer and Professor Marks that is all right.

Q. You got that from Professor Marks too?

A. Yes.

Q. Turn over to Exhibit E and you have repairs meters in one place?

3243 A. Yes.

Q. Then you have setting and removing meters as a separate item and not as repairs?

A. Yes.

Q. You say you checked these over carefully with the vouchers and the books to see that they were right?

A. Yes; they were checked over, yes.

Q. Now, then, did the vouchers in the way of setting and removing meters covering that item show a dollar spent for repairs?

A. I can't answer it; I didn't see the vouchers personally.

Q. So that at the suggestion of Professor Marks you added this item that was not a repair to these repairs?

A. I am not advised by Professor Marks that is a correct classification for it.

Q. Did you look at any classification?

A. I have seen all the classifications one time or another.

Q. You know none of them are treated that way?

A. It is not specifically called repairs.

Q. It is not repairs?

A. I couldn't tell.

Q. You don't know whether this is proper repairs or not?

A. I wouldn't like to say.

Q. Still you put it in here as repairs because Marks said so?

A. Yes.

Q. Did you go over your report before you made it, with Marks and fix it up with him?

A. No, he has never seen it. I discussed these questions I had any doubts on with Professor Marks.

Q. If you take your .27 cents on repair works and your .97 cent for setting and removing meters, which is not repairs, you

3244 have a total of 1.24 cents?

A. Yes.

Q. That should be deducted from your 4.82 if you want to get the actual repairs for that period?

A. No, I wouldn't concede that at all. I might concede meters, knowing nothing to the contrary, but I won't concede the other.

Q. You think for the purpose of this computation repairs works

should be taken as 2.32 cents and for the purpose of Exhibit E should be taken as 2.06 cents?

A. Yes.

Q. And for every other purpose in the report it should be taken as 2.06 cents?

A. Yes, but that is adjusted on account of the leakage.

Q. Now, then, will you take 1.24 from the 10.82 and tell us what we have there instead of 10.82?

A. 9.58.

Q. Now, then, referring to Exhibit E, will you tell us what repairs works were for the next period?

A. 2.32.

Q. You have them 2.49?

A. Yes.

Q. The difference is .17 cent?

A. Yes.

Q. You add .82 cents for setting and removing meters?

A. Yes, sir.

Q. That makes .99 cent?

A. Yes.

Q. Now deduct that from the 10.88.

A. 9.89.

Q. In the next year what are the repairs works?

3245 A. 1.46.

Q. You put them in at 1.55?

A. Yes.

Q. And the difference is .09?

A. Yes.

Q. And you have them setting and removing meters 1.04?

A. Yes.

Q. Making a total of 1.13?

A. Yes.

Q. Will you deduct that from the 10.61?

A. 9.48.

Q. For 1909 your repairs works is 1.28?

A. Yes.

Q. Over in Exhibit E it is 1.21?

A. Yes.

Q. And that is a difference of .07?

A. Yes.

Q. Then you have added there on account of setting and removing meters 1.13?

A. Yes.

Q. And that makes 1.20?

A. Yes.

Q. Deduct that from the 10.45?

A. 9.25.

Q. Now take the next period you have, 2.03 for repairs works, and Exhibit E shows it 1.91?

A. Yes.

Q. That is a difference of what?

A. .12.

Q. And then you have 1.33 for setting and removing meters?

3246 A. Yes.

Q. That makes a total of 1.45?

A. Yes.

Q. Deduct that from 11.78?

A. 10.28.

Q. For 1910 you have 2.67 for your repairs works; what does Exhibit E show it?

A. 2.55.

Q. A difference of .12 cent?

A. Yes.

Q. For setting and removing meters you have 1.01?

A. Yes.

Q. Total 1.13 cents.

A. Yes.

Q. Deduct that from the 13.42?

A. 12.29.

Q. Now what will that give you as an average for the four years where you get 10.89?

A. The average for the four years, 9.69.

Q. And the average for the five years?

A. 10.30.

Q. So that in either event we get under an average of from ten to twelve cents and to that you add six cents?

A. Yes, sir; on your basis.

Q. You don't say your basis is right?

A. If my information is correct.

Q. You mean Professor Marks says it is right?

A. Yes.

Q. So far as you yourself know, it is not?

A. Allowing for the setting and removing meters, I think it is?

3247 Q. You don't know of any good reason for calling setting and removing meters repairs?

A. Admitting that, I would take a cent off the estimated allowance.

Q. You don't know of any good reason for calling setting and removing meters repairs?

A. I am prepared to admit that, but I would make an allowance for that in making the computations.

Q. In order to get us up to the average of ten or eleven cents you would have to add a cent to your depreciation?

A. No sir, if I found I made a mistake in the setting and removing meters I would make that allowance.

Q. While on this matter of depreciation, you referred a good many times or at a considerable length of time in your direct examination to an item of $264,108.28; that was continually referred to as charged to depreciation; you remember that item?

A. I remember that item, yes sir. I don't think I have referred to it as being charged to depreciation.

Q. On page 3139 of your direct examination you testified: "Q.

Now right at that point did you find or were you able to ascertain just why $264,108.78 was charged off for depreciation? A. I don't know why it was done." Now that would be an inference that was charged to depreciation?

A. No, I don't think so.

Q. What do you say to this, on the same page: "Q. In other words, they took their surplus, what appeared to be surplus earnings and wiped it out by charging it up to depreciation? A. Yes, sir." Would you say that carries the inference that was charged to depreciation?

A. No.

Q. I want to know whether you think that this question
3248 stating that this was charged up to depreciation, and your answer, "Yes, sir," would carry the inference that it was charged to depreciation?

A. It couldn't be charged to depreciation.

Q. I am not talking about what was done as a matter of fact.

A. I wouldn't consider that at all.

Q. You would not infer from the question and answer I just read, which I will read again: "Q. In other words, they took their surplus, what appeared to be surplus earnings and wiped it out by charging it up to depreciation? A. Yes, sir." You wouldn't say that would lead to the inference, if a man was reading your testimony, that was charged to depreciation?

A. No, I would not.

Q. Now, you go on a little further on page 3140 and you say: "Q. Your depreciation account for the whole 16 years was only $245,000? A. Yes, less for the 16 years than they make for the three years. Q. They wiped out more in three years than you did the whole 16? A. Yes, sir." Is it exactly fair to compare three years to the 16 years in that way?

A. I am not attempting to compare it. They reduced the property more in that period than I did in 16 years.

Q. How much did you charge up to depreciation in that three year period, that is covered there, which is something more than three years?

A. About three years and four months.

Q. That would make your figures, your charges for depreciation, of course, run higher in the late years than in the earlier years, on account of increased sales?

A. Yes.

Q. So that it would not be fair to compare three of the
3249 later years with the 16 years as an average?

A. There is no comparison suggested.

Q. I didn't ask you that. It would not be fair to make such a comparison?

A. Certainly not.

Q. Now on page 3140, take this question: "Q. But in the sworn statements they have made for the last two years and made since that depreciation charge appeared on the books, has it appeared in any of these statements? A. Not so far as I have seen them. Q. I mean so far as you have been able to find? A. No, certainly has

not appeared in the federal tax statement, be no tax to pay if it did." Do you think that would lead a person reading your testimony to infer that amount had been charged to depreciation?

A. No, I don't think it would.

Q. Now, in the next place, what statements did you examine—you were asked whether it appeared in any of those statements?

A. Do you refer to the federal tax statement?

Q. I want to know what you are talking about here in the question "But the sworn statement they have made for the last two years and made since that depreciation charge appeared on the books, has it appeared in any of these statements? A. Not so far as I have seen them."

A. I saw no statement; the question was asked in regard to the federal tax statement.

Q. I want to know what statements you referred to?

A. I had in mind the federal tax statement.

Q. Did you see any of the statements?

A. No.

Q. Did you see the federal tax statements?

A. No; I saw the Company's receipt for one payment.

3250 Q. You never examined any of these statements?

A. No, I haven't.

Q. Has anybody else examined them and told you what the statements contained?

A. No.

Q. Now, then, as a matter of fact that was not charged on the books to depreciation?

A. No, it was not.

The MASTER: That $264,000?

Mr. GUERNSEY: Yes.

A. It was charged to the plant account.

Q. Have you copies of the entries in the books?

A. Yes.

Q. Will you let me see them?

A. Yes.

Q. Now with reference to this item, all that you have here indicating what appears on the books is this: Profit and loss $264,108.78. Now the next line, property and plant, $264,108.78. Now the first amount there on the first line appears on the left hand side and the second amount on the right hand side, and following that "to close balance of account." I read that correctly, did I?

A. Yes.

Q. Now is that all that appears on the books with reference to this item?

A. Yes.

Q. All the rest of your testimony about that is more inference?

A. Not altogether.

Q. It is not a statement of what the books show, is it?

A. No, it is an interpretation of the books.

3251 Q. Yes, inference. Now then, turning to your report, can you tell us roughly how much you think you should have

charged off on the property account on that date, to bring it down to what you claim is right?

A. No, I am making no claims as to what should have been charged off.

Q. You are talking here about water and things like that; didn't you mean your testimony to be understood as a criticism of those things?

A. Not at all. I have no objection to watering, if you care to call it that.

Q. Now, then, to go back, in your judgment what should have been charged against the property account, or credited to the property account—that is right, isn't it?

A. Yes.

Q. As of the date of this entry to bring that property account down to what you say was the value of the property?

A. I have no views on it at all.

Q. You haven't?

A. No, sir.

Q. You absolutely know nothing about it?

A. I do, but it is a matter for your own judgment as to whether you care to write down the value of the property as you have it or not.

Q. I am not asking for your recommendation or judgment, but you have in your report charged off to beat the band, to be a little slangy.

A. I have excluded items which did not appear to have any tangible value.

Q. Now if we had been attempting to charge off what you
3252 have called water in the stock, how much would we have had to charge off of profit and loss and credit up to the property account at the time the entry was made?

A. Approximately $2,300,000.

Q. Do you think there was any impropriety in this entry?

A. I do not suggest it. I am not suggesting there was any impropriety.

Q. So far as you know, it was an absolutely proper entry?

A. I have no reason to doubt it at all.

Q. When was it that you paid so much attention to this on your direct examination, and why was it you called attention to the fact that this was on a page that was inserted, if you regarded the entry as an entirely proper entry, and did not want us to infer there was something wrong there?

A. I simply stated the facts.

The MASTER: I would like to see the copy of that letter directing the entry.

A. Here is an extract from the letter. (Witness hands paper to Master.)

Q. Where did you find the letter directing this entry?

A. In the files.

Q. Whereabouts?

A. I haven't any idea; it was got out for me.

Q. By whom?

A. One of the men over there.
Q. Did you ask for it?
A. Yes, sir.
Q. How did you come to ask for it?
A. I wanted to know the authority for making the entry.
Q. Why did you want to know that?
3253 A. Out of curiosity.
Q. It was not such an entry as would be made by the book keeper in the ordinary course of business without some authority?
A. Certainly not.
Q. He ought not to make it without specific and definite authority?
A. Very definite authority.
Q. That was what I was getting at—you were asked whether this entry was not made by order from Philadelphia; now who makes the entries, the man that keeps the books, don't he?
A. Yes.
Q. He has no authority to make any such entry unless somebody gives him specific instructions?
A. No, sir.
Q. It would be absolutely wrong to do it?
A. It would.
Q. Was there any impropriety to your mind in his receiving instructions as to this entry from the treasurer of the Company?
A. None.
Q. That would be a very natural and proper thing, wouldn't it?
A. Certainly.
Q. In fact, if you had found the entry without some such authority, you would have said the entry was suspicious?
A. I would, yes.
Q. So that you referred to this letter and read the authority from the letter into the record in order to show there was nothing suspicious to this entry, didn't you?
A. Exactly.
Q. We have been discussing principally some of the factors that go into these operating costs and depreciation; now from the basis of the computation which you refer to on page 8 is it not?
3254 A. Yes.
Q. Now you say here, first, that the expense of operating the property for five years would indicate that the year 1910 was abnormally high. Now if you were putting your money in, you would want to have an estimated operating basis on high years as well as low years?
A. I would.
Q. That is the only fair way to do it?
A. Yes.
Q. Now do you remember in the Cedar Rapids case you based your estimate on five years and protested or criticised the estimate of the Company based on two years as wrong and based on not long enough a time?

A. I am sorry, I don't recall anything about Cedar Rapids.

Q. Passing that, to look it up, you say on page 8, the average distributing and other expenses for the four years immediately preceding 1910, and also for the five years including 1910 can more reasonably be regarded as indicative of normal conditions. We have therefore prepared computations to be afterwards explained taking the manufacturing cost for 1910 and added the average distribution and other expenses just referred to. That is the basis which you took for computing your net income?

A. Yes.

Q. That is correct?

A. Yes, sir.

Q. Did you make the figures yourself?

A. Yes.

Q. I will ask you now whether you testified—I am reading from page 529 of the record of the Cedar Rapids case, in the case
3255 of the Cedar Rapids Gas Light Company against the City of Cedar Rapids, Iowa, at the October term of the District Court of Linn County, Iowa, when that case was tried—I think at the city of Marion——

A. No that case was tried in the city of Cedar Rapids.

Q. I will read several questions and answers: "In your report Exhibit K-2, I notice you have taken a period of five years, while Mr. Kellogg has taken the books for a period of two years only; which is the proper method——

Objection.

(Question continues) in order to show or ascertain the true cost of the manufacture and distributing gas as shown by the books? A. For the purpose of determining the cost of any article such as gas, or determining the duration of any factor the period of five years is generally recognized as standard. The period of two years does not represent the operations of the company fairly and accurately." Did you so testify?

A. I remember very little about the case.

Q. Is it true, as you stated in Cedar Rapids, that the period of five years is generally recognized as a standard?

A. Five years, yes, except under exceptional conditions, five years is regarded as a fair average.

Q. If you had taken five years here you would have gotten a less return?

A. I took five years for your operating, but your manufacturing is slightly different.

Q. Did you testify: "Why is that the case? A. In a year or two years there may be extreme charges. For example, in this case the fittings account in the years 1905 and 1906 are very heavy. They ought to be spread over a series of years, and it is not expected that five years will cover such heavy charges. Q. Take the period
3256 of two years as Mr. Kellogg has done, instead of five years, what effect will that have in showing the general result as cost applied to the manufacture and distributing of gas? A. It

shows a much heavier cost; it shows forty-five cents more on an average of five years." Did you so testify in Cedar Rapids?

A. I presume so if it is there.

Q. Do you remember whether you did so testify or not?

A. I don't recollect what I did.

Q. It is true, however, is it not, as stated here, if you wish to get results that are reliable you must take a period long enough to cover high years as well as low years?

A. Yes; of course there is exceptions.

Q. It depends on what you want to show, don't it?

A. Not always, no.

Q. Now, then, I wish you would do something else for me. Take this table on page 5 and will you please—leaving out the two months' period because that is short—I wish you would pick out the highest item for manufacturing, that is the first thing there and the lowest?

A. The highest is 36.89.

Q. What is the lowest?

A. 29.76.

Q. Now, then what is the highest item on distribution and the lowest?

A. The highest is 8.49.

Q. The lowest?

A. 4.67.

Q. Now then what is the highest on commercial expenses and the lowest?

A. The highest, 9.01.

3257 Q. The lowest?

A. 7.31.

Q. Take the next item, new business, the highest and lowest.

A. The highest 4.76.

Q. The lowest?

A. 2.96.

Q. Now take the next item, general expenses?

A. The highest 4.90.

Q. The lowest?

A. 2.19.

Q. Take the next item taxes?

A. The highest 7.22.

Q. The lowest?

A. 5.56.

Q. The next item, leakage?

A. 2.78 the highest.

Q. The lowest?

A. 1.35.

Q. Now will you foot these columns and let me know what your totals are?

A. The highest 74.05; the lowest 53.80.

Q. Now, then, what is the smallest credit on account of miscellaneous sales?

A. .01.

Q. Will you deduct that from the high total there?
A. 74.04.
Q. The greatest credit on account of miscellaneous sales?
A. .08.
Q. Now, Mr. Hall, in order to tabulate this so it will be easy to get into the record, will you take either your copy or mine
3258 and read the account and figures into the record?
A. I will make a copy of it and he can copy it into the record.
Q. This memorandum showing the highest and lowest, I will ask you to hand to the reporter and ask him to copy it into the record.
A. Yes.

(Presents memorandum to reporter).
The memorandum is as follows:

	Highest.	Lowest.
Manufacture	36.89	29.76
Distribution	8.49	4.67
Commercial Expense	9.01	7.31
New Business	4.76	2.96
General expenses	4.90	2.19
Taxes	7.22	5.56
Leakage	2.75	1.35
	74.05	53.80
Miscellaneous sales	.01	.08
	74.04	53.72

Q. Now turn to page 9 and that shows per thousand feet sold, 19.71, 27.28 and 25.53?
A. Yes.
Q. Now that 19.71 is based upon what as total operating?
A. The actual of 1910.
Q. The actual of 1910 as revised by you?
A. As revised by me.
Q. That you find on page 5?
A. Yes, I think you will find it on page 19 also.
Q. We will turn to that, which is 57.62 before adjustment?
A. Before adjustment. On top of page 20 you will find the basis for the second one.
Q. To compare it with the figures we just made, 74.04 and 57.62?
A. Yes.
Q. The other is 59.37, the second method?
A. Yes.
3259 Q. So that if you adopt the method that you have adopted of combining the manufacturing cost of 1910 with the average of the four years, you get as a total operating cost, 57.62 cents per thousand?
A. Yes.

Q. Will you subtract 53.72 from that and see how near you got to the bottom?

A. 3.90.

Q. You are within 3.90 cents of the lowest amount you could have given if you had taken the lowest on each item out of the entire four years—will you subtract 57.62 from 74.04 and tell us how far you came from the top?

A. 16.42.

Q. You were 16 cents under the maximum and 3.9 from the minimum?

A. Yes.

Q. And that is what you say you regard as normal?

A. I don't think I said that specially about the four year period.

Q. You put it in here and you expected us to accept it as worth something?

A. Yes, that was put in for the information of counsel and the court; personally I prefer the five year period.

Q. You don't think the four year average is fair?

A. Yes, but the other one is fairer.

Q. Would you go to a man and ask him to invest his money in this plant and tell him you had made up an operating cost that was within 3.9 of the minimum of each item for a period of five years and was sixteen cents and a fraction under the maximum, and tell him to rely on that?

A. It would show him what he could do.

Q. Would you ask a man to rely on that?

A. I don't know that I would.

3260 Q. You know you wouldn't?

A. I don't know that I wouldn't; I should advise him of the facts.

Q. He would want facts in a speculation like that?

A. He would get the facts.

Q. Take your next figures, 59.37 and tell me how much that is over the minimum?

A. 5.65 cents.

Q. How much is it under the maximum?

A. 14.67.

Q. We seem to get the worst of it again?

A. Yes.

Q. Now, then do you think that would give a fair result?

A. Yes, I think that is quite fair.

Q. Take 5.65 cents over the minimum and nearly 15 cents under the maximum?

A. I think that is about right, yes.

Q. Will you average the 74.04 and 53.72 and tell us what you get?

A. 63.88.

Q. Will you give us the average for the five years and tell us what that is?

A. 63.34.

Q. Looks as if it was pretty close to right?

A. Quite close.
Q. Looks as if it might be the fairest thing to take?
A. No, I don't think it would.
Q. Because it is not the lowest?
A. No.
Q. Now, then, take this 19.71 that I find at the top of page 9 and we get at that this way, don't we, we take 29.76 from page
3261 5 as the manufacturing cost for 1910, the lowest manufacturing cost?
A. Yes.
Q. Then we take 35.43 the additional operating cost of that year?
A. Yes.
Q. Add them?
A. Yes, get 65.19.
Q. Then we add 6 cents for depreciation?
A. Yes.
Q. That gives 71.19?
A. Yes.
Q. Then you subtract that from your 90.70 you computed as your average return taking into account the Valley Junction and you get 19.51?
A. Yes.
Q. Then making your correction for the city tax?
A. Yes, you get 19.71.
Q. Let us figure out 27.28 the same way; we start again with 29.76?
A. Yes.
Q. Then we take an average of the other operating expenses for the four years 28.77?
A. Yes.
Q. That gives us what?
A. 58.53.
Q. Then we add six cents to that for depreciation?
A. Yes.
Q. That gives us 64.53.
A. Yes.
Q. Subtract that from the 90.70 and we have what?
A. 26.17.
3262 Q. Then add .2 cents to adjust your tax, what do you get?
A. 26.37.
Q. That don't check?
A. No.
Q. What is the trouble?
A. The leakage explains it.
Q. If that was made up as you state it was it would check?
A. No, it wouldn't, if you accept those figures, but those are not exact figures to take; you have got to get back to another table.
Q. You didn't make that up the way your report says; you didn't base it on an average of four years?

A. Yes, I did.
Q. What is the average leakage for four years?
A. 2.26.
Q. What did you take as leakage?
A. Didn't take leakage at all that way; I took the actual leakage, 1.35.
Q. So you reduced your cost and increased your profit by taking instead of the average for the four years the lowest item of leakage in the five years?
A. Yes.
Q. It is a little misleading here, to say that is made up by taking the manufacturing cost of 1910, and the average distribution and other expenses for those four or five years?
A. No, it is quite clear to me.
Q. It isn't true as a matter of fact, is it?
A. I think it is.
Q. What is your average expense on account of leakage for the four years?
3263 A. 2.26.
Q. You didn't take that?
A. No.
Q. Is the statement that you did take the average for the four years true then?
A. I took the average actual expenses in dollars and cents for the four years, yes.
Q. Is this what they call juggling with figures?
A. No, it is not; it is not my business to juggle with figures.
Q. Won't you turn to page 19, the top of that page shows how you made up these various operating costs, don't it?
A. Yes.
Q. Now, then, begin with the actual of 1910?
A. Yes.
Q. You take each item just as it appears over on page 5?
A. Yes.
Q. Now, then, take number 1, that is supposed to be made up of the manufacturing cost of 1910 and the average cost of the four years ending December 31, 1909, isn't it?
A. Yes.
Q. Now, then, I will read from page 5. You have first there expenses of distribution, 5.52 on page 5?
A. Yes.
Q. Then you have next commercial expenses, 7.67 and that checks with page 19?
A. Yes.
Q. Then you have new business 3.98 and that checks?
A. Yes.
Q. General expenses 2.72 and that checks?
A. Yes.
3263½ Q. Taxes, 6.65 and that checks?
A. Yes.

Q. And you have on page 5 for this average leakage, 2.66 and that doesn't check?
A. No.
Q. You have taken 1.35 the low year?
A. Yes.
Q. Then you have miscellaneous credit, .03 and that checks?
A. Yes.
Q. Why didn't you take the leakage for 1910?
A. That is the actual existing condition in 1910.
Q. How would the existing condition in 1910 give you an average for four years?
A. I didn't take the average for four years; I took the actual for that.
Q. In other words of the two low items you took the actual?
A. You can put it that way.
Q. That is a fact; it is a matter of fact they are the lowest items?
—. ——.
Q. When you got to your next average you did not take the average for the five years of the other expenses besides manufacture, but you put in the 1910 leakage?
A. Yes.
Q. Still you thought yesterday I did not put in the 1910 tax because that would increase it?
A. I think you have them in.
Q. You did not take the 1910 tax, you took the average of the taxes?
A. They were the average, yes.
Q. That is under what the 1910 tax would be?
A. Yes.
Q. And we may very definitely assume that the taxes will never be less?
3264 A. I don't know.
Q. Your assumption is they will grow less?
A. They have been down in Des Moines; you pay less per thousand feet that you did in the old days.
Q. You don't misunderstand that?
A. On account of the increased business.
Q. That don't mean a decrease in taxes?
A. Not in dollars and cents per thousand.
Q. When you get down to brass tacks, your computation over here on page 9 are not based on what you say they are, or on anything that ever happened, are they?
A. Not based on anything ever happened?
Q. Not based on any actual condition or average actual condition?
A. They do not state——
Q. They are not based on any actual condition or average actual condition?
A. Yes, they are based on the average actual expenses for distribution.
Q. Take the whole thing?
A. Not as a whole, no.

Q. Wherever you distributed from the average you selected the low item?

A. It so happened, yes.

Q. It didn't happen, did it; you did not draw lots; it was not an accident, was it?

A. I don't know just exactly what you mean.

Q. You said it happened; I want to know whether it happened or whether it is the result of intelligent work?

A. It was the result of some intelligent work.

Q. I want you to tell the Master whether you believe that a conservative man would be justified in basing a conclusion
3265 as to the result of the operation of these works upon figures such as these?

A. Yes, otherwise they wouldn't have been there.

Q. You believe they are better than actual results, or the average of actual results, such as you took in Cedar Rapids?

A. I think they are best suited here, otherwise they would not have been in that report.

Q. Now, then, you remember that yesterday we found out that there was an abnormal condition as to oil here judging by the experience from the books?

A. Yes.

Q. And that was abnormally low?

A. Yes.

Q. You have taken that and put that into your computation?

A. Yes.

Q. Taken that abnormally low basis?

A. Yes.

Q. The leakage is abnormally low?

A. I don't know that it is abnormally low; or very high.

Q. What was the leakage in Cedar Rapids?

A. I haven't any idea.

Q. What is the leakage in Chicago?

A. I don't know.

Q. What is the leakage in Saginaw?

A. I don't know.

Q. What was the leakage in New York?

A. It was very small in New York; under two per cent, I think.

Q. If under two per cent is exceptionally low is not 1.35 exceptionally low?

A. Under two per cent.

3266 Q. Of what?

A. Of the gross business.

Q. They had a dollar rate?

A. Yes.

Q. That would be under two cents?

A. Yes.

Q. 1.35 would be abnormally lower?

A. It is a low leakage.

Q. You know what the leakage is anywhere except New York?

A. I do not.

Q. What is the leakage in Lincoln?

A. I do not attempt to carry them around with me at all.
Q. Have you asked Professor Marks about it?
A. I don't remember discussing the matter with him.
Q. So you don't know whether that leakage is abnormally high except you do know that 1.35 is abnormally low?
A. I say it is not high.
Q. You said two per cent in New York was abnormally low?
A. I remember New York was considered low leakage.
Q. You took this abnormally low leakage?
A. I think your leakage is about four per cent.
Q. You took 1.35?
A. Per thousand.
Q. That was on the ba-is of a dollar rate?
A. Yes.
Q. All these figures made up on page 5 are based on the dollar rate?
A. Yes.
Q. That would be 1.35 cents?
A. Yes.
Q. Or, 1.35 per cent.
3267 A. Yes; your leakage is not high, I will admit.
Q. Won't you admit it is abnormally low?
A. No; I wouldn't want to admit that.
Q. You will admit two cents in New York was abnormally low?
A. That is my recollection. I may be all wrong in my recollection.
Q. Referring to the paper marked Complainant's Exhibit 48, headed Des Moines Gas Company Average Gross and Net Return applicable to interest and profit four years ended December 31, 1909, I wish you would take this first item and look at your report and tell me whether I have got correctly the average sales there and whether the amount to be derived from the sales is correctly stated as $391,-943.47?
A. That is all right.
Q. Now, then, have you checked the entire exhibit?
A. Yes, sir.
Q. So that if we took the average of the four years ending December 31, 1909, and took your operating with the changes which you made in it, and depreciation figured on your basis, the net return applicable to interest and profits would average $96,053.61?
A. Yes, sir.
Q. And that includes Valley Junction?
A. Yes, sir.

Mr. GUERNSEY: I think we would like to have the record show that complainant offers and reads in evidence Exhibit 48 and asks the reporter to copy the same into the record.
Complainant's Exhibit 48 reads as follows:

3268 "Des Moines Gas Company.

Average Gross Revenue and Net Return Applicable to Interest and Profits for Four Years Ended December 31, 1909.

Revenue.

City of Des Moines:	
435,492,747 c. f. at 90¢ per M.	$391,943.47
Valley Junction:	
4,518,125 c. f. at $1.50 per M.	6,777.18
440,010,872 c. f.	398,720.65

Operating Expenses.

Exhibit "A" (hall)	$276,411.96	
Depreciation 6¢ per M. on 440,010,872 c. *g.*	26,400.65	
		302,812.61
Net earnings		95,908.04
Miscellaneous sales		145.57
Net return Applicable to interest & profits		$96,053.61
Excluding Valley Junction		92,385.80

3269 Q. Now referring to Complainant's Exhibit 49, I wish you would state whether that correctly shows what the average results would have been at 90 cents gas based upon the operating expenses as shown in your report for the four years ending December 21, 1909, excluding Valley Junction but taking your basis of depreciation?

Mr. BYERS: The figures below at the lower end of the first proposition on Exhibit 48, 440,010,872, what do those represent?

A. The average sales for four years.

Mr. GUERNSEY: That would be the totals for Des Moines and Valley Junction. Referring to Complainant's Exhibit 49, the figures are correct, are they not?

A. Yes.

Q. On the basis of taking out Valley Junction expenses at the same ratio as the Des Moines expenses that would show an average return applicable to interest and profits at the 90 cent rate with your basis of operation and depreciation at $92,385.80?

A. Yes.

Complainant offers and reads in evidence Complainant's Exhibit 49, as follows:

3270 "COMPLAINANT'S EXHIBIT 49.

Des Moines Gas Company Average Gross Revenue & Net Return Applicable to Interest & Profits for Four Years Ended December 31, 1909.

Excluding Valley Junction.

Revenue.

435,492,747 c. f. at 90¢ per M.		$391,943.47
Operating Expenses.		
Operating Expenses	$273,573.68	
Depreciation 6¢ per M on 435,492,747 c. f.	26,129.56	
		299,703.24
Net Earnings		92,240.23
Miscellaneous Sales		145.57
Net Return Applicable to Interest & Profits		92,285.80

3271 Q. Referring to Complainant's Exhibit 50, I wish you would look that exhibit over with a view to stating whether that does not correctly show the net return applicable to interest and profits for the five year period ending December 31, 1910, including Valley Junction and upon the basis of your figures as to operation and depreciation. Have you examined it?

A. Yes, that is right.

Q. You find it to be correct?

A. Yes.

Q. So that for the five years including Valley Junction the net return applicable to interest and profits on the basis of your operating expenses and depreciation would average $97,683.67 per annum?

A. Yes, sir.

Q. Now, then, turn to Exhibit 48 and we find that for the four years on the same basis it is $96,053.61?

A. Yes.

Q. That does not show a very abnormal condition as to five years or four years, does it; they are pretty close together?

A. They are, yes.

Q. It would not warrant the inference that there was something abnormal in either one of them?

A. I don't think that is the correct way to look at it myself.

Q. You think that difference would warrant the inference there was something abnormal there?

A. I don't think you wanted to draw any conclusion of that kind from this.

Complainant offers and reads into the record Exhibit 50, as follows:

3272 "COMPLAINANT'S EXHIBIT 50.

Des Moines Gas Company, Average Gross Revenue & Net Return Applicable to Interest and Profits for Five Years Ended December 31, 1910.

Revenue.

City of Des Moines	453,414,600 c. f. at 90¢ per M....		$408,073.14
Valley Junction	4,992,300 " " " $1.50 " "		7,488.48
Total.....	458,406,900 c. f.		415,561.62

Operating Expenses.

Exhibit "A" (Hall).....	$290,577.40	
Depreciation 6¢ per M. on 458,406,900 c. f.	27,504.41	
		318,081.81
Net Earnings		97,479.81
Miscellaneous Sales		203.86
Net Return Applicable to Interest and Profits		$97,683.67

3273 Q. I wish you would examine Complainant's Exhibit 51, which is a corresponding computation for the same five years, but excluding Valley Junction, and tell us whether that shows correctly the net return. Have you now examined Exhibit 51?

A. Yes.

Q. Do you find that to be correct?

A. Yes, subject to the Valley Junction expenses being excluded at the same ratio as Des Moines.

Q. So that shows, excluding Valley Junction, the average net return for the five years ending December 31, 1910, on a 90 cent rate and upon operating expenses and depreciation as shown in your report, $93,659.35?

A. Yes.

Q. And comparing that with Exhibit 49 which showed the same thing for the four year period, we find there is only a difference of twelve hundred and some odd dollars?

A. Yes.

Complainant offers and reads into the record Exhibit 51, as follows:

3274 "COMPLAINANT'S EXHIBIT 51.

Des Moines Gas Company.

Average Gross Revenue & Net Return Applicable to Interest & Profits for Five Years Ended December 31, 1910.

Excluding Valley Junction.

Revenue.

453,414,600 c. f. at 90c per M.....	$408,073.14

Operating Expenses.

Operating Expenses	$287,412.78	
Depreciation 6¢ per M. on 453,414,600 c. f.	27,204.87	
		314,617.65
Net Earnings		93,455.49
Miscellaneous Sales		203.86
Net Return		$93,659.35

3275 Q. Now it wouldn't be exactly fair for us on our side to take the average for four years or five years, as shown by these exhibits based on the average sales for that period, without also showing what the result would be taking the same operating expenses and depreciation for the sales of 1910, would it?

A. I don't just follow that.

(Question repeated.)

A. No.

Q. I wish you would examine Complainant's Exhibit 52, which states the return including Valley Junction at the 90 cent rate, based upon the operating expenses for five years, as stated by you and depreciation upon your basis, and state to us whether that is correct?

A. That is all right.

Q. You find that to be correct, do you not?

A. Yes.

Q. If you take the sales for 1910, including Valley Junction, on your basis of operating expenses and depreciation and the tax adjustment, the return would be $114,697.27?

A. Yes.

Q. Now that shows the difference between the basis which you adopted of selecting the lower expense items and combining them, and the basis of taking the average?

A. Yes.

Q. You got $145,173.06 on one method, and $135,863.22 on another method?

A. Yes.

Q. This is the result which we attain if we take an average of the five years instead of picking out small items?

A. Yes.

3276 Q. Now, then, I notice here we have put in a profit per thousand of 21.56 cents?

A. Yes.

Q. While you have a profit per thousand for the year 1910, the actual results of that year of 19.71?

A. Yes.

Q. On this 90 cent basis?

A. Yes.

Q. That difference between 21.56 and 19.71 would represent the deductions which you made from the actual amounts paid out by the company during this five year period?

A. I don't follow that.

(Question withdrawn.)

Q. Is this 19.71 based on the year 1910 alone, on page 9 of your report?

A. Yes.

Q. The fact that we have a profit of 21.56 for the average would indicate nothing as to that?

A. No.

Complainant offers and reads in evidence Exhibit 52, as follows:

3277 "COMPLAINANT'S EXHIBIT 52.

Des Moines Gas Company.

Profits on Basis of 90¢ Gas and Average Expenses for 5 Years.
(Including Valley Junction.)

Average Total Cost per M. for five years to December 31, 1910 (page 5—Hall)	63.34¢	
Depreciation	6.00	
	69.34	
Less Tax Adjustment	.20	
	69.14	
Receipts per M. (including Valley Junction) page 20	90.70	
Profit per M.	21.56	
Sales for 1910, including Valley Junction (Exhibit "C")		531,991,054 c. f.
531,991,054 c. f. at 21.56¢ =		$114,697.27

3278 Q. I wish you would also examine Exhibit 53.
A. The works is not included in this.
Q. Will you make the correction, if necessary?
A. It would give a result of $109,536.27.
Q. That difference is due to the fact that Exhibit 53 does not include the cubic feet 531,486,354?
A. Yes, sir.
Q. Will you please take the original Exhibit 53 and add below 521,486,354 the amount of the gas used at the works?
A. 3,615,6[illegible]
Q. Will you carry out opposite that the additional amount on account of that?
A. It is equivalent to 754.20.
Q. Will you draw a line under that and add it so as to give us 109,536.27 of Exhibit 53?
A. Yes.

Complainant offers in evidence Complainant's Exhibit 53, with the additions made to it by the witness, as follows:

3279 "COMPLAINANT'S EXHIBIT 53.

Des Moines Gas Company.

Profits on Basis of 90c. Gas and Average Expenses for 5 Years (Excluding Valley Junction).

Average Total Cost per M. for 5 years to December 31, 1910 (page 5—Hall)	63.34c.	
Depreciation	6.00	
	69.34	
Deduct Taxes Adjustment	.20	
	69.14	
Receipts per M (Excluding Valley Junction)	90.00	
Profit per M	20.86	
Sales for 1910, excluding Valley Junction (Exhibit "C")	521,486,354	c. f.
521,486,354 c. f. at 20.86c. =	$108,782.03	
Should be	109,536.27	

Gas used at the works 3,615,600 = 754.34

3280 Q. Now this makes a difference on account of Valley Junction of five thousand one hundred and some odd dollars; can't you give it to me exactly, comparing this exhibit with 52?
A. $5,161.
Q. You made your difference on account of Valley Junction .7 cent per thousand?
A. Yes.

Q. You indicate by your report and that is the inference to be drawn from your statement of 90.7 net per thousand?

A. Yes.

Q. How did you get at that .7 cent per thousand, that amounts to less than five thousand one hundred and some odd dollars?

A. Yes, that is profit on the Valley Junction and the difference in this used at the works.

Q. How did you get at your .7 cent?

A. The result of calculation, taking the Des Moines sales at 90 cents and the Valley Junction actual amount of gas used at the works at a dollar rate and divided the whole thing by 531,991.30 being the total sales.

Q. Did you in making that computation figure the gas used at a dollar?

A. I let it remain at your figure, being a dollar on both sides.

Q. Is that right?

A. The net result is the same.

Q. It would be the same as if you would put that in at 90 cents?

A. Yes, because I would put it in as expense 90 cents.

Q. I am talking about your income?

A. Put that at 90 cents, would be 90.66; there would be a difference there.

Q. The difference would be how much—you beat us a little there?

A. No.

3281 Q. Would the difference be twice as much as that adjustment on account of city tax .2 cent?

A. I don't know. I didn't beat you any; I took it in as an expense at a dollar and consequently there is no injustice to you.

Q. Your 90.7 is not on your theory, would be the actual income per thousand of gas sold, if the gas was all sold at 90 cents in Des Moines?

A. It is not.

Q. The actual income from that would be less?

A. Yes.

Q. I want to call your attention to Exhibit 54 and take up the items there that start with 63.34 found on page 5 of your report?

A. Yes.

Q. As the average operating costs for the five years as you adjusted them?

A. Yes.

Q. And the tax- per thousand for the year 1910 were 6.22?

A. 7.22.

Q. Yes, but for the average five years they were 6.78?

A. Yes.

Q. So that if we were to adjust your figures to cover the tax on the 1910 basis we should have to add .44 cent to your 63.34?

A. Yes.

Q. And then the depreciation you took out, six cents?

A. Yes.

Q. Now I have learned, and that you will have to assume for the present, as I will have to prove it later, to cover accident insurance,

covering as much as $7,500 for one person and $3,500 for one accident, but not covering additional matters, we would have to pay a rate amounting to two cents or 1.99 per thonsand. We
3282 have one accident that is referred to in your reports where the claims for the single accident amount to $125 or $130 thousand; so it would seem to me that would be a reasonable amount of insurance; at least reasonably low?

A. Two cents?

Q. The amount I am talking about, the amount covering the $7,500 maximum single injury, and $3,500 maximum for a single accident.

A. Yes, assuming this accident as a sample, it would be reasonable.

Q. You know ordinarily single accident claims run over $7,500?

A. They do not always get that.

Q. Now your Exhibit E shows the amount actually paid out; you gave us credit for on account of expenses as .38 cent?

A. Yes.

Q. So that if there was added enough to bring up and carry that accident insurance, if the cost I have given is correct, you would have to add 1.62 cents on that account?

A. Yes.

Q. We would have an additional expense as to bad debts, on account of there being no penalty in this new ordinance?

A. I won't concede that; I think you could take deposits and obviate the question of bad debt.

Q. Who suggested that to you?

A. That is not an uncommon thing.

Q. Who suggested that to you?

A. That was not suggested to me. It has been talked over since I was on the stand yesterday.

Q. With chom?

A. Professor Bemis.

Q. He gave you that as an answer?

A. No, I opened the question of deposits.

3283 Q. You asked him whether that wouldn't be an answer?

A. Yes, we discussed the question and we thought it was a good scheme—done as a matter of practice.

Q. Is there anything in the ordinance authorizing and requiring deposits?

A. No.

Q. Would you say that a half a cent a thousand was an unreasonable amount on account of extra expenses on account of collections and on account of the loss that necessarily occurs when bills are deferred?

A. I think you could obviate the charge.

Q. Obviate it entirely?

A. Almost entirely at least.

Q. On what experience do you base that?

A. It seems not unreasonable to me.

Q. I didn't ask you that.

A. It is my opinion, sir.

Q. Have you any experience as a basis for that opinion?

A. No.

Q. You know as a matter of fact, don't you, from your general knowledge, not referring to the gas business, where bills are not paid promptly, it costs more to collect them and the losses are greater?

A. In general business, yes.

Q. Now, then, this company has got to pay the expense of rate regulation, hasn't it?

A. Yes.

Q. There must be somewhere in the expense before you get to your net return applicable to interest and profits, provision for that?

A. I don't regard it that way. The question must be con-
3284 sidered before you can get a return on your investment. In other words, I would favor giving you a larger return to cover such risks as rate regulation.

Q. We have got, for instance, in the mere matter of making up the inventory an expense that amounts to one per cent on the gross sales, or more, and that is only the cost of the inventory, or a part of the cost of the inventory in this case. Now, then, this company must pay that?

A. Certainly.

Q. And it is a part of the expense of doing the business, isn't it?

A. No, I don't regard it so.

Q. What would you call it?

A. It is an extra expense.

Q. It is an expense?

A. Yes.

Q. Does the expense grow out of the transactions of the Company's business?

A. Indirectly, not directly.

Q. Is there anything more closely related to the Company's business than the rate it obtains?

A. No.

Q. This expense is directly related to that rate?

A. It is.

Q. It is then directly related to the business?

A. No, not as you state it. Its charge must be taken care of in fixing a return for you.

Q. What do you mean by return, isn't the return the profit after you pay your expenses?

A. Yes. To take care of this, additional allowance should be made. For example, six per cent is considered a reasonable
3285 return on your investment. I would not recommend keeping it down to six. I would recommend an extra per cent. I am not expressing any opinion.

Q. You know no man ever invested a dollar so far as you know, if you ever made examinations for people investing in properties like this, you know they never went in on that sort of a basis, don't you?

Objected to on part of defendants as incompetent, improper cross examination and mere argument.

A. I don't know anything about it.
Q. Somewhere we have got to take care of this expense?
A. Yes.
Q. I wish you would take the sales since our last rate controversy from 1896 down to 1910 and tell us roughly what they run?
A. Since 1895 your sales appear to be four billion ninety-seven thousand.
Q. Does that include Valley Junction?
A. Everything.
Q. It don't include 1911?
A. No.
Q. What was it in 1895?
A. Sixty-one million.
Q. Well, if we add say thirty-six or thirty-seven hundred million that would be approximately right?
A. Yes, about that.
Q. One cent on that would be thirty-six thousand dollars?
A. Yes.
Q. Now that would be, on that basis, an inadequate provision, as these cases are tried now?

Objected to on part of defendants as not being cross examination.

3286 A. I have no idea what your expenses are.
Q. But you know that anything like that ought to be spread over a term of years?

Same objection as last above made.

A. Yes.
Q. How many years, five or ten?
A. I think about ten years would be reasonable.
Q. Now, if you gave a cent and a half a thousand on the present basis, that would be about $7,500?
A. About that.
Q. It would leave for the ten years $75,000, if our sales increased, to take care of the entire expense of this litigation, including not only what is to take place before this time, but the subsequent hearings before the Master and this and other courts?
A. Yes.
Q. Do you say that would be too low an amount?
A. I don't know what your expenses are.
Q. You know the expenses of such a thing as this they run fairly high, decidedly high?
A. Sometimes they do.
Q. You wouldn't say a cent and a half a thousand would be too much on that account?

Same objection as last above made.

A. It has got to be provided for some time.
Q. You wouldn't say a cent and a half a thousand was an unreasonable provision?

A. I wouldn't care to express an opinion about a cent and a half.

Q. I didn't ask you to express an opinion. You wouldn't say a cent and a half a thousand would be too high, would you?

Same objection as last above made.

3287 A. Well, I will say it is too high.

Q. Who told you about that?

A. No one.

Q. And you say you have no experience upon which to predicate your judgment?

A. I would say, it comes in very largely as to whether or not you are entering on a gamble in the fight, if you are taking a forlorn hope.

Assuming you take up a fair fight, you are certainly entitled to an allowance.

Q. Do you think now that you ought to sit here and determine the cost of this litigation?

A. I am not attempting it.

Q. It would be a fair allowance on account of it on the assumption that the suit was brought in good faith?

A. I am not making any assumption at all.

Q. Assuming that the suit was brought in good faith, will you undertake to say that you believe a cent and a half is too high?

Objected to on part of defendants as not cross examination and immaterial.

A. No, I would not attempt to say it was too high.

Q. Now if the adjustments I have referred to shown on Exhibit 54 were made, that would bring the total cost per thousand up to 73.4 cents?

A. Yes, sir.

Q. Now so far as these adjustments are concerned there is not a single one of them that will not be a matter of expense to —. company, is there?

A. Ultimately that all will be expenses.

3288 Q. There is no doubt about that?

A. To a small extent.

Q. The only thing we could quarrel about would be the amount?

A. Yes.

Q. I wish you would look this over and see whether the computations based upon these adjustments are correct and what amount there would be net at the 90 cent rate, making these adjustments including Valley Junction?

A. You wish Valley Junction as you have it here?

Q. Yes, just as shown by this exhibit?

A. The result is $92,034.45.

Q. That is what the 1910 sales would give, net, taking your basis of cost and your basis of depreciation, and making the adjustments shown by this Exhibit?

A. Yes.

Q. And that includes Valley Junction?

A. Yes.

Complainant offers and reads in evidence Exhibit 54.

Objected to on part of defendants as incompetent, immaterial and based upon assumptions not in the record, and is no part of the cross examination of this witness.

Complainant's Exhibit 54 reads as follows:

3289 COMPLAINANT'S EXHIBIT 54.

Des Moines Gas Company.

Profits on Basis of 90¢. Gas and Adjusted Operating Expenses (Including Valley Junction.)

Average total cost per M. for 5 years to December 31, 1910 (page 5-Hall)		63.34¢
Taxes 1910 (page 5)	7.22	
" Aver. 5 years (page 5)	6.78	
Add to adjust taxes to 1910 basis		.44
Depreciation		6.00
Accident insurance	2.00	
Less amount actually paid (Exhibit "E")	.38	
Add to cover unsettled claim		1.62
Expense collection (no penalty)		.50
Rate regulation		1.50
Total cost per M. as adjusted		73.40
Receipts per M., including Valley Junction (page 20)		90.70
Profit per M.		17.30
Sales for 1910 including Valley Junction (Exhibit "C")		531,991,054 c. f.
531,991,054 c. f. at 17.30¢		$92,034.45

At this time, 12:- M. an adjournment was taken until 1:30 P. M.

3290 1:30 P. M., THURSDAY, *September* 14, 1911.

JAMES HALL continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. Now Mr. Hall I want to call your attention to page 3104 of the record, on your direct examination you were asked this question and made this answer: "As I understand that proposition up to that point, the books of the company show and these figures are taken from the books by you and your men, that the net revenues at the present rate of gas for interest and other charges for 1910 was $192,107.65. A. Yes, sir." Then on the next page this question

was put to you "And it works out a net revenue available for interest and other charges of $104,884.98 or the equivalent to a return of 19.71 per thousand feet of gas sold. A. Yes, sir." Now it is not proper to compare that $192,107.65 with the $104,884.98 is it?

A. They are prepared on an entirely different basis.

Q. One has depreciation taken out and the other has not?

A. Exactly.

Q. This first item, $192,107.65 is not the net revenue at the present rate of gas for interest and other charges for 1910?

A. As shown by your record, but before excluding any depreciation.

Q. And that must be borne in mind otherwise this is misleading?

A. Oh yes, that has got to be borne in mind.

Q. Now there is this question and answer on page 3105 "I notice you state here that adopting results which you have adjusted and including depreciation gas at a sale price of 90 cents in Des Moines you have a net revenue available for interest and other charges of $145,173.06. Does that come in a later computation?

3291 A. Yes, it does. I might say I prepared computation on a basis of average operating expenses for four years preceding in order to determine the true working conditions of the company." Now that average operating expense for the four years preceding was not taken to get that $145,173.06?

A. The operating excluding manufacture.

Q. And taking low leakage that you found in 1910?

A. Yes.

Q. So that if we read this as it stands here it would be misleading?

A. It might be somewhat misleading.

Q. In other words we cannot accept the statement as exactly accurate without these modifications. Now you say again on page 3105 "Q. Now if you will, take up the fourth proposition and work that out for the Master explaining it to him as it appears on page 9. A. The table on page 9 is a statement showing the net return as previously determined on a basis of 90 cent gas assuming an actual expense for 1910. The second table is prepared on a basis of 90 cent gas assuming the manufacturing expenses for 1910 together with the average distribution expenses for four preceding years while the third table is on the basis of actual manufacturing expenses, plus the average distribution charges of five years to December 31, 1910." Now then there again that in order to be accurate should be subject to these modifications.

A. To the leakage modification, yes.

Q. You say as to the last matter referred to as on a basis of actual manufacturing expense. That should be modified to read actual manufacturing expense for 1910.

A. For 1910.

Q. I want to call your attention, Mr. Hall, to page 247 of

3292 the printed abstract in the supreme court of Iowa in the Cedar Rapids Gas Light Company against the city of Cedar Rapids, apparently the September Term 1908 which refers to and sets out a part of your report there as to the matter of leakage and I wish you

would refer to that and state what you reported the percent of leakage was in Cedar Rapids?

A. For the year 1902 8.58 per cent of the manufacture. For the year 1903 9.01 per cent of the manufacture. For the year 1904 11.22 per cent. For the year 1905 13.30 per cent. for the year 1906 12.81 per cent.

Q. The average is what?

A. 1.39 per cent.

Q. How much did that amount to per thousand?

A. 1902 3.30 cents; 1903, 3.08 cents; 1904, 5.36 cents; 1905 5.91 cents; 1906, 6.15 cents. Average 5.13 cents.

Q. You also stated there didn't you in that same connection that these percentages averaging 11 per cent and a fraction were excessive?

A. Yes, sir.

Q. Do you remember now whether you did consider this matter of l-akage in Cedar Rapids?

A. Must have if I made that statement.

Q. Now did you adjust that to what you thought a reasonable basis there?

A. I don't recall doing so.

Q. Just accepted the actual resul-s there?

A. As far as I recall. As I have already said I don't recall much about Cedar Rapids.

Q. Passing that for the present, I wish you would look over this Exhibit 55 and state whether or not on the assumption there
3293 made which are the same as those in Exhibit 54 except that Valley Junction is excluded the result attained is correct basing it on the average operating for five years and the gas sales of 1910.

A. On this basis the computation is correct.

Q. And that would give as the net return——

A. $87,166.92.

Mr. GUERNSEY: Complainant offers and reads in evidence Exhibit No. 55 as folows:

Objected to as incompetent, based upon assumptions that are not in the record, as no part of the cross examination of this witness and as immaterial.

COMPLAINANT'S EXHIBIT No. 55.

Des Moines Gas Company.

Profits on Basis of 90¢ Gas and Adjusted Operating Expenses (Excluding Valley Junction).

Average total cost per M. for 5 years to December 31, 1910 (Page 5—Hall)..		63.34¢
Taxes 1910 (Page 5).....	7.22	
" Average five years (Page 5).....	6.78	
Add to adjust taxes to 1910 basis.....		.44
Depreciation		6.00
Accident insurance.....	2.00	
Less amount actually paid (Exhibit "E")	.38	
Add to cover unsettled claims.....		1.62
Expense collection (No penalty).....		.50
Rate regulation.....		1.50
Total cost per M as adjusted.....		73.40
Receipts per M. excluding Valley Junction		90.00
Profit per M.....		16.60
Sales for 1910, excluding Valley Junction (Exhibit "C").....		525,101,954 C. F.
525,101,954 c. f. at 16.60¢.....		$87,166.92

3294 Q. Somewhere in your report you give a comparison of the depreciation each year. Can you tell me what page it is?

A. 17, at the bottom of page 17, the right hand column.

Q. There is a longer list than that here somewhere, it is on the next page 18.

A. It continues over.

Q. Now look at that, as a general proposition the per cent charged for depreciation on your theory grows smaller as we go further back?

A. Yes.

Q. And if instead of taking an arbitrary figure January 1, 1905 you had run as far as the books would show you and taken the cost and depreciated it, your value would have been larger than it is now would it not?

A. No, if I understand your question correctly.

Q. If you don't understand it I will be glad to make it clear or try to. Your per cent of depreciation runs smaller as you go back.

A. Yes.

Q. Because sales are very much smaller I suppose, that is the reason isn't it?

A. Yes, and relatively the plant investment is somewhat higher.

Q. If you had kept on going back from 1895 to 1886 the same condition would have prevailed wouldn't it?

A. Yes.

Q. And the amount that you charged off would have been relatively smaller as you went further back.

A. Yes.

Q. But instead of that you took an arbitrary figure for 1895?

A. Yes.

3295 Q. That would decrease your ultimate valuation wouldn't it?

A. The acceptance of this $429,000 in 1895 would tend to decrease the valuation, but on the other hand taking depreciation further back would help to equalize that increase at that time.

Q. At a smaller rate though?

A. Get smaller as the years went back.

Q. On page 9 near the bottom of the page you say that the investment amounts to $1,550,766.58?

A. Yes.

Q. Now of course that is not strictly correct.

A. That is the investment subject to the deduction for the depreciation.

Q. That is the amount upon which you have computed your various returns?

A. Yes.

Q. Do you think it is fair to charge off depreciation and to add no appreciation, if there is any?

A. It depends how you consider your appreciation. As I have explained in this report I think you are entitled to certain concessions in the way of appreciation, I don't know what they are that is a matter for you. I accept the figures as I find them on the books.

Q. You are figuring here a return on something?

A. Yes.

Q. Now that return is not on investment is it?

A. No, it may be more or may be less.

Q. You say here it is less don't you. You say you have computed the investment and have deducted about $250,000 from it.

A. Yes, that is investment shown by your books less that depreciation.

3296 Q. The amount on which you figure return is not the investment is it?

A. No.

Q. It also is not the value is it?

A. No.

Q. Now then what conculsions do you deduce from a computation that is based neither on the investment nor on the value?

A. That is your investment as shown by your books less that proportion which we estimate has expired.

Q. I asked you what conclusion you deduce from this computation of returns based neither on the investment nor on the value.

A. The conclusion stated here.

Q. What is that conclusion?

A. That there are certain percentages of return on that investment as stated.

Q. That is not return on the value is it?

A. No.

Q. It could not be accepted as indicating what return these same figures would give on the value?

A. Does not purport to do so.

Q. Now you have again left out an item that would have decreased the percentage of return haven't you?

A. I don't know.

Q. You don't know whether appreciation would decrease or increase the percentage?

A. Appreciation would decrease the percentage.

Q. Yes, I thought it would. Now at whose suggestion did you omit that?

A. The matter was never discussed.

Q. Take this table at the top of page 9 it shows a return or valuation upon which some figures would give a return of five per
3297 cent and so on?

A. Yes.

Q. Now there is nothing in your report by which the Master could get at what the actual value of the plant was so as to utilize that table at the top of page 9?

A. I do not purport to show the Master the value of the plant.

Q. You referred to this Chicago ordinance and to the action under it with reference to some items. That ordinance provided for the rehabilitation of the property and the expenditure of some money?

A. Yes.

Q. How much did that ordinance provide should be added for contractor's profit?

A. Ten per cent.

Q. How much did it provide should be added for overhead charges?

A. Five per cent on 110 per cent. At least it has been interpreted as five per cent on 110 per cent. There was a doubt in the ordinance.

Q. How much did it say should be added on account of discount on securities?

A. Nothing.

Q. Are you right about that?

A. Absolutely.

Q. Were the bonds to be sold at par?

A. The five per cent was to provide for any discount on securities.

Q. That was to provide for discount on securities.

A. Yes.

Q. How much did it provide for engineering and contingencies like that?

3298 A. The ten per cent and five were the only provisions in the ordinance.

Q. Now you applied that ordinance to us on these donations, did you give us the benefit of fifteen per cent?

A. I added nothing to your books.

Q. Before I forget it, there is one item I want to ask you to get some information about and I will ask you now. You itemized this cost more or less somewhere, here it is on page 21? You have real estate $35,765.26 at that time. Now I wish you would get me the specific pieces of real estate that that covers.

A. All right.

Q. In getting at this $1,550,766.58 how much gave you put in on account of discount on securities or expense of selling bonds.

A. Nothing.

Q. The books showed that expense didn't they?

A. Yes.

Q. And that is a legitimate expense isn't it?

A. Quite.

Q. Why did you ignore it?

A. That is an expense to be considered by the stockholder and not in my opinion one to be considered in litigation with the consumer, that is a question of finance.

Q. Then when you made up this account here you did not take the actual cost?

A. If you consider that an item of cost no I did not.

Q. Well it is isn't it?

A. Not in this connection.

Q. Well but a thing costs so much don't it?

A. Yes, sir.

Q. And the point of view from which you look at it don't
3299 change these figures?

A. It doesn't cha-ge the figures, but changes the way of measuring it.

Q. As a matter of fact the company did spend some money on this account didn't it?

A. Yes.

Q. How much did it spend on this account?

A. $40,000 altogether including reorganization expenses or $33,750 I think for bond discount.

Q. Those were actual expenses incurred?

A. Yes.

Q. They were legitimate expenses so far as you know?

A. Yes.

Q. And were part of the investment?

A. Of the stockholder, yes.

Q. Now then on what theory is that money to be treated differently from other money?

A. That is a matter for the finance of the stockholder himself not a matter to be treated in connection with the consumer.

Q. That don't answer my question, I want to know why that item of expense is not as legitimate a part of the actual cost of this plant as any other item of expense?

A. I have just answered.

Q. You have said you did not consider it but you have not said why.

A. I will explain a little further, if you had sold six per cent bonds you would have sold them at par, but there would have been a heavier charge against your profits in respect to that issue of bonds. Instead of that you put them out at five and should absorb the discount over the rate on the bonds. That is another matter for the stockholder himself being a finance matter.

3300 Q. The stock holder in your very wide eperience has evi*d*ced something like this disposition, what he wanted to know was how much money it was going to cost him?

A. Yes, sir.

Q. Now he didn't care what that money went for, he wanted to know thoug*h*t how much he had to put up?

A. Yes, sir.

Q. Then he wanted to know how much the company could return on it.

A. Yes.

Q. Now you check out $40,000 you say and don't allow him any return on that?

A. No, I do not. I would not interpret it that way.

Q. Why does your report contain this so called book value of the plant less depreciation, what you call the actual value of the plant?

A. Simply as a guide to the court as to money invested in this plant.

Q. And for what purpose would the court want to know anything about that for?

A. To determine what is a reasonable rate in this suit.

Q. You omit an item of $40,000 or $50,000 that has actually gone in?

A. And so state.

Q. Because on your theory it don't earn a return?

A. Not quite so.

Q. Now were there any other items omitted in the same way?

A. No, that item and $120,000 paid to the United Gas Improvement Company in respect of the debt due by the Capital City were the *the* only two items omitted from your account that I recall.

Q. You did omit practically all that $200,000 paid for patents and——

3301 A. I excluded $172,000 of that, yes.

Q. Now that is not on the investment theory is it?

A. No.

Q. They made that investment?

A. They presumably made that investment, yes.

Q. You exclude it because the value was not there?

A. No, I exclude it because I commenced business with the affidavit by Col. Pratt. I accepted his affidavit as being what was left here in this plant.

Q. If you went back of that affidavit you would have included this investment?

A. On Mr. Hagenah's report I would have to include another $40,000.

Q. If you went back of this item and adhered to your investment basis you would have included that wouldn't you?

A. Yes, in all probability I would.

Q. And that would increase your book value?

A. Yes.

Q. Have you any idea what the value of this plant is?

A. None.

Q. Not the remotest?

A. Not the very slightest.

Q. Now you charge up on page 12 some repairs and say at the bottom of page 11 in producing this it might be mentioned that during the year 1910 extensive repairs were made at the works stated in dollars and cents the repairs during the period under review were as follows, and then you explain them. Now there is nothing improper in those repairs is there?

A. No, I am not making the suggestion.

Q. It was bound to be necessary to make those repairs some time?

A. You have got to repair your plant some time.

3302 Q. The company had to pay for them some time?

A. Certainly.

Q. And the fair way for you in order to get at general results would be to average them over a number of years?

A. Your repairs you have to average the same as others.

Q. And five years is the standard is it?

A. Not always.

Q. Well it was the standard time in the Cedar Rapids case wasn't it?

A. Yes, sir.

Q. And it was as you stated there, it had been adopted as standard?

A. It is very often considered as the standard, but it may not always be adopted.

Q. I don't mean always adopted, there is nothing that is always done that I know of. To get any fair average on repairs it is just as necessary to take in a big year as it is a small year isn't it?

A. Certainly to get a fair average.

Q. Now you had also some repairs mains and repairs services referred to on page 13 that were high, is that right?

A. Yes.

Q. The reason for that was obvious wasn't it?

A. Quite.

Q. That is the city had been changing grades of streets?

A. Yes.

Q. And the company to conform to these grades had to change its mains and incur expense that it would not occur every year but would incur occasionally?

A. Naturally.

Q. And a change in the mains involved a change in the services?

3303 A. Exactly.

Q. That is something that you have to pay some time?

A. Yes.

Q. And to get a fair average these items ought to be spread over a number of years?

A. Yes.

Q. Now you say the increased advertising expense of 1910 appears to be due to the inclusion of larger charges by the United Gas Improvement Company at Philadelphia in respect to advertising services rendered. I wish you would be a little more specific about that and tell us just what it is.

A. I can't give you any more detail now, I can get it for you.

Q. Do you know anything about it?

A. I know larger advertising was paid to the United Gas Improvement Company, that is all I know about it.

Q. Who told you that?

A. My assistants.

Q. You don't know on what account they were paid?

A. I was not particularly interested. In connection with advertising in some shape or manner.

Q. You call attention to this here and it is the only item there with reference to advertising to which you call attention.

A. Yes.

Q. You had some reason for it why you emphasize it in that way.

A. Because it was considerably larger, that is why I call attention to it.

Q. How large was it?

A. .59 in 1910.

Q. Was that the increase?

A. No, that was the actual figure.

3304 Q. What was the increase you call attention to here?

A. The increase was over the average .21.

Q. That would be about how much?

A. About $1,100.

Q. What was that paid for?

A. I don't know.

Q. Do you know anything about this except what somebody told you?

A. No, I don't except it is increased to this extent.

Q. How do you know that, did you look the books up?

A. No.

Q. That was just what somebody told you?

A. Yes.

Q. As far as you know the company made money by spending that $1,100?

A. I don't know anything about it.

Q. And it was an entirely legitimate expense as far as you know?

A. I am not objecting to it.

Q. Not in the slightest degree?

A. Never raised any objections to it.

Q. You say increased soliciting expense is explained by largely

increased salaries in 1909 and 1910? What is just the force of that word largely in there, what was the increase?

A. I don't recall.

Q. Did you ever know?

A. Yes, I looked over the schedule of the salaries and general increase in the way of salaries.

Q. Did you pick out the solicitors salaries and find out what that increase was?

A. And increase force is my recollection.

Q. All I know is by what you say, I don't know what you think or recollect, you say the increased soliciting expense is ex-
3305 plained by largely increased salaries in 1909 and 1910. Now did you use that word largely without some reason?

A. No, I don't presume I did.

Q. Have you any information on the subject?

A. Yes, we have some information on the subject.

Q. I don't like that we, I am asking about you.

A. Well I have.

Q. Based on your own investigation?

A. The summary prepared of these ac-ounts.

Q. Where is it?

A. In the working papers; I can get it for you tomorrow.

Q. Have you any idea what that increase was?

A. I don't recollect now.

Q. You would no- suggest then it was improper?

A. I have not suggested it.

Q. Why did you call attention to it?

A. To explain the increase in the expense.

Q. That is all you know about it as a matter of fact?

A. Yes.

Q. Now then I want to take up this expense extra for a minute. These expenses are usual are they not with corporations such as this one?

A. Yes.

Q. They are usual with business men generally?

A. To a greater or lesser extent, yes.

Q. Well people usually try to keep them down as low as they can don't they like any other expense item?

A. They certainly do.

Q. But they are incurred simply because people believe generally that it is worth while from a business point of view to do it?

A. Not always. You give them very often because you are
3306 importuned to give them.

Q. And because you think it would be bad policy to refuse?

A. Not always, no.

Q. Do you mean to say that these expenses are illegitimate?

A. I didn't say so.

Q. Do you mean to be so understood?

A. No.

Q. They are expenses ordinary with corporations on this character and bysiness corporations generally?

A. They are with business corporations generally, but not so much with corporations of this character.

Q. You know the classification of the Inter State Commerce Commission prepared for railroads covers items of this kind?

A. Yes, sir.

Q. They recognize them?

A. Yes, sir.

Q. You know every commission classification for public utilities recognizes the propriety of items of this kind?

A. Yes.

Q. Do you know of any classification that does not?

A. Yes.

Q. What?

A. Not classification exactly but the comptroller of the city of Chicago.

Q. I asked for classification?

A. No classification, no.

Q. So generally every classification you know of whether public or private recognizes them as part of the legitimate expense doing this?

3307 A. Yes.

Q. You will not say that is not sound will you?

A. Well I think there might be reasonable doubt about it.

Q. That would be putting your opinion against the recognized principles everywhere so far as you know except in Chicago wouldn't it?

A. It is not the general practice to exclude them, but I think there is a very good reason for excluding them.

Q. You take this association and these transactions that are directed towards building up the city of Des Moines, the business — of Des Moines contribute to it simply because they think it is to their interest to built up the city. Don't you think the interest of the gas company is identical with theirs?

A. It is identical with the city of Des Moines.

Q. It is identical with the interests of the business men who think they can help in building up the city.

A. Yes, the business men pay subscriptions themselves and also you to pay yours, that is the fair way to look at it.

Q. Then if they are assisting us to pay ours I can say I am assisting them to pay theirs.

A. Yes.

Q. So it is six of one and half a dozen of the other isn't it?

A. Well I don't know but it is.

Q. You know it is not exactly legitimate is it for me for instance to say if a man pays me a fee he is assisting me in buying cigars?

A. It certainly assists you to buy the cigars.

Q. If I d[illegible]n't earn any fees I perhaps could not buy cigars, but the man th[illegible] pays me pays me not with reference to what I am going to do with the money?

3308 A. Pays you for your brains.

Q. Or with reference to the service I render to him?

A. Certainly.

Q. If by contirbuting to these things the gas company can help build up the city and so help build up the business of the gas company and in that way produce this condition that is going to decrease expenses and enable them to some time reduce the price of gas, why isn't the public just as much interested as anybody else?

A. I am not arguing with you about it, I have no particular objections on the subject one way or the other.

Q. You don't know whether this ought to be included or not?

A. I do know, I simply state the fact of what happens in Chicago. I think the best proof of the matter is I left them there.

Q. You have referred to one public utility in Chicago, there are others aren't there?

A. That applies to all public utilities connected with the city of Chicago.

Q. Name them.

A. Refers to all traction companies and the telephone company.

Q. Now the other companies?

A. That remains to be seen yet.

Q. Now then *you* call your attention to these salaries general. Do you mean to say that these items are not proper?

A. I never made the suggestion.

Q. Then you do not criticise them, do not say they are improper?

A. It seems to me it is a matter of proof if you get the services rendered.

Q. That is all there is isn't it?

A. All there is to it.

3309 Q. If we have a purchasing agent and by reason of that purchasing agent and by reason of his connection with the U. G. I. company are able to buy lower than other concerns, then the Des Moines Gas Co. gets a benefit?

A. If you can show where you get any benefit from the salaries paid it would be a legitimate expense of your business.

Q. Do you throw out all salaries unless it is affirmatively shown there is benefit commensurate with the salary?

A. I think quite reasonable to do so.

Q. What investigation did you make. The fact is it is the reverse as to salaries and you accept salaries un-ess there is something to indicate they are not earned?

A. Yes.

Q. In this same connection, what is oil selling for now?

A. 2.8 cents according to your contract.

Q. I don't mean that, what is it selling for in the market?

A. I don't know.

Q. What did it sell for last year in the market?

A. I don't kno-.

Q. What is any company aside from this company paying for it?

A. I don't know.

Q. What has any company aside from this company ever paid for it?

A. I have no idea.

Q. Well didn't you yesterday rather intimate that our price of oil was high?

A. I intimated that I had—my general impression was that there was a much larger cut in the price of oil than there was, than according to your records there was, that is all.

Q. Where did you get that information?

A. That is what I have been trying to think out myself. I got that impression some very considerable time ago.

3310 Q. Didn't Prof. Marks tell you?

A. He did not.

Q. Prof. Bemis?

A. No he did not. The matter has not been discussed with Prof. Bemis or Prof. Marks.

Q. You don't know as a matter of fact that this price for oil is low?

A. I don't know, no, except as I say I received the general impressio*j* some very considerable time ago that oil had been cut in two.

Q. How long ago?

A. Quite some months ago, about a year ago.

Q. Do you think it is of any value to this company to have available what funds it needs from time to time for extensions and things like that?

A. To a certain extent yes.

Q. What do you mean by your limitation to a certain extent?

A. I would regard it rather poor business to carry an exceptional cash balance when you have the bonds you can sell, when you *ha* have bonds in the treasurery available for sale any time when required.

Q. You apparently do not understand the question, what I want to know is whether it is worth something to a public utility in Iowa to have somebody that will take its securities and advance it money when it needs it.

A. Oh yes, that is useful at all times.

Q. Can't always sell your securities at a good price can you?

A. Some trouble some times.

Q. If we are going to adopt your theory and won't allow
3311 anything for discount on bonds that is a pretty serious thing?

A. I did not suggest that theory to you.

Q. You throw it out of your valuation?

A. I don't think you understand. That theory was not advanced,

Q. Now then do you think it is worth anything to this company to have its books audited and its accounts audited periodically by competent people?

A. It should be yes.

Q. You charge for doing that work don't you?

A. We certainly do.

Q. And you think it is worth the money?

A. We regard it as being worth the money.

Q. Do you think it is worth anything to this company to have the engineering experiences and the engineering force of the U. G. I. Company at its disposal?

A. It should be yes.

Q. It would cost a good deal if they tried to buy it from somebody else?

A. Cost some money I expect.

Q. You say on page 18 as explained on page 8 of this report the distribution and other expenses of the year 1910 cannot be regarded as indicative of normal operating conditions. To obtain a reasonable estimate of the net revenue operating under normal conditions and including sales at 90 cents per thousand cubic feet and an allowance for depreciation we have decided to accept the average expense of operating for two years as follows, A, four years ended December 31, 1909, B, five years ended December 31, 1910. That is followed by your statement on page 19 which is the one that I referred to before, it is not made up on the basis stated is it?

3312 A. Yes I regard that as being made *up* on the basis stated.

Q. You state the basis here as the average for these two periods *an* and do not say anything at all about taking the 1910 manufacturing at the bottom of page 18.

A. Well I am quite content to modify it as to manufacture.

Q. So if a person reading this accepted it it would be misleading?

A. No, I think if he read the report as a whole it would not be misleading.

Q. If he took*d* the report as a whole and checked out the figures and found out where were the differences but without doing that if he read the statement as you have it here it would be misleading wouldn't it?

A. I hardly think so.

Q. You think by intuition he would make these corrections?

A. I think he would if he read the report as a whole he would follow it all right.

Q. Now you carry that on, you say on page 19 the following is a summary of these results and comparison of actual results giving 1910 actual and then the average of four years and the average of five years except you have 1910 manufa*fruting* and 1910 leakage?

A. Yes.

Q. And you go on down at the bottom of the page and carry that same thing through, say under operating expenses manufacturing year 1910 actual so and so, distribution other expenses the sales so many thousand feet, without anywhere calling attention to the fact that you did not make this up in the way in which the report states it is made up, isn't that true?

3313 A. I hardly agree with your conclusion.

Q. Well point out the place where you do call attention in your report to the fact that these statements are not made up as stated?

A. The report and statements taken together I think are perfectly clear.

Q. Find me the statement here. Of course we figured it out by making these computations, spent three or four hours on it. Show me a statement giving it without taking the figures?

A. There is no statement such as you mention.

Q. Do you remember now whether there were surrounding towns at Cedar Rapids that were involved in the case there?

A. There was one town.

Q. And do you remember whether the gas sales there were eliminated by you?

A. I do not. I don't recall.

Q. Now let me call your attention to this from the testimony in the Cedar Rapids case, the transcript filed in the supreme court page 1368. "Q. Now you heard Mr. Dutton's testimony yesterday with regard to Exhibit K-2 containing a schedule with reference to gas sold for 1907 for the months April to August inclusive. You have included the sales at Marion in your statement, don't you? A. Yes." Do you remember that, do you remember whether you included Marion sales?

A. I will accept that as being a record of the proceedings.

Q. Did you proceed as follows: Q. Now have you prepared a schedule showing what difference it would make in the final result which you have reached as shown on page 29 of Exhibit K-2. A. Yes."

A. What is Exhibit K-2?

Q. That is your report I think. Now do you remember that you did there when your attention was called to it
3314 after you had gone through and testified make a computation eliminating the outside town?

A. I do not. I am quite prepared to accept the record on the subject.

Q. Do you remember there whether the price of gas in the outside towns was the same as in Cedar Rapids?

A. I have no recollection.

Q. As a matter of fact Valley Junction ought to be eliminated becaue it would not be fair to increase rates in Des Moines and hold Valley Junction down or decrease them here and hold them up would it?

A. Not attempting to do so.

Q. I didn't ask whether you attempted to do so or not, I assume you did not make the rates, I asked whether it would be the right thing to do?

A. It would not. But if you will permit me to point out if you take out sales and expenses of Valley Junction and take out a corresponding amount out of the capital the amount will be just about where you started.

Q. We have not put any capital into our estimate.

A. In my estimate $45,000.

Q. How can you say it affects it where you say you have nothing to do with the value of the property?

A. It shows what you paid for the property.
Q. No, it don't even show that.
A. Shows actually expended going into the property charged to that account by the original affidavit.
Q. It shows this when we get down to brass tacks it shows what you say is Mr. Pratt's appraisement, it shows then what you
3315 say is cash paid in less some 40 odd thousand dollars on account of discount on securities and less about $250,000 depreciation that is what it shows instead of actual cost isn't it?
A. Yes.
Q. Now I would like to turn *go* your computation for the working capital for a minute. What page is that on?
A. 25.
Q. What do you mean by working capital?
A. The amount of available free working assets necessary to operate business.
Q. In other words this company sells gas on credit?
A. Yes.
Q. It has to buy the material and to pay the cost of manufacture?
A. Yes.
Q. It necessarily has to carry some cash, does it discount its bills?
A. I can't say whether it does or not. I think they pay thirty days.
Q. You don't know whether they discount bills or not?
A. I could not say.
Q. That would be something for which working capital would be necessary?
A. Yes.
Q. These things all mean that the concern after it has its plant or property must have some money on top of that to do business on?
A. Yes.
Q. It buys and carries supplies on hand?
A. Yes.
Q. It is important it should have supplies on hand isn't it?
A. Yes.
3316 Q. Especially where it is shipped in from a distance like oil and coke?
A. Yes.
Q. So that there shall be no interruption of the business of the company on account of the failure of these things?
A. Should not be.
Q. Now you took then as their material and supplies on hand what you found at that time to be $77,410.46. Now will you turn over to your Exhibit "F" and tell us what they carried on hand on March 1, 1906?
A. $128,790.72.
Q. And on 1907?
A. $127,499.30.
Q. And 1908?

A. $122,789.49.
Q. And 1909?
A. $97,319.28.
Q. The items you are reading are found under the head assets subhead material and supplies.
A. Yes.
Q. And as of what date did you take this?
A. December 31, 1910.
Q. What did they have at that time?
A. $73,929.26.
Q. Don't check does it?
A. Yes, gas arc lamps underneath $3,481.20.
Q. That is what makes it check?
A. Yes, gas arc lamps.
Q. So you took the lowest figure at that time that there was in the five years?
3317 A. It took the balance sheet of December 31, 1910, that was the date I was working at. It so happened it was the lowest.
Q. That happens in every distance don't it where there has been any selection of figures?
A. It has happened once or twice.
Q. Please give us an instance where it has not happened where there has been any discretion exercised in making a selection of figures in your report?
A. I don't know that I can.
Q. Isn't it a fact that wherever in your report where you had some discretion you have selected the low item?
A. The question of discretion did not come into it at all.
Q. No question of discretion involved in your report?
A. Was not a question of discretion involved in this.
Q. Then you took the accounts receivable, that is something that your working capital goes into?
A. Yes.
Q. What makes up these accounts receivable?
A. The accounts current gas accounts, gas sold those in arrears, city of Des Moines, Welsbach street lighting Co. and residual appliances and sundry accounts.
Q. So they are all current accounts growing out of the business.
A. Yes.
Q. You put also in here your cash on hand?
A. Yes.
Q. And then your insurance paid in advance?
A. Yes.
Q. So that as a matter of fact at this time the company has invested in surr-nt and working assets $179,608.35?
A. Less the deduction?
3318 Q. Well but didn't it have this investment at this time?
A. Yes.
Q. Without any deduction?

A. I had the investment, current working assets, yes.

Q. Now then you cut that down by deducting two things, one is bills and accounts payable?

A. Yes.

Q. If those bills and accounts payable are for additions made to the plant during the year not funded into bonds they ought not to be deducted ought they?

A. That would depend to some extent. I would not be prepared to give you a straight answer on that. Under certain conditions, yes.

Q. On what conditions, just what conditions?

A. If you had built the plant entirely and notes payable, long time notes I would say you are quite right. In a case of this kind accepting the balance sheet as your basis I would say no, on this balance sheet.

Q. The result would be this, you have got the so called book value of the plant and you give us some working capital here and on the assumption I have made you would deduct $51,000 that had gone into the plant that you do not show anywhere in your book value?

A. No, I would not. I would give you the book value of your plant exactly as shown by your books subject to that original affidavit.

Q. And subject to depreciation and subject to cutting out bond discount?

A. Yes.

3319 Q. Now if that $51,837.00 had gone into the plant we are entitled to it somewhere aren't we?

A. You have got it.

Q. I say we are entitled to it.

A. Yes, you are entitled to it and you have it.

Q. Now then would it appear in your $1,450,000?

A. $1,550,000, yes.

Q. Now you deduct your accrued taxes and interest?

A. Yes.

Q. You stated that there is doubt about that and you resolve the doubt against again didn't you?

A. No.

Q. You say this, we believe the suggestion has been made taxes and interest should not be deducted in determining the amount of working capital but because of their non payment the amount of cash on hand is correspondingly increased?

A. That is so.

Q. So there is doubt about that?

A. No doubt in my mind.

Q. It is a mooted question?

A. Might be a question about it, yes, open to argument.

Q. You resolved that against us?

A. Resolved it against you because in the adjustment it should be.

Q. Resolved it against us?

A. Yes.

Q. We seem to have hard luck don't we?
A. You certainly have.
Q. Don't seem to win any of these mooted things. Now suppose this company had started out in business and take up that accrued taxes and interest a minute. It had not been operating and
3320 taxes and interest had accrued where would it get the money to pay them?
A. Issue of bonds presumably or issue of stock.
Q. Or borrow it?
A. Or borrow.
Q. It would need that much working capital wouldn't it?
A. Yes.
Q. Would you deduct it from the working capital under those circumstances?
A. Conditions are not parallel.
Q. I didn't ask you that I asked you whether you would deduct it under *whose* conditions.
A. Under those circumstances I would determine the whole thing on a different basis.
Q. Under those circumstances would you deduct it?
A. Not on the conditions you state no.
Q. You would not deduct it because we would need that much working capital to pay these bills.
A. Yes.
Q. Now then we need just that much to pay bills as of the date of your statement here don't they?
A. Yes, from your funds you get from the collection of your accounts receivable.
Q. We get all our funds from that.
A. Yes, I know but for those particular bills you collect before the 10th or the 15th of the month to get these accounts.
Q. All of our working capital must come from somewhere?
A. It must.
Q. You determine then whether it is working capital or not by the source from which we get the money?
3321 A. Not altogether.
Q. If we had borrowed this money and had it on hand and were using it for this purpose you would call it working capital wouldn't you?
A. Yes.
Q. But because we happened to not borrow it but have applied it here and taken it out of the earnings instead of distributing them in dividends you say it is not working capital, is that it?
A. That seems about it, yes.
Q. So the smart thing for us to do would be for us to distribute that for dividends and then borrow the money?
A. The- it would show you had that much more invested in the plant, you would have yes.
Q. But would we have any more money or any more property than we have got now?
A. You might not no.

Q. Did you have a conference with Mr. Marks about this working capital?

A. The thing was casually mentioned one night.

Q. You both happened to get it just the same didn't you or within a very few hundred dollars.

A. It so happened I believe.

Q. That was pure accident?

A. It was. I might explain to you the subject was not discussed until we had both prepared figures.

Q. You were keeping close enough in touch with Prof. Marks to know when he prepared his figures?

A. I know when he came in here on the stand the matter was *talled* one night after he started to give evidence.

3322 Q. This company with a working capital of $68,000 on your theory has got current assets here of $179,000?

A. Yes.

Q. And you give them credit on account of these assets for only $68,952.

A. Yes.

Q. But if it had borrowed money instead of saving it out of its earnings you would give them credit for the whole amount?

A. It would have altered the position certainly.

COURT: Let me understand that. You mean to say that you give them credit on the value of the plant or investment when they borrowed money to pay interest?

A. If they issued some more bonds it would increase their cash balance.

COURT: Don't you put interest in the same category you do dividends.

A. I do.

COURT: Not part of the expenses?

A. Not part of the expenses of the business.

Q. Now as a matter of fact these accrued taxes and interest that you put down here is a mere book entry isn't it?

A. It is.

Q. It is not something that has been paid out?

A. It has not.

Q. But you are holding the working capital in order to pay it.

A. Yes.

Q. That is what we are going to use the working capital for.

A. Yes.

Q. So you say you have not got that working capital?

A. You have if you would take a ba-*nace* sheet the same date and you have the cash and the liabilities against it, it would be

3323 substantially the same as this.

Q. But we haven't got cash here?

A. Got substantialy cash to pay it.

Q. Got $49,434.15, we are goijg to use that to apply on bills and accounts payable?

A. Yes.

Q. We haven't any cash to apply on accrued taxes and interest?

A. You will be collecting some accounts receivable to pay that.

Q. Then you are deducting it from something we are going to collect in the future.

A. Collect ten days after the first of the month most of it.

Q. What I want to get at is this theory on which you take out of the working capital we actually have, the amount of some accrued expenses we are afterwards going to pay out of it. If we were going to pay off some actual cost of manufacture you would deduct that? In other words you do not give us the actual working capital but take working capital and then deduct from that what you can find that you think we are going to apply it on?

A. On the result I consider *I consider* working capital.

Q. You only give us credit for the balance?

A. Yes. If it happened that we paid these bills and accounts payable, if they were capital accounts paid them out of bonds then that won't be deducted because we are not going to pay them out of working capital.

A. There are conditions where that would apply, yes.

Q. If we are going to pay accrued taxes and interest out of something, going to be collected hereafter, then that ought not to be deducted?

A. No, I don't agree with you there.

Q. As a matter of fact the amount of working capital we
3324 actually have there is $179,608.33.

A. I don't agree with that conclusion either.

Q. We have that much invested actually in supplies, accounts cash in the bank and insurance paid in advance.

A. Yes, I think your theory is subject to grave abuse however.

Q. I don't know anything about that. I am just trying to get at——

A. I am just offering the suggestion, that is all.

Mr. Byers: It might be entertaining to have him enlarge on that subject?

Mr. Guernsey: All right go ahead.

A. You can imagine a condition where a company would buy very expensive material and supplies far beyond any requirement, and then you would claim a return that you would not be entitled to. You may have materials and supplies to go ahead for a year or a couple of years and then include it as capital.

Q. That would not be a very wise course?

A. I am simply offering the suggestion the theory is liable to be abused.

Q. When you check up material on hand here it shows less on hand than any time the last five years.

A. That shows good and careful management.

Q. That is like some of these other things, it don't apply to this case?

A. I am simply offering it to you is all.

Q. Then to get back we have actually invested $179,608.35 of working capital?

A. On your theory, yes.

Q. I don't care what the *chtory* it, that is the amount of investment?

A. Subject to these deductions, yes.

3325 Q. The deductions don't affect the aggregate amount of this investment, the aggregate of the things in which working capital was invested was $179,608.35.

A. Yes, I will accept that.

Q. The way you get at your proposition is by deducting from the actual invested working capital some of these obligations which you think it will be used to pay?

A. Yes.

Q. Where as a matter of fact there is not enough money to pay half of them so it is obvious it cannot be used to pay even one half of these obligations.

A. I think it is also obvious if you collect your accounts receivable within ten days *fater* the end of the month you will have enough.

Q. That will be another quarter section, it won't be this cash in the bank, be some more cash?

A. Be some more cash.

Q. And we may have some more accounts to pay?

A. Probably.

Q. Now you say this you have considered there the amount required to operate the business, that is right isn't it?

A. Yes.

Q. That means the amount required to carry the accounts, carry the supplies and carry the things that are paid for in advance and to carry the proper cash balance.

A. Yes.

Q. Now what is this balance sheet here on page 27?

A. That is a summary of the balance sheets of December 31, 1910 and March 1, 1909, reversing the entry we talked about this morning, the $254,000.

3326 Q. March 1, 1906.

A. March 1, 1906, yes.

Q. This is only material on this immaterial question of the amount of so called water in the stock isn't it?

A. That is all.

Q. Now turn to page 28, you have there an account showing some profits?

A. Yes.

Q. Are those as shown by the books?

A. Yes.

Q. Any adjustments?

A. The adjustments as shown at the end of the table.

Q. That is you have taken out the expenses the $5,935.18 which the company has already paid on account of this suit.

Q. Yes.

Q. Or had paid at that time?

A. Yes, and put into expense that federal tax.

Q. Did you charge any depreciation?

A. No. That is as shown by your own balance sheet.

Q. So that *y*ould have to be corrected by depreciation?

A. It states that it is accumulated increment shown by your balance sheet.

Q. To be of any value to us, we would have to take depreciation out?

A. Oh yes, if it was to give actual facts.

Q. Could not draw any conclusions on it to use in this case?

A. Not until you took depreciation out.

Q. Why did you take out that $5,935.18?

A. Because that is not an ordinary expense. I increase your profits by the amount of $5,835.18.

3327 Q. These were profits we did not have, we had to pay out the money?

A. I know you had to pay out the money. I say that is not an ordinary operating expense of the business.

Q. Suppose one of our holders should be struck by lightning would you say that damage was ordinary operating expense?

A. I think you would call that loss of capital.

Q. What would you do if we had repaired it, would you charge that to capital account?

A. No.

Q. Charge it to operating?

A. Be an extensive repair spread over a number of years.

Q. And charge it to operating?

A. Oh yes.

Q. There are just two general heads for the account, one is capital account and the other is operating.

A. No, I think you are stretching it rather fine. There is a midway head for such expenses as these are.

Q. There is what?

A. Sort of one between for expenses such as these replacement expenses.

Q. What do you call it?

A. Has no name, an operating expense by the company is no place for large extraordinary expense.

Q. Got to go there ultimately?

A. Got to be taken care of ultimately.

Q. In the operating?

A. Not necessarily.

Q. You take care of it as a capital expense?

A. No.

Q. Where would it go if it didn't go to operating?

3328 A. It would be held in suspension.

Q. Can't hold it there all the time.

A. No, I should say you should be allowed a certain allowance to take care of this.

Q. You are an expert accountant chartered accountant and public accountant. Now I want to know whether these expenses whether they are ordinary or extraordinary expenses that come out of the transaction of the business don't they ultimately go into operating?

A. Suppose I concede your point that they ultimately go into

operating but can it be regarded as operating in a manner of this kind?

Q. But that is not an answer to my question. They ultimately go into operating, they can't be capital.

A. They are not capital.

Q. That means if not capital they must go into operating?

A. They must go into operating but not in a case of this kind.

Q. In a case of this kind would you call them capital?

A. No.

Q. Where would you put them?

Q. Put them in suspension.

Q. Leave them there indefinitely?

A. Up to you to take care of them in subsequent years.

Q. When we did take care of them would they go into capital or operating?

A. In operating, but not in a report in operating in a matter of this kind.

Q. Then you would have some expenses that in a matter of this kind we would have to pay out of our own pockets?

A. No, I don't think I suggested that? I suggested that the margin of return should be so much higher to enable you to take
3329 care of such expenses.

Q. Don't you know as an accountant who has taken some law at Edinboro and political economy and so on we cannot pay dividends except out of net profits?

A. I know that.

Q. Going to deduct this before you get net profits or is this part of the net profits out of which we have got to pay dividends?

A. Well you get your net profits then make the deduction for expense and pay dividends out of the balance.

Q. In other words our net profits include expense?

A. They do, but not those expenses of ordinary operations, the operating of this business don't include an extraordinary charge like that.

Q. They would have to be paid out of the receipts from the operation of the business.

A. You have got to pay them some time.

Q. You would have to pay them out of the receipts from the operation of the business?

A. Yes, or get more capital in.

Q. You have said they are not a proper capital charge?

A. You can't capitalize them not properly.

Q. They are an expense that grows out of the transaction of the business and must be paid out of the receipts of the business?

A. Yes.

Q. And still you say they are to be paid out of net profits. Suppose we don't make any net profits?

A. Then you just carry them along until you do.

Q. The company might just earn enough to pay these without making anything more.

3330 A. You would not pay a dividend I think in ordinary course, perhaps you have not made any profit of operating this business before you take into consideration such extraordinary expenses as these.

Q. What is the definition of net profits?

A. Profits received from the operation of a business in ordinary course.

Q. Take a railroad like the Chicago, Rock Island & Pacific Railway that has continuous expenses for rate cases, what are they charged to?

A. They are charged as expenses.

Q. Do they go into operating?

A. I don't know, I have not seen their balance sheet.

Q. Is it your theory they ought to be paid out of the profits?

A. Got to be paid from profits.

Q. They are not part of the operating expense?

A. No.

Q. Then there are certain expenses in connection with the transaction of the business that to your notion are not operating expenses?

A. Yes, there are.

Q. And the net profits is the difference between what you call operating expenses and the gross receipts without the payment of these special expenses?

A. Yes, the net profits of operating a business in general course is before charging these expenses.

Q. Would you be willing to just strike out "in general course"?

A. No, I would not be willing to strike out in general course. You can charge these expenses before getting your net profits in a case of this kind.

3331 Q. That is a matter of law.

A. It may be a matter of law, but as a matter of accounting you can determine your net profits in a case of this kind after charging these expenses as an expense.

COURT: You would then allow the cost of insurance against lightning and fire or anything of that kind as a part of the ordinary expenses?

A. This is a matter of insurance.

COURT: And that would be to liquidate a loss by fire or lightning if it occurred?

A. Yes.

Q. Give us some other special expenses that could not be included in operating expense?

A. There might be quite a number of special advertising expenses that would be entitled to charge only as a proportion in any year and charge the balance forward to the next year and so on.

Q. I am not questioning that, it is not a question where we are going to spread it, but where it is to go.

A. It has got to be ultimately taken care of from your profits, I don't dispute that at all, but I do say you can't include it as a general expense in a matter of this kind.

Q. Why is there any difference between bookkeeping here and bookkeeping if a man was buying bonds?

A. Will you explain that a little more fully, I don't understand it.

Q. You say it can't be taken into account in a case like this, now suppose that a man was talking about making an investment in the bonds of this company and wanted to know what expenses of carrying on the business were and the company had spent $100,000 in a rate case and you were to report on it, would you ignore that $100,000 if it had been paid and show net operation in
3332 addition to that?

A. No, in a case of that kind I would except them in operations make a reduction for the purpose of rate expense and show the balance available for interest.

Q. In other words you say here this extraordinary expense we have got to spread it over a term of years in order to know what would be the fair earning for this plant under normal conditions, charge it with a fair proportion of these expenses.

A. Yes, that is my idea I have tried to explain all day.

Q. Now in this case if you had spread this $5,935.18 over the five years you would have charged in for rate litigation a little over one fifth of a cent per annum?

A. Yes, but it would not be correct at all, it should be charged over the next period. It has nothing to do with this period under review.

Q. Nothing to do with the period where the expense is incurred. You would not begin with that period?

A. If I began at all I would begin the next period.

Q. Do you think that the time over which this should be spread would be affected at all by a local situation which prohibits cities fixing rates for any specific term or prohibits them making contracts for any specific term?

A. I would not care to express an opinion on that.

Q. Turning to your table on page 29 what you attempt to show there is the per cent of return?

A. Yes.

Q. That is not based on the value of the property?

A. No.

Q. And is not based on the actual investment?

A. No.

3333 Q. And does not take into account appreciation?

A. No.

Q. So it does not show what the investor has been actually earning on either the value of the property or upon his investment.

A. It does not. That is the investment as shown by your books.

Q. Now where did you get this net revenue?

A. From your books.

Q. Have you checked it at all, do you know where you did get it?

A. No. I am told it came from the books and the records.

Q. But do you know what if any adjustments were made in it?
A. No.
Q. This you say includes depreciation?
A. Yes.
Q. And on the basis of six cents a thousand?
A. Yes.
Q. You have not checked these figures yourself?
A. No.
Q. Don't know anything about them more than appears on the face of the papers?
A. Made up under my instructions, yes.
COURT: Before you leave page 29, what do you count the investment?
A. The investment accepts the affidavit of Col. Pratt as the commencement and adds all subsequent additions as shown by the books taking out a deduction in respect to depreciation.
COURT: Why do you take the depreciation out of investment?
A. The plant is wearing down each year, so much of the plant has got to be absorbed.
COURT: Why not just leave the investment stand and not count anything for depreciation?
3334 A. I don't think that would be fair.
COURT: Wouldn't that be practically the same thing?
A. No, sir.
COURT: That is as far as the investor was concerned?
A. No. The investment today is not worth as much as they pay for it on the theory that the plant is wearing down each year.
COURT: Of course that is getting at the value of the property, I am speaking of investment.
A. If I did not consider depreciation at all there is a deduction from the investment or operating expenses you might take that away which — give considerable larger returns.
COURT: Investment is the amount of money put into the plant from start to finish.
A. Yes, less that proportion worn out.
COURT: The value of the plant entering in?
A. Entering in altogether.
Q. You say at the bottom of this page that 11.12 per cent would be the return on this investment subject to certain modifications.
A. Yes.
Q. If depreciation had been omitted?
A. Yes.
Q. Deduct that 9.56 from that and let us see what your average depreciation has been?
A. That 11.12 applies to the year 1910?
Q. Only to the one year?
A. Yes.
Q. You state on page 30 at the top of the page and I think you added the same statements in your testimony several times the U. G. I. company obtained control of this property and operated it. What

do you mean by saying the U. G. I. Company operated this
3335 property?

A. They owned the stock and it was operated under their general supervision or ownership.

Q. Now as a matter of fact the U. G. I. owned the stock.

A. My understanding of it, yes.

Q. And the company was operated by its officers, I mean by the officers of the Des Moines Gas Co., under the instructions of its board of directors?

A. Yes.

Q. And the U. G. I. company exercised the control that owners of stock ordinarily exercised over a corporation?

A. Yes.

Q. Nothing abnormal or unsusual in that?

A. It is not meant in any offensive way at all.

Q. How did you get that $640,709.16?

A. That represents the balance of surplus income taken from the company.

Q. How is it made up. Did you make it up.

A. No.

Q. Is any depreciation in there?

A. No. Exactly as shown by your books.

Q. Is the $264,000 ite-, charged out of it or in it?

A. It is in.

Q. Then that means this that the $640,709.16 is the amount which your assistant computed as the income without deducting depreciation from 1886 to the end of 1910.

A. No. To February 28, 1906.

Q. Now you have a dividend here of four and one fourth per cent April 1888. Is that the only cash dividend that the company has ever paid?

A. Yes.

—. ——.

3336 A. $12,750.

Q. And the balance of these earnings $168,255.56 prior to June first, or December 31st, 1896, went into a stock dividend?

A. Yes.

Q. Now that was money then that had been invested in the plant?

A. Yes.

Q. Did you cut that out as water?

A. The $168,000 no I did not.

Q. So that all of these profits except $12,750 were put into the business?

A. Put into the business.

Q. At the top of page 31 you have an entry income from July 1886 to December 31, 1910 which amounts to as you have it $1,074,393.88 that is right is it?

A. Yes, sir.

Q. And as you have made up your statement here the company has used about $250,000 of that or you have charged them with that on account of depreciation, the balance of it is in the plant.

A. Yes, subject to that small dividend.

Q. $12,750?
A. Yes.
Q. Now as a matter of fact all of that depreciation fund you have deducted has gone back into the plant hasn't it?
A. Yes.
Q. You didn't give us credit for any of it did you?
A. I don't follow your question at all.
Q. You took off $250,000 in round numbers, as I recall 245 thousand and something isn't it?
A. Yes.
Q. Of the value of the plant on account of depreciation?
3337 A. Yes.
Q. We put that all back.
A. That makes no difference.
Q. So we neither have value nor depreciation fund on your theory?
A. No, your plant depreciated to that estimated extent.
Q. I know, but did you give us credit for $1,074,393.88?
A. Yes, sir.
Q. As new money put in?
A. Yes, it is in your investment account.
Q. Now you said in connection with Exhibit 33 that Mr. Hagenah in his estimate of the investment value had made a fundamental error?
A. Yes, sir.
Q. What is the theory upon which Mr. Hagenah's estimate of the investment value is made up?
A. The theory is as I understand it that the deficit of earnings under eight per cent shall be capitalized and that any excess over eight per cent shall be credited to the investment account.
Q. Do you credit it where that credit results in cutting down the actual investment of the plant?
A. As it was done in this statement.
Q. Which statement.
A. Mr. Hagenah's statement.
Q. He didn't make any such credits did he?
A. He didn't t-eat it that way, that was the net result of what he does.
Q. He didn't treat it that way did he.
A. He didn't treat it that way, but that is the net result of what he did.
Q. We will come back to that later, I think you are mis-
3338 taken. Now then is this right as you understand that theory Mr. Hagenah takes the original investment, then he takes the additional investments, then he takes a return computed at some rate and adds the return to the opaerating and the depreciation?
A. Yes.
Q. Then deducts the gross receipts?
A. Yes.
Q. Now the effect of that is this is it not and this is the whole story of it that if the return in the earlier years is inadequate to take care of these things, so as to give the investor a fair return that

difference, that loss is capitalized and he is given a return on it until he has been reimbursed.

A. That is the idea.

Q. Now in order to make him whole you must give him say to take as an illustration a plant that costs a hundred thousand dollars, now he would be entitled to each year to $8,000 on an 8 per cent basis and he would be entitled to his operating which we will call $15,000 and to his depreciation which we will call $1,750, wouldn't he?

—. Yes.

Q. Now that is what Mr. Hagenah did.

A. Yes.

Q. Now what you have done is to give him his depreciation and then take it away from him with interest haven't you?

A. Exactly.

Q. So you have penalized him $437,441.00 because you gave him the depreciation?

A. No, I have not.

Q. Let's see if you haven't. You take this Exhibit 33 in
3339 the summary here you have analyzed this this way haven't you, you have first taken the total cost of the plant?

A. Yes.

Q. $2,064,118?

A. Yes.

Q. That includes the original cost and additions?

A. Yes.

Q. Now you have added your interest or return on the plant and on the additions which amount to $2,453,719?

A. Yes.

Q. That makes a total of $4,517,837?

A. Yes.

Q. That is what the investor has in it, that is he has got his money and interest?

A. That represents his money and interest on his money.

Q. For the whole period?

A. For the whole period.

Q. Now what he has taken out is his gross earnings less certain things?

A. Yes.

Q. Now you have gross earnings, $5,159,853? Now will you please deduct from that the operating expenses not taking out the depreciation at all, assuming that he is not entitled to depreciation.

A. $1,774,268?

Q. That would leave him that much, not assuming he was entitled to any depreciation?

A. Yes.

Q. Now deduct that from what he has put in, $4,517,837.00 and what do you get?

3340 A. $2,743,569 which figure includes the interest on the depreciation which went in.

Q. You have volunteered something which is not in answer to my question. Now I wish you would turn to the summary on page

2 of this report. Now just point out to the Master if you will, how much interest went in on that depreciation?

A. On the depreciation there is included in the interest some about $430,000.

Q. Will you turn to your summary. Now then will you just point out in that summary how much interest you put into the $4,517,837 on account of interest on depreciation?

A. Mr. Hagenah has in the—I accept his figure which includes that depreciation.

Q. You have put down investment in the plant?

A. Yes.

Q. You have put down next 8 per cent on opening balances?

A. Yes.

Q. That is investment in the plant?

A. After charging the depreciation.

Q. Turn back and see what the column opening balances is? What is the column opening balances there?

A. The column opening balances as I have represents the investment.

Q. Tell me which column?

A. The first column.

Q. The column begins $308,983? This first figure in that column represents actual investment?

A. Yes, the second figure includes the element of interest on that depreciation.

Q. In your summary here you don't pur any interest on that depreciation do you?

—. ——.

3341 Q. I didn't ask you that. In your summary you assume that the earnings were large enough to pay the depreciation and operating?

A. Yes.

Q. And if that is so, there could not be any interest on it because it would have to be paid?

A. No, the interest is in that figure, the interest on that depreciation is calculated.

Q. Now then go on a little further. You make a deduction there $2,743,569?

A. Yes.

Q. The interest you make your depreciation fund earn at 8 per cent amounts to $437,441.00 don't it?

A. Yes.

Q. Now deduct that from the $2,743,569?

A. $2,306,128.

Q. In other words that is your result?

A. Yes.

Q. That makes the man just $437,441 worse off than if you had allowed the same depreciation over here.

A. That is the correct working out of that table on your theory, it makes him $437,000 worse.

Q. I am coming to that later, but please answer the question.

Your man is just $437,441 worse off than he would be if — had allowed him depreciation by your *very* summary here isn't he?

A. I don't agree with that no.

Q. Now do you say that this amount $4,517,837 or the amount preceding it, $2,453,719 includes interest at 8 per cent on this depreciation from the outset?

A. Yes.

Q. Then will you please turn back to your computation here and tell the Master whether to put the depreciation in *in* column 6 and take it out again in the first two of the last three columns affects the result at all?

3342

A. Take it out of there and take the corresponding interest out with it, take all that out and results the very same.

Q. You say on one side of this amount that is in this $3,136,231 you have your depreciation, $392,362 and your interest on that $437,441, don't you?

A. Yes. I say the depreciation is again in plus the interest.

Q. It is already in?

A. Yes.

Q. You have taken out just that same amount?

A. Yes.

Q. Now would your computation have been just the same if you had left depreciation out altogether?

A. If I had left out depreciation altogether it would have been the same.

Q. So that all you have done then by the changes you have made is to take out the depreciation factor from the Hagenah computation?

A. Yes.

Q. Then you have not allowed the man the depreciation, have you?

A. No, I have not.

Q. You have given it to him and then taken it away, that is the difference between your computation and Hagenah's isn't it?

A. Oh no. Hagenah's computation charges the plant with an allowance for depreciation, but that same ch-rge should be credited to -he plant or put up in a reserve.

COURT: The difference between you is this, the depreciation is given to the owner of the plant by Mr. Hagenah and he is entitled to interest on it?

3343

A. Yes.

COURT: But by your calculation the public is entitled to the interest on it instead of the owner of the plant?

A. Not exactly. Mr. Hagenah, before getting out his net profits charges out an allowance for depreciation. That same allowance must be put into the replacement of the plant or set up in a depreciation reserve otherwise you are penalizing the consumer to the advantage of the company.

COURT: You don't allow him any depreciation.

A. I allow him the depreciation in addition to that, but he has

got to put that depreciation fund out on the same basis at which he is charging the consumer the 8 per cent.

Q. You give him a depreciation and make him account for it plus 8 per cent interest compounded?

A. Yes, if you are going to take 8 per cent out after charging depreciation, if you are going to say my operating revenue is so much after taking out expenses with an allowance for depreciation you have got to take that same depreciation out of your plant or put it up in reserve.

Q. That is a question that I don't care to discuss with you now, we wil- get to that later. I want to stick to this until we get this straightened out first. You have assumed in your calculation that all of this depreciation is earning interest all the time.

A. Yes.

Q. Now is there any year where the gross revenue was not sufficient to pay both the operating expenses and the depreciation?

A. I don't recall.

Q. Well let's look and see.

A. It won't pay the return I concede you that for a number of years.

3344 Q. It will pay if your figures are right as to return it will pay operating and depreciation won't it because you figure out a net return every years?

A. Yes, on that theory.

Q. Well wasn't that right.

Q. On these facts.

Q. You did figure out a net return every years?

A. Yes.

Q. Now then l-t's take the first year for instance, what was the gross revenue?

A. The gross revenue $78,793.

Q. What was the operating?

A. $51,553.

Q. And what was the depreciation?

A. $5,997.

Q. Total.

A. $57,750.

Q. Now what is the difference between that and the gross earnings?

A. $21,043.

Q. Now then how much was the return in that year, $24,719 wasn't it on the original capital?

A. Yes.

Q. And $736, and how much were the additions to the plant?

A. $18,394.

Q. What is the total of these things?

A. Total of that things.

Q. Last three items.

A. $43,849.

Q. Only had $21,043 to pay them with?

A. Yes.

3345 Q. Your assumption then that all of this depreciation is bearing 8 per cent and is in that column $3,136,231 leaves the investor without his return and without any interest on it.

A. I am not arguing about the earning capacity of that depreciation. I say here it is accumulated on a basis of 8 per cent.

Q. Please answer my question. Your assumption that your depreciation is all earning interest at the rate of 8 per cent per annum results in leaving the investor without a return and wit-out any interest on it don't it?

A. No, I don't agree with that.

Q. Where does he get return or interest on it?

A. You are charging the con-umer here——

Q. No please answer my question. Where does the investor get his return or interest on the deferred part of it.

A. That question cannot be answered without an explanation.

Q. Go ahead. See if you can explain it.

A. In this column you have charged up depreciation. I admit the first year he did not earn 8 per cent on your investment. You are charging up that depreciation and also charging that plus 8 per cent. In other words the company is taking credit for this $5,997 of depreciation plus 8 per cent on them. On the other hand the consumer has something to say about it and he should have that fund put up as a credit to take care of wear and tear on that plant at the same rate of interest.

Q. I asked you where the investor was getting his return or interest on the return if it was deferred if your theory that all of this depreciation drew 8 per cent was sound, can you tell us wher-?

A. He is not getting 8 per cent in this year.

Q. Well then is your theory that all of this depreciation draws 8 per cent compounded and that goes into this column $3,136,231 correct?

3346 A. Yes.

Q. It is?

A. It is.

Q. Now let's see for a minute and see whether that works out. Take the first year. We had there the value of the plant at the close of the year was $331,789 as estimated by this table?

A. Yes.

Q. At the first of the year it was how much?

A. $308,983.

Q. That shows that during that year there had been a failure to pay this return and operating and depreciation amounting to that difference don't it?

A. Yes.

Q. How much is that difference?

A. $22,806.

Q. That is what is added and bears 8 per cent isn't it?

A. Yes.

Q. The investor will not be made whole unless you do add that and give him 8n per cent on it until he earns enough so as to recoup these early losses will he?

A. That is so.

Q. That is right?

A. Yes.

Q. Now if you call take that from the depreciation and then take it out of this will the investor be made whole?

A. No, it alters the investor's position considerably.

Q. The investor will not be made whole will be?

A. If you adopt your theory. My theory is a fair one to the investor and correct one.

3347 Q. Will the investor be made whole, will he receive the interest on this $22,806 that he has lost the first year until it is repaid to him on your theory if you take off depreciation at 8 per cent?

A. Only receive return on the increase over the amount of that depreciation $16,809.00.

Q. So he would be loser on your theory not getting that back?

A. No, would not be loser, counting something he is not entitled to.

Q. What?

A. This depreciation compounded.

Q. Under this theory, we are talking about this theory and not about what ought to be, but the theory on which this report is made. Under the theory on which this report is made he is entitled to just that thing, that is to have that $22,806 added to the investment until he is reimbursed?

A. Assuming the Hagenah theory to be correct, yes.

Q. Under that theory he is entitled to have this added?

A. He is not.

Q. Not under that theory?

A. Only entitled to have added the difference between that $22,806 and $5,997.

Q. So if the expense and the depreciation for each year leave nothing to be applied on the return so he got no return, then he would not be entitled to have anything added for that year, that is right, isn't it?

A. That seems right.

Q. Have you carried out the logical conclusion.

A. Yes.

Q. So the bigger his loss was under this theory the smaller his reimbursement would be?

3348 A. No.

Q. Take arbitrary figures for a minute. This $22,806, the difference between $22,806 and $5,997 and your operating?

A. Give him an operating expense $68,562.

Q. On that assumption the only thing left that was met would be the amount of your depreciation wouldn't it?

A. No, I don't think that is a proper interpretation of that at all.

Q. Well take such figures as on the assumption the amount left in at the close of the year will be $5,597 with nothing for a fair return. On your theory that would give nothing to the depreciation fund

and with absolutely no return there would be nothing to reimburse the investor, that is right isn't it?

A. No, I don't agree with that.

Q. What is wrong with that, why don't that drive you to this position?

A. If you take this one allowance for depreciation.

Q. Take these specific figures where there is not any return except an amount just enough for depreciation?

A. The first year he gets you state to me, that is more than enough.

Q. I want to illustrate your theory by taking a case where it is not, and then want to ask you where the investor would come in, assuming that what is left after you take care of your depreciation goes into the capital.

A. The investor would be left with the balance of $2,300,000.

Q. You are not answering my question are you?

A. As I understand your question.

Q. Well Let's try again. Take this first year and assume that your expenses were such that the amount left after you made
3349 your gross earning deductions just took care of your depreciation, $5,997, upon your theory that would be set aside and draw 8 per cent?

A. Yes.

Q. How would you take care of the loss of the investor?

A. The investor is being taken care of as the years go past.

Q. This is the first year?

A. The first year you will carry forward whatever balance you will carry to make up your 8 per cent?

Q. He would not carry forward anything on your theory?

A. I am not quarreling at all with the theory.

Q. The trouble with me is you are not answering the question.

A. I can't understand it.

COURT: Suppose that that plant had been earning 8 per cent right along, figures out 8 per cent as I understand this Wisconsin theory is for the purpose of getting at the value of the plant?

A. Supposed to be the idea as I understand it.

Q. If it earned 8 per cent and run long enough it would pay for itself.

A. Certainly have a credit balance.

COURT: The more it earned the less the plant would be worth at the end of the period?

A. Certainly.

COURT: The less it earns the more it would be worth.

A. Exactly.

COURT: That would be the practical effect?

A. Yes.

COURT: On the other hand you take it they are not permitted to earn more than 8 per cent and the loss is simply made up to that, would be a different result?

3350 A. Yes, increase the value of the plant, it would increase the investment value of the plant.

Q. If you run over 8 per cent on this theory it increases this investment.

COURT: Well your report is based on investment.

A. I am not saying anything about the investment this way, I am dealing with it on this statement.

COURT: As I understand Mr. Hagenah's plan, the Wisconsin plan as he explained it and as I understood it, the idea was to give the plant 8 per cent and no more, fix the value upon which rates are to be judged?

A. That is the theory, yes.

COURT:

Q. That and no more?

A. My idea is he did not apply his theory properly. That is the fundamental idea of the Wisconsin plan.

Q. If they had already earned that 8 per cent?

A. It would greatly reduce the value of the plant.

COURT: But you take this through your depreciation and make it what you term a fund and put it out upon interest at 8 per cent.

A. I don't care whether put in a fund or not. If they use depreciation and put it back in the business.

COURT: The difference between you two, you charge interest upon the depreciation, compound interest at 8 per cent?

A. Yes, he charges the depreciation in at 8—I might illustrate the thing this way if you take your depreciation reserve and make your additions to the plant out of your reserve you will be right down on the basis I have made you now. Even take your operating expenses and charge repairs against depreciation reserve and you will get down to the same result I bring out.

3351 Q. You have attempted to state here what we call the Wisconsin theory. Do you know of any case in which the Wisconsin theory has held that you should make deductions from the actual value of the plant or actual investment in the plant on account of the excessive earnings?

A. I think I am correct in stating that the Madison decision it pulls down the investment quite considerably.

Q. The actual investment?

A. The actual investment is pulled down on account of the excessive earnings, the earnings being in excess of the rate amount.

Q. That was in the Madison case?

A. Yes.

Q. Have you read it?

A. Read that part in regard to going value.

Q. Who called your attention to it?

A. I borrowed the report from Prof. Bemis, he had the case.

Q. And when?

A. It was within the last couple of weeks or so.

Q. Can you put it a little closer than that?

A. Well since I left here last.

Q. Can you put it a little closer than that?

A. I am afraid I can't. It was within about two weeks ago.

Q. Let us take for an illustration here some round figures so we can get away from the bother of odd amounts. Suppose you have a plant worth a million dollars and your depreciation is say $17,500 you earn enough to pay everything including the depreciation except the return. Now you set aside your depreciation at the end of the year. What becomes of the return?

A. It goes forward—the absence of return goes forward into the next year.

3352 Q. In the absence of the return?

A. Yes.

Q. Then that would draw interest?

A. Yes.

Q. Now as a matter of fact that would have to draw interest in order to reimburse the investor?

A. Yes.

Q. More than that the investor would have to have the depreciation in order to reimburse him wouldn't he?

A. Yes.

Q. If he didn't have both of these he would not be made whole?

A. He would not.

Q. And he would be entitled to the depreciation at the end of that year wouldn't he?

A. Yes.

Q. At that time?

A. Yes.

Q. And the amount of depreciation that he would be entitled to would not be at all affected by what he did with it.

A. Not at all.

Q. Now then if you take that depreciation and interest that it earns away from him when you get through have you made him whole?

A. I am not taking it away from him. He has it.

Q. You have deducted from the amounts made and given here by figuring interest on this deficit and the amount of depreciation, $392,662?

A. Yes, $437,441 interest accrued on it. Took depreciation plus interest went into the plant.

Q. I don't care where it went, this man had to have both the depreciation and if the payment was deferred he would have to have interest on that and his return to make him whole?

3353 A. Yes.

Q. Mr. Hagenah gives him both depreciation and return?

A. I think he gives him depreciation twice that is all.

Q. You take away from him depreciation after giving it to him once?

A. I take away one. Mr. Hagenah doubles up on that depreciation and I separate it and give him one.

Q. Where does Mr. Hagenah give him twice?

A. On one side income charge depreciation on investment and not use it for getting reserve, purely a matter of book-keeping.

Q. If you give it to the investor and take it away from him and put in into reserve would he have it?

A. He has it used in his business, the reserve is there.

Q. As part of the value of the plant?

A. Yes.

Q. Then why do you deduct it from the value?

A. That depreciation is wearing down of the assets in the plant.

Q. You say you have this reserve, put it as part of the value of the plant?

A. Exactly, so much of the amount of the plant to be worn out and the reserve itself used as an extra consequently your original plant is not worth as much as you paid for it only worth what you paid for it less what you have reserved.

Q. Now you have gotten on another subject.

A. Same old subject.

Here the further hearing of this case was adjourned until 9:30 o'clock tomorrow morning.

3354 Friday Forenoon Session.

SEPTEMBER 15, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of Defendants resumed as follows:

JAMES HALL, continuing his cross examination, examined by N. T. Guernsey, Esq., testified:

Q. Now, Mr. Hall, I understood you to say yesterday that Mr. Hagenah put depreciation in twice and that you took it out once, because it ought only to go in once?

A. I don't think that is a correct interpretation of what I said.

Q. I prepared a statement here, Mr. Guernsey, a somewhat similar one, if you care to see it.

Q. Well, let us take this one first. You did say, as a matter of fact, didn't you, yesterday, that Mr. Hagenah put depreciation in twice?

A. That is the sum and substance of his statement.

Q. What I am asking you about is what you said on yesterday?

A. I will try and tell you what I said yesterday. I said this: Mr. Hagenah takes the plant at the commencement at its face value, one hundred dollars, and he adds his depreciation, compounding both figures.

Q. You said, did you not, on yesterday that Mr. Hagenah put depreciation in twice?

A. That is added——

Q. Just answer the question—didn't you say that on yesterday?

A. I don't recall using those words. I said——

Q. Don't get away from this; just let us stick to this for a moment. Didn't you say on yesterday, at least once, and probably

twice, that Mr. Hagenah put depreciation in twice, or that in substance?

3355 A. I don't recall saying that exactly that way.

Q. I don't want any limitations—didn't you say that or that in substance?

A. I will say that in substance.

Q. That is the fact, is it?

A. It seems to me to be the fact, yes.

Q. Now, then, let us take the first computation here for the first year. You start with $308,983. Now will you add to that, please, additions to the plant, $18,394?

A. Yes, $327,377.

Q. Now take the two interest charges, amount to what, together?

A. $25,455.

Q. Now, then our operating is $51,753?

A. Yes, sir.

Q. Our depreciation $5,997; that makes how much?

A. $410,582.

Q. Oh, no; you misunderstood me. Add operating and depreciation together?

A. $57,750.

Q. Now you- income was how much, your revenue?

A. $78,793.

Q. So that you had left after paying your operating and depreciation, how much?

A. $21,045.

Q. The return he was entitled to was $25,455?

A. Yes.

Q. And you didn't have quite enough to pay the return?

A. That is so.

Q. Now deduct that, will you, and tell us what the balance is?

A. $4,412.

3356 Q. Now, then, that year the depreciation did not go into this fund to be compounded?

A. Yes, the depreciation goes in there to be compounded.

Q. There is only $4,412 in the aggregate?

A. No, after taking out $5,997.

Q. In order to get that depreciation in there, to add it to the capital because it had not been paid in the first place, you wouldn't have enough deficit to get it all in?

A. What in?

Q. All the depreciation out of that year's business?

A. I don't get that question at all.

Q. Well, then I will try it again. You- gross income from that year's business is enough to pay your operating and your depreciation and your return, but with a deficit of $4,412?

A. Yes.

Q. So that the deficit in that year amounts to less than the amount of your depreciation?

A. Yes.

Q. Now, then, that $4,412 wouldn't be a deficit in depreciation; it would be a deficit in return, wouldn't it?

A. Yes.

Q. So that no depreciation would go into your additions there; your additions there would be made up of $4,412 that was short on the return?

A. Yes, subject to the deduction of the depreciation.

Q. But deduction from what?

A. Well, take your plant at the beginning of the year, $308,983; you do not contend it is now worth $308,993, plus depreciation; it is only worth 98% of its original value according to Mr. Hagenah——

3357 Q. But I have put this in a different way as I think you misconstrue it or have a misunderstanding of it. I have simply taken the plant and the additions to it; that is proper, isn't it?

A. Yes.

Q. I have got $327,377?

A. Yes.

Q. Now, then, in order to maintain that at that amount I must have that depreciation given to me on this depreciaion basis, must I not?

A. Yes.

Q. I must also have my return, or else I am short?

A. Yes.

Q. It develops that after they give me that depreciation, to maintain my plant in that condition, I am short $4,412 on my return?

A. On that theory, yes.

Q. That is the theory that is made up on?

A. Yes, but it is a wrong theory; that is the Wisconsin theory.

Q. But I have maintained my plant just as it was, $327,377, because they have given me that depreciation to do it with?

A. You have maintained that plant at its original——

Q. Yes, with that depreciation, but I am short $4,412 of return?

A. Yes.

Q. Now, then, I put that return into my plant as a part of my earlier losses because if they have not given me the return the best thing they can do is to pay me interest on it, defer it and pay interest on it. Then that gives me, when I add $4,412, $331,789?

A. Yes.

Q. How did we get depreciation in twice there?

A. You have the original value of the plant, $308,983, which you claim is at its face value, plus an allowance for depreciation. I would not contend that the original value was 100%; I con-

3358 cede you 98% plus depreciation.

Q. Well, I don't know what you mean, but I am sure your intentions are good. Now let us come back to earth. I have here $327,377, haven't I?

A. Yes.

Q. Now, I was entitled to depreciation to keep that good for that year on this 2% basis to $5,997?

A. No, not as you are figuring this here——

Q. Isn't that the amount of the depreciation?

A. That is the amount of the depreciation, but you already have your depreciation in your original allowance, $308,983.

Q. We start with $308,983 as the value of the plant?

A. At 100% value.

Q. Just let me ask the question, please. Now, then, leave these figures out. We will start with something that is hypothetical. I have got a plant worth $100,000 at the beginning of the year and I am entitled to a depreciation of 2%?

A. Yes.

Q. I am entitled to 8% return?

A. Yes.

Q. That depreciation would be $2,000?

A. Yes.

Q. We will say it cost me $15,000 to operate it and that I have got an income of $21,000?

A. Yes.

Q. Now I take that, at the end of the year my plant without the depreciation is worth $98,000?

A. Yes.

Q. Now I take that income and I first pay my operating and that leaves me $6,000 and then I pay my depreciation; that leaves
3359 me $2,000. I put that $2,000 back there to bring my plant back to 100%. Now, then, I have $4,000 left to apply on my return and I am short $4,000?

A. Yes.

Q. I add that $4,000 to my $100,000 because they have not paid me and we will say they owe it to me and pay interest on it?

A. Yes.

Q. Now, then, have I got anything out of that except just what I had when I started, plus the fair return?

A. Yes, figuring on this theory you would be getting $106,000——

Q. Just wait a minute—on these figures, what have I got at the end of the year?

A. You have your $98,000, depreciated value of your plant.

Q. I have got $2,000 depreciation?

A. Yes.

Q. That brings it back to where we started?

A. Yes.

Q. That is $100,000?

A. Yes.

Q. I have had $4,000 in income?

A. Yes.

Q. I have taken out my $4,000?

A. Yes.

Q. I was entitled to $8,000?

A. Yes.

Q. I failed to get the second $4,000 so I have added that to the value of the plant?

A. Yes.

Q. Have I made any money?

A. No.

3360 Q. I am just square on that?

A. Yes.

Q. And if you didn't give me that depreciation I would be just $2,000 short?

A. Yes; but you commenced this hypothetical question, you commenced with your depreciated value at $98,000.

Q. In what question?

A. We commenced the plant with $100,000 which depreciated to $98,000.

Q. During that year?

A. Exactly.

The MASTER: The difference between you gentlemen is just this: he figures on the value for a rate all the time and you figure on the investment, that is the difference.

Mr. GUERNSEY: I don't think that is exactly the difference between us.

Q. You don't think they would be permitted to put this back into the plant?

A. No, not in actual practice.

Q. Now I call your attention to Exhibit 56, which is a computation on this same basis, except no allowance for depreciation whatever is made, so of course the capital is not maintained unimpaired, and that checks out with what the total is there, the final figure?

A. $2,305,758.

Q. Now, then, will you give us the figure you got here after you deducted depreciation?

A. $2,306,128.

Q. Now, would you say that confirms my notion that what you have done is simply to take the man's depreciation away

3361 from him in making what you say, your corrections of Mr. Hagenah's computation?

A. I take the man's depreciation plus the interest at which it was compounded.

Q. So that the difference between you and Mr. Hagenah is, you do not allow depreciation and Mr. Hagenah does?

A. No, I allow the man to maintain his plant at his original hundred dollars and Mr. Hagenah is insisting it is a hundred and two dollars.

Q. Will you at your convenience check over this Exhibit 56. I won't ask you to do it now, but I want no question between us ultimately as to the correctness of the computation?

A. Yes, I am very pleased to.

Q. Will you also, if you find any errors in the computations call our attention to the matter?

A. With pleasure.

Mr. GUERNSEY: With that understanding we offer Exhibit 56 in evidence.

Objected to on part of defendants as incompetent, immaterial,

not cross-examination, and based upon assumptions not in the evidence or record.

Q. Now, Mr. Hall, I wish you would turn over to a later page here which you headed, Des Moines Gas Company Annual investment value on a six per cent return basis, in Exhibit 33; this computation which you made yourself is based upon the valuation which was made as of December 31, 1895, plus $50,000 working capital, and on a 6% return, and upon your depreciation allowance; is that right?

A. Yes.

Q. Now, before we get into the computation itself, I notice
3362 one thing here, that your annual allowance for depreciation is $245,862 and the interest on it amounts to only about one-third of that; how did you compute the interest?

A. Six per cent compounded.

Q. Now then in your other computation here, your interest amounts to $437,441 against the depreciation charges $392,362.

A. Yes.

Q. The difference I suppose is due both to the difference in the rate and time?

A. Yes, and the amounts being larger.

Q. Now you have a column here, net revenue, allowing six cents per thousand cubic feet on sales; how did you get that column?

A. That is the gross revenue shown by your books, except where adjusted in the last five years, less operating with six per cent added for depreciation.

Q. Give me the items that go into $36,351.

A. I can't give you that off-hand.

Q. Did you make the computations?

A. I had them made.

Q. Have you ever seen the items?

A. Yes, in the rough.

Q. Where are they—the reason I ask this, I went over it and it did not check exactly, I wanted to see where my difference was.

A. It does not check with Mr. Hagenah, I know, but I can give you the computations, I think.

Q. You take December 31, 1896?

A. If you take page 29 in this report, we have there the total revenue and total expenses

Q. Well, let us take this one and see what your revenue is for 1905?

3363 A. The revenue is $369,375.

Q. Put that down, will you please.

A. Yes.

Q. Now what is your operating?

A. Including depreciation?

Q. No, without it; your revenue is given on page 19 $127,527 isn't it; that is, your net revenue?

A. It is page 29.

Q. Yes. Your operating you have there, including depreciation is $241,848.

A. Your depreciation is $20,064.

Q. Take your operating, including depreciation on page 29, $241,848. and subtract it from $369,375. and that gives you what?

A. $127,527.

Q. Is that the way you get at these figures in this Exhibit 33?

A. Yes.

Q. You couldn't get all of them—yes, you could from that table there?

A. Yes. There are slight variations with Mr. Hagenah's report, I know.

Q. What are those variations due to?

A. I cas't answer that off-hand. As a matter of fact we investigated to find out what they were, but were not entirely satisfied where he got his figures.

Q. Take the first year here, ending December 31, 1895, and you had a total revenue of how much?

A. $95,412.

Q. That would be $36,351.

A. Yes.

Q. Now by this computation here you get an investment
3364 value before you deduct your depreciation, what you call an investment value, of less than you compute the actual investment after you deducted depreciation?

A. Yes.

Q. What is the purpose of this table—you get a result of $941,268?

A. The purpose was to demonstrate the absolute fallacy, in my judgment, of the Wisconsin theory.

Q. That is assumed, that the Wisconsin theory makes such deductions?

A. Assuming it is unsound, but that it permits you to capitalize the deficiency of six and credit your excess over six.

Q. The next table is the same thing on a seven per cent basis?

A. Yes.

The MASTER: Will you tell me what the amount at six cents per thousand cubic feet of gas allowance for depreciation would be?

A. $245,800.

The MASTER: I am talking about this one; I wanted it for the year ending December 31, 1895.

A. $3,666.

The MASTER: Is that the amount of gas for that year?

A. At six cents.

Q. How many cubic feet of gas was there that year?

A. 61 million feet, in round numbers.

The MASTER: How much was it for the next year?

A. We allowed, $4,586. On pages 17 and 18 of the report they are all figured out.

The MASTER: I notice that makes a difference of $6,000 in the first year between you and Mr. Hagenah; the next year you get it over $3,000 more than he has it?

A. I don't know that I follow you.

3365 The MASTER: Well, it is not material.

Q. Now, your next table is the same thing on an 8% basis?

A. Yes.

Q. And to summarize, on Exhibit 33, as I understand it, your purpose is simply to show that it don't mean anything; that it is unsound?

A. No, I think this is a sound way of applying the theory, but I do not approve of the theory.

Q. That is the purpose, to show that the whole thing is unsound?

A. Yes.

Q. Turn to this chart in your report; this dotted line represents the return, does it not?

A. Yes.

Q. And that shows that since 1908 the rate of return has been going down?

A. Yes.

Q. It also shows radical variations in the rate of return?

A. It does, yes.

Q. It shows that while the revenue from the sales of gas has been gradually increasing, and the sales have been increasing pretty nearly on a uniform curve, there have been marked variations in the return during this same period?

A. Yes.

Q. The fact that the return does vary in this way and that it does not seem to follow any fixed relation to either the sales or revenue from the sales of gas, indicates that there is more or less instability in the business, doesn't it?

A. Or that you have been extending your plant quite extensively.

Q. Take your investment in the plant, that investment increases by a curve as compared with the return, the curve is uniform?

A. Yes, compared with that it is.

3366 Q. For instance, you take this return curve, in 1895 it runs down?

A. Yes.

Q. Then from 1896 to 1898 it runs up?

A. Yes.

Q. Then during the year '98 and '99 it runs down?

A. Yes.

Q. The next year it runs up?

A. Yes.

Q. The next year it runs down a little?

A. Yes.

Q. The next two years it runs up?

A. Yes.

Q. And the succeeding year, 1904, it runs up very decidedly?

A. Yes.

Q. In 1905 it runs up just a little?

A. Yes.

Q. In 1906 it drops as decidedly as it ran up in 1904?

A. Yes.

Q. Then in the next two years it runs up again to 1908?

A. Yes.

Q. From 1908 it has been running down steadily?

A. Yes.

Q. Now, then, during that same period your investment has been increasing by a relatively uniform curve, hasn't it?

A. In the last five years it has made quite a decided jump, but relatively to the drop it is about right.

Q. That curve as compared with the return curve is relatively uniform?

A. Yes, it is not much out of the way.

Q. During this same period the gas sales and revenue have
3367 been increasing on the uniform curve?

A. Yes.

Q. Don't these facts indicate that there is more or less instability in this business?

A. No, I wouldn't go quite as far as that. You might reason from this last curve that the operating expenses took a very decided increase here, which would explain the drop during the last two years in net revenue.

Q. If you take a line, beginning in 1898, take a rule and run it across here to the operating, at the end of 1910, you will find that if you made that an absolutely uniform curve, projected it over 1907, it would hit right where it is now, wouldn't it, or a little above where it is now, on a uniform basis, starting from 1898 and going through 1907, and projecting it?

A. That would seem to be right.

Q. Now, then, where you have a business where the return varies as radically as is shown by this chart here, in the business of this company, and where it appears that for the last two years the tendency has been downward, you have got to make some allowance in order to make a conservative or reliable estimate as to the income in the future?

A. You cannot accept any chart without considering all the circumstances and conditions.

Q. That don't answer my question. You must where there are variations to that extent in the return, where it is not a uniform return, like interest on a note or something like that, take these variations into account in making your estimates for return.

A. Your variations have to be considered.

Q. You cannot assume that you have a regular return in the future where the history shows that in the past it has been irregular?
3368 A. I would not assume the high peak for judging the future.

Q. You would assume there had to be some give and take there?

A. You have got to have give and take in fixing any rules.

Q. You could not run this business, could you, or it would not be on a sound basis if you ran the business on the assumption that it was going to take every dollar that you earned to pay your interest, operating expenses and your depreciation?

A. I should say the stockholders would want something.

Q. Suppose you had a proposition that showed it would pay 8 or 10 or 6 per cent, or whatever per cent you would want on your invest-

ment, plus your expense and your depreciation, that would take $100,000, and you had a business that earned just a $100,000 and did not earn a dollar of surplus, that wouldn't be a satisfactory business?

A. I should not care to run it that way myself.

Q. In other words, to put the thing on a sound basis, you have got to have some margin over that?

A. You have got to have a margin in any business.

Q. If you don't, you are insolvent?

A. You will get there some day.

Q. Now, I want to call your attention to Complainant's Exhibit 57. In the first place, in order to avoid any misunderstanding, I will say there is a memorandum on this "Hall Exhibit F" and is simply for the purpose of calling attention to one of the exhibits to your report, and you are not expected to assume any responsibility for it. Referring to this Exhibit 57 I will ask you to look at Exhibit F of your report and state whether this Exhibit 57 correctly shows the average working capital of the company for the five years covered by that Exhibit F, not deducting the accrued interest and taxes and shows that to be $197,292.97?

3369 A. Will you accept yes, subject to the fact that I check it out.

Q. I have no objection to doing that, if we may offer it now and any corrections that may be desired will be suggested afterwards, so that the burden is not on us to show that it is done.

A. That is all right.

Q. Now, then, if we deduct the accrued interest and accrued taxes the actual working capital which the company has employed in its business during the last five years would average $197,229.97.

A. It does not say that here.

Q. That is the fact, isn't it?

A. You have not deducted anything for accrued taxes and interest in this statement.

Q. I meant the question to show they had not been deducted.

A. Subject to the exclusion of these factors, yes.

Q. I wish you would look at Exhibit 58 which also contains a reference to Exhibit F of your report, as the source from which it is obtained, and look at your report and check that over and tell us whether that shows the average working capital that this company has used for the last five years upon the basis upon which you have computed the working capital, at $68,000; I would like to have you check this now.

A. There is something wrong with some of these figures, in your current liabilities and bills payable, it does not foot, that statement.

Q. Let us take it up: it is $1,407,052.77?

A. Yes.

Q. And the average $229,410.55?

A. Yes.

3370 Q. Now, then, you say the current liabilities and bills payable do not check?

A. Yes, there is a difference in it. If you substitute my figure

for your figure your statement will foot all right. I think it is a mistake in insertion.

Q. What is your figure?
A. $160,902.92.
Q. And do you get the same total $538,512?
A. Yes.
Q. So that it is evidently a mistake in copying?
A. A clerical error.
Q. Then the average is right $321,858?
A. Yes.
Q. Then the result is correct, $121,708.13?
A. Yes.

Complainant offers and reads in evidence Exhibits 57 and 58.

Mr. BYERS: We object to Exhibits 57 and 58 because they are incompetent, immaterial and not cross examination, and the tables are based upon assumptions not in the record and for which no foundation or basis has been laid, and not the best evidence of what is claimed to be shown by the exhibits.

Said Exhibits are as follows:

3371 "COMPLAINANT'S EXHIBIT 57.

Des Moines Gas Company.

Working Capital, Including Current and Working Assets and Current Liabilities Less Bills Payable.

(Hall Exhibit "F")

	Total 5 years ended Dec. 31, 1910.	Average.
Materials and Supplies	$ 636,257.52	$127,251.50
Accounts Receivable	261,177.75	52,235.55
Bills Receivable	712.50	142.50
Cash	248,905.00	49,781.00
Total	1,147,052.77	229,410.55
Current Liabilities Less Bills Payable	160,902.92	32,180.58
Total	$986,149.85	$197,229.97

3372 "COMPLAINANT'S EXHIBIT 58.

Des Moines Gas Company.

Working Capital Including Current and Working Assets & Current and Accrued Liabilities.

(Hall Exhibit "F.")

	Total 5 years ended Dec. 31, 1910.	Average.
Current & Working Assets.....	$1,147,052.77	$229,410.55
Current Liabilities Less Bills Payable	160,902.92	32,180.58
Bills Payable	101,635.47	20,327.09
Accrued Liabilities	275,973.75	55,194.75
	$ 538,512.14	$107,702.42
Total	$608,540.63	$121,708.13

3373 Q. Mr. Hall, in view of the objection to Exhibit- 57 and 58, that they are based upon assumptions not shown by the record and not proven here, I will ask you to state whether in checking them you found they are based upon Exhibit F to your report Exhibit 33?

A. They are the totals of certain items.

Q. The figures appearing in Exhibit- 57 and 58 and the totals there are taken from your statement Exhibit 33 of the results of the operation of this Company?

A. Yes.

Q. And you have checked Exhibit 57 with Exhibit 58?

A. Yes.

The defendants here again interpose the same objection to Exhibits as offered.

Q. I meant to ask you, and to be understood in asking you whether you checked it at the same time that you checked Exhibit 58?

A. I did.

Q. Now, referring to Exhibit A in your report which shows the income and profit and loss for the five year period, that is not as the books show it, as I understand it; but there are certain changes made?

A. Yes.

Q. And what those changes are nowhere appears in your report, does it?

A. Not in dollars or anything like that. Two of those are mentioned on page 28.

Q. What are they?

A. Tax omitted by the Company $1,287.37; the replacement values and expenses excluded. In the prior page there is a reference made to the accident claims of the two months having
3374 been excluded.

Q. Now is the result or effect of these changes to show a greater or less income than the books show?

A. Somewhat greater.

Q. And none of these expenses that you struck out were either illegitimate expenses or expenses that had not in fact been paid?

A. No, perfectly legitimate.

Q. When you struck out that loss and damage item, for instance, because the accident had arisen at an earlier time, did you go back and charge that against the earnings of the earlier period in figuring our operations?

A. Yes.

Q. Where is that shown?

A. It would be in the year, February 28, 1906.

Q. Is that the year in which the accident occurred?

A. That is my recollection.

Q. Isn't that something that Professor Marks said he was told occurred sixteen years prior to that time?

A. I have no idea what Professor Marks testified.

Q. You didn't find anything of that kind, any charge on account of accident or damage occurring sixteen years prior to this five year period?

A. I do not recall hearing anything about that matter.

Q. Do you know anything about it?

A. Not a thing.

Q. You say you don't recall; what I want to get at is whether you ever did know?

A. I may have, I don't know.

Q. You did not investigate it yourself?

A. No.

Q. Do you know whether this amount that you deducted here in 1906 was that the year for which the deduction was made?
3375 A. I moved the charge back from the two months to the prior year and included it as an expense there.

Q. Are you sure about that?

A. That is my recollection.

Q. You didn't do it yourself?

A. I didn't do it myself.

Q. Have you ever looked—do you know anything about it?

A. I know the charge was moved back on my instruction.

Q. Was it moved back to the time when the accident occurred?

A. My recollection is, to the year preceding.

Q. Was that the time the accident occurred?

A. I don't know when it occurred.

Q. Then it was wrong to put it in the year preceding?

A. I wouldn't say it was wrong.

Q. Just as a matter of practical book keeping, what would the Gas Company do if a man was injured, say today, and he brings his suit in six months, and it is settled, say in eighteen months after that; now how would they get that on the books?

A. Good book keeping would dictate that a reserve should be set up each month to cover such risks.

Q. How would they get this accident on the books as of today?

A. They cannot get the accident on the books until such time as they pay the claim.

Q. That is right?

A. That is proper.

Q. It is rather impossible to do it in any other way?

A. There is usually a record kept in the office of claims in big corporations, of what they anticipate is going to happen.

Q. What I want to get at is how the Gas Company could
3376 do what you say it ought to do here as a practical proposition?

A. The practical proposition in my judgment is to set up the item each month on the basis of business done, charging operations with the amount and crediting the reserve with accident and damages.

Q. How much ought that to be?

A. Your books have a cent for 1911.

Q. By the way, when you made the estimates for our guidance in the future, did you make such an addition to the pers, the cost of gas per thousand?

A. Yes.

Q. That would have decreased your return to that extent?

A. To that extent.

Q. The matter I referred to in Professor Marks' report was this: on page 84 he has total operating expenses for the five years as per the company's books $1,466,821.22. I wish you would give us the total operating for the years as your report shows them corrected?

A. Do you wish the miscellaneous sales separately?

Q. Where is this?

A. In Exhibit "A".

Q. Give it to me both ways?

A. It is on the first page there.

Q. You have your total operating what?

A. $1,452,870.25.

Q. Is that before or after you deducted these miscellaneous sales?

A. Before.

Q. Now when you deduct your miscellaneous sales, it is what?

A. $1,451,850.94.

Q. Now it is stated here in the report of Mr. Marks on
3377 page 84, accidents and damages 1893, $3,685.17. Now is that the item which you deducted?

A. It seems to me the amount in dollars and cents.

Q. I understood Professor Marks to tell us on his examination, though it is some time ago and my memory may not be accurate, that he obtained the information from you or your assistants as

to this item, and the date of the accident—will you get us the date of that accident.

A. Yes.

Q. Was there any reason for pushing that back from 1906 to 1905, assuming the accident occurred in neither year, except to get it out of the operating for this five year period and so reduce that operating?

A. The intention was to get that operating for the five year period as nearly as possible accurate.

Q. You know, if you took out actual payments on account of the loss and damage and did not add some percentage to take care of that, your result would be inaccurate and too low?

A. I have so stated. I think I explained before that I made inquiries about your outstanding claims but got no information.

Q. Did you personally make those inquiries?

A. I answered a few days ago, no. I have since been told I did.

Q. So far as this testimony is concerned, you have no recollection of having made any inquiry of anybody?

A. I have no recollection of having done anything at all——

Q. You have no recollection of having made any inquiry of anybody?

A. Except of my own assistants.

The complainant moves to strike out the testimony of this witness as to these inquiries as being purely hearsay and secondary.

3378 Q. Now, I wish you would find out for me and let me know when we come in here this afternoon, if you can, just when this accident occurred, and also to just what year you added this amount as operating expenses?

A. Yes.

Q. Now turn over to the next table; that is the same thing, Exhibit B, as Exhibit A, except stated in a different way?

A. Yes, sir.

Q. That is, this is the result stated in cents per thousand cubic feet of gas sold?

A. Yes.

Q. Now does this revenue from gas that you have here, does that include Valley Junction or not?

A. Yes.

Q. Of course, this table will show the same variations from the books that there is in Exhibit A?

A. Yes.

Q. Because it is founded on Exhibit A?

A. It is founded on Exhibit A.

Q. This interest on floating debt, less interest received, there are two items in red, those represent periods where the interest received was more than the interest paid?

A. Yes.

Q. Now I will skip Exhibit C, which I think you compared with our statement covering the same matter?

A. Yes, that is prepared from your statement.

Q. There is a variation of 25 cents in the five years, but we will

let that go. Now, then, take Exhibit D; that is a statement of the cost of manufacturing and distributing gas, and that is again not the actual cost, but the cost with the deductions which run
3379 all through your work?

A. Yes.

Q. The red items here are profits?

A. Yes.

Q. And are deducted from the cost?

A. Yes.

Q. Now your next statement, Exhibit E, which purports to be the cost in thousand feet is predicated on the one that precedes it, I suppose?

A. Yes.

Q. Through Exhibit E are carried the same variations from the books which appear in the preceding exhibit?

A. Yes.

Q. Now, then, your balance sheet Exhibit F, how does that vary from the books, if at all?

A. That only varies from the books by the entry of $264,108.78 reve-sed for these periods, that is, added to the investment account and also added to the surplus. In other words, that is how your books would appear had that entry not been made.

Q. It did not affect your general results here, as I understand it?

A. Not at all.

Q. Why did you reverse it then?

A. There didn't seem to me to be any particular basis for the entry.

Q. I thought you said it wouldn't affect the result?

A. It would not affect the result except in those two accounts, the surplus and your plant.

The MASTER: Is that credited to the profit and loss account?

A. No, sir; the profit and loss account was charged with that amount and credited to the plant account to reduce it.

Q. So the result of your change was to increase our sur-
3380 plus $264,108.78, and increase the value of the property as shown on the books by the same amount?

A. Yes, sir.

Q. Now have you adjusted the surplus to take care of the changes you made in the operating expenses and things like that?

A. No.

Q. Then, of course, this balance sheet won't check with your operating results?

A. Not by those two differences, the replacement values and the federal tax, shown on the previous page.

Q. And interest and accident or damage and what else?

A. That is all I recall.

Q. In fact you don't know exactly how you did do it?

A. Oh, yes; I have a pretty fair idea.

Q. In your schedule 1 you gave the quantity of gas manufactured, and that is simply historical, and used also in making some of these computations?

A. Yes.

Q. Where did you get the information for this schedule?
A. From the records of the company.
Q. Well, be a little more specific; what records contain this information?
A. The records of gas manufactured sold and used by the company.
Q. What books show that?
A. I don't know.
Q. What did you call is, did you ever see it?
A. I saw the book one day; I saw some book on that subject.
Q. Do you know whether you got this from the books or took it from our statement?
A. I can't answer that. They were got out of your office.
3381 Q. You don't know whether they were worked up from the books or whether you accepted our statement?
A. I don't know, and I am rather indifferent.
Q. You haven't found any statement that we furnished you to be inaccurate?
A. Your statements are very accurate in as far as they go.
Q. Now this next schedule 2 is a comparative monthly statement of the quantity of gas accounted for and unaccounted for for the five year period; do you know where that came from, whether we furnished it to you or came off of some of the books?
A. It came off of some of your records.
Q. We furnished it to you or got it from the books?
A. I don't know; I would be glad to accept your statement of it.
Q. Now what do these figures in red mean in schedule 2?
A. An adjustment of the gas connected with the meter reading of the manufacture.
Q. That is not clear to me. Take this lower set of figures and it shows the gas unaccounted for?
A. Yes.
Q. In September, 3,211,438 feet, in red?
A. Yes.
Q. What does that mean?
A. I mean that month you sold more than you manufactured, or read meters for more than you manufactured.
Q. And it shows that somehow there was a surplus in gas somewhere?
A. Somewhere, yes.
Q. Can you explain that?
A. I am afraid I cannot go into that technically.
Q. Now, I wish you would turn over to schedule 6, headed, data relative to standard prices paid by the Company. What
3382 significance do you give to the word standard?
A. That would mean ordinary current prices paid by you during this period.
Q. Ordinary current prices?
A. Prices paid by you under the date mentioned, whether under contract or arrangement.
Q. Take oil for instance, did you put down the standard price for oil 2.8 per gallon?

A. That was the price under the contract.
Q. Under the contract of 1905 it was 4.4 per gallon?
A. About that.
Q. In 1906 4.5 cents?
A. Yes.
Q. In 1907 it was 4.55?
A. Yes.
Q. In 1908 it was 3.1 cents?
A. Yes.
Q. And then they made a three year contract at this minimum price?
A. Yes.
Q. So that you have not taken the average price, but the lowest price?
A. This does not purport to show the average price.
Q. Is it present prices or latest prices or lowest prices?
A. The latest price under this purchase.
Q. Take coke and we have the lowest price of coke for the last three or four years given by you?
A. Yes.
Q. Coke cost in 1909, 6.15 including freight?
A. Where do you get your figures?
Q. I didn't get them from your report.
A. I can't tell you anything about that.
3383 Q. You did not attempt then to give anything like an average price?
A. No, we got the price of this time, December 31, the last invoice under these items, irrespective of whether high or low.
Q. This would not afford any basis for determining the cost during the five year period?
A. No.
Q. And it would not be a reliable estimate to be based on the future prices?
A. It might assist in getting a reproduction value on the present price.
Q. You think in order to get the reproduction value as of December 31, 1910, you would take the price from a single invoice that happened to be the latest one without reference to what would be a fair price for a reasonable period of time?
A. If you were reproducing as of that time, you would be quite justified in taking the current market price.
Q. You think that would be a reasonable way to get at it if you were going to reproduce this plant and make an estimate for me what it would cost me to reproduce it, knowing that it would take me two or three years to do the work, and you would take a single price like that and base an estimate on it?
A. I didn't say so; that is simply a guide, that is all.
Q. It would be a very weak staff on which to put your money in?
A. I would expect the engineer to apply his own knowledge in addition to the price.
Q. You told us you had spent, I have forgotten how much time on

this report, and that the last part of the time was Saturday last week and Monday of this week?

A. Yes, I got a note of the days I spent.

Q. Can you give us the items?

3384 A. Yes, I was in Des Moines June 27th and 28th; I was in Des Moines July 14, August 3rd, August 15th, 16th, 17th, 18th, 19th and 20th. I put in some time in Chicago, running about 18 hours or 20 hours. I came back to Des Moines on the night of September 8 and spent Saturday looking over the various papers I had and spent Monday at the same thing and came here Tuesday.

Q. You did not come to Des Moines on the night of September 8th?

A. I left Chicago on the night of September 8th.

Q. You went to Colfax on the night of September 8th?

A. Yes.

Q. Who went with you?

A. Mr. Sangston.

Q. Who else?

A. Professor Bemis.

Q. Who else?

A. Professor Bemis' stenographer.

Q. How long did you stay in Colfax?

A. All Saturday and Sunday morning.

Q. And Monday?

A. And Monday.

Q. Who was with you there at Colfax?

A. Professor Bemis and Mr. Sangston.

Q. He was going over your report with you at that time?

A. I barely talked to Professor Bemis on Saturday.

Q. And on Monday?

A. I hardly saw him on Monday.

Q. You furnished him a copy of your report?

A. Yes.

Q. When did you furnish him a copy of your report?

A. August 20th.

3385 Q. And how often did you see him after that and discuss it with him?

A. I saw him several times after that; the report was discussed in a general way once or twice.

Q. When did he suggest you make up Exhibit 33?

A. He did not suggest it.

Q. Who did suggest it?

A. My own idea.

Q. When did he furnish you with this copy of the Madison case report?

A. My recollection is after I went back to Chicago on August 20th.

Q. And before you made up this Exhibit 33?

A. Yes.

Q. Have you looked *that* advertising literature?

A. No, I haven't had time to get that out.

Q. Will you do that for us?

A. Yes.

Q. The reason I want you to do it is, you leave it in your report as if it was a suspicious item and I want to know what the facts are?

A. I will do you justice.

Q. I wish you would give me the total sales for this five year period as you computed them?

A. They would be in round figures 2,292,035,000.

Q. That was the basis for the depreciation you charged during that period?

A. Yes.

The MASTER: There are certain rejected items, did you give the total of them?

A. I gave it from the record yesterday.

Q. Where are they?

3386 A. I don't know; the items are in the record; we read them over yesterday.

Mr. BRENNAN: Are they shown in your report?

A. No; the details are all in the record.

Q. Mr. Hall, will you prepare a memorandum showing the rejected items and if there was any provision made for taking them into the operating expenses anywhere else, showing what was done in that respect?

A. Yes.

Q. You referred several times in your testimony and in your report to an item of $131,744.44 which was charged to the plant account and credited to profit and loss and subsequently distributed as a stock dividend May 1st, 1897. I refer to page 3137 of the transcript, and I call your attention to Defendants' Exhibit 26, and in that to the minutes of the stockholders' meeting held December 31, 1896, and to a resolution passed at this stockholders' meeting as follows:

"Thereupon A. B. Cummins offered the following preamble and resolution: Whereas, prior to this meeting the authorized capital stock of the Capital City Gas Light Company was three thousand shares of one hundred dollars each, aggregating three hundred thousand dollars, and

Whereas, the capital stock had been increased by amendment duly passed and adopted to six thousand shares of one hundred dollars each, aggregating six hundred thousand dollars, and

Whereas, the property of this company, real and personal including its rights, franchises, privileges, contracts and immunities is of the fair value of six hundred thousand dollars, after deducting its indebtedness, and

3387 Whereas, the present stockholders are entitled to the said increase of capital stock;

Now, Therefore, be it resolved, that the board of directors is authorized and directed to make a stock dividend of the said increase of capital stock, to-wit, of three thousand shares and to cause to be issued and delivered to each stockholder, according to his holdings as appears from the books of the Company, his ratable propor-

tion of the said increase of capital stock. Which capital stock shall be issued as fully *a*pid and nonassessable. Whereupon A. B. Cummins moved the adoption of said preamble and resolution, which motion was duly seconded by W. B. Keffer and after having been duly considered by the stockholders of the corporation was adopted by an affirmative vote of all the shares of stock. Whereupon the presiding officer declared the said preamble and resolution to have been unanimously passed and adopted."

Q. You had seen that resolution, had you not?

A. I had not. I did not see it myself. I got an abstract of it.

Q. Who furnished it to you?

A. Mr. Sangston.

Q. You had seen this just as you have seen these other things, by proxy?

A. By proxy.

Q. Just as you had seen these other things you testified about?

A. I might just explain for your information, it is impossible for any accountant in practice to do the work other than by proxy.

Q. You notice I have not objected to any of this testimony of yours on the ground that it was secondary. Now I will call
3388 your attention to a minute from the directors' meeting of the same date at which there were present Mr. Cummins, Mr. E. J. Pratt, and read from the record as follows:

"Whereupon A. B. Cummins offered the following preamble and resolution:

Whereas, the capital stock of this corporation has been increased to six hundred thousand dollars and three hundred thousand dollars thereof has not been issued, and

Whereas, the said increase of capital stock has been made upon the basis of the value of the property of the corporation, and

Whereas, the stockholders of the corporation at a special meeting, held in Des Moines, Iowa, on December 31, 1896, have ordered said increase of capital stock to be distributed to the existing shareholders proratably as a stock dividend;

Be it therefore resolved, that the President and Treasurer of the Company be and they are hereby directed to issue the said increased capital stock fully paid up and nonassessable to the existing stockholders in proportion to their present holdings, and to cause such entries to be made upon the books of the Company as will carry into effect this resolution. Upon motion the foregoing preamble and resolution was unanimously adopted."

These two resolutions I have read to you were the authority for the entry that was made and the stock that was issued?

A. Yes.

Q. And they were predicated upon the proposition that the property of the Company was worth the amount of this additional stock, that is, there was value there to represent it?

A. Presumably.

3389 Q. If that is so there was no water in the stock, was there?

A. If the assets were there to represent the $300,000, there

would be no water in the stock, provided you have the tangible assets.

Q. Why do you use the word tangible?

A. Provided you had them.

Q. Will you say the company didn't have them?

A. I don't know; it did not have them according to its books.

Q. Do you mean that? That the books show or purport to show what was the value of the tangible and intangible assets of the company?

A. I would expect to go into your plant account and I would figure what would represent in your judgment the value of your assets.

Q. How could that make that plant account represent the value of the assets as distinguished from their cost, except by either making additions to it as made under these resolutions, or subtractions as were made in the $264,000 item?

A. That is one way.

Q. What other way would there be of making our plant account agree with the actual value except by making additions or subtractions to it arbitrarily in accordance with our judgment?

A. That is not good book keeping.

Q. I ask you this: you said something about the plant accounts representing our idea or value, and how are you going to take care of the difference between cost and value except by some entry?

A. It is not customary in book keeping to take care of cost and *and* values.

Q. Then it is not customary to do what we did?

A. They do it very often, quite common practice.

Q. If they do do it, how are they going to do it except by making such additions or subtractions?

3390 A. You might put it down on the basis of appraisal.

Q. Suppose you took an appraisal—you don't know whether they had an appraisal back of the resolution or not?

A. It would be in the resolution if there was; I don't know anything about it myself; if there was it would be mentioned.

Q. You think it would be mentioned?

A. I think it is almost certain to be.

Q. To get back to my question, I wish you would answer and tell me how, except by making some additions or subtractions from this property account or plant account, they were going to make it show the actual value as distinguished from book cost?

A. Assuming your actual value is more than the book cost, you must make an entry.

Q. And if your actual value is less, you have got to make a subtraction?

A. Yes.

Q. These amounts must be predicated upon somebody's judgment?

A. Yes.

Q. If that judgment is sound or reasonably sound, it is wrong to call it water?

A. If your judgment is sound and you have the assets, I would not call it water, no.

Q. Now, on page 3137, after you refer to some item, you were asked this question: "Q. So that the actual value would be even less than $1,423,953? A. Yes, would be subject to a deduction of $211,468.16 and $134,297.44 mostly making up that appreciation"—you used the words "actual value" there; you didn't mean it, did you?

A. Actual cost as shown by the books.

Q. You didn't mean that there, you mean the actual cost
3391 shown by the books with the additions and subtractions we talked so much about yesterday?

A. Yes.

Q. There is one thing on page 3146 of the transcript—your Exhibit 33 is read in the record here and it is a reconciliation you made at the request of the court of the difference of something like $200,000 and your cost figures and Mr. Hagenah's?

A. Yes.

Q. You took some items aggregating $470,173.66 beginning with $295,383.08?

A. Yes.

Q. That was taken from Mr. Hagenah's statement and was the amount with which he started as the original investment plus the additions down to your statement?

A. Yes, it was an attempted reconciliation between the two ideas.

The MASTER: The table that shows Mr. Hagenah's investment will show it.

A. I might say that was the big table of Mr. Hagenah's.

Q. Now I want to call your attention to something on your direct examination at the bottom of page 3151: The question refers to the salaries paid by the Des Moines Gas Company to officials of the Des Moines Gas Company residing at Philadelphia: "Q. So this whole matter is a matter of book entries, so far as the books here are concerned? A. Altogether, yes." What did you mean by that?

A. These salaries or checks and vouchers are made out in Philadelphia and sent here for signature and returned to Philadelphia and paid out of the funds in the hands of the treasurer. The treasurer in turn sends the entry to the people here and instructs them to put it on the books.

3392–3393 Q. This suggests something more than a mere matter of book entry?

A. Yes.

Mr. BYERS: What I meant by that was simply to show the transaction here of putting it on the books; I don't want myself to have any other inference drawn from that question.

The MASTER: I understood him the next day to make a correction of that.

Mr. GUERNSEY: I am reading from the testimony given the second time.

The MASTER: I understood him to say these warrants were drawn by the Philadelphia office and were endorsed by these officers.

Q. Now, then, if I understand you correctly, the checks are signed here?

A. By Mr. Haines and one other.

Q. Mr. Haines, Manager, and somebody else?

A. Yes.

Q. Now you said the entries on the books are made here when those checks are signed and mailed?

A. As I understand it, the entries on the books are made here when the journal entry comes from Philadelphia.

Q. What information have you on that subject?

A. Just from Mr. Sangston.

Q. The natural way to do would be to make the entries if they were keeping the books here, when the checks were signed and delivered?

A. No I think the natural transaction would be for the Philadelphia office to accompany the checks by a journal entry; at the time of signing the entry goes on the books.

Q. That is the way you think it is done?

A. I take it it is done that way; that is the natural way to
3394 do it.

Q. So that the people here signed the checks and then make their entries at that time?

A. Yes.

Q. There is nothing out of the way in that?

A. That is all right.

Q. Now on page 3152 I find, you had stated that there was an item on the books, talking about the federal tax, I find this: "Q. I wish you would state into the record just what the books show with respect to the federal tax and how the accounts would figure out? A. The books show in 1911 a federal tax covering the fiscal year of 1910 was paid on $128,737.13; at one per cent that tax is $1,287.37. Q. You found the item $1,287.37 in the books, did you? A. Yes, sir; in 1911."

The MASTER: What was that paid on?

A. $128,737.13.

The MASTER: That was the net?

A. The net earnings.

Q. Do you use the expression "net earnings" there in the same sense that we have been using it elsewhere here?

A. No.

Q. If we accepted that as a statement of the net earnings as we have been using it in the case here, that would be misleading?

A. No, that is not used in the same connection at all.

Q. You also said, referring to these taxes on the next page: "I might explain, that was paid under protest?"

A. I think I made that remark in regard to the 1909 tax.

Q. There was nothing either wrong or unusual or abnormal in that?

A. It was good business judgment.

3395 Q. Why did you call attention to it?

A. To give you the benefit of that.

Q. What benefit?

A. You was entitled to the benefit of trying to take care of yourself; a number of people paid it without protest.

Q. Everybody protested?

A. Everybody who consulted me paid it under protest.

At this time an adjournment was taken until 1:30 p. m.

3396 1:30 P. M., FRIDAY, *September* 15, 1911.

JAMES HALL being continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. Mr. Hall, you promised to get me the specific description of the real estate which was taken into account by you in making up your figures as property of the company. Did you get that?

A. Yes.

Q. I wish you would take this plat which has been introduced as an exhibit which I believe is Exhibit 5 and shows enclosed in red the real estate owned by the company. I wish you would check the real estate that you took into account and see whether you took in all of it.

A. I am afraid I can't make anything of this plat.

Q. Well give me the description then of the real estate.

A. You had on January 1, 1895, real estate on the books at $8,960.00——

Q. I want the specific list?

A. I can't give the specific list on that.

Q. You can tell from the books?

A. This begins 1895, the tabulation. I know nothing about it before that.

Q. Well can you find out from the books?

A. I can investigate it.

Q. Didn't you go over this real estate and examine the vouc*ehrs*?

A. We accepted the Pratt affidavit as the start.

Q. What did you get after that?

A. February 28, 1897, the land located in Fourth district Des Moines, Polk County, Scott & Dean's Addition comprising Lots 3, 4, 5, 6, 7, 8, 9 and 10 in Block 5.

3397 Q. That is Block B isn't it instead of Block 5?

A. May be.

Q. You are reading the entry from ledger No. 4, folio 154?

A. I don't know where it came from, came from your ledger, which one I don't know.

Q. What are you reading from, one of these memoranda?

A. Yes, I am reading from a typewritten copy of a memoranda.

Q. Assume that is Block B which it ought to be, that date is February 28, 1897 isn't it?

A. Yes.

Q. Let's call that Block D then. Now what is the next property?

A. August 27, 1901, lot 4 in Block T.

Q. What next have you?

A. Lot 3 in Block T same date. These are the only additions except the cost of some curbing and surveying.

Q. That was 1901?

A. Yes.

Q. So you don't show lots 5, 6 and 7 in Block T, you don't take them into account at all?

A. Unless they are included in the original affidavit of Col. Pratt.

Q. Have you a copy of that affidavit?

A. No.

Q. You don't show anything in Block C at all?

A. Not unless included in that first figure.

Q. You don't show anything in Block K?

A. Not unless included in the Pratt affidavit.

Q. Nor in Block M?

A. Same answer.

Q. Will you look and see whether this in Block C, K, M, and Lots 5, 6 and 7 in Block T are included in that affidavit and let us know?

3398 A. Yes.

Q. Now there is an expression that I find here in your direct examination, page 3168 that I want to ask you about. You were asked if there was any significance in the apparent widening of the space between the lines on this chart of yours showing the operating expenses and gross revenue, the question and answer being as follows: "Q. What if any significance is there in the apparent widening of the space between these first two lines as you go up? A. Considerable dumping in of expenses in the year 1909 and 1910, especially 1910. The ratio of the sales appears to have been narrowed down." Now what do you mean by the expression dumping in? You mean to convey the impression of some illegitimate expenses there?

A. No, I do not. Quite willing to modify that to exclude any illegitimate expenses. I didn't intend to convey that impression.

Q. It is rather a peculiar way of referring to legitimate ordinary expenses?

A. Well it is perhaps a little rough on you.

Q. And that is not the way you intend it——

A. Oh I didn't intend to make any offensive remark about your expenses or hurt your feelings in any way.

Q. Now as a matter of fact as the business increased in volume you would expect the lines on the chart indicating gross revenue and operating to separate wouldn't you.

A. They would, yes.

Q. And that would be true if the ratio of profit remained the same?

A. Yes.

Q. And might be true if the ratio of profit was run down?

3399 A. Yes, might be to a modified extent.

Q. If it did not decrease fast enough to keep up with the increase of the business.

A. Yes.

Q. Now I want to call your attention to your direct examination on page 3174, this question and answer appear there at the top of the page "Take the bookkeeper for instance, where did he get his memoranda or data or facts or figures to go upon the books of the company here? A. They appear to come very largely from Philadelphia." Now did one per cent of the entries come from Philadelphia?

A. I could not put a percentage on it at all. I do know that the important items connected with the sale of bonds or anything of importance, officers' salaries and so on, came from Philadelphia. I would say quite a fair proposition.

Q. You say they appear to come very largely.

A. Well I regard these important items, I don't include ordinary routine work of the business, you would expect to get that here.

Q. What you mean is the unusual items?

A. I modify the answer to that effect.

Q. Would you expect the bookkeeper to enter up these unusual items without specific directions from somebody who is an officer of the company?

A. I would not.

Q. And where if the officers of the company live in Philadelphia where would be the normal place for these entries to come from?

A. I would expect to get the bulk of the entries O. K's by your local manager.

Q. As to sales of bonds for instance, where the home management did not make the sales?

3400 A. No, that would come — Philadelphia.

Q. Now a bookkeeper is like an ordinary human being in this at least isn't he, that he don't know what to put on the books, unless somebody gives him the information?

A. He should put nothing on the books without getting information.

Q. And the natural and proper source for the information would be from the officers of the company who knew.

A. Exactly.

Q. Now then take bond sales for instance you referred to them. Did you know that the trustee under the trust deed was in Philadelphia?

A. Yes.

Q. And you knew the bonds would be certified from time to time by the trustee?

A. Yes.

Q. Under resolutions of the board of directors?

A. Yes.

Q. It is the usual method, the only method I guess?

A. It is the correct method.

Q. You knew that the board met in Philadelphia?

A. Yes, I assume they did. I don't know, I assume they did.

Q. And the bonds would naturally be delivered to the treasurer there?

A. Yes.

Q. Now where would you expect under those circumstances that the information would come from as to these entries as to bonds?

A. Come from Philadelphia.

Q. The only place it could come from?

A. Of course it is where the transaction originated, must
3401 come from there?

Q. So there is nothing wrong about that is there?

A. No, with the one modification perhaps I thin'k the entry might be a little more full than they are?

Q. Well we get to that. Now the next thing you refer to is contracts for materials and supplies. You found here copies of the contracts didn't you?

A. Yes.

Q. You found here canceled checks that had been given the tracts?

A. Yes.

Q. They agreed with the contracts as to prices?

A. Yes.

Q. You found here canceled checks that had been given the people who furnished the material?

A. Didn't examine them.

Q. You could have examined them if you wanted to? contracts wouldn't he?

Q. The ordinary man would be satisfied with going that far on contracts wouldn't he?

A. I don't know if he would.

Q. You don't?

A. No.

Q. How much further would you go?

A. There is always a suspicion, Mr. Guernsey on the subject of contracts, special discounts on them are known, met with them quite often in the ordinary course of business and got to be rather suspicious of them.

Q. The concerns you have been connected with then have been engaged in that prpactice?

A. I have met the practice quite often.

3402 Q. So that you would like to see whether there was some special discount?

A. Oh I would have a doubt occasionally about it.

Q. How is that affected by the situation here. You of course could go for instance, take the oil you could go to the books of the standard oil company and see whether they were paying anything back?

A. Yes, you would have a hard chance of getting them.

Q. With reference to these contracts was there anything suspicious in the price?

A. Nothing.

Q. Was there any suspicious circumstance in connection with them so far as you know?

A. I saw nothing to indicate anything at all except the natural suspicion I would always have of contracts.

Q. You would assume that therefore they are dishonest?
A. No, I am not assuming that, but it is wise to look into the matter usually.
Q. Referring again to the entries on the books that you mentioned, what entries were meager?
A. The entry relative to the sale of the bonds was somewhat meager.
Q. Now what did you find on the records of the directors as to the sale of the bonds?
A. I never seen them.
Q. They could not be sold without—could not be issued without some action of the directors?
A. Oh they were authorized by the directors.
Q. You don't know what these records showed then?
A. No.
3403 Q. You don't know that there was a directors' record as to each additional bond issued.
A. I know they were all authorized.
Q. That is you know because somebody told you?
A. No. I know because your entries states they were authorized at a specific meeting of the board of directors.
Q. The books show—the entry on what books?
A. The entry of the instructions from Philadelphia.
Q. The books show the amount of the bonds issued?
A. Yes.
Q. They show what they sold for?
A. Yes.
Q. They show the treasurer is charged with the proceeds?
A. Yes.
Q. They show something with reference to discount?
A. Yes.
Q. Now what additional information is ordinarily shown on such a set of books as to the sale of bonds?
A. As to who bought the bonds.
Q. That is shown by the books?
A. The whole record of a transaction of that kind should be on the books.
Q. The name of the purchaser of the bonds is usually put on the books when a bond sale is made, is that right?
A. Yes, my experience.
Q. Now give us some corporations that keep their books that way?
A. I don't think I am called upon to do so.
Q. Can you give us one?
A. I could if I would.
Q. But you won't?
3404 —. No, I won't.
Q. Could you give us two?
A. Yes. But that is a question of privilege and I am not going into it.

Q. So the only objection you make to these accounts is they don't show the name of the purchaser of the bonds?

A. Yes, sir.

Q. The prices don't look out of the way?

A. No comment on the price at all.

Q. It is simply your natural suspicion that leads you to suggest that the name of the purchaser ought to be on the books?

A. No suspicion about it, simply stating a fact.

Q. All that you have in mind when you say that the entry might be more full is that it might have shown the name of the purchaser of the bond?

A. Yes, that is one of the important items connected with a bond.

Q. Suppose they sold the bonds through a broker and don't know who the purchaser was?

A. You know the broker.

Q. Usually bonds that are sold through a broker are sold to a purchaser and you don't know who the purchaser is?

A. You know N. W. Harris & Company or whoever it is?

Q. Suppose they are sold through a broker?

A. You know the broker. All you have got to do is where you put them through the broker that is the end of the transaction.

Q. Do you think it would materially affect, the person who happened to buy these bonds would materially affect the value of this plant or amount of its earnings?

A. Would not affect it at all.

3405 Q. Not in the remotest degree?

A. Not at all.

Q. Now somewhere as I recall it, you said in your direct examination didn't you that the treasurer's account was kept in Philadelphia and you didn't have access to it?

A. That is, was in Philadelphia with their records here.

Q. The account is kept here?

A. Account is kept on the ledger here, but the treasurer in Philadelphia keeps a separate account.

Q. He sends the entries here so that the two accounts correspond?

A. Well they should.

Q. So that if the books balance what you could have ascertained by looking at the other accounts you could find here.

A. If the current accounts there are off balance you could not find it here?

Q. They were in balance weren't they?

A. I don't know.

Q. Didn't you look to see?

A. No.

Q. Did you find any indication the books were not in balance?

A. I did not.

Q. As a matter of fact you found they were very well kept as you said?

A. The books are very well kept, yes.

Q. You were asked this question after you stated the treasurer of

the Des Moines Company sends the entries through to Philadelphia —that should have been from Philadelphia?

A. Yes.

Q. Then you were asked the direction is from an officer of this company who is in Philadelphia who is also one of the officers
3406 of the United Gas Improvement Co., and you said I understand he is. If it turned out the United Gas Improvement Company owned the stock of this company do you think there would be any impropriety in their being company officers?

A. I didn't offer that suggestion at all.

Q. Be the most natural and proper thing in the world?

A. I would rather expect to find the same men on both boards.

Q. That is what people usually do isn't it?

A. As a rule it is my experience.

Q. Now you referred to these bonds, some of them sold in earlier years at a discount of 10 per cent and some sold later at a discount of five per cent. What rate of interest did they bear?

A. Five.

Q. And after referring to everything here in detail your attention was called to a good many accounts or to a number of accounts or entries that were made pursuant to instructions from Philadelphia. None of those instructions so far as you know involved any impropriety?

A. None at all.

Q. You called counsel's attention to the fact that these entries were so made didn't you?

A. Were made on instructions of Philadelphia?

Q. Yes.

A. I don't recall whether I did or not. I will accept the responsibility of doing so.

Q. Counsel who examined you didn't examine the books or accounts did he?

A. No.

Q. You did examine the books?

A. Yes.

3407 Q. You gave them this information?

A. I or some of my assi-tants must have given it. I will accept the responsibility of giving it any way.

Q. Could not have been any purpose to bring it out except to sort of try and create a suspicion or something could there?

A. Oh no, I don't think you are just giving me a fair deal there Mr. Guernsey.

Q. Then it was the purpose to emphasis this matter so much and in the way in which it was emphasized if as you say it was entirely proper.

A. Don't you think it is fair to counsel that he should know all the facts connected with it and how business is done?

Q. Well yes, but my experience is that a witness calls counsel's attentuon to the material things.

A. Well I regard that as quite material.

Q. From which point of view is it material, for no other purpose

except to rather suggest some doubt about the transaction that we have to remove on cross-examination.

A. Not at all. I am not offering any suggestions about your transactions. I am simply doing what I am paid to do, advise counsel in the matter as to the position of affairs. That is all of my whole connection with it.

Q. Now you said with reference to some bonds sale that you could not tell what they did with the money, it simply went into the same pot. Is it usual in keeping the books of a corporation to trace the receipts so that you can tell for what purpose each identical item of receipts is disposed of?

A. You could not tell from any set of accounts.

Q. No of course not. Now referring to this bond sale again, you say in answer to the question this bond sale, how is it entered
3408 on the books up here and you answer entered as a straight bond sale and the proceeds charged to the treasurer and to the question just simply charged to the treasurer you answer yes and then the question to ascertain exactly what was done with that you would have to go to the books in Philadelphia, and you answer yes. Now do you think the books in Philadelphia would trace that particular fund, say they got a thousand dollars here and paid that thousand dollars out for that?

A. No set of books would do that. I didn't intend to convey that idea, if I did I didn't mean to.

Q. I have simply read what you said.

A. I didn't intend to convey that idea at all.

Q. Now you said this, page 3184, what do you have to say about anything like an intelligent examination or investigation of these books or papers being made in say five or six days. A. Well I would not take much stock in it myself. I would not place much value on it myself, personall- I could not do it. Now just what do you mean by that?

A. Practically what it says that you could not examine the books and accounts of this corporation in five or six days and do the subject justice.

Q. Could you examine the books and take what the books show?

A. You could accept the figures from the books in a modified extent in five or six days.

Q. How would you have to modify them?

A. You could get al- the books showed in five or six days, might get some if it.

Q. You could in five or six days very readily take the figures from the books as to the plant account or property account of this company couldn't you?
3409 A. Not in detail and by years. You could take the total figure off very easily.

Q. You could take the total off in a minute or two?

A. Oh a few minutes you could do that, but could not make any analysis in five or six days of that kind.

Q. That is what you mean, you could not take and check the figures and analyze the accounts is it?

A. Could not even analyze the account without checking the figures in five or six days.

Q. What do you mean by analyze?

A. Could not go over that account to ascertain by classes the extensions by years and by divisions in five or six days.

Q. What do you mean by ascertaining the classes of extensions and divisions?

A. Could you get an analysis of that account stating the extensions put in in years and in classification, the extensions of mains, meter service or anything else.

Q. Do you know of anybody attempting to do that in five or six days?

A. I have not suggested anything or attempted to do so, simply said I would not do it, would not attempt to.

Q. But you could go to the books and find out how much was invested in the plant as shown by the books without auditing it or analyzing it in a very much shorter time?

A. Oh fifteen minutes take your balance on the books, about fifteen minutes.

Q. That would be what the books showed?

A. That would be what the books showed in total.

Q. You could get at the end of each year what they showed at the end?

3410 A. Take the total at the end of each year.

Q. Very readily.

A. Oh take some little time.

Q. You said on page 3194 with reference to the U. G. I. Co., I see no record of their charging anything in respect to auditing, but they did make charges in respect to advertising service, engineering service, rate regulation expense and a few things of that kind. Now what advertising service did they charge for?

A. I have not got that information for you, I was going to get tha- information for you, but I have not got it yet. I promise to get an analysis of that account and I will get it for you.

Q. Were there any engineering services charged for aside from those in this rate regularfion?

A. My recollection is yes. I will verify it.

Q. And the few things of that kind, what are they?

A. I will tell you all about it tomorrow.

Mr. GUERNSEY: I believe that is all with the exception of the things the witness was to furnish.

Redirect examination by Hon. H. W. BYERS.

Q. What did you mean in your response in your examination in chief where you said that to get a complete record of these transactions you would have to get the Philadelphia books at Philadelphia?

A. You refer to the bond transactions?

Q. Yes?

A. I thought an examination of this company would

3411 involve an examination of the treasurer's account in Philadelphia.

Q. Now Mr. Guernsey asked you if the two accounts ought not to agree and you said yes they ought to. Is there any way you can tell by an examination of these books here whether they do agree or not?

A. You can't tell by an examination of one set whether it agrees with the other.

Q. Your answer as you gave it was made because of the information that you did have from the books here and the testimony that has been given already in this case that all of the stock of this Des Moines Gas Co., is owned by the U. G. I. and that the officers, the principal officers reside in Philadelphia and are officers of the U. G. I. and the testimony that there is a separate set of books in Philadelphia, is that right?

A. Yes.

Q. Mr. Guernsey asked you if you did not find vouchers here and oil contracts and other things of that kind. You did, but it does not follow does it that the vouchers show the real transaction?

A. Not always.

Q. The truth is that the books here do not show the truth in many respects as you have ascertained, isn't that so?

A. Would you mind specifying a little more, I don't follow you.

Q. Take this question of salaries for instance, the books here do not show the truth about that do they?

A. My understanding is no, they do not.

Q. Now they went through the form of making out vouchers in the name of each of these individuals just exactly the same as though they were getting their pay?

A. Yes, sir.

3412 Q. And that was too right at a time when the U. G. I. did have an account with this company didn't it?

A. Yes.

Q. That is to say there were other items in the books showing an account with the U. G. I.?

A. Yes.

Q. So that it does not follow at all because you find a copy of a contract here that has been sent here from somewhere else where another set of books relating to the same concern is kept, it does not follow that the contract shows the whole transaction.

A. I am sorry to say it does not.

Q. Been your experience very many times it does not?

A. I have found what are called special discounts quite often.

Q. You were asked about the real estate. All the real estate entries that you took from the books correspond with the entries as Hagenah has them in his sheet?

A. I don't recall what he has in his sheet at all.

Q. Anyway you figured out his sheet to ascertain the difference and you did not find any difference in real estate?

A. No, our results agree substantially barring the differences pointed out.

Q. Your results agree substantially barring the $40,000——

A. At the commencement, $120,000 for the holder, and bond discount of $40,000.

Q. Mr. Guernsey has asked you several times about valuation. You did not attempt did you and it was not your purpose in your examination or in making the report to give the value of this property as that term is ordinarily used, the market value?

A. It was not.

3413 Q. You were also asked about your instructions or who told you what was wanted, what kind of an examination was to be made. You were told were you not that what the defendants wanted was simply to know what the books of this company showed the property cost?

A. That covered my instructions.

Q. Your investigation then was for the purpose of ascertaining as near as possible exactly how much money had gone into this plant here in Des Moines.

A. As shown by its books.

Q. What other purpose, if any did you have either in making the investigation and examination or in submitting a report here than to ascertain the investment in the Des Moines Gas Co.'s plant.

A. Well that was the whole purpose of the examination.

Q. And what do you have to say as to whether or not that is what your report shows?

A. That is what it purports to show.

Q. And what do you have to say as to whether it shows it substantially correct as shown by the books with the modifications you have already explained?

A. It does.

Q. Now just before we went to dinner, and it just so happened we had the pleasure of eating dinner with Senator Cummins, just before we went to dinner counsel read into the record a record with respect to the increase of stock of the Capital City Gas Light Co. from $300,000 to $600,000 and you were asked after the reading of the record whether you saw anything improper in that record, and as I remember it you answered that you did not suggest anything improper. Now does the books of that company show that $600,000, either in money or property had gone into the

3414 plant un to that time?

A. No. I may say in further answer to your question that the Capital City company if it were being examined on behalf of a bond house, that $131,000 would not stand in the plant account unless there was an appraisal brought forward to substantiate the whole figure at that time.

Q. The truth is I suppose, I don't know and want to get your judgment about it from your experience in these matters, they are all new to me, I suppose the truth is after listening to the reading of that resolution and record that it was not property in the plant that Senator Cummins referred to at all in his resolution, but the franchise that he suggests in his resolution has a certain value?

Objected to as leading and further because it is asking the witness not only to interpret the resolution, but state what was in the

mind of the person who offered it, which certainly cannot be competent on any possible theory and which no very conservative man would attempt to answer.

Q. Don't get the notion Mr. Witness I am asking in anybody's mind.

A. My judgment when I saw the entry was they capitalized the franchise and what they termed immunities.

Q. You were asked about assets aside from the so called franchise aside from whatever franchise they claimed to have at that time. Did the books show anything like $600,000 in book assets over and above bonds?

A. The books showed assuming the $131,000 was represented in assets the books showed that they were that amount short of the $600,000. The $600,000 capital stock being increased to that amount after declaring a stock dividend of $300,000.

Q. The amount of stock that was issued at that time
3415 brought the total stock up to $600,000.

Q. That I understand you was $130 odd thousand dollars more than the assets as shown by the books?

A. Yes.

Q. So there was that much water if you use that term so far as the books were concerned?

A. Well if you call it water there was.

Q. And there was that much that if a rate for gas was to be based upon the capitalization there was that much of that capitalization that was not represented by the property or assets.

Objected to as leading and incompetent because it asks the witness to argue the legal proposition.

A. There was that much not represented by anything as shown by its books and the amount would want to be very carefully considered in rate making.

COURT: You found a net income there available for dividends $181,005.56?

A. Yes.

COURT: Then a dividend of four and one fourth per cent had been taken out of it?

A. Yes.

COURT: Leaving $168,255.56?

A. Yes.

COURT: As assets belonging to the corporation at that time.

A. Yes, their profits were invested in assets.

COURT: In other words there was that much surplus?

A. Yes.

Q. The difference between that $300,000 and that amount is what you call what, from the books?

A. General Byers' term water, appreciation I will call it.
3416 Q. The chart that Mr. Guernsey referred to that is found in your report merely represents a computation and tables that are found on page 29 of your report.

A. Yes.

Q. In Exhibit 33, there are three tables, tables 3, 4 and 5 as I designate them. Mr. Guernsey inquired about these tables. These three tables are worked out to show what could be accomplished by the theory advanced by Mr. Haganah?

A. That was my idea.

Q. That Exhibit 56, I suppose that has not yet been offered?

Mr. GUERNSEY: I think you are mistaken, I think it is offered.

Q. Now getting back to the alleged difference between you and Mr. Hagenah, that was broken off a little soon for me this forenoon. You suggested to counsel that you had a table that would illustrate that proposition very nicely. I wish you would hand it to me. Before I take it up I wish you would turn to your Exhibit 33 for a moment and just take the first item in the table and work it out for us and give us the amount that ought *ot* be carried in the first column in the second year on the correct theory of reaching investment values, correct according to your theory. Have you figures that for me?

A. Yes, sir.

Q. Give me the amount which should be carried down for the second year of that table in Exhibit 33, what do you make it.

A. Do you wish the process?

Mr. GUERNSEY: May we not have the amount first.

A. $325,792.

Q. That is the first year's depreciation?

A. That is depreciation, y-s, charged that year taken out of the plant account.

3417 COURT: I don't see what you mean?

A. The plant as the commencement of the period has decreased in value from 100 per cent to 98 per cent. I reduce it to that 98 per cent admitting the charge as an operating expense which is entered to always maintain the plant at the par value of 100 per cent. In this table he has the value of the plant at 102 per cent.

Q. Go through it and give us the way you work it out?

A. I accept the value of the plant at the commencement of the year $308.983. Add 8 per cent of the value $24,719, subsequent additions during the year $18,394. 8 per cent on the additions for six months $736.00. I charge operating expense after deducting allowance for depreciation giving a net result of $21,043 deducted from the figure before we find it gives $331,789. That depreciation was placed in in order to bring this plant to par value, consequently it has got to come out again and brings down the opening balance the second year to $325,792.

Q. Take the sheet you offered counsel this morning being report marked Defendant's exhibit 24 and you may state what that is and explain it to the Master?

A. I prepared this table in an endeavor to clear up any misapprehension about this theory and I assumed that we have a plant commencing the first year with one machine valued at $1,000. That each year thereafter on June 30th we would add another machine of $1,000 value and that each machine would earn net ten per cent

or gross 20 per cent and expenses, 110 per cent leaving a net return of 10 per cent on the amount. I give ten per cent on the opening balance and ten per cent on the additions and work it out beginning with the first year with a machine valued at $1,000.

Ten per cent would be one hundred. And another ma-
3418 chine June 30th, another thousand dollars and interest and then depreciation five per cent per annum on that machine, $75.00 operating expense $150 paying ten per cent on the investment, we have $2,275. Deduct gross earnings $300 and it leaves cost the first year or gives $2,075 investment in that plant. Carried forward each year I find at the end of 20 years we had an investment of $43,933.12. The original outlay here we would assume to go a thousand dollars being the price of the first machine and as there is always your depreciation reserve %75.00 plus the amount required to get a new machine the final result would be that $10,000 would be invested in that plant in capital at the end of that time having on hand 21 machines at $21,000. Take the machines themselves and work the depreciation down on the basis at which you charged it at five per cent per annum you find the present value of those machines to be $10,000 representing this investment value of $43,000. There is a proportion of that depreciation in fact all the depreciation went back into the plant to get its ten per cent consequently that has got to be taken care of and the stockholder has got to get something coming yet under the Wisconsin theory and that amount will bring up the investment to $21,000 the par value of the machines at the end of the time. He having pulled down net ten per cent of his investment throughout and five in some cases. He gets his five per cent throughout the depreciation earning ten per cent and his five per cent taken care of would bring up his investment to 21,000 the par of the machine, but not $43,933.

Q. In other words, if I understand your statement and your analysis and criticism of Mr. Hagenah's statement under his theory if rates were based upon his method of ascertaining the method value the consumer would — paying a return upon prac-
3419 tically double the investment.

A. In this case yes, but in other cases it might work very much the opposite way where the company would have no investment at all wipe it out entirely.

Q. In other words if it was operated long enough?

A. Carried long enough and a sufficient high rate you could wipe the investment right out even on this theory.

Mr. Byers: We offer Exhibit No. 34.

Court: Here is my idea of the Wisconsin theory, that it is simply a rate making table first and the design of it is to allow them to earn or recoup their earnings where they are not earning at least 8 per cent or ten per cent whatever it is. They are not affected by the excess, for instance if they were actually earning say only five per cent for rate making they are allowed to recoup that, but if it goes above that that they are not affected by it for rate making.

Of course if they are affected by high and low the greater their earnings the less value of the plant would be and the less earnings the greater the value of the plant would be.

A. It is not the idea I am quarreling with, it is the application of the theory.

Mr. GUERNSEY: I would like to defer our objections to this Exhibit 34 until we understand it a little better.

Q. To cover that question of depreciation a little just give us your explanation of that and then we will take up another matter?

—. All I can say more about it is that the investment calculated on the depreciation values would give you $10,000 and they still have $11,000 in that imaginary plant which would leave your Wisconsin theory investment $21,000.

3420 Q. For a little over $11,000 investment?

A. For $10,000. The other $11,000 representing these profits which they have not taken out, capitalization of their profits. I might say further the difference between $43,000 and $21,000 represents the depreciation which has gone in out of interest. It is simply a question of reducing the statement by the amount of that depreciation plus interest account.

COURT: Did you ever figure this from six per cent?

A. I have a six per cent table here.

COURT: I understand that, but did you ever figure it eliminating the excess over six per cent in one year?

A. I have not, I will be glad to do it for you.

Q. This page 29 of your report, I wish you would just state briefly the basis of that table and that computation?

A. That table purports to show the added investment as per the books subject to the adjustment and qualifications made by Mr. Guernsey less depreciation as claimed.

Q. Worked out on six per cent?

A. No, worked out on the basis of their net earnings I stated and after applying six cents depreciation per thousand.

COURT: In other words you took the net earnings for a particular year and divided that by six and got this result didn't you?

A. No, sir; divided it by the investment to get the return.

COURT: In order to get this percentage?

A. Yes.

Q. Would this table if it were not for some adjustments you have made here show the cost of construction as it is shown by the books of the company?

A. It could be prepared that way.

Q. I wish you would prepare a table for us that will show what if anything must be added or subtracted from your statement

3421 on page 29 so that the result will show the cost of construction as it appears on the books of the company?

A. Yes, sir.

Q. Now you were questioned about one item of rate expense, I think it was fairly cleared up and at least your notion about what

ought to be done with it was fairly well cleared up, but I want to ask you if you can give any better reason now for excluding an item of that kind than you did on yesterday.

A. Well I might offer this suggestion and explanation if the company was about to sell and anyone about to buy this property both sides would be very anxious to consider this question of rate expense in order to determine what this property could do. In other words if the Des Moines Gas Company was going to sell this property on an earning basis I rather imagine they would want to exclude this as an expense, want to make large earnings and I think quite properly so.

Q. In other words I get this understanding from your testimony that an expense to be an operating expense in a manufacturing business must be an expense growing out of the operation of the business itself.

Objected to as leading, I think the witness ought to be permitted to do part of it.

A. That is my idea.

Q. Take this account or charge, in the end of course it all must be considered in making up a balance sheet to determine where you stand?

A. It has all got to be considered ultimately.

Q. Take a case like this for instance, see if it is a fair illustration of what you have been trying to get at. Suppose that some
3422 employé or officer of the company should be short or take out of the till a thousand dollars and carry it off, it is lost. There would be a thousand dollars of money taken out of the funds of the company, would that item be proper to go into operating expense?

A. No, I would feel quite justified to take that out in determining the sale or buying of that business.

Q. Why.

A. It should not be an ordinary recurring matter in that office.

Q. Is there any difference in principle between that item and an item like this of rate expense?

A. The principples are the same, yes.

Mr. GUERNSEY: Your idea both of them occur out of a steal?

A. No, I don't suggest that for a minute.

Q. I don't want of course to spend too much time on this salary proposition, but you were asked if there was anything wrong about this salary proposition, you don't mean to endorse that $10,000 charged for salary in this case do you?

Objected to as leading and I submit if your honor please that we ought not to be required to make this objection so continuously especially where questions are of this kind.

A. I don't feel I am in a position to either endorse or negative.

Q. Now let me see if you can't negative it. You examined these books pretty carefully?

A. Yes, sir.

Q. You know what force is up there at that office?

A. Yes, sir.

Mr. GUERNSEY: We object to all of this as leading and as argumentative putting the argument into the mouth of the witness and getting the witness simply to say yes.

3423 Q. Did you find any indication up there at all about that office that these gent-emen were doing or performing any services for this company that justified any such charge?

A. One or two of the gentlemen do perform to my knowledge certain services, but whether those services or the value of them justify that charge I am hardly in a position to say.

Q. Did you find anything that the U. G. I. was doing that justified it in geting $10,000 salary?

A. Well it might be justified in getting it under certain circumstances.

Q. Well did you find any?

A. I didn't observe it.

Q. Was there anything about the plant up there or its management that indicated to you the necessity of any help in the management of the business or in the performance of the necessary labor about the offices.

—. ——.

Q. In addition to the management that is local here?

Same objection.

A. I had the impression that the local management was very competent.

Q. Mr. Guernsey asked you if it was not entirely proper and common to have these expense extras charged up to the co-t of operating the business. Is that usual and customary where companies are operating at a loss and not making money?

A. If we don't make any money there is no subscriptions I know that.

Complainant moves to strike the answer as not responsive.

Q. Well is it usual at all or common for public service corporations in states where the rate is a matter of adjustment by the authorities of the state to charge up as an operative expense such items as you find charged up here including dues and fees to local

3424 clubs and such things as that?

Same objection and as leading.

A. All companies charge up some chairty expense to a greater or less extent, but I notice it is usually a lesser.

Q. Now just another thing about leakage here. Mr. Guernsey went over that and you say as I remember it in one of your tables here you used 1.35 per cent leakage.

A. If I said so I didn't intend to say that. 1.35 cents per thousand.

Q. What was the *pre* cent leakage.

A. 4.31 per cent leakage.

Q. That is what you carried into that table?

A. Yes, sir.

Q. Mr. Guernsey had you verify the additions subtractions, multiplications and divisions if there were any in Exhibits 48, 49, 50, 51, 52, 53, 54 and 55. Now let's take Exhibit 48 a minute. Start with Exhibit 48 and work for the Master if you will a table using these figures so far as they go to show the average investment for five years and what the rate of return would be on the basis of this Exhibit 48.

A. Have you any objection to doing this tomorrow, it is quire a little work.

Q. No objection, if you will take Exhibit- 48, 49, 50, 51, 52, 53, 54, 55, and 57 and make them up showing the average investment for the same time and rate of return?

A. Yes, sir.

Q. Something was urged in Mr. Guernsey's questions at least against your taking the low manufacturing cost in 1910 in making up your tables How do you justify that?

A. That is the actual. That is what the company has
3425 demonstrated it can do and is doing.

Q. The manufacturing cost for 1910 shows exactly what this company with its present facility and capacity can work out here in the ggas business.

Objected to as leading.

A. Yes.

Q. I wish you would tell us in your own way if you have anything further to say with respect to why you took the manufacturing cost of 1910?

A. I have nothing to say about it, but the company demonstraed it did business in 1910 on that basis.

Q. Was there anything to indicate that the company to do that were compelled to curtail in any respect expense where they ought to have been more liberal?

A. Seemed to me reasonable to assume they could continue to do so.

Q. That is the reason you took the item of 1910?

A. Yes.

Q. And not for the purpose as was intimated of being unfair in making up these tables?

A. Oh no I am not in the figure juggling business as Mr. Guernsey kindly suggested.

Q. You have a statement in the record this morning that I think perhaps won't read as well to you when you see it as it might have sounded to you and I want to call your attention to it so you may explain it. I can't state it exactly to you, but that you did just what you were paid for. What did you mean by that statement?

A. That I complied with my instructions from the corporation counsel to provide his office with all the information available in
regard to the operations of this company.

3426 Q. What did you do in the way of carrying out these instructions other than to make a good faith effort and a diligent effort to ascertain every fact that would either inform the Corporation Counsel as to exact investment in this case of this company or inform the Master or other counsel?

A. That was my *soul* endeavor in making this examination to get all and every fact available for the information of court and counsel.

Q. Finally now I want to ask you, as I remember it your figures show the value not the cost but the value of the investment of this company on December 31, 1910, to be in *t*round numbers $1,550,000.

A. As shown by the books with certain eliminations.

Q. Now what do you say as to whether from the examination you have made with your experience in these matters as to whether that sum represents substantially the investment value of this property.

A. I am afraid I can't very well answer that, I have not enough experience to say there is so much invested in that plant.

Q. I do not mean that, I mean the experience you have had as to the accuracy of the work. Leave ou*f* value and use investment in the plant?

A. As to the accuracy of its books in this regard do you mean?

Q. Would you be willing to rest your judgment upon that showing that amount as to the investment in this plant?

A. Yes, as shown by its books, yes.

COURT: Assuming that that appraisement is correct.

A. A correct basis.

Q. This morni*j*g you spoke of *their* being *own* one dividend, was that exactly correct?

3427 A. One cash dividend.

A. Yes, one cash dividend. That is what you meant when you said one dividend?

A. I don't recall the question, but there was one cash dividend and two other dividends.

Q. What were the other dividends?

A. One $300,000 in 1897 I think and the other one on the sale of the Capital City property to the Des Moines company.

Q. And what was that?

A. $3,169,000 in securities.

Q. How much of that was interest bearing securities some of which have since been retired?

A. The interest bearing securities issued at that time amounted to $800,000 of six per cent preferred stock contracts, and $285,000 of first mortgage bonds.

Q. Both these items were dividends were they?

Objected to as leading?

A. Not exactly.

Q. What were they?

A. The $800,000 preferred stock contract, $120,000 of bonds and common stock $2,249,000 were declared as dividends to the stock holders of the Capital City Company.

Q. And the balance of the $285,000 five per cent gold bonds were absorbed in this Valley Junction business and in some other matter, the debt to the United Gas Improvement Co.?

A. Yes.

Q. $105,000?
A. $205,000 and a few hundreds.
Q. That was paid by the Des Moines Gas Co., turned over to the Capital City Gas Light Company for the U. G. I., $120,000
3428 of these five per cent gold bonds?
A. Yes.
Q. Then what do you have to say as to whether or not that would make $935,000 of interest bearing securities that were absorbed as dividends at that time?
A. I don't just reason that out.
Q. All the $800,000 of the six per cent preferred stock contracts.
A. That went to the stockholders of the Capital City Company as dividend.
Q. Then the $120,000 of five per cent gold bonds?
A. As part of the dividend, yes.
Q. That is $920,000?
A. Yes.
Q. Then there was $15,000 bonus or difference between the amount of the $120,000 bonds and the debt wasn't there?
A. Yes.
Q. There was a discount on those bonds just about $15,000.
—. ——.
Q. And it was all the U. G. I.?
A. As I understand it.
Q. On yesterday Mr. Guernsey had you admit, unless I am wrong that any new business commencing in new business you would have to borrow money to pay taxes. That is not true is it?
A. You might have to borrow money or issue stock to pay the taxes which taxes you would capitalize during construction. That is what I understand Mr. Guernsey wanted to know.
Q. Taxes are not payable at the first of the year are they?
A. They are not payable at the first of the year and I don't know how you charge taxes during construction here. Assuming there are any taxes during the period of construction you could reasonably capitalize it.
3429 Q. They would be charged to construction then?
A. Yes, sir.
Q. Did you refer to taxes on operations?
A. No I had in mind Mr. Guernsey asked me about taxes on construction.
Q. That would go into construction?
A. Oh yes, during the period of construction capitalized those.

Recross examination by N. T. GUERNSEY, Esq.

Q. Your taxes during construction would be treated as part of the cost of construction and capitalized on that basis?
A. Yes.
Q. The same way as interest during construction?
A. Until the plant is operating, yes.
Q. Until the plant is earning money?
A. Until it commences operating, yes.

Q. Do you mean to say that this distribution of the assets of the property of the Capital City Gas Light Company was what we ordinarily call a dividend?

A. That is a term you use in your own records.

Q. That don't answer my question.

A. Well I don't know what you mean. If you will explain it I will be very pleased to answer it.

Q. You don't understand my question?

A. I don't follow the meaning.

Q. You referred to the payment of some $12,750 as dividend?

A. $12,750, yes.

Q. Was this distribution of the assets of the Capital City Gas Light Company after they sold the property a dividend in
3430 the sense that the $12,750 was a dividend?

A. It was not, no. Of course I would not suggest it was at all.

Q. It was division of what this company had received for its entire assets?

A. Yes, including its profits on the transaction.

Q. It was not a dividend paid out of earnings?

A. No distribution of assets including profit made on the transac-ion.

Q. Whatever they made on the sale of their property?

A. Exactly.

Q. If they did make any profit on the transaction that profit you do not take it into account when you give the investment value of the plant in the hands of the next succeeding company do you?

A. No.

Q. You cut that out?

A. Yes.

Q. In other words you treated this in the hands of the Capital City Gas Light company as something that was paid for this property, but did not treat this in the hands of the Des Moines Gas company as something it had paid for the property. That is right, isn't it.

A. That is right.

Q. Now you said one reason why this rate expense should be excluded would be that if you thought or if the Des Moines company was endeavoring to sell this plant, and a purchaser was looking into the earnings and operating expenses, the company would like to exclude it?

A. As an expense, yes.

Q. Then how about the purchaser, do you think he would want to ignore it and then spread it over the next ten years?

—. Yes, that should be ignored as regards the high cost
3431 which applied to the two years?

Q. The purchaser knowing it would be applied to future years would ignore it?

A. If he would have to pay the expense he would allow for it, but in determining the possibility of the business he would not take it into account?

Q. Unless he assumed in view of the outlay on the plant that might occur not every year, but periodically.

A. Every two or three years might be a more important factor.

Q. After mature deliberation that is the best reason you can give us for excluding this item?

A. I think it a very good one myself.

Q. Suggested to you by whom?

A. Not suggested.

Q. Haven't had any conference?

A. I don't require a conference in a matter of that kind.

Q. You have told us two or three times in answers to leading questions put to you by your counsel on redirect examination that the only thing you tried to do in this examination was to ascertain the cost of this property. That is an error isn't it?

A. That was one of the things I endeavored to ascertain, not the only thing.

Q. You have stated two or three times in answer to leading questions that was the only thing?

A. If I said so I didn't mean that.

Q. You put in a good deal more time getting operating?

A. Perhaps equally distributed.

Q. Checking that voucher by voucher, the last year, that was a big piece of work?

A. That was a good big piece of work.

3432 Q. The biggest single piece of work in the whole this?

A. Barring the preparation of the report itself, yes.

Q. Take this matter of salaries again I want to get what your position is squarely, if I can get it. You have testified about it three times now and I want to try again. Do you say that these salaries are items that ought to be excluded or not?

A. I have no particular view with regard to these salaries, whether they ought to be excluded or included, it is a matter for the court to decide.

Q. You have not intended to change your testimony on that subject?

A. Why no I don't think I did. I didn't intend to.

Q. Now let's look at this Exhibit 34 a minute, I don't understand it. You start out the first year with a thousand dollar investment in your machine?

A. Yes.

Q. And you charge a return of $100?

A. Yes.

Q. Then you put in another machine in six months?

A. Yes.

Q. Figure the same kind of a return?

A. Yes.

Q. Then you figure your depreciation on the plant is $75 on the two machines for that year?

A. Yes.

Q. So that to make that man whole at the end of the year he would have to have his machines and $150 return and $75 to make up depreciation on the machine.

A. No.

Q Well haven't they depreciated?

3433 A. He is entitled to get his machines $1925 plus $75 plus his $150.

Q. Let me ask my question please. You assume he is entitled to a return of $150 don't you?

A. Yes.

Q. During that period you assume his machines have depreciated $75 don't you?

A. Yes.

Q. So at the end of the year he has two depreciated machines?

A. Yes.

Q. To make up that depreciation would cost $75 wouldn't it?

A. Yes.

Q. So if you give him the machines in their then condition plus $75 he would have his machines as good as when they were put in?

A. Yes.

Q. He would have to have a return of $150 in addition to that wouldn't he?

A. Yes.

Q. That is exactly what I asked you a few moments ago isn't it when you dissented?

A. No it is not.

Q. So he should have at the end of the year $225 and the machines in their then condition, that would give him his return and enough to take care of the depreciation- that have occurred up to that time?

A. No.

Q. Now we will go over it again. I thought that was what you told me a moment ago.

A. I didn't intend to tell you that. He had the machines in the depreciated condition his reserve of $75.00 and $75.

Q. I am not asking what he did have but what he ought

3434 to have to make him whole on your theory?

A. That is what he ought to have.

Q. Now what he did get as a matter of fact he had gross earnings $300 and operating expense $150?

A. Your expense don't include depreciation.

Q. Of course I understand that. If they did include depreciation he would come out just even?

A. Come out $75 net earnings.

Q. If that $150 included depreciation he would come out just even at the end of the year, would not have been any $75 shortage.

A. I don't follow that reasoning out.

Q. You would then not have to charge depreciation in column five?

A. If you eliminate depreciation in column five you would come out $200 at the end of the year.

Q. But take it as you have it here at the end of the year he has $150 out of which to reimburse himself for the depreciation and the earnings?

A. Yes.

Q. And that is $75 short?

A. Yes.

Q. Now then in order to make that up to him you add that to his investment and pay interest on it?

A. The $75 I stated before went into additions consequently was earning 10 per cent.

Q. What additions.

A. On the next business, that $1000, when he bought the machine he put in $925 new capital and $75 depreciation.

Q. Oh no he didn't do that because he bought the machine in June and didn't get the depreciation until the end of the year.

A. Never mind when he got it, it went in there. He
3435 utilizes his depreciation as he goes along to buy new machines.

Q. But now then let's see, he is not entitled to that $75 until the end of the year.

A. Be entitled to half of it as he goes along say $37.50 in June.

Q. So he would not have it June 30th to put into the machine?

A. Might not have it all, go into the next machine.

Q. Does the correctness of this computation depend upon his putting that $75 into the new machine every time?

A. It depends upon the depreciation going into the investment.

Q. If he put the $75 into the new machine what did he put into the old one to keep it up?

A. That is part of his operating expense.

Q. So that you have allowed him here enough to keep up and maintain the old machines and help buy the new ones.

A. Yes.

Q. Which of course would be an unreasonable amount of depreciation?

A. I don't claim any reasonableness, simply an arbitrary thing to demonstrate the point. I don't say it is an actual occurrence.

Q. Suppose he had not had that depreciation, $75 to help buy that new machine, before he got to depreciation and had paid that $75 out of his own pocket and then when he received the depreciation had put that back into his pocket, would that make any difference in the calculation?

A. Bring the same results, the final result would be the same.

Q. So it makes no difference whether he uses this depreciation to buy a new machine or not?

A. If he puts the depreciation up in a reserve it has got to be earning on the same basis it goes in at.

Q. That don't answer my question.

A. That is as far as I can answer it.

3436 Q. All right I wil- try another. Now then if your depreciation here is charged up on a correct basis you have just enough to maintain your plant and keep it up to its original condition during this period haven't you?

A. Yes.

Q. You can't take that depreciation and put it off in a fund for twenty one years and let it pile up and keep running your plant can you?

A. It would not be good business.

Q. It would be worse than not good business?

A. You would have to go out and borrow it to finance your plant.

Q. You would have an additional expense in here you have not put in if you followed out this theory of yours and compounded that depreciation fund that way wouldn't you?

A. My point in that depreciation fund in the Hagenah table is to show——

Q. I didn't ask you what for, I just asked you for the fact.

A. If you put in into the plant as you put it in there you have got to get it out on the same basis, no other answer to it.

Q. I didn't ask you that. If you compounded this depreciation fund as you say you have to get these results the result would be that your plant would not run or else you would have to borrow some money or incur some expense to keep it going.

A. To put your fund outside?

Q. And if you did that you would have to pay for it?

A. Yes.

Q. And that same ten per cent?

A. That is reasoning away from the original proposition.

Q. Away from your theory but not from the facts?

A. Away from the facts too. The fact that this depreciation is added here and you are putting the plant in more than face
3437 value $1000 and you have got to bring it down——

Q. You added that $75 there for that depreciation?

A. Yes.

Q. Where did you get that to add?

A. The result of this computation.

Q. Oh no, this showed a deficit of $75.

A. On ten per cent, yes.

Q. So this man did not add his return but was $75 short. You add in your bookkeeping here $75, but where did you get the money to put in there?

A. This outside column here and the outside column of the Wisconsin theory are not represented by money at all, that is the fallacy of it.

Q. To have that $2,075 there that $75 would represent something that the plant owes this man to make him square?

A. That would represent the deficit of his ten per cent income.

Q. That they owe him to make him square?

A. Yes.

Q. Now then at the end of your first year he would have in machines $1925 wouldn't he? That is he would have his machines depreciated $75?

A. At the end of the first year, yes.

Q. Then he would have $75 to make up that depreciation?

A. Yes.

Q. Then he would have $75 of his return?

A. Yes.

Q. He would be short the next $75 of his return?

A. Yes.

Q. So you then owe the man the $75 and add it to the value of your plant?

3438 A. Yes, sir.

Q. So the amount of his investment at the end of the year would be $2075 instead of $2000?

A. Take the depreciated value of the machines, the depreciation fund and what was coming to him.

Q. If you take that depreciation out of there he would be short $75?

A. I am not taking it out of there, putting it back in the plant.

Q. But you do take it out when you get through with the criticism of the Hagenah computation?

A. Yes, because this depreciation goes into the plant and has got to earn on the same basis.

Q. Now let's go to another year, he started out at the end of this year the man had $2075 invested, $2000 being made up of the $1925 plus the $75 to make him his original investment and the $75 being made up of the deficit that they owed him. Now at the end of the next year we find this change don't we that he has invested another $1000.

A. No, not exactly. He invests the amount returned over and above his depreciation to buy his machine.

Q. Well if he takes the depreciation away from the $1925 he has not got his original investment has he?

A. He takes that $75 to bring his investment up, puts that *in* additional capital in to buy another machine.

Q. Let's see what is done on your theory. He had at the end of the first year in machines $1925 didn't he?

A. Yes.

Q. Then he had in money to make up depreciation $75?

A. Yes.

3439 Q. Now then you say he takes that $75 and puts in $925 more with it and buys another machine?

A. Yes.

Q. Then he will have at the time he makes that purchase in his machines $925 plus $1000 and he will be $75 short of their original value.

A. Yes.

Q. And he has invested this depreciation fund so that his capital is depreciated then $75?

A. Yes.

Q. That is right isn't it?

A. Yes, the $75 is taken care of in additional machine, it goes back into the business.

Q. The investment there is not as you put it here, there is not a thousand dollars additions to plant, only $925 additions to the plant and $75 invested on account of depreciation?

A. Brings exactly the same results.

Q. I don't care for results.

A. These are the facts when you come right down to the same basis that is the fact.

Q. So that at the end of that second year what is his deficit?

A. He is $207.50 short in his income.

Q. So on your theory at the end of that year——

A. Subject to a return of ten per cent on his investment and his depreciation fund gone back in the business.

Q. So at the end of that second year he started out with $2,075—or did he start out with $2,075?

A. He started out with two machines and his shortage in income.

Q. During this next year he gets how much depreciation?

A. $125.

3440 Q. And each year he goes a little further in the hole then on your theory?

A. Yes.

Q. It don't make him whole?

A. Does not make him whole.

Q. And it never will?

A. At the end of twenty one years he will be whole and have $21,000 representing his $10,000 of capital and his $11,000 of earnings which he has not taken out?

Q. There is how much capital?

A. $10,000 being the present value of his machines, he will have that and he should have $11,000 to take care of his shortage in income.

Q. How many machines did you have him buy?

A. Twenty one.

Q. What was his total investment?

A. He spent for the machines $21,000.

Q. You give him back how much?

A. All he receives from depreciation fund, $11,000.

Q. Nearly twelve?

A. No, $11,000 the exact figure.

Q. He put in $21,000.

A. He paid $21,000 for machines, put in new capital $10,000 and his depreciation of $11,000.

Q. Now then how much did he get out of it?

A. Got earnings, his ten per cent interest was $22,000.

Q. That is only on your original investment.

A. Oh no.

Q. That is not on your $10,000?

A. Yes, on the $10,000 he got his twenty two thousand.

3441 Q. What else did he get out of it?

A. Got his operating expenses out of it.

Q. What else did he get?

A. That is all.

Q. Your theory of this thing is this he has advanced out of his own pocket $10,000.

A. At varying intervals as required.

Q. When did he put that up?

A. Put a thousand up when he bought the first machine and additional money up as he bought additional machines utilizing his additional money as it goes along.

Q. I want to go back to that second year, you start out that year with $2,075 that he is entitled to on account of deficit and a return on investment?

A. Yes, sir.

Q. Now at the end of that year instead of getting any of that back he has made a further deficit?

A. Yes.

Q. So that with his additional investment it brings him up to $3,270.50

A. Yes. I may make the suggestion this table could be checked up by taking additions to the plant of a thousand dollars less depreciation.

Q. What is the addition to the plant the last year, $1900?

A. The last year $25,000.

Q. It is a negative figure.

A. Negative figure.

Q. You don't put anything in at all?

A. Not the last year, takes a little out.

Q. Gets back $25.00, when he buys the machine he gets $25 back

3442 A. It begins to get his capital then.

Q. Suppose this man stopped at the end of the second year how much would he have to get to get out whole plus the depreciation on his machines and allowing him this return of ten per cent.

A. He would have to get o-t the $3,207.50.

Q. The end of the first year I said?

A. To get out whole, with his ten per cent he has got to get out $2,075.

Q. Takes that to get him out whole?

A. Yes.

Q. Take $3,270.50 to get out whole at the end of the next year?

A. Not quite.

Q. Not quite?

A. Less ten per cent on that fund that went into the depreciation account.

Q. He was entitled to earn that if he put it in?

A. He is earning it and not entitled to have it piling up. That is my objection to it.

Q. Let's follow him through that year and see whether that is right. It takes $2,075 to make him whole at the end of the first year?

A. Yes.

Q. Instead of getting out of the business and taking the money he goes ahead for another year with a guarantee of ten per cent return, suppose I had made a contract with that man I would give him a ten per cent return and let him quit at the end of any year he wanted to. Now take this second year he starts in with $2.075. Now he is entitled to a return on that of $207.50 isn't he?

A. Yes.

Q. And then he is entitled to $50 more in the way of deficit.

3443 A. That makes $257.50.

Q. Now of course at the end of that year he has not received the return by how much?

A. $3,200.

Q. Now he is not short on the return that much?

A. The return $500.

Q. This second year $2,075 is what he has got in?

A. Yes, sir.

Q. Then he puts in another $1,000 and the return he would be entitled to would — $257.50. Now he is short some of that, how much is he short? He is short isn't he $152.50?

A. No, he is not short that; be short $72.50.

Q. He is entitled to a return of $257.50, that is right isn't it?

A. Yes, that is right.

Q. Now his gross earnings are $500?

A. Yes.

Q. His operating *are* $250?

A. Yes.

Q. His depreciation is $125?

A. Yes.

Q. So if I subtract $375 from $500 I will get his shortage?

A. Yes.

Q. That is $125?

A. Yes.

Q. That can apply on the $257.50 can it not?

A. Yes.

Q. That is all you can apply on it?

A. Yes.

Q. That gives you how much left?

A. $132.50.

3444 Q. Then if I settle up with him at the end of that year I would have to pay him what he had to begin with $2,075 plus the $132.50 wouldn't I, he would have to have that to come out even wouldn't he?

A. No. You lose sight of the seventy five which went back in the business.

Q. Well but I don't think I do.

A. You would have to stand sponsor for $3,200 with his ten per cent on seventy five which went in because the depreciation goes into that business.

Q. I din't care whether it goes into the business or where it goes.

Q. That is the whole thing as far as that is concerned. That is the whole point with me that goes back there.

Q. In other words what it would be worth depends on where he invests the depreciation fund, not what is the amount of the fund or the return on it but where he invests it.

A. Not altogether. He has got to invest that fund if he draws the fund out of this business got to invest the fund at the same rates.

Q. Go back to the $2,075 and you show me where I am wrong. This man I made this contract with call him Mr. Brown had $2,075 invested there at the beginning of the year.

A. Yes.

Q. And he has that much in there that he is entitled to part of it in the business and part of it in the shape of a credit there the amount of $75 that we owe him?

A. The $75 of the depreciated value of these machines is in the business.

Q. In there was $2,000 representing value of the machines?

3445 A. Exactly.

Q. Then $75 I ow- him on account of earlier losses.

A. Yes, sir.

Q. When we get through that year he has put in another $1,000?

A. Less $75 paid on depreciation reserve. That $75 has got to go back in the business.

Q. You spent that the 30th of June before?

A. I will concede to it in this year, don't make any difference.

Q. I can't follow you if you don't say harder than that.

A. I don't care what year you put in it.

Q. You have got to have some theory or other more permanent?

A. I think my theory is quite permanent.

Q. If I take that depreciation fund and put it into a new machine then what I invest is $925?

A. Yes.

Q. And I have not anything to take care of the depreciation on my old machine if you use that to make investment, a new investment of a thousand dollars?

A. You are bringing yo-r original investment back by putting in this new machine, putting depreciation in that machine.

Q. I know, but you can't call that investment of a thousand dollars where you have taken the depreciation set aside to take care of the old machine and put in a new one, haven't got the $2,000?

A. You have your new machine and depreciation on the old machine.

Q. Is that right?

—. That is quite right I think. What happens in practice every day.

Q. You haven't at that time taken care of the old machine when you put in a new machine if you adopt that theory?

A. Oh yes.

Q. ——.

3446 A. You will find that works aout all right. I can't explain any more than I have explained, I have explained it as well as I can.

Q. There is one thing I want to ask, down below here you have got gross earnings $44,000.

A. Yes.

Q. Then you have offset against that another $44,000 making up the operating expense and interest?

A. Yes.

Q. So that your gross earnings are not sufficient during any period to take care of your operating expenses, interest and depreciation.

A. They fall $11,000 short through the entire period consequently

but investment at the end has got to be $21,000 inste-d of 43 thousand odd.

p. What does this item mean excess of interest over that applicable to actual earnings?

A. That is the interest accumulated assuming your depreciation fund goes into the business the $11,000 here would have earned on a ten per cent basis $11,933.

Q. Does that mean that that is interest on the depreciation reinvested in the business?

A. Yes, in other words it is the interest on the proportion of these opening balances which leaves the accumulated losses or depreciation bot- taken care of.

Q. Do you make any distinction between depreciation and accumulated losses?

A. They are all in there on this theory.

Q. Then that is interest on depreciation and interest on that balance whatever it is?

A. Yes, might call it that.

Q. That is a more accurate way of putting it isn't it?

A. It may be, yes.

Here the further hearing was adjourned until 9:30 A. M. Tomorrow.

3447 Saturday Forenoon Session.

SEPTEMBER 16, 1911—at 9:30 A. M.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JAMES HALL, continuing his re-cross examination, examined by N T. Guernsey, Esq., testified:

—. Now referring to Complainant's Exhibit 59, and your Exhibit 34, you will notice that the first column in your Exhibit 34 which gives the opening balance has been divided here in Exhibit 59 into two amounts?

A. Yes.

Q. The second column showing the additions on account of the deficits at the various years?

A. Yes.

Q. Now your column number one is made up of these two factors shown here as "A" and "B," in Exhibit 59, are they not?

A. Yes.

Q. Now your column we have divided in this Exhibit 59, and I wish you would state whether that is a correct division; that is, we have separated into sub-column A the interest on the investment and into sub-column B the interest on the deficit?

A. Yes, that is correct.

Q. That is correct?

A. Yes.

Q. Now 3, 4, 5, 6, 7, 8 and 9 are, I believe, just as they are in *in* your Exhibit 34?

A. Yes.

Q. So that this would agree with your Exhibit 34, except it is subdivided as to these two columns?

3448 A. Yes.

Q. Now, I wish you would refer to Complainant's Exhibit 60, which is headed, referring to your Exhibit 34. Now, the gross earnings for the period are correctly stated there as $44,000, as taken from your Exhibit?

A. Yes.

Q. And the operating at $22,000; that is correct?

A. Yes.

Q. And the depreciation $11,000?

A. Yes.

Q. Now if a man wanted to go out of business at the end of this period he would have, if he had used his depreciation to maintain his machines, the difference between thirty-three and forty-four in cash—that is $11,000?

A. Yes, that is depreciation he set aside.

Q. No, if he had maintained his machines——

A. Assuming he had maintained his machines he would have $11,000, being the amount he used as depreciation, set aside for that.

Q. What he used for depreciation he would not have left, of course?

A. If he set aside this amount for depreciation each year——

Q. I am not assuming that he did not—he maintained his machines?

A. He couldn't maintain it at 100% value.

Q. Well, he could theoretically at least have the machines in that condition or something that represented whatever depreciation there was in them?

A. Yes, if he applied the depreciation fund, yes.

Q. So that he would have if he maintained his machines, he would have left $11,000?

A. Yes.

Q. He would also have left his machines in 100% condi-

3449 tion or something that represented that?

A. The machines plus other machinery to make up 100%.

Q. So that we call that $21,000?

A. Yes.

Q. So that he would have left $32,000?

A. On that reasoning, yes.

Q. On your figures?

A. I do not agree with your reasoning—on your reasoning, yes.

Q. I am not asking you to agree with the reasoning. We will go back now and see where we disagree on our facts. During this whole period he would receive $44,000?

A. Yes.

Q. He would have to pay operating expenses?

A. Yes.

Q. If he kept his machines up that would take $11,000 more?

A. Yes.

Q. He would use up $33,000?

A. Yes.
Q. That would leave him $11,000 at the end of the period?
A. Yes.
Q. He would also have the machines?
A. Yes.
Q. So that he would have altogether $32,000?
A. Yes.
Q. Now, then, on the other side of that, if he came to figure it up, against that $32,000, he would put in the $1,000?
A. Yes.
Q. Then he had additions $20,000?
A. Yes.
Q. Then he would have been entitled to interest amount-
3450 ing to $32,933.12 on his original investment?
A. Yes.
Q. And on his additions $1,000?
A. Yes.
Q. So that he would have gotton in with his investment and his interest $54,933.12?
A. Yes.
Q. He would have taken out $32,000?
A. Yes.
Q. So that he would have been short $22,933.12?
A. Yes.
Q. And that is just the amount of the depreciation and the interest on the depreciation?
A. Yes.
Q. That is what he would have been short on the transaction?
A. Yes. I would like to add, the fundamental mistake in this statement that the depreciation has got to come out with the interest—I can not see any other way; I have spent hours over it and can not make any other thing out of it.
The MASTER: To get the exact depreciation each year properly you simply keep the investment whole?
A. Before you are adding on your depreciation.
Q. You take the depreciation fund and put it back in the business?
A. It is added just the same as outside capital.
The MASTER: I am talking about true depreciation.
A. It keeps the original investment whole.

The Complainant offers in evidence Exhibit 59 and Complainant's Exhibit 60.
We ask the reporter to copy into the record the short exhibit, being Exhibit 60.

3451 Mr. BYERS: Exhibits 59 and 60 are objected to as being incompetent, immaterial and not proper cross examination.

Complainant's Exhibit 60 reads as follows:

3452 "COMPLAINANT'S EXHIBIT 60.

Referring to Defendant's Exhibit 34.

Gross Earnings		$44,000.00
Operating Expenses	$22,000.00	
Depreciation	11,000.00	
		33,000.00
Balance		11,000.00
Machines, 21—100 per cent Good		21,000.00
		$32,000.00
Original Capital January 1, 1881	$ 1,000.00	
Additions	20,000.00	
Interest { $21,000.00 / 11,933.12	32,933.12	
Interest on Additions	1,000.00	
		54,933.12
Deficit		$22,933.12
Investment Value		$43,933.12
Value of Machines as Above	21,000.00	
Deficit as Above	22,933.12	
		$43,933.12

3453 The WITNESS: I have checked over Complainant's Exhibit 56 and there are one or two small clerical errors here which I have noted on the bottom, otherwise it is all right.

Q. Is there anything of any consequence to affect the actual conclusions?

A. It is immaterial; two or three hundred dollars. I figured out the adjustment of the gross income also as we show it. Here are six copies of it.

Q. Referring to Complainant's Exhibit 61, Mr. Hall, this memorandum which you have made up at our request reconciling your gross income for the five years ended December 31, 1910—your net income, I guess it is—with the same figures as they appear on the books of the Company?

A. Yes.

Q. And under the column headed Cr. you put in your additions?

A. Yes, under the column Cr. representing credit.

Q. You put in what you add to the operating expenses and deduct it from the net income and under the column Dr. you put in what you deducted from the operating expenses and add it to the net income?

A. Yes.

Q. Did you ascertain for me in what year this personal injury occurred?

A. Yes, sir; it was 1903; it was a mistake. It was thrown back to the prior period, prior to 1895.

Q. It was thrown back into 1895?

A. Prioe to 1895; it shoudl have gone into 1903, to be strictly correct; that is a mistake.

Q. So that we don't get credit for that anywhere?

A. You do not.

Complainant offers and reads in evidence Exhibit 61, as follows:

3454 "COMPLAINANT'S EXHIBIT 61.

Adjustment of Gross Corporate Income as Shown by Complainant and as Recorded in Defendant's Exhibit No. 30, Exhibit "A," for the five-year period to December 31, 1910.

Two Months to February 28, 1906	$15,377.48
Year to February 28, 1907	135,038.09
" 29, 1908	163,739.26
" 28, 1909	194,185.54
Ten Months to December 31, 1909	156,497.18
Year to December 31, 1910	185,729.62
As per Complainant's Records	850,567.17
As per Exhibit No. 30, Exhibit "A"	864,518.14
Difference	13,950.97

Accounted for:

	Cr.	Dr.	
Accidents & Damages—1906		$3,685.17	
Federal Tax—1910	$1,287.37		
Rate Regulation Expense		5,935.18	
Interest on Floating Debt		7,126.53	
Interest—Miscellaneous	1,508.54		
	$2,795.91	16,746.88	
		2,795.91	
			13,950.97

3455 The MASTER: There is one question I want to ask. Did you take out anything and on account of replacement?

A. No, I did not. I allowed all the replacements as they had them, if any, in the operating account.

Mr. BYERS: In that table you made there for the Master you used the wrong sign up there in your depreciation; you got it 6% and it should be six cents?

A. That is so.

Q. What do you mean by replacements, in response to the question that the Master asked you?

A. Replacement would simply be the putting in of something to replace something which was taken out.

The MASTER: The reason I ask this question, in his report he states that he agrees with Mr. Hagenah there was certain items which should have been replacements instead of expenses, but he made the remark if they are considered as replacement, they should go into the value of the plant.

A. Yes, providing you have taken out his own depreciation to take care of it, but any deficiency I would take care of out of my operating.

The MASTER: I asked the question simply to know whether he had taken out anything for replacement.

A. I did not feel it would be exactly fair to take anything out for that.

Q. This real estate item I asked you about Mr. Hall, I think you told me personally this morning you would have it looked up later?

A. I will have it got out. If General Byers approves of it, I will have Mr. Sangston put it in.

Q. That will be furnished later then?

A. Oh, yes; certainly.

3456 Q. It will be an accommodation to you to have it deferred?

A. Yes, I would much prefer; I will have to go east.

Q. Now with reference to this matter we took up yesterday, I will call your attention to your testimony on page 3352 and 3353 of the transcript; we were talking about this Hagenah table, which I will read: "Q. I don't care where it went, this man had to have both the depreciation and if the payment was deferred he would have to have interest on that and his return to make him whole? A. Yes. Q. Mr. Hagenah gives him both depreciation and return? A. I think he gives him depreciation twice, that is all. Q. You took away from him his depreciation after giving it to him once? A. I took away one, Mr. Hagenah doubles up on that depreciation and I separate it and give him one. Q. Where does Mr. Hagenah give him twice? A. On one side income charge depreciation on investment and not use it for getting reserve, purely a matter of book keeping." Now referring to this you did say, didn't you, that this was Mr. Hagenah's error and gave this man depreciation twice?

A. That is the effect of the thing.

Q. Didn't you say just what I read there?

A. Was that late yesterday afternoon?

Q. No, that occurred late on the afternoon of Thursday, September 14th?

A. I must have said it if it is there.

Q. That was a mistake?

A. It is not just strictly speaking correct. The interest which goes into depreciation——

Q. Don't explain, please, or I will have to cross examine you some more.

A. All right.

3457 Redirect examination by General BYERS:

Q. You may examine what the reporter has marked Defendant's Exhibit 35 and state whether that is a tabulation made up in response to a question put to you yesterday afternoon?

A. It is.

Q. To furnish us with a statement showing the book entries and a summary of the plant investment as taken from the books without any subtractions or additions upon your part?

A. It is.

Q. Exhibit 35 is that showing?

A. It is.

Q. That shows the total investment as you figured it out $1,730,-205.31?

A. Yes, sir.

Q. Without any depreciation, or subtraction of any kind on the books?

A. With the deduction of the sum of $264,108.78 charged off on June 30.

Q. That is on the books?

A. Yes.

Q. This shows just what the books show with reference to the investment?

A. Yes.

The defendants offer and read in evidence as a part of this witness' testimony Exhibit 35, which is as follows:

3458 DEFENDANT'S EXHIBIT THIRTY-FIVE.

Summary of Plant Investment as per Books.

January 1, 1895, to December 31, 1910.

Cost of Plant as shown by books, January 1, 1895:

Tank No. 1	$7,000.00
Holder No. 1	8,000.00
Tank No. 2	13,056.64
Holder No. 2	20,300.00
Old Gas Works	25,000.00
Real Estate	8,916.00
Office Furniture	358.07
Gas Building and Machinery	63,621.40
Improvement	27,097.47
Extension Works	153.03
New Coke Wagon	30.00
Tank and Holder No. 3	40,279.01
Meters	16,849.17
Street Main Extensions	40,256.37

Extension Fuel Gas		15,898.24
Street Mains, Old		64,357.68
Service Pipe		18,957.10
New Services		16,547.72
Street Lamp Extension		3,710.84
Street Lamp Improvement		11,135.03
Water Gas Plant and Patents		200,000.00
Construction Account representing stock issued without consideration		39,371.22
Total		640,894.99
Additions—January 1, 1895, to February 28, 1906:		
Amount as per report page 21	$648,760.90	
Amount debited to Construction Account May 1, 1897	131,744.44	
Capital City Electric Light Co. Stock	2,553.00	
		783,058.34
Total Book Cost at February 28, 1906		1,423,953.33
Additions—March 1, 1906, to December 31, 1910:		
Amount as per report page 21	484,487.94	
Valley Junction Property at price paid for same	45,000.00	
Bond Discount	33,950.00	
Reorganization Expenses	6,922.82	
		570,360.76
Total Book Cost of Capital City Plant plus Des Moines Company Expenditure		1,994,314.09
Deduct: Amount Transferred from Profit and Loss Account as at June 30, 1909		264,108.78
Total Investment in Plant December 31, 1910, excluding increase on transfer to Des Moines Gas Company		$1,730,205.31

3459 *Summary of Plant Investment as per Books*—Continued.

Total Investment in Plant December 31, 1910, excluding increase on transfer to Des Moines Gas Company.....		$1,730,205.31
Add: Increase in Plant Account on Transfer to Des Moines Gas Co. on February 28, 1906:		
Plant Account Des Moines Gas Company's Ledger	$3,592,723.24	
Less: Valley Junction Property...	45,000.00	
	3,547,723.24	
Total book cost of Capital City Company Plant February 28, 1906, as on previous page.....	1,423,953.33	
		2,123,769.91
Total Cost of Plant as shown by Books December 31, 1910		$3,853,975.22

3460 Q. You may examine what the reporter has marked Defendant's Exhibit 36, and you may state what that is?

A. Exhibit 36 shows, first, the average investment in the plant for the four year period from 1906 to 1909; for the five year period from 1906 to 1910 both with and without Valley Junction; that is, as those investments as determined by Exhibit 30 show the return and applying that investment upon the schedules submitted by complainant as regards Des Moines and Valley Junction in Exhibits 48, 50, 52 and 54. It also shows the average investment in Des Moines alone excluding $45,000 as the Valley Junction property and gives a return on the basis of Complainant's Exhibits 49, 51, 53 and 55.

Q. You took Complainant's Exhibits of yesterday, numbers 48, 49, 50, 51, 52 up to 55 and carried their computation on out to a final result as to return by adding the average annual investment and figuring out a return on the basis of their exhibits?

A. Yes.

Q. I suppose so far as Valley Junction is concerned, it may be more or less than it was at that time?

A. It may be; I assumed $45,000 in Valley Junction.

Q. I suppose naturally it had increased rather than diminished?

A. I would expect an increase.

Defendants offer and read in evidence Exhibit 36, as follows:

DEFENDANT'S EXHIBIT 36.

Estimated Average Investment and Return from Estimated Revenues.

Investment.		1906–1909, four year period.		1906–1910, five year period.	
		Years.	Product.	Years.	Product.
Estimated Investment, January 1, 1906.....	1,008,972	4	4,035,888	5	5,044,860
Additions to:					
February 28, 1906.....	7,332	3 11/12	28,717	4 11/12	36,049
" 28, 1907.....	275,581	3 1/3	918,603	4 1/3	1,194,184
" 29, 1908.....	67,203	2 1/3	156,807	3 1/3	224,010
" 28, 1909.....	13,860	1 1/3	18,480	2 1/3	32,340
December 31, 1909.....	69,864	1/3	23,288	1 1/3	93,152
" 31, 1910.....	107,955	.....	.....	1/2	53,977
Totals including Valley Junction...	1,550,767		5,181,783		6,678,572
Deduct: Valley Junction Plant.....	45,000		180,000		225,000
Net Total.....	1,505,767		5,001,783		6,453,572
Average Investment—Des Moines.....			1,250,446		1,290,714
Add: Valley Junction Plant.....			45,000		45,000
Total Average Investment.....			$1,295,446		1,335,714

Return on Investment in Des Moines and Valley Junction.

Period—Years.	4 1906–1909.	5 1906–1910.	Year 1910.	Year 1910.
Average Investment.....	$1,295,446.00	1,335,714.00	1,496,789.00	1,496,789.00
Net Return applicable to Interest and Profits as per Complainant's Exhibits.....	48 $96,053.61	50 97,683.67	52 114,697.27	54 92,034.45
Percentage of Return.....	%7.41	7.31	7.66	6.15

Return on Investment in Des Moines*:

Period—Years.	4 1906–1909.	5 1906–1910.	Year 1910.	Year 1910.
Average Investment.....	$1,250,446.00	1,290,714.00	1,449,789.00	1,449,789.00
Net Return applicable to Interest and Profits as per Complainant's Exhibits.....	49 $92,385.80	51 93,659.35	53 109,536.27	55 87,166.92
Percentage of Return.....	%7.39	7.26	7.56	6.01

*Assuming no increase in Valley Junction Investment during above period.

3462 Q. Yesterday you were asked by Mr. Guernsey about the $800,000 6% preferred stock contracts not being a dividend and you acceded to that; just what did you mean by that; were you simply dealing with the definition of the word dividend?

A. Very largely. The $800,000 preferred stock contracts, plus the bonds, plus the common stock issue at the time of the organization of the Des Moines Company was to be paid to the stockholders of the Capital City Gas Light Company.

Q. In other words, it was all divided between the stockholders?

A. Yes, their return of capital or profit.

Q. It was not, however, an ordinary cash dividend?

A. Oh, no.

Q. But it was a division of the spoils at the end of the term—finis, I think they wrote at the bottom of that page?

A. I think they did. You can call it distribution of the stock realized on the sale of the property.

Q. There would be no difference between that and dividing up the money if they had the money instead of the bonds?

A. I don't know; I think I would rather have the par value of the money.

Q. But so far as a division is concerned?

A. So far as the division is concerned, that didn't make any difference.

Recross-examination by Mr. GUERNSEY:

Q. The only point that was involved, what you told me yesterday, this was not a dividend in the ordinary sense of the term?

A. It is a dividend in the sense, ordinary sense of the term; it was not included in the return of capital. Take the word dividend as you would mean it is a return on investment; this is a return
3463 of capital, plus return on investment.

Q. It was a liquidation?

A. Yes.

Q. Referring to your Exhibit 35, that shows a total investment of $1,994,314.09?

A. Yes.

Q. And that includes this discount on securities and reorganization expenses.

A. Yes sir; everything added on.

Q. Just as *so in* as you make this charge against it, $264,108.78 you get away from the investment?

A. You get away from the money you put in.

Q. You get away from the investment?

A. Unless you take into consideration the investment is declining in value.

Q. You are getting away from the investment as soon as you are getting into that question?

A. From the original investment.

Q. Just as soon as you get into that, you are bound to take up the question of appreciation as well?

A. It should be considered.

The MASTER: These figures do not include working capital?

A. No, that is the physical property.

Q. Now there is one other thing—this investment is subject to another limitation, isn't it. The Des Moines Gas Company can not measure its investment in the plant by what the Capital City Gas Light Company paid for it, can it?

A. No.

Q. If the Des Moines Gas Company paid $800,000 in preferred stock contracts, and $285,000 is bonds, and then assumed
3464 $400,000 more of bonds, that is its investment in addition to the common stock, isn't it?

A. Yes.

Q. So that this don't represent the actual investment of the Des Moines Gas Company, does it?

A. In the second page, the total——

Q. I want this amount. This $1,994,314.09 does not represent the actual investment of the Des Moines Gas Company in its property?

A. That figure does not; no.

Q. This amount $1,994,314.09 is less than the actual investment of the Des Moines Gas Company in this property without any reference whatever to the common stock, is it?

A. I don't know that I follow you.

Q. The Des Moines Gas Company when it bought this property paid $285,000 in bonds?

A. Yes.

Q. It then assumed $400,000 more of bonds?

A. Yes.

Q. And then issued $800,000 of preferred stock contracts which were interest bearing obligations?

A. Yes.

Q. It has since put in $570,000 in cash, according to your figures?

A. Yes.

Q. Will you foot those?

A. $2,055,360.

Q. Now that represents what the actual investment of the Des Moines Gas Company is in addition to the common stock that was issued, don't it?

A. Subject to the deduction of $120,000 of bonds being paid for the United Gas Improvement Company debt.

3465 Q. Why do you deduct that; didn't they have to pay that as a part of the purchase price of this property?

A. Yes, that is right, yes.

Q. Now these items I gave you foot how much?

A. $2,055,360.

Q. And the Des Moines Gas Company has actually invested that much in the property in addition to the common stock?

A. Yes, actual investment, measuring by its bonds and preferred stock contracts will not agree with this.

Q. But the bonds and preferred stock contracts and the cash are the actual investment of the Des Moines Company?

A. Yes.

Q. These other figures do not represent the investment of the present company?

A. They do not purport to show that, no.

Q. Now, turn to Exhibit 36; I do not understand the upper part of this. Now your investment here stated in the upper part of this sheet, is based upon the original figures shown in your Exhibit 30?

A. Yes.

Q. Not upon either actual investment of the Capital City Gas Light Company, or the actual investment of the Des Moines Gas Company?

A. No, they are based on Exhibit 30.

Q. And it is lower than either of the other amounts we stated?

A. It is.

Q. You took Valley Junction arbitrarily—$45,000—without refererence to the value of that plant?

A. I did.

Q. Then when you got your total you divided that by four to get the average investment?

3466 A. Yes.

Q. Now in the lower part of this you get as a return under Exhibit 48 7.41 per cent?

A. Yes.

Q. Now that is a return on what?

A. On the average investment in Des Moines and Valley Junction as shown by Defendants' Exhibit 30.

Q. So that means, if you took Exhibit 48 as complainant's computation of the average net return applicable to interest and profits for the four years ending December 31, 1909, including Valley Junction?

A. Yes.

Q. So that upon your figures, if Valley Junction were included and the investment were put down to less than thirteen hundred thousand dollars, the return would be 7.41 per cent?

A. Yes.

Q. And that after deducting the operating expenses that you have deducted?

A. Yes.

Q. And without making any provision for rate regulation, accident and damages and the continuance of the present rate of taxation or anything like that?

A. Yes.

Q. Now Exhibit 50 is on the same basis, but for the five year period?

A. Yes.

Q. And that gives a return a little smaller, 7.31 per cent?

A. Yes.

Q. And for the year 1910, based on Exhibit 52, your return includes Valley Junction?

A. Yes.

3467 Q. And is based on the operating situation we stated a moment ago?

A. Yes.

Q. And is 7.66 per cent?

A. Yes.

Q. Now, this column headed Year 1910 grows out of the business of 1910 alone? Do you apply that to an average investment?

A. The year 1910.

Q. You apply to an investment of $1,496,789.

A. Yes.

Q. That is an average of what?

A. That is the year December 31, 1909, accepted as one year and the return additions for six months, on the assumption they earned from June 30 on.

Q. Now, then, you have got the year 1910 based on Exhibit 54 which is Des Moines, including Valley Junction, and making the additions that are shown on Complainant's Exhibit 54 on account of depreciation, accident, insurance, expenses of collection and rate regulation.

A. It was all your additions.

Q. And that including Valley Junction gives a net return of 6.15 per cent?

A. Yes.

Q. Did you carry that out and find out what that net return would be for the same year, upon the same basis, but excluding Valley Junction?

A. Yes.

Q. Is it here?

A. Underneath that table.

Q. It would be 6.01 per cent?

3468 A. Yes, assuming Valley Junction is $45,000 and that the expenses of manufacturing and distributing from Valley Junction would be the same as Des Moines.

Q. Then this second line of Exhibits 49, 51, 53 and 55 are upon the same basis as the line above, except Valley Junction is excluded.

A. Yes.

Redirect examination by General BYERS:

Q. And these computations in Exhibit 36 are based upon 90 cent gas?

A. Yes.

Q. And without any estimate or without reference to any possible increase of sales or anything of that kind?

A. Simply on what the Company did, accepting the costs for Valley Junction the same as Des Moines.

Q. I don't want to annoy you again about Exhibit 35, but the testimony as it stands now might be misleading, would be to me, before I had the benefit of this long experience, I want to see if I cannot clear it up a little. Exhibit 35 shows, as I understand you, exactly what you said yesterday; you started out to get for the city

the construction cost of the Des Moines Gas Company's plant as shown by the books?

A. Yes; the books of the Des Moines Gas Company and the books of the Valley Junction Company, but ignoring altogether the sale.

Q. I am not talking about the sale now; simply what I want to get into the record, clear and definite for once, if possible, is the fact that this figure $1,994,314.09 shows the sum total of the investment in the construction of the property as shown by the books of the Company?

A. Yes, including in that item the construction as shown
3469 by the books of the Company, including in that an item called construction account and the item of appreciation referred to yesterday $134,000 and the bond discounts.

Q. In other words, that figure shows, that $1,994,314.19 shows every dollar of money that the Company's books indicate went into the plant in addition to the items you say was without consideration and without money?

A. Yes; I have got to add, to treat that clear, and ignoring the transfer of interest from the Capital City Gas Light Company to the Des Moines Company.

Q. What I am trying to get at now, to have it clear in the record, is the amount of the actual investment in the plant as shown by the Company's books without reference to this over-night transfer?

A. That is all right; that is it.

Q. That is the amount?

A. Yes.

Q. $1,994,314.09?

A. Yes.

Q. Now, then, the $264,108.78 the sum by which you reduce that total to $1,730,205.31 represents that amount of the investment that was taken out?

A. Yes, or the reduction of the investment on the books.

Q. In other words, if this con-rn were just starting and had just opened its books and had credited up to capital in actual money that had just gone into the business, including into the physical property and into the till or treasury, the books show $1,994,314.09 had gone in, and then they had taken out of that, all that amount out of the till, or profits, or rather out of the plant, the $264,108.78,
3470 thereby reducing the amount of the investment that much, is that correft?

A. No, that is not just exactly right. You are taking into consideration the question of cash in the till. This is the amount of cash and the other items which went into the construction of the physical properties.

Q. This $1,994,314.09?

A. Yes.

Q. What is the $264,000?

A. Is the writing off of the value of that $1,994,314.09 on the books of the company.

Q. What did it represent if anything according to the books?

A. It is not stated; the assumption is it's the depreciation of the properties.

Q. When you said it was not depreciation the other day, all you meant to say was, that wasn't what they called it?

The MASTER: That $264,108.78 credited to profit and loss if it were distributed to dividends would have changed the physical investment of the property?

A. Had they distributed that in dividends and not placed it to the credit of the construction account, the investment would still remain $1,994,314.09.

Q. In other words, they used that much of their profits in paying for the physical development of the property?

A. As a matter of fact that is where the profits went, but this sum $264,000, I cannot interpret it as writing down of the book value of the assets.

Recross-examination by Mr. GUERNSEY:

Q. That book value begins—when this charge was made
3471 and written down was $1,994,314.09?

A. Yes, sir.

Q. Aren't you mistaken about that?

A. That one item does not appear in any one set of books; this is a composite figure prepared from the two sets of books.

Q. You- book value begins when that $264,000 was written off?

A. Four million, one hundred and something.

Q. So that the books don't show anything written down as that?

A. That figure is not on the books.

Q. To get at this actual investment again, the situation is a good deal like this, isn't it: Suppose a man bought a lot for five thousand dollars and built a house on it for ten thousand dollars and carried that forward twenty-five years, making additions, so that he had $25,000 there; then I paid $50,000 for that in notes and mortgage and so on, and then I added $50,000 to the property; you on this basis would figure the cost of that property to me at $75,000?

A. Oh, no; the cost of your house is $100,000.

Q. If you adopted this basis here you would say my investment was $75,000?

A. I would say the composite of $75,000; the composite investment of both parties was $75,000.

Q. All I wanted to illustrate was whether or not this $1,194,314.09 represented what is equivalent to what I call my investment there; it does not, does it?

A. It does not.

Q. It does not represent the cost of this property to the Des Moines Gas Company?

A. No.

Q. Does that $1,994,314.09 includ*ing* that $100,000 for a holder?

3472 A. It does not.

Q. Does it include the $45,000 for Valley Junction?

A. Yes.

Q. Where is that in there?
A. In the last section of the table.
Q. Add that $120,000 to it?
A. $2,114,314.09.
Q. You would have to add that to be fair?
A. On the assumption the holder went in.
Q. There is no dispute about that, is there?
A. I haven't heard it.
Q. What? Any dispute at all?
A. This, however, is by the books, and the holder is not in the books.
Q. Where do you find Valley Junction on the books?
A. It is referred to in the agreement, or in some document; it is referred to somewhere.
Q. Do you think in view of all the circumstances that it is really a safe proposition to just blindly accept what you find on the books that way, if it doesn't pay any attention to a little item like $120,000?
A. There seems to be something wrong with the books.

Redirect examination by General BYERS:

Q. What writing on the books there was aside from this $240,000 in either up or down, were principally up, wasn't it?
A. What $240,000?
Q. I mean $264,000?
A. That is the only writing down I notice.
Q. But there was considerably writing up?
3473 A. There was some.

Recross-examination by Mr. GUERNSEY:

Q. Let me ask you another question. Counsel asked you a question something like this: he asked you whether this $1,994,314.49 was not the amount that the Company would have put on the books if it was putting in their actual investment in the property. You remember a question something like that?
A. I remember it.
Q. You assented to it?
A. On the assumption that this is one plant, dealing with one thing.
Q. Let us not make any assumption; let us take the facts as they actually existed. Assume they were the facts, is that the amount you would put on the books?
A. Not of the Des Moines Gas Company.
Q. That is the Company we are talking about. You would put on the books just exactly what appears there?
A. Yes, what I intended counsel should understand was that this was one plant, one continuous operation from beginning to end and no sale, that would be the opening figure I would take.
Q. You would have to have a sale to get an opening figure?
A. Not when you are constructing your final figure and you are opening for operations.

Q. You referred to this over-night sale; what did you mean by that?

A. I didn't say anything about an over-night sale.

Q. Don't most sales occur some time and immediately before the sale — it has not taken place, and immediately after — it has?

A. As soon as you sign them in.

Q. Nothing abnormal or peculiar about that?

3474 A. I didn't remark there was.

Q. I wondered what the significance was, you seemed to assent to it?

A. I don't think the words were mine.

Q. But you assented to them. Now, then, this $264,108.78 was written off of the book value?

A. Yes.

Q. Then that entry did not affect in any way the actual investment shown by the books, did it?

A. It was written off the book value and consequently reduced it.

Q. You distinguish between book value and actual investment?

A. Yes, there is a very considerable difference.

Q. It was not written off the actual investment?

A. No.

Q. It did not affect the actual investment shown by the books a dollar?

A. Not a dollar.

Excused.

3475 E. C. PEASE, being first duly sworn on behalf of Defendants, examined in chief by R. O. Brennan, Esq., testified:

Q. What is your name?

A. E. C. Pease.

Q. Where do you reside?

A. On the east side of the river.

Q. How long have you lived in Des Moines.

A. About forty-five years.

Q. During the forty-five years of your residence in the city of Des Moines, what has been your general business?

A. Real estate.

Q. How extensively have you dealt in real estate in the city of Des Moines during these forty-five years in a general way?

A. I have been continuously in the real estate business for a little over forty-one years.

Q. In which part of the city do you maintain your office?

A. East side.

Q. How long have you had your office in east Des Moines?

A. Practically all the time.

Q. And what is the character of the real estate in which you have dealt?

A. Mostly east Des Moines property.

Q. And does that include business properties as well as residence property?

A. Yes, sir.

Q. And have you bought and sold property for yourself and others during those years?

A. Yes, more particularly others than myself, especially
3476 in the last ten years.

Q. Have you acquainted yourself, Mr. Pease, with the reasonable market values of property in the city of Des Moines?

A. Yes, sir; more especially on the east side.

Q. And that acquaintance with values has extended over a series of years?

A. Yes, sir.

Q. You have endeavored to keep in touch with the value and the range of prices in real estate?

A. Yes, sir.

Q. In the market?

A. Yes.

Q. Are you acquainted with the property owned by the Des Moines Gas Company in east Des Moines?

A. I am.

Q. Are you acquainted and have you been with that property for a number of years?

A. Yes, sir; all the time I have been there.

Q. And with the property adjacent thereto?

A. Yes, sir.

Q. Have been familiar with the sales of properties in that vicinity?

A. Yes, sir; largely.

Q. What do you say to the Master whether or not you are familiar with the values of real estate in that portion of the city?

A. I think I am, sir.

Q. Did you at the request of counsel for the defendants in this case examine the properties of the Des Moines Gas Company with a view to placing a valuation thereon?

A. I did, sir.

Q. About when did you make that examination?

3477 A. Day before yesterday.

Q. And did you examine the properties as shown on the plat Complainant's Exhibit 5 to which your attention is now called, that is to say, the properties inclosed in the red borders?

A. Yes, sir.

Q. Are you prepared at this time to tell the Master what those valuations are?

A. I am, sir.

Q. Exclusive of the buildings or improvements?

A. Yes, sir.

Q. Now, then, Mr. Pease, referring to Complainant's Exhibit 5, I want to call your attention to Lots 3 and 4 in Block K of Scott & Dean's Addition to Fort Des Moines, and you will please state what in your opinion is the reasonable market value of the lots to which I have called your attention?

A. Lots 3 and 4 in Block K, 132 front feet, $75 per front foot, $9,900.

Q. Now going to Lots 9 and 10, Block M, as shown upon the plat, Exhibit 5, tell the Master what in your judgment is the reasonable market value of those lots?

A. 132 feet, $30 a front foot, $3,960 on the south side of Elm Street.

Q. The 132 feet on Elm Street, that is Lot 9, what is the frontage upon Second Street?

A. 132 feet.

Q. 132 feet square?

A. Yes.

Q. Going now to the lots shown upon Exhibit 5 in Block C, being Lots 1 to 10, both inclusive, please tell the Master what in your opinion is the reasonable market value of the lots
3478 to which your attention has been called, and described in Block C as shown on this plat?

A. Lots 4, 5, 6, 7, and 8 in Block C, 280 feet, $90 a front foot $25,200.

Q. Now the other lots?

A. Lots 1, 2, and 3 in Block C, 140 feet, $75 a front foot, $10,500; Lots 9 and 10, Block C, 140 feet, $65 a front foot, $9,100.

Q. Does that include all the lots in Block C from 1 to 10 both inclusive?

A. Yes, sir.

Q. Now, referring to Lots 3 to 10, both inclusive, in Block B of Scott & Dean's Addition, shown upon Complainant's Exhibit 5, tell the Master what in your judgment is the reasonable market value of those lots?

A. 9 and 10, 140 feet, $60 per front foot, $8,400; Lots 3, 4, 5 and 6 in Block B, 192 feet, $70 a front foot, $13,440.

Q. In Block B, have you given the valuations of Lots 3, 4, 5, 6, 7, 8, 9 and 10?

A. Lots 3, 4, 5, 6, 9 and 10.

Q. And Lots 7 and 8, have you those in Block B?

A. No, I haven't got 7 and 8.

Q. You haven't got 7 and 8?

A. No. (Refers to plat.)

Q. What in your judgment, Mr. Pease, is the reasonable market value of Lots 7 and 8 in Block B, Scott & Dean's Addition as shown upon the plat.

A. $60 per front foot.

Q. How many feet?

A. 66 and 74 feet.

3479 Q. That would be 140 feet?

A. Yes.

Q. On East Second Street, and 140 feet on Market Street?

A. Yes.

Q. That would be $8,400 in the aggregate?

A. Yes.

Q. Did I ask you about Lots 9 and 10 in Block M?

A. Yes.

Q. Now, referring to the lots shown on Exhibit 5, being located

in Block T, Scott & Dean's Addition, being Lots 3, 4, 5, 6 and 7, state to the Master what in your judgment is the reasonable market value of those lots?

A. $20 per front foot.

Q. How much per front foot?

A. $20—$4,000.

Q. If I have carried your figures correctly the total aggregate value of the property to which I have called your attention is $92,900.

A. Yes.

Q. You have been acquainted with the values of property in that part of the city for a number of years?

A. I think so.

Q. And have kept in touch with the sales in that part of the city?

A. I have.

Q. Covering forty-one years of experience which you have had?

A. Yes.

Q. You tell the Master now, do you, Mr. Pease, in your judgment $92,900 period represents the reasonable market value of the real estate and property to which I have called your attention, exclusive of the buildings and improvements thereon?

3480 A. Yes.

Cross-examination by W. L. READ, Esq.:

Q. Did you consult or confer with any one over the matter of the valuation of these lots?

A. Some time ago I had a talk with Mr. Mathis.

Q. That is F. A. Mathis?

A. Yes.

Q. One of the witnesses in this case for the city?

A. Yes.

Q. Did he give you his views with respect to the value?

A. Well, yes, he talked with me about the values and estimates.

Q. Was your conference with Mr. Mathis after or before he testified in this case?

A. Before and after; I told him his prices were too high——

Q. Don't mind about that—you conferred with him both before and after?

A. Well, I was in the office and there was several real estate men there talking the matter over.

Q. Who was in the office and participated in the talk ?

A. I don't remember now; there was several in there.

Q. Mathis was there?

A. Yes.

Q. Who else?

A. I couldn't say; there was several in there.

Q. Whose office was it?

A. I think Mathis' office.

Q. You had gone there for what purpose?

A. I just happened in there; I wanted to see another

3481 party; there was several in there and I stopped in.

Q. You cannot recall now what other persons were there?

A. No, I couldn't say; I didn't pay much attention; I know there was several in the office.

Q. Do we understand you had been in the real estate business in Des Moines forty-one years?

A. Yes, sir.

Q. Living on the east side all the time?

A. Yes, I lived one year on this side of the river.

Q. What year was that?

A. I can't say now what year it was.

Q. How long ago was it?

A. Well, I think it was——

Q. It must have been about forty years ago?

A. I couldn't say; it was so long ago, I couldn't say.

Q. You have lived in East Des Moines how long, continuously?

A. Well, forty-two years, with the exception of one year; probably about forty-three years.

Q. In all that time have you engaged in any other business than the real estate business?

A. No, not to speak of.

Q. Didn't you have a millinery store for a while?

A. No, sir; never did.

Q. On East Sixth Street?

A. No, sir.

Q. There was a Pease store over there?

A. Yes, sir.

Q. That wasn't you?

A. No, sir.

Q. Wasn't you connected with it?

3482 A. Well, I happened in there; my wife run it, but I had no interest in it whatever.

Q. Your real estate activity has been on the east side?

A. Yes, sir.

Q. Exclusively?

A. Well, pretty near, yes; I have done a good deal of business on the west side, but I do not claim to be posted much in west side real estate.

Q. Where is your office now?

A. I have my office at my house now, 911 Des Moines Street.

Q. Your office has been in your house all these years?

A. Oh, no.

Q. You now have your office in your house?

A. Yes.

Q. Where is it?

A. 911 Des Moines Street.

Q. That is not within the business section at all?

A. Very close.

Q. Well, there are no business houses in that vicinity?

A. Not in that block.

Q. The business center is down on Fifth Street, isn't it, or Sixth Street?

A. Yes, Sixth Street.

Q. How long has your office been in your house?
A. Oh, about probably four or five years.
Q. Hasn't it been there longer?
A. I think not; I couldn't tell without looking.
Q. You have not maintained a down town office much of the time in the last forty years?
A. All the time, excepting this last time; I have been —
3483 Coberger Block over the Bank.
Q. Officing with some one?
A. I had an office, roomed part of the time with Stewart, and part of the time in partnership.
Q. You have not maintained much of an office?
A. I had a regular office.
Q. You had a desk and a chair, that is all?
A. I had my fixtures and everything.
Q. Your fixtures have been a desk and some chairs?
A. Yes.
Q. That is all?
A. How much would you want?
Q. That is all.
A. I have had all necessary to carry on a real estate business.
Q. That is all anyhow, whether enough or too much?
A. Yes.
Q. Has your dealing in real estate in East Des Moines been for yourself or others?
A. Mostly for others.
Q. Have you bought and sold anything in the last year for yourself?
A. No.
Q. What have you bought and sold on your own account in the last twenty years?
A. I couldn't tell you without looking at the books.
Q. In the last ten years?
A. I couldn't tell you.
Q. In the last five years?
A. I haven't bought anything, I don't think.
Q. What is the character of the property you bought on your own account?
3484 A. Oh, it has been residence property.
Q. Lying way out on Stewart's Addition, north?
A. Oh, no; not much of that.
Q. You have not dealt on your own account with any property lying west of east Fourth Street, have you?
A. No, I don't think I have.
Q. What property have you handled in East Des Moines during the past year, for others, bought or sold?
A. Mostly residence property.
Q. Where is it, what property?
A. I don't know that I could tell you.
Q. How many pieces?
A. I sold several pieces.

Q. How many pieces?

A. I made a sale a short time ago on Locust Street, 45 feet, only a short time ago.

Q. Residence property?

A. No, sir, business—well it is used now as a residence, but it is considered business district.

Q. Where on Locust Street?

A. Between Sixth and Seventh.

Q. What other property?

A. On Maple Street, I sold a place on Buchanan Street; I couldn't tell you without looking at my books. I am busy all the time; sometimes I hit it and sometimes I miss it.

Q. You are busy trying to sell?

A. Yes.

Q. You made no purchase for anyone?

A. No.

Q. All been sales?

3485 A. Yes.

Q. What has been the aggregate amount of sales effetced by you during the last year?

A. I couldn't tell you.

Q. Approximately?

A. I couldn't tell you.

Q. $5,000?

A. I presume so.

Q. More than that?

A. I would think so.

Q. How much more?

A. I couldn't tell you without looking at my books.

Q. Your dealings have not been extensive?

A. They have not been probably as much as some.

Q. They have been comparatively light?

A. No, they haven't been very light; sometimes up as high as $22,000 or $25,000.

Q. In a single deal?

A. Yes.

Q. When was that?

A. The Kenwood Block, for $20,000 and once for $25,000.

Q. Where is that?

A. On Locust Street, the south side of Locust.

Q. Between what streets?

A. Fifth and Sixth.

Q. You made two sales of that within the last year?

A. No.

Q. When?

A. Two years ago, probably.

Q. That is business property?

3486 A. Business property.

Q. Take it in the past ten years, what has been the aggregate amount of your sales?

A. I couldn't tell you without looking it up.
Q. Has your business been extensive or otherwise?
A. I have been quite busy all the time, yes sir.
Q. And principally in residence property?
A. Yes—well business and residence.
Q. But the bulk has been residence property lying on the east side?
A. Both.
Q. Has your principal business been one class of property or the other?
A. Both together; anything I could get a hold of.
Q. Your sales have been principally upon residence property?
A. No, not principally; I couldn't say that.
Q. Your principal sale has been the Kenwood Block?
A. That is, heavy sale.
Q. You never made a sale heavier than that?
A. No.
Q. That is the only one of that class you did make involving so large an amount?
A. Yes, I think that is.
Q. The sales usually involve how much, you have made?
A. About $1,500 and up.
Q. To what; what is the highest price residence property you ever sold in East Des Moines?
A. I couldn't tell you that.
Q. Approximately?
A. I couldn't tell you.
Q. $3,000?
3487 A. Certainly more than that; I couldn't tell you without looking over my list.
Q. What principal sales of residence property have you made in East Des Moines?
A. $4,000 anyway.
Q. What property was that $4,000.
A. I sold the Wilkins property of East Ninth Street for $4,000.
Q. That was when?
A. I couldn't tell you.
Q. Do you recall any other sale involving so large an amount?
A. I might pick it out.
Q. Think just a minute.
A. Pretty hard to think—I have a list of sales on my books; yes, I believe I had one $6,300; I could pick out a good many in the course of a day.
Q. The sales in East Des Moines have been chiefly of small properties?
A. Both, Mr. Read, both.
Q. Have most of your sales been high-priced property or most of the- low-priced property?
A. Well they have been what I call bar*a*gins, all of them pretty near; that is what I work on, bargains.

Q. Your mind runs to the bargain counter proposition?
A. I would like to sell property a man wants to sell.
Q. And wants to sell real badly; that is naturally so?
A. Yes.
Q. And the price is unusually low?
A. Well I like to get it as low as I can, yes, sir, that helps me.
Q. You make an easy sale then?
A. Yes.

3488 Q. You have been dealing in low priced properties, relatively low bargain counter properties.

A. Well, that——
Q. You are naturally pretty conservative?
A. Well, I don't know.
Q. Your mind sort of runs naturally that way?
A. Some might think so.
Q. Isn't that your reputation?
A. Nobody ever told me that.
Q. You are conscious of your conservatism?
A. It is natural for an agent to work on something he thinks a pretty good bargain.
Q. When you find a man who wants to sell and he is conferring with you as to the value, you naturally want to persuade him to take a price that seems to you the one at which he should sell?
A. I have not followed that course. I first find out what a man wants to sell for and then I look up the customer, and if the customer says it's too high and makes a bid, I go back with the bid; if he says he cannot stand that, that ends it.
Q. Prospective buyers—buyers are usually conservative in their offers, are they not?
A. Oh, yes; somewhat.
Q. You never knew of any great liberality evinced by a buyer of residence property?
A. Nor business property either, Mr. Read. A buyer is generally looking for a bargain counter as well as the other fellow.
Q. I wish you would tell us, Mr. Pease, precisely by what means and upon what basis you have fixed the valuations you have placed upon the various properties of the Gas Company?
A. On property that has been sold.

3489 Q. Well, now, what property did you have in mind, what property has been sold which has furnished you with the basis for you- valuation?

A. Well, of course, I don't know that property has been sold lately, of course, I have been in touch with the property down there ever since I lived there. I know generally speaking up to the last few years, property down there has been a hard proposition; it has been on the bargain counter, as you speak of.
Q. It has been a drug on the market?
A. Yes.
Q. Always has, and was that when you first went to East Des Moines?

A. I should say so.

Q. You couldn't give it away hardly?

A. No, sir.

Q. A sort of a yellow dog proposition, so to speak?

A. Just suit yourself about that.

Q. Well, that has been the estimate, or the way in which property has been viewed by East Des Moiners?

A. I don't think agents have spent very much time on that property down there.

Q. You say that has been true up until the last few years; since then there is a change?

A. Yes.

Q. Now, to go back to the other proposition; you said you used as a basis for your valuation of the gas property, sales?

A. Yes.

Q. Now, what sales?

A. A sale on Third Street this summer made a short time ago, of a quuarter block for $8,000.

Q. What quarter block was that?

3490 A. That is the—I guess it is not on that chart—on the south side of the Rock Island and on the east side of Third Street.

Q. Can you show it on the plat there?

A. It is not on the plat. I didn't make that sale myself; I had it and had an option on it for three weeks.

Mr. BRENNAN: Was that the Yaeger property?

A. Yes, sir.

Q. Please describe the property, please take Exhibit 6 and get it from there?

A. I can't see it on there; that is too fine for my eyes.

At this time an adjournment was taken until 9:30 A. M., Monday, September 18, 1911.

[End of Volume III.]

Vol. IV.

TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1904.

No. 275.

DES MOINES GAS COMPANY, APPELLANT,

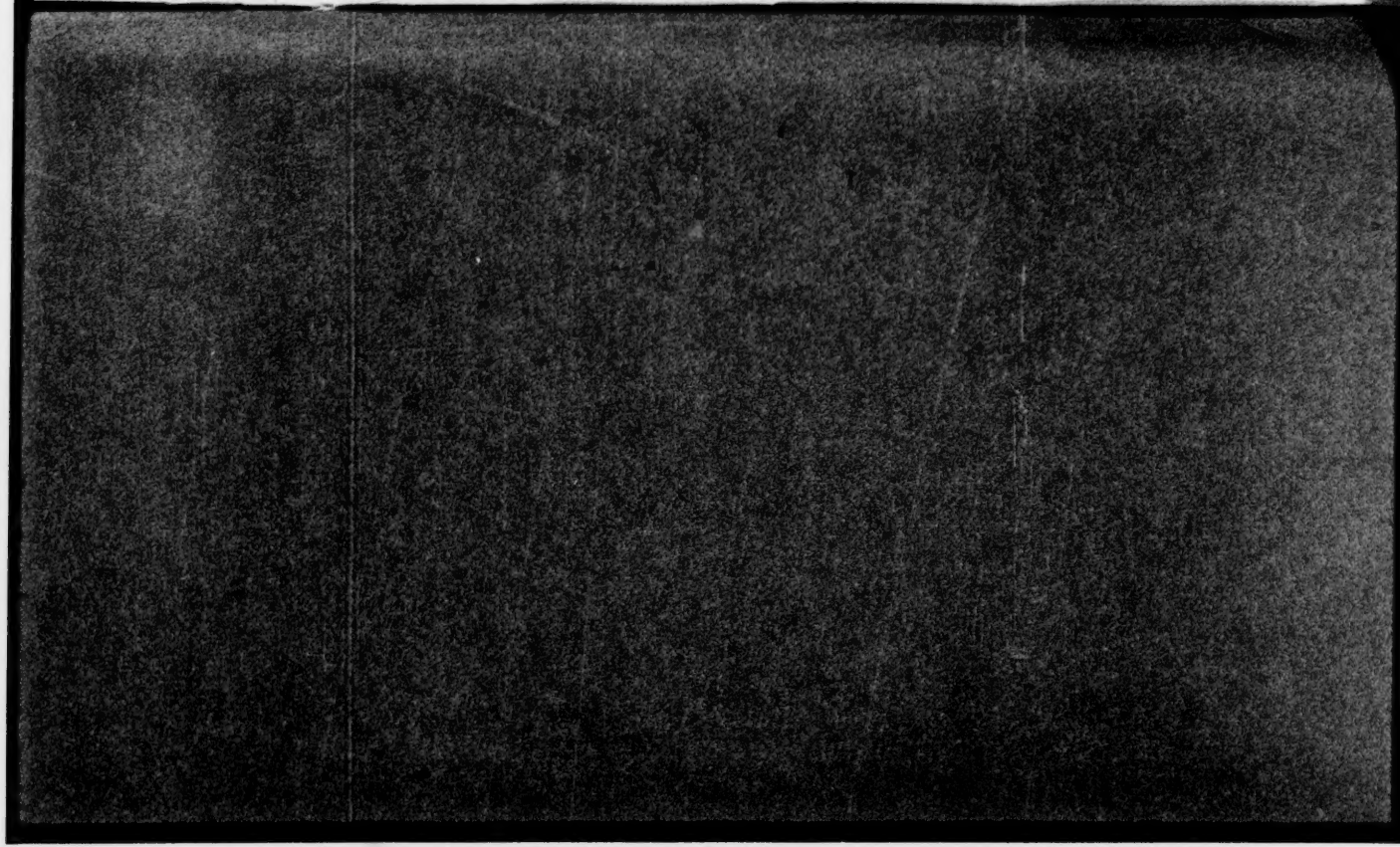
vs.

CITY OF DES MOINES.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

FILED DECEMBER 14, 1904.

(22,459)



(23,459)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1913.

No. 397.

DES MOINES GAS COMPANY, APPELLANT,

vs.

CITY OF DES MOINES ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

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(23,459)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1913.

No. 397.

DES MOINES GAS COMPANY, APPELLANT,

vs.

CITY OF DES MOINES ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

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VOLUME IV.

DES MOINES GAS COMPANY
vs.
CITY OF DES MOINES et al.

3491 Monday Forenoon Session.

SEPTEMBER 18, 1911—at 9:30 A. M.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

E. C. PEASE, continuing his cross examination, examined by Mr. Read, testified:

Q. Mr. Pease, we were inquiring about a sale on the corner of East Third and Vibe Streets perhaps; I wish you would identify the property now, if you can—what was the property you then referred to?
A. On Thi-d Street, Third and Vine.
Q. Who was the purchaser?
A. I understand the Yeager Manufacturing Company.
Q. Who was the seller?
A. I don't know whether Mr. Ankeny made the sale personally or not.
Q. Where was the title?
A. In the Oil Company, I suppose; they said they lived in New York; I had it for sale but I didn't make the sale.
Q. You had it for sale from Mr. Ankeny?
A. Yes.
Q. He is the Manager of the Oil Company?
A. I understand it that way.
Q. When was that sale made?
A. I don't know; I never saw any record of it.
Q. When did you have the option?
A. This past summer.
Q. In 1910?
A. It might have been, I am not certain.
Q. You are mistaken, aren't you, it was an earlier date, wasn't it?
3492 A. Yes, an earlier date.
Q. You had an option on that from Mr. Ankeny for how long?
A. Well my parties asked I think a three weeks' option and Mr. Ankeny consented to it.
Q. What was the price under your option?
A. $8,000.

Q. That is a quarter block?
A. Yes.
Q. Now, was there any other sale that you took or considered in forming an opinion as to the price of the Gas Company property?
A. Well, no, I understand that the sale in Block K—I understand that was sold to the Younger Brothers several years ago——
Q. What part of Block K?
A. 3 and 4.
Q. The Gas Company owns it now, don't it?
A. I understand so.
Q. You had in mind then in fixing the basis for the valuation of the Gas Company property what Lots 3 and 4 in Block K sold for some years ago?
A. Well, I don't know that I took that in consideration; the man had an established business there, I don't consider that a fair estimate of the values.
Q. That is also true, isn't it, with respect to the sale of the Yeager Manufacturing Company, that was a very low valuation, wasn't it?
A. I think not.
Q. So you took that as the basis of the valuation of the Gas property?
A. Of course I sold that quarter block where the soap works was several years ago.
Q. What property was that, what lots?
3493 A. I don't know as I can tell you without looking at your plat. I think that is 5 and 6 in L.
Q. 5 and 6 in Block L?
A. Yes, I think that is where the Bolton Soap Works is.
Q. That is in Block K, isn't it?
A. That is right; I was looking at this scale here; I guess that is right, in K; 5 and 6 in K.
Q. How long ago, in what year?
A. I don't remember when they started that works there. I think I sold that at that time for about $1,200 or $1,400, the quarter block?
—. That was how many years ago a good many years ago?
A. Yes.
Q. As much as ten years, wasn't it?
A. Yes, probably, maybe more.
Q. Was it fifteen or eighteen or twenty?
A. I can't say, Mr. Read; I wouldn't say how long ago; I am not good on dates.
Q. Well, you had that in mind then?
A. No, I didn't have that in mind.
Q. What other property did you have in mind as affording you a basis for the valuation of the gas property at the time you made the valuation?
A. Outside of the property belonging to the Oil Company I never have had application for property down in that block.
Q. And that price at which you held the option seemed to you to be a normal price, high enough?
A. Well, I thought it was a good round figure, at least my clients thought it was.

Q. And so you used that as the basis of getting at the valuation?

3494 A. Well, that helped to form an opinion. I made another sale years ago in that block.

Q. Ten, fifteen or twenty years ago?

A. I couldn't say; probably——

Q. You had in mind this Yeager Manufacturing Company and you took into account to some extent the sale you made to the soap people years and years ago, didn't you?

A. In fact there has been no demand so far as my knowledge goes for property down there.

Q. You also took into account the other sale you refer to, made years and years ago?

A. Well that of course——

Q. And from that you formulated in your own mind the basis of the valuation of the gas property—is that right or wrong?

A. Not wholly—in part.

Q. Wherein is it wrong?

A. Because that was so long ago it would not be hardly fair.

Q. You are now referring to these two sales other than the Yeager Manufacturing Company?

A. Yes; but the last two sales, the Oil Company quarter block I think was high water mark.

Q. You think that was high water mark and therefore you took that as the unit, so to speak?

A. Yes, largely.

Q. And from that basis you valued, by comparison valued the Gas Company property?

A. Yes. Of course, that street was paved, you know.

Q. That, you think, would enhance the value of the Yeager Manufacturing Company property?

A. Yes, sir.

3495 Q. So that in your opinion the price on the Yeager Manufacturing Company property, owing to the fact that the street was paved, was too high?

A. I say it is high enough.

Q. You think it was too high as a basis of comparison of the Gas Company property?

A. It is high enough; not too high.

Q. You say the property that the Yeager Manufacturing Company purchased was on a paved street?

A. Yes, sir.

Q. That made the property more valuable?

A. Yes, sir.

Q. And therefore that property was more valuable than the Gas Company property?

A. I think so.

Q. So you didn't value the gas property as high as the price at which the Yeager Company property was valued?

A. Yes, sir; I think I did higher.

Q. Why did you do that?

A. I wanted to give them the benefit of the doubt, if there was

any; some might think that property near the river might be more valuable.

Q. Did you think so?

A. No, sir.

Q. Why did you then add to the value?

A. I knew the demand was for more property near the river; that is, my clients had always thought that way.

Q. Had you ever handled or investigated trackage property, the situation with respect to trackage property in West Des Moines?

A. Oh, yes; in a general way, but not as to prices.

3496 Q. Do you know as to the supply, whether it is limited or otherwise?

A. I understand the last year or two it was somewhat limited.

Q. You understand the demand has been increasing right along and now for the last year there is difficulty in getting trackage property in West Des Moines?

A. I understand so, yes.

Q. Now, had you ever investigated the trackage property situation in East Des Moines with reference — fact that it has trackage property?

A. Yes, sir.

Q. In the district lying between East Fourth Street and the river and between Court Avenue and Market Street, is or is not the supply limited?

A. Court Avenue south?

Q. Yes, West of Fourth Street it is limited, isn't it?

A. Yes.

Q. It is limited, isn't it?

A. Yes.

Q. It is difficult, if not impossible to purchase any considerable amount in one body, isn't it?

A. Yes, I think it is.

Q. A great deal of the property lying in that district is owned by the railroads for railway purposes and not on the market?

A. Yes, that is true as far as the Des Moines Union is concerned.

Q. Isn't that true of the Rock Island and the Q also?

A. Yes, in those blocks it is limited. There seems to be no demand for it now; they are opening up new territory.

Q. Who is opening up new territory?

A. On the Rock Island.

Q. Where?

3497 A. On about Nineteenth, in there by Dean Lake.

Q. That is out as far as Twentieth Street?

A. Well, it is east, yes.

Q. You understood, didn't you, I was inquiring about the district west of Fourth Street and the river?

A. Yes.

Q. And south of Court Avenue to Market?

A. Yes.

Q. Let's talk about that alone then for a while—I am not inquiring about the outside territory; that district is inside, isn't it?

A. Yes, sir.

Q. Now, in making your valuation, I note you took Lots 3 and 4 in Block K?
A. Yes.
Q. And you have placed a valuation of $9,900?
A. Yes, sir.
Q. Now, did you regard that as trackage property?
A. Yes, sir.
Q. All of it?
A. Well, together, the two lots together.
Q. You considered the two lots together?
A. Yes, sir.
Q. What did you consider Lot 3 worth?
A. Well, if I was going to separate them—I took them as a whole.
Q. What did you consider Lot 3 worth?
A. I don't know—in Block K, you mean?
Q. Yes.
A. If you was going to separate them it would not be worth so much?
A. Lot 3 would not?
3498 Q. Why not?
A. Because it would not have trackage frontage.
Q. You valued the lots together?
A. Yes, sir.
Q. And considered it all trackage?
A. Yes.
Q. Now, coming down to Block C, you took Lots 4, 5, 6, 7 and 8?
A. Yes.
Q. Did you value them together?
A. Yes, sir.
Q. All as one property?
A. Yes.
Q. Did you do that with all the groups of lots you have given?
A. Yes, sir.
Q. There was one group, Lots 7 and 8, that you did not value, or had not valued when you came into the court room, wasn't there?
A. 7 and 8 in B.
Q. 7 and 8 in Block B?
A. Yes, sir.
Q. You placed a valuation on them during your examination?
A. Yes.
Q. That was all the time you required for that?
A. Of course, I went over the whole property when I was over there but some way I neglected to include that.
Q. There has been in East Des Moines quite a noticeable increase in values owing to the construction of the new Locust Street bridge, the new City Hall, location of the Park, and the construction of the Walnut Street bridge, hasn't there been?
A. There was on Locust Street for a while, but it seems to have died down.
3499 Q. Well, I mean a permanent enhancement in value?
A. Oh, yes.

Q. Has there been?

A. It has not decreased the value any.

Q. Has the advancement been a permanent one?

A. Yes, I think so.

Q. How much, what per cent?

A. Oh, I think that is very meagre, especially property as far away as this is from Walnut Street.

Q. I am asking you about Locust Street now; I am inquiring how much that property on Locust Street from the river east to Fourth street has enhanced in value since the location of the City Hall and the opening up of Locust Street bridge for the last two or three years?

A. Well, I think it has pretty near doubled that property.

Q. On Walnut Street, how is it?

A. Well, Walnut Street it has added a good deal, but not so much as it will when it is opened.

Q. How much do you think?

A. I don't think it has added Walnut Street more than fifty per cent so far.

Q. How about Court Avenue, has it affected the value on Court Avenue?

A. I don't think so.

Q. So you didn't take into account any enhancement values of Court Avenue property or Vine Street property; you don't think they were advanced any?

A. No, that is a difference class of property.

Q. What do you think is the highest available use of the Gas Company's property, what is it best adapted for?

A. Well, it seems to be well adapted to the use it is being put to.

3500 Q. What other uses could it be put to?

A. It could be used for trackage purposes.

Q. You mean for manufacturing and storage?

A. Manufacturing.

Q. You think it is well adapted for that use?

A. For manufacturing, yes.

Q. You understand inside trackage property in West Des Moines is very limited, don't you?

A. It is controlled practically by one man, pretty near.

Q. That is only available for leasing purposes, isn't it?

A. Yes, sir.

Q. And you understand and so state that trackage property in the district from East Fourth Street west to the river and from Court Avenue south to Vine and Market streets is limited also?

A. Yes.

Q. You have murmured something to the effect that there is not much demand for trackage property?

A. I haven't had it.

Q. You predicate that statement upon your own experience?

A. In part, and talking with real estate men.

Q. When—recently, since this valuation began?

A. Well, in part—yes I have talked with them since this commenced.

Q. Did you consider the Gas Company's property any more valuable because of the quantity, the area in one body?

A. Oh, no; I don't consider it that way.

Q. You don't add anything for that consideration?

A. No.

Q. You regard it as if it were simply so many lots?

A. It is a very nice property.

Q. You regarded it as if it were simply so many lots?

3501 A. I can't say as I did by lots.

Q. How did you regard it?

A. I took it as a whole, in the groups in which I placed it.

Q. Why did you place it in groups?

A. On account of the way the lots lay and the way it is located between the two tracks.

Q. Suppose you had a customer who wanted two blocks and a half of ground in that territory from Fourth Street west to the river and from Court Avenue south to Market, would you have any difficulty in getting it together under one ownership?

A. Yes, sir; there I would.

Q. You couldn't do it, could you?

A. Not there, between the places you speak of, that is without buying established business.

Q. Suppose the Gas Company property was used as the other property in that district is used by established businesses, you would have difficulty in getting two blocks and a half or two blocks and a quarter?

A. Yes.

Q. You would have to pay a high price for it?

A. Yes.

Q. A good deal more than you have valued this property at?

A. Undoubtedly.

Q. Two or three times as much?

A. I have valued this ground, and not improvements. Of course if it was improved——

Q. Well, the improvements, except as the business is an established one, don't count for much on the properties down around there?

A. Well, there is some substantial improvements, for instance the Yeager plant there.

3502 Q. I am calling your attention to these matters in order to inquire whether you regard the gas property as of greater value because of the large body under one ownership, lying contiguously; you say you have not given that circumstance any consideration; shouldn't you have done so?

A. I don't think so, from the fact that there is but very few manufacturing institutions that want so large a tract of ground.

Q. But if there was no Gas Company in Des Moines and a Gas Company should come in here, then it would be a real live question, would it not?

A. Yes.

Q. From that point of view you should have given it consideration?

A. But there is other ground over there south of Elm Street that could be used at a much lower figure.

Q. Do you know anything about the requirements of use for gas manufacturing purposes?

A. No, sir.

Q. Why do you volunteer other ground, you know as a matter of fact that is below high water mark?

A. It is.

Q. And it would have to be filled to bring it above high water mark.

A. Yes, sir.

Q. Filling ground costs money?

A. You bet.

Q. Lots of money.

A. Yes, sir.

Q. That ground down there has no trackage facilities, has it?

A. Well, on the C. B. & Q., it does some.

Q. You couldn't get in there, you would have to go further south than that?

—. —— ——.

3503 Q. I wish you would glance at the card I gave you a moment or two ago. You recognize that picture, do you?

A. Yes, sir.

Q. You recognize in the foreground, first the Gas Company property, do you not?

A. Yes, sir.

Q. To the left is an open space with something piled on it?

A. Yes.

Q. That is the ground in Block T?

A. Yes, but that has not got them pipes on it now.

Q. I am only calling your attention to that ground. To the right are some buildings belonging to the gas plant?

A. Yes, sir.

Q. To the left and across the river is shown the Warfield-Pratt-Howell Grocery property?

A. Yes, sir.

Q. Immediately north of it the Brown-Camp Hardware Building?

A. Yes.

Q. Still north of that property is the Public Library Building?

A. Yes, sir. The Post Office is not shown here, is it?

Q. No. I wish you would take a pencil and make a cross where the Gas Company's property is shown.

A. (Witness makes cross.)

Q. You have made a cross on the property that is embraced within Block T?

A. Yes, comes up here. I don't know that it comes down that far though.

Q. Isn't this the front here?

A. Yes, the ground commences in here.

Q. The property lies in the picture to the right of the cross,
3504 doesn't it, the property marked with a cross?
A. Yes, sir; in Block C you mean—that is Block T in here; this is Block C in here.
Q. The Warfield grocery building, I wish you would put a cross there?
A. Yes. (Witness makes a cross.)
Q. I wish you would make a cross on the Public Library?
A. Yes. (Witness makes cross.)
Q. Lying between the Library and the Brown-Camp Hardware Building is now the new Post Office Building, in here?
A. Yes.
Q. And on the right and east side of the river is the new City Hall, not shown in this picture?
A. No, I think it is not shown here.
Q. The card which your attention has been called to and marked with the crosses indicating the buildings inquired of is now marked Complainant's Exhibit 62, isn't it?
A. Yes, sir.

The MASTER: I understand the location of the Gas Company's property is right immediately south of the Rock Island track on the east side of the river.

Mr. BRENNAN: The Gas Company's properties, yes, and running south down by the Burlington tracks.

The MASTER: And it includes the block south of that also?
A. Yes, sir.

The MASTER: And then further east is where Lots 9 and 10, or in other words the oil tanks are?
A. No, the oil tanks are in Block B; there may be some in C.
Q. Mr. Pease, by whom is the north half of Block A shown on the plat, Exhibit 5, owned, do you know?

(Question withdrawn.)

Q. Do you know the ownerships in that half block?
3505 A. I think the Company owns half of this in there.
Q. You mean the C. B. & Q.
A. No, I think the Gas Company owns some of that. If they don't, it belongs to the C. B. & Q.
Q. The C. B. & Q. owns the north half of the northeast quarter block?
A. It is marked so.
Q. Doesn't the Q. own also the north lot of the northeast quarter block?
A. It is marked that; that is all I know.
Q. You don't know anything about it outside of that?
A. I do not.
Q. Mr. Pease, it is your idea, I take it from what you have said, that actual sales fix the price of real estate?
A. Well, in a measure, that is the only way we can judge—one of the ways.
Q. Accordingly you have judged the value of the Gas Company property by the sale to the Yeager Manufacturing Company?

A. The demand down there is very limited.

Q. Answer the question. So you in fact have valued the Gas Company property on the basis of the sale to the Yeager Manufacturing Company?

A. Oh, yes; largely, well not on that entirely; no sir, on other property there.

Q. What other property then have you used?

A. Well there has property been sold in Block 1—the Shepherd and Nicholas property there was sold.

Q. How lately, when was the sale made?

A. Within a year, I think.

Q. How much property?

A. A quarter block there.

3506 Q. That fronts on what street?

A. On Fourth Street; that is not shown on the plat.

Q. There was a quarter block sold to the Nicholas Shepherd Company?

A. No, sir; from them to the Yeagers; that of course has more expensive buildings on it.

Q. When was that sale made?

A. In the past year; I think this last spring.

Q. In the spring of 1911.

A. I think so; that is my understanding. I had it for sale last year and I couldn't make it; they came on here and took it up.

Q. That was a sale from the Nicholas Shepherd Company to the Yeager Manufacturing Company?

A. Yes, sir.

Q. Of a quarter block?

A. Yes.

Q. At what price?

A. I understand it was $35,000.

Q. That included the buildings?

A. Yes, they claimed, the agent——

Q. Never mind what the agent claimed. All you know about it is what you have been told?

A. Yes, and the price I had on it.

Q. What price did you have on it?

A. Well, my customer wanted time——

Q. What price did you have on the property?

A. I think it was $35,000 or $37,000; I don't just remember.

Q. What other property did you have in mind, what other sales, rather?

A. Well, that has been the only recent sale I can recall; of course there was property back there sold——

Q. So that you had in mind fixing the price largely, the 3507 sale of the quarter block by Mr. Ankeny or the Oil Company to the Yeager Manufacturing Company, and also the sale by the Nicholas Shepherd Company?

A. Well, I wouldn't want to be quited as using the Shepherd and Nicholas property, because that is differently situated.

Q. Then it comes down to the sale of the quarter block of the Oil Company or Ankeny to the Yeager Manufacturing Company?

A. And the other sale made there.
Q. What other sale?
A. I understand, three and four in K, that is the one the Company owns.
Q. That was made some years ago?
A. Yes.
Q. How many years ago?
A. The Gas Company officials undoubtedly know.
Q. Will you answer the question?
A. I can't say.
Q. What is your understanding of it?
A. Well, a few years ago; I don't know how many.
Q. A few years ago?
A. Yes.
Q. Four or five?
A. I wouldn't say.
Q. You had in mind then those two sales as fixing the price over in that vicinity?
A. I had it in part, yes sir.
Q. You say in part, now what was the rest of it?
A. The property in Block C is higher property, the lots are higher and to be considered worth more money.
Q. So you have added something, have you?
3508 A. Yes, sir.
Q. Let us see how the case stands. You took the selling price on the quarter block sold by the Oil Company to the Yeager Manufacturing Company and also the price at which Lots 3 and 4 in Block K sold some years ago, as fixing the basis of the valuation or price.
A. In part, yes sir.
Q. And then you added nothing on account of recent appreciation—in your judgment there has been no appreciation; you added nothing on account of recent appreciation?
A. Why, yes; I think I did.
Q. You just stated as to Lot C, because it is higher ground you considered that more valuable; I mean you add nothing on account of recent appreciation in real estate values in East Des Moines?
A. Well, I certainly did; I certainly have; I understand this property here was sold for $7,000; my appraisement is $1,900 more than that.
Q. Whatever difference you have made over and above the prices as fixed by these two sales, is your judgment as to the appreciations in value recently except as to Block C, and that is filled and a higher level?
A. So is B filled.
Q. Except as to those blocks then on account of filling?
A. Those are filled perfect almost.
Q. You have allowed additional value on account of that?
A. Yes.
Q. You have allowed no additional values on any property by reason of any recent appreciations in value?

A. I think so, yes sir. I think the prices I fixed there are above——

Q. What was the price of the oil property sale to the
3509 Yeager Manufacturing Company in K, how much a front foot?

A. Not the Yeager, you don't mean.

Q. I mean the one you have been referring to in Block K?

A. 3 and 4?

Q. No, I don't mean that. I have been understanding you to say that there was a sale of a quarter block to the Yeager Manufacturing Company; that is in another block, is it?

A. Yes.

Q. It ain't shown here?

A. It is in the block east of K.

Q. Well, what was the price per front foot on that sale?

A. That was 132 feet.

Q. How much would that be a front foot now; what was the total price?

A. $8,000.

The MASTER: That would be $50 a front foot?

A. Yes.

Q. Then the difference in the valuations of the Gas Company property as given by you measures your estimate of the appreciation, does it?

A. Well in part, yes.

Q. That is, aside from the difference on account of Blocks C and B being graded is that right?

A. That is the way we estimate——

Q. Is that the way you estimate the enhancement of its values recently?

A. Of course we estimate our values from the sales largely in any locality.

Q. Let us go back over the ground again. The quarter block in the block east of K sold to the Yeager Manufacturing Company was sold for fifty dollars a front foot?

3510 A. Well, $8,000.

Q. You have placed a higher valuation per front foot on the Gas Company property?

A. Yes.

Q. So far as Blocks B and C are concerned, you regarded them as more valuable because they are located and graded to a higher level?

A. Yes, sir.

Q. But aside from that consideration the difference in the price per front foot between the sales to the Yeager Manufacturing Company in the block east of Block K measures the enhancement in value recently of the property?

A. Why, it don't measure the enhancement.

Q. Measures your estimate of the increased value?

A. I said those lots were higher lots and worth more on that account.

Q. I have just said, aside from the increased value owing to that situation, the difference between the values you placed on these properties measures your estimate of the increased values since the sale to the Yeager Manufacturing Company has been made.

A. I don't think there has been any increased value.

Q. Why did you knock the price up then?

A. Because they are higher lots.

Q. Why did you mark them up?

A. Why that is frontage.

Q. Why did you mark up the values there?

A. I should say I gave a very liberal estimation.

Q. That is your nature and disposition—I want to get at it more intimately. You have said there has been no increase in values over there?

A. I don't think there has been in the last year.

Q. Yet you have given an increase of value over and
3511 above the basis of your sales?

A. Yes.

Q. I am asking you to explain why you did that; As I understand you it was out of extraordinary liberality and generosity on your part?

A. Yes, largely.

Redirect examination by Mr. BRENNAN:

Q. Now, Mr. Pease, your attention has been called to Exhibit 62 that seems to be a panoramic view of certain portions of the Des Moines river, and it appears that the camera which took this picture was located somewhere in the vicinity of the Gas property; this picture shows the east bank of the river on the right hand side of the picture looking north?

A. Yes.

Q. On the west bank of the river are the buildings to which your attention was called?

A. Yes.

Q. The library building, where the new Post Office is now located, and the Warfield-Howell Grocery house and the Brown-Camp Hardware house?

A. Yes, sir.

Q. Now this shows a beautiful picture here of parks and blue roofs and all that sort of thing—does it show Mr. Rubenstein's junk pile near the Second Street bridge; do you see that on the picture?

A. No, sir.

Q. Or the American Iron Works where the boilers are stored out on the river bank?

A. No, sir.

3512 Q. The Capitol Building is not shown on this picture, is it?

A. No, sir.

Q. Well, this is a river view printed on a post card?

A. Yes, sir.

Q. Can you see the battered stacks of the Edison Electric Light Company?

A. Yes, sir.

Q. Where is that?

A. That is up north of the Library Building.

Q. There are no summer resorts that you know of located in this immediate vicinity?

A. I don't recognize any.

Q. Well, now your attention was called, or you stated rather, that the Rock Island Railway Company had opened up a new factory district, or manufacturing district in East Des Moines, just where is that located?

A. Near Dean Lake; I understand they bought 20 or 24 acres there.

Q. What is the fact, Mr. Pease, as to there being at this time available sites for manufacturing purposes in East Des Moines?

Objected to on part of Complainant as being immaterial.

A. Plenty of them.

Q. Just indicate where they are located?

A. Along the Rock Island or Wabash. I am dealing now for 20 acres on the Rock Island, east; there is plenty outside of the existing part of the city.

Q. What is the fact as to there being sites of that character along the right of way of the Chicago Great Western and the Des Moines & St. Paul Railways, running north and in a northeasterly direction?

A. Plenty of them.

3513 Q. Now did you testify anything concerning the property on the northeast corner of First and Court Avenue which was purchased by the Lorenz Ill estate?

A. That is Court Avenue and what?

Q. And First Street, immediately across the street from the Des Moines Manufacturing & Supply Company?

A. I am not posted on that deal.

Q. Do you know whether that was purchased within the last year?

A. No.

Q. You are not familiar with that property?

A. No.

Q. Now this Yeager Manufacturing Company, where is that property which they purchased located?

A. On Fourth and Vine, between Vine and between the Des Moines Union and the Rock Island on Fourth.

Q. It is between the Des Moines Union Railway and the Rock Island Railway?

A. Yes.

Q. Near Fourth Street?

A. Fronts on Fourth Street.

Q. On which side of Fourth Street?

A. On the west side.

Q. How far is it from the gas property?
A. Oh, it would be three or four blocks; about three blocks.
Q. That is from the front?
A. From front street. Well, it would be nearly four, about four blocks I think.
Q. Take it from the east line of the Des Moines Gas Company property, where would the west line of the Yeager Manufacturing Company be?
A. Well, that wouldn't be more than a block I don't think;
3514 taking them two lots in K, it wouldn't be much over a block.
Q. That you say was purchased for $50 a front foot?
A. I have reference to their big building they sold; you have reference to the two lots.
Q. Yes.
A. That would be different. I didn't understand that; I would have to be corrected on that. I supposed you meant the other on Fourth Street.
Q. I mean the property which they purchased recently.
A. Well, take it on First Street, it wouldn't be only two blocks from First Street.
Q. How far would it be from the east line of the property of the Des Moines Gas Company?
A. Just a quarter of a block.
Q. Did you state the price at which that property was purchased by the Yeager Manufacturing Company?
A. $8,000.
Q. How much frontage?
A. 132 feet.
Q. 132 feet square?
A. Yes, sir.
Q. It has trackage facilities?
A. Yes, sir.
Q. On what railroad is it situated?
A. The Rock Island.
Q. The main line of the Rock Island?
A. Yes, sir; on the main line.
Q. Is that the property sold by the Oil Company?
A. Yes, sir.

3515 Recross-examination by Mr. READ:

Q. Mr. Pease, when you said there is plenty of trackage property on the Great Western and the other roads, you referred to property in the outlying districts?
A. Yes, sir.
Q. Away out?
A. Inside of the city limits.
Q. And out a mile or two; Dean Lake is out at Twentieth Street?
A. It is outside of the thickly settled part.
Q. The Yeager Manufacturing Company is not using these two lots now?
A. No.

Q. Just holding them?
A. Yes.

Redirect examination by Mr. BRENNAN:

Q. Mr. Read said a mile or two; the country which is being developed by the Rock Island Railway Company is about Eighteenth street you say?
A. That is out further than that. It would be out about Twenty-second street, I should judge, south of Dean's Lake there; on the south side of Dean's Lake.
The MASTER: That is where the new cut-off is?
A. Yes, sir.
The MASTER: That is on the other side of the river?
A. On the east side.
The MASTER: At what point do they leave and turn south?
A. They leave, this Des Moines Northern I suppose they would be continued south, they have additional ground there, I know, in there to the southeast.
3516 Q. Well, it is a fact, Mr. Pease, as you approach East Eighteenth street between the Des Moines Union and the Burlington tracks, there are what is called crossings there; the Great Western crosses some other tracks at that point and the Des Moines & St. Paul which has been recently acquired by the Rock Island, parallels the Great Western tracks some distance north?
A. Yes, sir.
Q. That is the point you referred to?
A. Yes.
Q. That would be about East Eighteenth Street or Twentieth Street?
A. The crossing would be about Twentieth Street, yes.
Q. The Rock Island and the Wabash and the K. D. division run parallel to each other, and the Great Western crosses the tracks at or about that point, going in a northeasterly direction?
A. The Great Western I don't think crosses the other tracks.
Q. It is north of these other tracks?
A. It is north.

Recross-examination by Mr. READ:

Q. What is it you say is being done out there?
A. Well, the ground the Rock Island lately purchased, I understand, on Deans Lake,—you know where Deans Lake is I suppose——
Q. What has been done, what has it been purchased for?
A. For the Rock Island.
Q. For what use?
A. That I couldn't say.
Q. What have you been telling us here?
A. I suppose they done it for trackage.

Q. You supposed that; that is all the information you
3517 have?

A. Yes.

Q. Just your own inference?

A. Yes.

Q. Don't you know the Rock Island is making a terminal site, is buying it for a terminal site for the new Des Moines & Mason City & St. Paul line?

A. Well, I don't know.

Q. Don't you know the company has been buying a small piece of ground from the Street Railway Company for the purpose of establishing a terminal site out there?

A. I understand the Soap Company has bought a piece of ground out there?

Q. What Company?

A. The Prouty Soap Company.

Q. What did you infer from that?

A. The Prouty Soap Company, I understood in the last few days, has bought three acres out there or such a matter.

Excused.

Complainant offers in evidence Complainant's Exhibit 62, being the post card identified by the witness.

Objected to on part of defendants as incompetent, irrelevant and immaterial.

3518 ANDREW SANGSTER, being first duly sworn on part of defendants, examined in chief by H. W. Byers, Esq., testified:

Q. Where is your present residence?

A. In Chicago.

Q. How long have you lived there?

A. Since January of this year.

Q. Of what country are you a native?

A. Scotland.

Q. How long have you been in this country?

A. Since January.

Q. Have you ever been on the witness stand before?

A. No, sir.

Q. What is your occupation or business?

A. I am a chartered accountant.

Q. How long have you been such?

A. Since 1905.

Q. I wish you would state into the record in your own way just what training and experience you have had as a chartered accountant?

A. I entered the profession in 1897 and became an apprentice or was indentured in 1902; I qualified in 1905 and became a member of the Edinburg Society of Chartered Accountants in Scotland. Since that time I have been employed taking charge of private and public companies, such as commercial, industrial and financial, and

in making investigations in the accounts of companies, proposing to offer shares to the public, that is to say, inquiring into the profit and loss accounts of these companies for the purpose of certifying the profits over a period of years.

Q. As I got it, you commenced your training as an ac-
3519 countant in 1902?

A. Yes; well I have been in an accountant's office since 1897. I did not go in for the qualification until 1902.

Q. With whom are you employed now?

A. Marwick-Mitchell & Company of Chicago.

Q. How long have you been with them?

A. Since I came to this country.

Q. What are your duties with Marwick-Mitchell & Company; what part of their work do you do?

A. Much the same as I have described: taking charge of auditing and investigation work.

Q. Since you have been here in this country, have you been engaged in the business of examining and investigating books and records of companies and corporations and municipalities?

A. Yes, sir; ever since I have been busily engaged in that work.

Q. When did you first come to Des Moines?

A. July 14.

Q. And for what purpose did you come here?

A. For the purpose of making an investigation of the accounts of the Des Moines Gas Company and the Capital City Gas Light Company.

Q. Under whose supervision did you, or rather at whose direction did you come to Des Moines?

A. At the direction of Mr. James Hall, senior partner of Marwick-Mitchell & Company of Chicago.

Q. That is the Mr. Hall who testified here?

A. Yes, sir.

Q. What if anything have you done in the way of examining or investigating the books and records—I don't mean in detail now; as to whether or not you have examined and investigated the books and records of the Des Moines Gas Company?

3520 A. Yes.

Q. What part of that work did you have in charge, if any part of it—were you at the head of the force that was here?

A. Yes, I was in charge of the work.

Q. How many helpers did you have?

A. Three.

Q. Who were they and who were they working for?

A. They were also in the employ of Marwick-Mitchell & Company.

Q. What do you have to say as to whether they were competent young men for the work they were doing?

A. In my opinion they were quite competent for the work which was entrusted to them.

Q. You say you came to Des Moines on the 14th of August?

A. The 14th of July.

Q. Now I wish you would state to the Master just the scope of your examination and investigation of the books and how much of it you inspected and checked yourself?

A. The scope of the work included the following: Prepared all balance sheets of the Capital City Gas Light Company as of July 1, 1886, and January 1, 1895; balance sheets as at February 28, 1906, of the same company; a series of balance sheets of the Des Moines Gas Company as at March 1, 1906, February 28, 1907, 1908 and 1909, and December 31, 1909, and 1910. These last being shown in the exhibits to Mr. Hall's report, Exhibit 30 I think. The additions to the plant since January 1, 1895, which was taken as a starting point, were analyzed; so also were the additions to the plant under the operations of the Des Moines Gas Company, and these latter additions were vouched or checked. Analysis was also made of the profit and loss accounts of the Des Moines Gas Com-
3521 pany for the five years ending December 31, 1910. I think that includes all of it.

Q. In what way, if at all, was this examination and investigation and the analysis that you refer to worked out, that is, was a complete written memoranda of the work made?

A. Yes, there was.

Q. What do you have to say as to whether that memoranda is contained in the report furnished by Mr. James Hall and marked in this case as Exhibit 30?

A. These are all contained in that report.

Q. Now did this examination and investigation cover all of the accounts of the Des Moines Gas Company from 1906 down to December 31, 1910.

A. Yes, sir.

Q. And what do you have to say, whether it covered every item of either charge or credit that appears upon the books?

A. It embraces all entries on the books.

Q. And was complete as to every item?

A. Yes, sir.

Q. Now, in this examination, you may state what you have to say as to whether or not you made up tables for the purpose of determining the cost of the manufacture of gas and all of its details and reduced the same to schedules and writings?

A. I did.

Q. How much, if anything, did you have to do with making up Exhibit 30, that is, Mr. Hall's report?

A. I prepared all of the Exhibits and schedules shown in that report and which formed the basis for the report.

Q. What do you have to say, whether you personally checked those items and since have checked them back with the books, so that you know they are correct as they appear in that Exhibit 30?

3522 A. I did so, either personally or it was done under my direction.

Q. What do you have to say as to whether they are correct as they appear in that report?

A. They are correct, subject of course, to the adjustments which Mr. Hall made.

Q. I am referring to the matters that purport to have been taken from the books?

A. Yes, sir; those are correct.

Q. Now how much time have you devoted to an effort to check up all these items to be sure that nothing had been overlooked and nothing had been added, aside from these adjustments you are talking about?

A. You mean as to time?

Q. I want to know how diligent and how much effort you put forward to furnish Mr. Hall an accurate statement of the books and records and accounts?

A. Well, I used every care and caution in the work consistent with my experience.

Q. After the thorough examination of Mr. Hall, especially the cross examination, and the time he devoted here upon the witness stand, as the character of his report developed, were you watching it to check up errors or mistakes?

A. I was.

Q. How many did you find?

A. With one exception, I didn't note any.

Q. And that exception was as to the item of loss and damages that was set back into some former period?

A. Was not set back.

Q. Now, in examining these books, Mr. Sangster, I wish you would state whether you found upon them continuous running accounts, both as to the Capital City Gas Light Company and the Des Moines Gas Company, with the U. G. I., the United Gas Improvement Company?

3523

A. Yes, the books were a continuous record of the transactions of the company.

Q. You do not quite catch the drift of the question, I think, Mr. Sangster, although the answer is perhaps sufficient. What I wanted to know is as to whether or not you found on the books a continuous open account, first with the Capital City Gas Light Company and then later on with the Des Moines Gas Company, of the United Gas Improvement Company?

A. Yes, I did.

Q. Did the books and records of the Des Moines Gas Company apply alone to the city of Des Moines, as you found them, or did they cover Valley Junction as well?

A. They covered Valley Junction.

Q. And so far as the journals and ledgers and account books or records were concerned, did you find any place where the operations applying to Valley Junction were separated from the Des Moines operations?

A. Not in any of the books which I examined.

Q. That is to say, the record of the amount of gas manufactured does not show the amount for Valley Junction and the amount for Des Moines?

A. Oh, yes; as regards gas statistics they are quite clearly stated distinctly for Valley Junction.

Q. That is the amount of gas furnished?

A. Yes, sir.

Q. Now with reference to the accounts, general expenses, office expenses and manufacturing and all that class of expenses, and
3524 distribution, is that made up in the books separately, so that you could tell what should be charged to the Valley Junction end of the business and what should be charged to Des Moines?

A. No, it is not stated separately, and I don't see how they could arrive at any distinct proportions to be charged against Valley Junction.

Q. First state in the record, just what item, if any, aside from the gas statistics, you found recorded in the books anywhere that applied alone to Valley Junction?

A. Apart from these gas statistics I don't think there was anything in the books which showed an expenditure properly applicable to Valley Junction.

Q. What was there, if anything, on the books with respect to the Valley Junction plant? Do you remember any item?

A. Apart from the $45,000 paid for the plant *in* March 1, 1906, there was nothing else.

Q. Now in going through the books of the company, what if anything did you find from them indicating the payment to the city of Des Moines of a tax on gross sales?

A. Special city tax?

Q. Yes.

A. That was paid regularly.

Q. You found such an item, two cents?

A. Two cents.

Q. On the gross revenue?

A. On the gross receipts rather.

Q. That was not separated from the Valley Junction business, was it in any way?

A. No, not in the books.

Q. So that the tax, as you understand it, was paid upon the
3525 entire output?

A. Yes.

Q. Did you find anything in the books anywhere—I am speaking of the books now, the regular office books, account books and the books showing the cost of material and manufacture—what if anything did you find in the books that would indicate, either to you, or could be pointed out to us, as to the character and extent of the extensions that have ben made to the Valley Junction plant in the last five years, any charge in the general account of the Des Moines Gas Company?

A. On the books, I find nothing which would indicate to me how much of the construction account applied to Valley Junction.

Q. Now did you think to go into the authorizations that are filed there in the office to try to get the character and extent of the additions and extensions to the Valley Junction plant in the last five years?

A. No, I did not.

Q. Your attention up to this time had not been called to the fact that information might be gotten in that way?

A. It didn't occur to me.

Q. I wish you would, for me, after you are through with the witness stand, refer to the authorizations that you find up there, unless I am mistaken, as to what they show or they will indicate on their face the character of the improvements and the streets on which the improvements are to be made. I think you can tell from the street, with some help, whether it is in Des Moines or Valley Junction.

I would like to inquire whether the Des Moines Gas Company minute book is here?

Mr. GUERNSEY: I think it is.

(The minute book is produced.)

3526 Q. The book I just inquired about is Exhibit 27. Now I will call your attention, Mr. Witness, for the purpose of aiding me in getting me that further information in this Exhibit 27, which is the Des Moines Gas Company No. 1 Stockholders' and Directors' Meetings, you will find carried through it what I assume to be copies of these authorizations. To illustrate, I find one here referring to certain mains on East Seventeenth Street, Vail Street, Raccoon, East Eleventh, Logal, Hillside, Bloomfield Avenue, and so on. Do you remember whether anywhere in the books there is anything to indicate just where these meters go that are entered up in the totals, whether to Des Moines proper or Valley Junction?

A. There was nothing to indicate.

Q. Whatever information you can get along that line for me later on, I wish you would get. Now you have stated, you prepared an abstract of the books covering the five year period of the Des Moines Gas Company's operation, that is, such of the five years as you have covered up to the 31st day of December, 1910, for the purpose of making an analysis of what the books show and ascertain the cost of manufacturing and distributing gas in Des Moines. Now in addition to that have you prepared tables and figures covering a period of some years back of 1906 beginning with the existence of the Des Moines Gas Company, for the same purpose, of working the cost for manufacture and distribution price to that period?

A. Yes, for the years 1904 and 1905.

Q. To whom did you furnish those figures?

A. To Professor Bemis.

3527 Q. Now did you go over these tables and assist in making up these figures and schedules and the analysis of the cost for manufacturing and distributing gas as they appear in Exhibit 30?

A. Yes, I prepared these exhibits myself, or checked them where I did not prepare them.

Q. What do you have to say as to their being correct?

A. They are correct as taken from the books.

Q. Now did you have any conversation with the managing offi-

cers of the Gas Company about what you wanted to do and as to the books and papers you wanted to examine and so on?

A. Yes.

Q. What do you have to say, whether they understood perfectly what you were there for, and you explained it to them, did you?

A. There was no doubt in my mind they understood the purpose of my visit to that office.

Q. I suppose whatever you asked for they furnished to you?

A. Yes, except where we may have stated to the contrary in the report; Mr. Hall may have stated to the contrary in his report, that certain productions were not produced to us.

Q. Well, as I remember it, about the only thing of importance was the item of $120,000 that involved, or rather one of the holders down here?

A. Yes; the particulars of the claims for accidents and damages were not produced until this report was practically completed.

Q. Aside from that they furnished you what you asked for, that you thought was necessary to make a complete transcript or abstract of the books of the company?

A. Yes.

Q. For the purpose for which you were directed to make the examination?

A. Yes.

3528 Q. Is that right?

A. That is right.

Q. What do you have to say as to whether Exhibit 30 as made up by yourself and Mr. Hall and the other young men that you had charge of, does show in the figures and tables and schedules and exhibits attached thereto the cost of manufacturing and distributing gas at this plant here as it is shown by the books of the Des Moines Gas Company?

A. Yes, they show these costs as made up from the figures taken from the books.

Q. What do you have to say as to whether Exhibit 30 contains a complete and accurate transcript in these numerous tables and schedules and exhibits of all of the book entries of the Des Moines Gas Company so far as you were able to find them, showing the investment in the property of the Des Moines plant?

A. They do; subject to the adjustments made and stated by Mr. Hall in his report.

Q. Well not subject—these adjustments of course are in addition to what the books show?

A. Yes.

Q. But the report is a complete and accurate abstract of the books and all of the entries as they relate to the cost of distribution of gas as appears in this Exhibit 30?

A. That is so.

Q. Did you make some inquiry about this holder that has been referred to several times or did Mr. Hall do that?

A. Yes, I did that myself; Mr. Hall may have made certain inquiries in addition.

Q. To whom did you direct your inquiry?
A. To the comptroller.
3529 Q. That was Mr. Curran?
A. Mr. Curran.
The MASTER: He resides here or in Philadelphia?
A. Philadelphia, I believe.
Q. What relation do you understand Mr. Curran bears to the United Gas Improvement Company?
A. I don't know just what position he holds with the United Gas Improvement Company.
Q. You call him comptroller; is he comptroller of this company or the United Gas Improvemnt Company?
A. As I understand it, he is comptroller of the auditing department of the United Gas Improvement Company.
Q. What response did Mr. Curran make to you about the holder?

Objected to on part of complainants as secondary and hearsay and not competent as against this company.

A. He said he thought there must be some contracts outstanding including this holder which was not shown on the books; he had no information.
Q. And since then have any of the managing officers of the company furnished you any further information about it or assisten you in any way trying to ascertain the truth about the holder its cost and so on?
A. No, nothing.
Q. Now in going through these books, can you tell me from memory now just what amount of cash monthly receipts come from these cash meters; does that appear anywhere in this report—prepayment meters?
A. Proportion of cash receipts?
Q. The amount of money that is received monthly or about the amount of money that is received monthly by the Gas Com-
3530 pany from these prepayment meters, does that appear in the report anywhere?
A. Exhibit A shows the proportions.
Q. What does it show with respect to that?
A. It shows the receipts of the regular meters and prepayment meters.
Q. What is the amount of the prepayment meters in any one year?
A. Take the last year, the amount from the regular meters was $339,454.28 in Des Moines; from the prepayment meters the revenue was $204,330.
Q. It doesn't show it by the month?
A. No.
Q. Is there any place in the report it is shown by the month?
A. No, sir not in the report.
Q. But it is shown by years?
A. Yes.

Q. Do you have any memoranda in which it is shown by the month?

A. Yes, I think I have.

Q. You may look that up for me too. In going through the books and records of the Company, did you find any evidences of any special privileges to the consumers here in Des Moines in the way of putting in mains or in any other way?

A. Nothing which I would call in the nature of special privileges.

Q. Did you find anything that indicated mains were put in and money deposited by the consumers for the payment of mains?

A. Yes, sir; certain portion of the mains put in the company received deposits in advance.

Q. Did you find anything that indicated the Gas Company put in gas extensions for real estate men under some special arrangement?

A. No, I did not.

Q. You don't remember such?

3531 THE MASTER: Were those mains or services you refer to where the money was deposited?

A. I understand they are mains; that is my understanding.

Q. Now, Mr. Sangster, do you remember when this report that has been exhibited in this case, Exhibit 30, was first handed to counsel and the officers of the Des Moines Gas Company?

A. I don't know.

Q. About when?

A. There were copies made which I handed to Mr. Curran just before Mr. Hall went on the stand.

Q. You handed those to Mr. Curran just before Mr. Hall went on the stand?

A. Yes.

Q. Has Mr. Curran, Mr. Douthirt, or any of the officers interviewed you since then to call your attention to any errors in your tabulation or tables or accounts you have shown them?

A. No, sir.

Cross-examination by N. T. GUERNSEY, Esq.:

Q. These extra copies were made under arrangement with the City by which as a matter of convenience they could be made by your office and then turned over to the Company, or the complainant here when the report was produced as testimony?

A. Yes, sir.

Q. Now have you seen all the exhibits that have been introduced by the complainant in this case?

A. Yes.

Q. Have you checked them over to find errors in them?

A. Well, I don't know that; I did check them over; I don't know that you would call them errors.

3532 Q. Did you call the attention of Mr. Curran or anyone on our side of the case to any discrepancy that you found in them?

A. No, sir.

Q. You did not consider yourself under the remotest obligation to do it, did you?
A. I did not.
Q. What is your age, Mr. Sangster?
A. Thirty.
Q. How many Gas Companies have you examined?
A. None previous to this.
Q. How many public utilities have you examined prior to this one; I mean by that corporations engaged in furnishing service to the public, like gas companies, water companies, street railways, telephone companies and electric light companies?
A. Well, if you call the electric traction companies and tram-way companies, not directly under the control of the municipality, but whose maximum fares were fixed by the municipality, I have made such investigation.
Q. What companies were they?
A. Companies in Scotland.
Q. How many have you examined in this country?
A. None.
Q. Now, as I understand your statement, the scope of your work which included balance sheets of the Capital City Gas Light Company of July 1, 1886, and January 1, 1895, and February 28, 1906; is that right?
A. That is right.
Q. Then the balance sheets of the Des Moines Gas Company, March 1, 1906, and then February 21, 1907, 1908, 1909, and December 31, 1910?
3533 A. And 1909; there was a ten month period from February 1909 to December 31, 1909.
Q. Then you made up this five year profit and loss account?
A. Yes, sir.
Q. Or went over it?
A. Yes, sir.
Q. And you analyzed the additions since January 1, 1895, and you said vouched them where they were made by the Des Moines Gas Company?
A. Yes.
Q. By that you mean you checked them by the vouchers as to the latter company?
A. Yes, sir.
Q. Where did you do this work in Des Moines?
A. In the Gas Company's office.
Q. The Gas Company furnished you a room?
A. It did.
Q. Outside of the regular office?
A. Yes, outside of the regular office.
Q. But the Gas Company furnished you the room?
A. It did.
Q. The Gas Company also furnished you the books and the vouchers?
A. Yes, sir.

Q. It also furnished you some one to tell you where these entries were and that sort of thing, where the vouchers were, to help you to find the things?

A. Yes, sir.

Q. The Gas Company also furnished you an itemized statement of the profit and loss account for the five years?

3534 A. Well, yes, they did.

Q. Is this paper, marked Exhibit 24, a copy or reproduction of the statement that was furnished you by the Gas Company to aid you in your work of checking there?

A. Well, it seems to be; I couldn't say until I compared the two.

Q. I do not ask you to vouch for the accuracy of the figures, but it is apparently the same thing?

A. It is made up on the same lines, yes.

Q. And that was furnished you by Mr. Curran voluntarily?

A. Voluntarily, yes.

Q. And it was stated by him at the time, wasn't it, that he furnished it because it might aid you in checking these things out?

A. Yes, sir.

Q. And it was of some assistance to you in getting at things and checking and comparing your statement with the statement of the Gas Company?

A. Not very much.

Q. Not any?

A. I had to make up my statement, which was taken from the books.

Q. This copy or exhibit was a convenience to you, wasn't it?

A. Yes, it might have been.

Q. It was as a matter of fact, wasn't it?

A. I did not compare the statement Mr. Curran gave me from the books, I made up my own statement.

Q. I ask you whether this statement Mr. Curran gave you was not of convenience to you in doing your work?

A. It may have been of some slight assistance.

Q. You found, didn't you, so far as the books went, Mr. Curran's statement was correct?

A. Absolutely.

3535 Q. The only difference you made was on account of adjustments which you made of various items?

A. Exactly.

Q. For how long a period did the Gas Company furnish you an office?

A. About five weeks.

Q. And for how long a period did it furnish somebody to aid you in making your investigation?

A. The same period.

Q. It also furnished you incidentals, that is, furnished you paper to work with, from which you could make your statements and things like that, didn't it?

A. I did run short of paper one time and Mr. Curran very ac-

commodatingly gave me a small supply, but I did not depend on the Gas Company for paper.

Q. How much of Exhibit 30 did you write?

A. You mean the body of the report?

Q. The whole thing?

A. I constructed the exhibits and schedules.

Q. They are all your work?

A. Yes. So is the chart. I wrote pages 2 and 4 which Mr. Hall revised; that is all.

Q. That is the historical matter?

A. Yes.

Q. Now, then, you said on your direct examination that you made a complete written memoranda of this investigation or audit—which was this, an investigation or audit you made?

A. An investigation.

Q. That you made a complete written memoranda that was all contained in Mr. Hall's report; that isn't true is it?

A. No; summaries of this memoranda are contained in
3536 the report.

Q. Have you these memoranda here?

A. Yes, I have.

Q. Now, it would not be correct to say that Mr. Hall's report contains everything; it is simply conclusions that are deduced from those things that you reported?

A. Yes, sir; they could not possibly contain all the memoranda.

Q. I understood you to say that it did?

A. I had in mind just what was intended by the question.

Q. We can't tell what you mean except by what you say.

A. Well I thought it was fairly obvious.

Q. Whenever you say in your examination that the report shows what the books show, that is always subject to the exception that grows out of your adjustments?

A. Yes, I think I maintained that.

Q. And of course the books do not show your investment balance you start with on January 1, 1895, the investment entry there?

A. No, they don't.

Q. Now, you were asked whether you found a continuous account with the United Gas Improvement Company. You said you did; why was not that referred to in the report Exhibit 30?

A. I do not think that I am responsible for the treatment of the report.

Q. Didn't you help make it?

A. Yes, sir; except where I have stated——

Q. What were you doing with Mr. Hall here Saturday, Sunday and Monday down at Colfax, just before he went on the stand? Weren't you working over this report?

A. No, sir.

Q. Doing nothing?

A. I wasn't working on the report; I was doing other
3537 matters.

Q. Working on something in connection with this case?

A. Yes, sir.

Q. What matters were you working on?

A. Preparing certain statements that had to do with complainant's Exhibit 26.

Q. Making up this Exhibit 23?

A. Not exactly making it up; preparing for Mr. Hall's information certain statements; he may not have produced them, but for his information.

Q. Did any of your adjustments have to do with this account with the United Gas Improvement Company?

A. No, sir.

Q. So far as you were concerned you found that to be right?

A. That account?

Q. Yes.

A. Yes.

Q. Anything abnormal or suspicious about it?

A. Anything abnormal or suspicious about it was referred to in the report and such as was brought into prominence by Mr. Hall.

Q. Whereabouts in the report is this account referred to?

A. No where.

Q. Was there anything abnormal or unusual about this account?

A. Well, these replacement values, a great portion of the sums charged against replacement values was credited up to the United Gas Improvement Company.

Q. That is something you threw out?

A. Yes.

Q. Did you throw that out when you made your report?

A. Oh, no; it was on my statements; I didn't throw it out.

Q. Have you got your original memorandum making up
3538 your operating cost for the year 1910?

A. Yes, sir.

Q. Let me see it, will you?

A. I haven't got it here.

Q. Will you produce it so that we can look at it?

A. Yes.

Q. When you made up that account, did you exclude this item of $5,900 and some odd dollars on account of replacement valuations?

A. Possibly I may, but I did under direction, if I did so.

Q. Do you remember whether you did or didn't?

A. I really don't remember whether the statement excluded it or included it.

Q. Under whose direction did you do it?

A. Mr. Hall's.

Q. Did Mr. Hall know about the item before you made up the account?

A. Yes, sir.

Q. How could he know about it?

A. Mr. Curran produced the statement you previously referred to as we started out on our preliminary survey of our account; that item was stated separately and easily noticed.

Q. It was not concealed?

A. Mr. Hall's instructions was to make up that item, excluding that item.

Q. Did you have any conference with Professor Marks while you were making up these statements?

A. Professor Marks did ask me a few questions.

Q. Did you have any conference with Professor Bemis while making up the statement?

A. Yes, he also asked me some questions.

Q. Did they stop with asking questions?

3539 A. I took no instructions from either.

Q. Did they make suggestions?

A. None whatever; I would not have accepted them.

Q. I simply asked you whether they made them?

A. No, none.

Q. Did you give Professor Marks his statements of operating costs and the statements throwing out these accident and damage items that he has in his report?

A. I dont know what he has in his report; I showed him what I had ascertained as the result of my examination. I told him this was subject to Mr. Hall's approval. I do not know what use he made of it.

Q. And Professor Marks had access to your figures as you were making up your report?

A. In that particular instance he had.

Q. Well, he had in any other instance, didn't he; didn't he come over there and complain because you were not getting the matter of figures and information as promptly as he wanted it?

A. He didn't make any complaint.

Q. Are you sure?

A. As far as I recall, I never heard him complain.

Q. Don't you remember of his coming over there after information?

A. He was not complaining.

Q. Don't you remember his coming over there after information?

A. Yes, I do.

Q. Don't you remember of his coming over several times after information?

A. I think he came over twice.

Q. Don't you remember of his being impatient on account of the delay?

A. I don't know that he was impatient on account of any delay.

3540 Q. What was the cause of his impatience?

A. He wanted to see Mr. Hall, I think.

Q. He wanted to see Mr. Hall?

A. Yes.

Q. And Professor Bemis was also taking an interest in the investigation, wasn't he?

A. Naturally.

Q. And how frequently was he over there?

A. Once.

Q. Only once?
A. Yes.
Q. The other times you saw him at the hotel?
A. Yes.
Q. Now, do you remember defendants Exhibit 35, which showed the total book coost of the Capital City plant, plus the Des Moines Company expenditure $1,994,714.09?
A. Yes, I remember it.
Q. Did you also make that up for Mr. Hall?
A. Yes, sir.
Q. And the facts shown by that exhibit are the facts as they appear on the books?
A. I prepared them from my own statements as taken from the books.
Q. So that the report Exhibit 30 which shows the total cost seventeen hundred and some odd thousand dollars, and Exhibit 35 showing nineteen hundred and some odd thousand dollars are both made up by you from the books?
A. That seventeen hundred thousand dollars is based on the valuation of Mr. Pratt in 1895.
Q. Yes, and leaves out a few items?
A. Yes. This Exhibit 35 was made out by me from state-
3541 ments taken from the books without any introductory figures such as the valuations by Mr. Pratt, but starting off with the balances on the books.
Q. In other words it won't do to say that Exhibit 30 shows the facts shown on the books?
A. It is always understood as based on that valuation.
Q. It is always understood it shows those facts except as they have been modified by you?
A. I have been acting under instructions all the time.
Q. Certainly; I am not questioning your instructions. I am discussing simply your general statement that Exhibit 30 shows things as they appear by the books, that is true?
A. Subject to the acceptance of that appraisal as a starting point.
Q. Then you have to say subject to about $40,000 bond discount too?
A. Yes.
Q. And then subject to your deducting $250,000 depreciation?
A. $164,000.
Q. No, you didn't deduct that, you deducted six cents per thousand feet?
A. I didn't deduct that depreciat-oj.
Q. You did testify this morning that the things shown in Exhibit 30 were as they appeared on the books of the company?
A. I think I testified that the exhibits and schedules on which that report was based was taken from the books.
Q. Now, then, just what is there in this report, Exhibit 30, that shows what the books of the company show without change or modification?
A. On page 22 of the report there is a statement which shows the

present book value of the property $3,853,975.22; add depreciation written off June 30, 1909, $264,108.78.

3542 Q. Can't you indicate this without reading it all. How much is there here that is as shown by the books; just indicate it without reading it; that is simply to save time.

A. This figure, $4,118,084, is stated as the book cost of the Des Moines Company.

Q. Is that figure on the books?

A. No, the first figure is $3,853,975.22.

Q. What else is there in this report that is as shown by the books of the Company without some modification or change?

A. I think these various schedules show just what the books show.

Q. Take the first one, quantity of gas maunfactured and sold and so on, what books will show that, or did you get that from the statement made by the company?

A. The quantity sold and used by the company is shown in the journals.

Q. Did you get this from the books or the statement the Company made up?

A. From the books.

Q. That is shown by the journals of the Company?

A. Yes.

Q. Now then this next statement is made up from the books?

A. Yes, altogether; of course I put in the amounts unaccounted for. Schedule 3 showing the summary of extensions and improvements of works is as taken from the books.

Q. No change in that? Is that right, schedule 3?

A. Yes, schedule 3.

Q. Schedule 4 is not shown by the books?

A. No that is taken from certain statistics furnished to us.

Q. By the company?

A. Well that was from the books or statements handed to us.

3543 Q. And which was it, you said either from the books or statements handed to you, which did you take?

A. The particulars as regards meters were taken from the meter record, the book recording the number of meters in service or use; the feet of mains was taken from statements given to us by the Company; the gas sales were taken from the books.

Q. Does that check with your other gas sales statement balance?

A. Well, these are for the calendar year.

Q. It ought to balance out with this other statement, ought it not?

A. Yes, approximately.

Q. Well, will it exactly?

A. I don't know that it will exactly.

Q. It will if you got both of them from the same source, don't it?

A. It ought to.

Q. The fact is you did not get them both from the same source; you took this from the statement furnished by the Company?

A. No, sir.

Q. Then it will balance out with the other?

A. It ought to.

Q. But will it as a matter of fact; you know if you checked all these things?

A. Yes, sir; I remember just inquiring as to this particular item, in total this figure given for the calendar year checked up with the statement as broken up over the five year period, and I was told by my assistants they did.

Q. You didn't want us to catch you on a thing like that?

Mr. BYERS: You wouldn't want to try to.

Mr. GUERNSEY: I wouldn't regard it as material.

Q. Now, then, your summary of additions to mains, service, meters, etc., did you make that up from the book?

3544 A. Yes.

Q. From the books as they stand?

A. Yes.

Q. And did you make up this list of standard prices, schedule 6?

A. No, it was prepared by my assistants at Mr. Hall's instructions.

Q. Did you have anything to do with it one way or the other?

A. I did not directly.

Q. Then you don't know why they always took the lowest?

A. Yes, Mr. Hall instructed the assistants to take the lowest invoice price.

Q. Not the average?

A. No question of average was made.

Q. Did you take the lowest invoice price—here is a piece of 24 inch pipe, October 1907?

A. Yes, we couldn't find any invoice for 24 inch pipe until away back in 1907.

Q. So you carried three or four years?

A. In stores.

Q. Did you add interest on it?

A. Oh, no.

Q. Somebody had to pay that?

A. We are talking of invoice prices here.

Q. Did you add that interest anywhere to get at any of your costs?

A. No, sir.

Q. Somebody had to pay it didn't he?

A. Well the Company didn't take credit for it in their inventory.

Q. I didn't ask you that.

A. I should think if they thought it was worth the addition of interest——

Q. My question is somebody had to pay it?

3545 A. Yes.

Q. It was a part of that cost wasn't it?

A. This pipe was bought in 1907 and it was not required until 1910; if then they chose to pay interest on it, it is another matter,

Q. Do you know whether they bought then because it was low?
A. Very likely they did.
Q. You have to take into account the carrying charge as well as the low price?
A. Yes.
Q. You just took the low price and eliminated the carrying charge?
A. Yes, that is what is stated there.
Q. What else is there in this report that was taken from the books that is not changed?
A. The balance sheets taken from the books, Exhibit F, with the exception——
Q. No, but things that are not changed; I want things that are not changed; you testified this morning this report showed the books just as they stood?

Mr. BYERS: That is not fair; he did not say that.
Mr. GUERNSEY: I have not attempted to quote him; I will take the record for it.

Q. I wish you would point out things not changed in addition to what you have pointed out?
A. Exhibit C is a statement from the books.
Q. That is not changed in any respect?
A. Some slight adjustment had to be made.
Q. You don't understand my question; I want to know the things in this report, in addition to those you pointed out taken from the books, without change, is there anything?
A. Will you let me explain in regard to Exhibit C?
3546 Q. I prefer to have you answer my question. I am not concerned now with the magnitude of the changes. I mean what is in this report except what you have taken from the books without change?
A. That is all.
Q. You pointed out everything?
A. Yes, sir.

At this time an adjournment was taken until 1:30 p. m.

3547 1:30 p. m. MONDAY, *September* 18, 1911.

ANDREW SANGSTER being continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. Did you bring over with you your memorandum showing the 1910 operating?
A. Yes, I did.
Q. This memorandum that you hand me is not the memorandum as you made it up originally is it. This is the operating expense 1910 this is marked Exhibit "D"?
A. This is the only statement I prepared in connection with these operating expenses.

Q. This is the final statement as it appears in the report Exhibit 30?

A. Yes, sir.

Q. Now then is that the only statement that you prepared as to this operating?

A. Yes, sir.

Q. Didn't you go through the books first and make up your statement of operating and then take it up with Mr. Hall and make your changes before Exhibit "D" was prepared?

A. I had my instructions as to what to include and as to what to exclude before I made up the statement.

Q. Before you made up any statement?

A. Before making up any statement.

Q. These instructions were given you by Mr. Hall after you had taken this statement of Mr. Curten's and looked it over?

A. Yes, sir.

Q. You said you had a reconciliation of these things here. Ordinarily in a report where you make any changes in the books
3548 you indicate the changes, what those changes are and reconcile them in the report so that a person who reads it can tell just what has been done?

A. Yes, that is usual.

Q. So you do not say for instance if you are making a report ordinarily you do not say the operating expense with certain corrections are so and so, but you say they are shown on the books so and so and then you say there are certain items which we think perhaps should be added or ought to be taken away and you indicate these items?

A. Yes.

Q. And that makes it clear so that a person to whom the report is made can tell just what you are doing and why you are doing it.

A. Yes, sir.

Q. Now the report itself does not contain this reconciliation does it?

A. I think it mentioned these specific sums in the report, in the body of the report.

Q. I know, but don't give the items?

A. Does not give a succinct reconciliation in that form.

Q. It gives the totals somewhere of the books I think, can you refer me to the report?

A. Page 11, Mr. Hall indicates what eliminations he has made.

Q. I know, but are the amounts stated in there?

A. No, the amounts are not stated.

Q. Well will you prepare for us in such shape that I can use it here a copy of this reconciliation?

A. Yes, sir.

Q. So that we may put that in and have a record showing
3549 your own reconciliation of these items?

A. Yes, sir.

Q. That will cover the five year period?

A. The whole five year period.

Q. Your attention was called to Valley Junction. The Valley Junction accounts are separated are they not on the books as far as that can be done without resorting to some method of averaging and deducting on that basis?

A. I should say so.

Q. That is in the first place receipts are shown separately, Valley Junction and Des Moines?

A. Yes.

Q. When you come to some of these expenses like say the cost of the gas in the holder it would not be possible would it to separate these matters item by item except upon some basis that was adopted as a fair basis in view of the circumstances?

A. That is so.

Q. And that could be done at any time just as easily and perhaps better later than when the gas was being made couldn't it?

A. Yes.

Q. So that the books are kept properly as far as that matter is concerned are they not?

A. Well with the possible exception of debits to the construction account I don't know, but it would not be possible to just state explicitly what proportions of the additions to plant were in connection with Valley Junction.

Q. I was talking about the operating expense?

A. As regards operating expense I don't say that it could be possible than to do more than what the books show.

Q. Then when it comes to dividing these operating ex-
3550 penses we either have got to take the revenue or feet of gas sold or some other equitable basis for the division.

A. Exactly.

Q. Now then with reference to the construction you don't know yet do you whether the books show that so that it is easily divisible or not?

A. Yes, I know that the books do not show the division between Valley Junction and Des Moines.

Q. The books do show where each extension is made do they not, if there is an extension?

A. No, sir; I don't think so.

Q. You have in this report somewhere here a schedule showing the extensions of *names* haven't you?

A. Five.

Q. Schedule 5. You begin here in 1895 and you have a certain amount. Now don't the record show where that money was spent?

A. That expenditure is analyzed according to the size of the main. That is, the accounts are kept for two inch, three inch, four inch, six inch and so on.

Q. If yo8 go back of that to the authorizations and to the other record you find out just where the work was done do you not?

A. The authorizations may show.

Q. Well do they not show as a matter of fact just where each piece of work was done and the extent of it?

A. I don't know.

Q. You don't know, well then your criticism is——

Mr. BYERS: I have asked him to get that.

Q. Your criticism is directed not to the fact this record is not kept but as to the place where it is kept?

A. Yes, sir.

3551 Q. Your notion is it would make a material difference whether kept in one place or another as long as there was a systematic record kept?

A. No, I don't say so.

Q. You have not gone far enough with your examination yet to be able to tell us whether there was a systematic — kept with reference to these transactions have you?

A. I have not.

Q. So it would not do to say the records were incomplete in that respect yet would it?

A. No, it would not.

Q. Your attention was called to the fact that *that* the special city tax was paid upon the entire earnings, gross earnings of the company, including earnings from Valley Junction, you recall that do you not?

A. Recall the question.

Q. Now did you allow that special tax upon the gross earnings as a proper operating charge?

A. Yes, I did.

Q. Did Mr. Hall allow it as a proper operating charge in his report?

A. I think he did.

Q. You are sure, aren't you?

A. Yes, I am sure.

Q. So that in the judgment of yourself and Mr. Hall it was a proper operating charge?

A. I have never passed any judgment on it. Under Mr. Hall's judgment it must have been a proper charge.

Q. Now you know do you not that the ordinance fixing these rates prescribes two per cent on the gross earnings.

A. Yes.

3552 Q. And it was a strict compliance with that ordinance that made this two per cent payment was it not?

A. Yes.

Q. Doesn't the company keep a record of every meter?

A. Yes.

Q. Shows the date when set?

A. Yes.

Q. Where it is set?

A. I could not say as to that.

Q. Have you examined these meter records?

A. I had an assistant examine it.

Q. Got to go down one step further to find out about that or up one step further, just as you please?

A. Well the purpose of investigation of that——

Q. I am not criticising it, I just want to get at the fact, I understood you to say that there was not anything in the book, on your direct examination here, to show where the meters go.

A. Not on the books of account.

Q. Would you expect that on the books of account?

A. No.

Q. Now is there something in the proper records to show just where each meter is set, when it is set, there and when it is removed and where it goes?

A. Yes.

Q. And have you examined these records so you know whether there is or is not?

A. I think the meter record gives those particulars.

Q. So that if I did undderstand you as saying that the books did not show where or did not indicate where the meters go that is an error isn't it?

3553 A. If you include the meter record as one of the books of the company.

Q. If I asked you that question you would understand it as referring to the proper books, books in which that information would properly appear wouldn't you?

A. Well on reflection I would.

Q. Just if I should ask you whether there was any original entry for instance about something you would not merely limit your answer to the ledger and say no would you?

A. Not on due consideration.

Q. Now take these tables for 1904 and 1905, what are they?

A. To which do you refer?

A. You testified you prepared something for Prof. Bemis for the years 1904 and 1905, just what kind of tables are they?

A. I prepared a statement of the operating expenses as shown by the books without any adjustment.

Q. Now did you put back into this operating expense this personal injury item that you took out later?

A. No, sir.

Q. So you left us up in the air so far as that item is concerned finally?

A. Without any intention of doing so, but that is the fact.

Q. I don't want to have you infer any criticism of it, I am getting at the situation?

A. That is the situation.

Q. These statements you prepared for these years show exactly as they appear from the books?

A. Exactly.

Q. No modifications or adjustments?

A. None.

3554 Q. Are they statements in detail or simply aggregates?

A. In detail.

Q. I want to get the extent of your conversation with Mr. Curren about this 120,000 item. Can you tell just what that conversation was?

A. I will try to recall it in general terms. When I came across the gap as it were, between the Capital City Gas Light Company accounts and the Des Moines Gas Company accounts I found of

course a considerable increase in the value of the plant stated in each of these books and I asked——

Q. You mean increase in the book value?

A. In the book value, and I asked Mr. Curren if there were any detailed inventory of the properties sold by the Capital City Gas Light Company to the Des Moines Co. He said there was nothing further than what appeared in the minute book, but he indicated that there were certain contracts which did not appear on the books including this holder, some real estate I think and there might be an oil tank, but I am not sure now. That was practically how the matter stood then and I never was able to follow it up in any greater detail.

Q. Is that the entire conversation as accurately as you can state it now?

A. Yes, as I can recall it it is.

Q. You would have to add to it this wouldn't you that Mr. Curren told you that he had given you all the information that he had about it?

A. Yes.

Q. Now did you ever take that up with him again?

A. Yes, I believe I did.

Q. And what occurred this second time?

3555 A. Mr. Curren indicated to me that *je* thought——

Q. I don't like your saying he indicated to you, can't you tell us about what he said instead of his inferences from it?

A. He intimated that certain specifications would be got showing the cost of the holders and the other items of which I never had any definite information, but up to the time when Mr. Hall prepared his report we never received these specifications.

Q. Now is that the whole story as to the holder?

A. That is the whole story.

Q. And so you took Prof. Marks' estimate of its value?

A. No—I don't know what was in Mr. Hall's mind when he stated the $120,000 as the price of the holder, all I could infer was that the balance of the bond issue namely, $120,000 must have gone for the holder.

COURT: The balance of $120,000, what was the other $120,000 for?

A. That was paid the United Gas Improvement Company for a debt of $105,000 and some odd dollars.

Q. What information did you furnish Prof. Marks as to what the books showed about the cost of this property?

A. I didn't furnish him any information.

Q. None whatever?

A. No.

Q. Nothing along that line.

A. He did compare his totals with mine, that was all.

Q. And his totals on what?

A. Additions to plant.

Q. He don't show additions to plant in his report does he?

A. I don't know.

Q. It is total on investment isn't it?

A. Yes.

3556 Q. Now didn't he go a little farther than that, than the mere comparison of the totals of the investment?

A. No.

Q. I don't recall the details of it very well, but my recollection is that Prof. Marks' figures *some* some appreciation on real estate. Did you give him a basis for making these figures?

A. No, sir.

Q. You said that Mr. Curren in connection with the holder spoke of some oil tanks. Did you ever put them in?

A. Into our figures?

Q. Yes.

A. We put nothing but the $120,000 in.

Q. You said he also spoke of some real estate, you didn't put that in?

A. I say we put nothing in but $120,000, I don't know what it is for.

Q. Have you ever checked your total real estate investment as shown by this report, that is the real estate that it covers with the real estate that the company now owns?

A. Well all the price I got as to real estate was from the books

Q. (Question read.)

A. I don't know what real estate the company now owns.

Q. You were here this morning weren't you when this plat was being used with Mr. Pease? And when they were referring to the various pieces of real estate that are used in connection with the manufacturing plant?

A. I was here.

Q. Now then I want to know whether you have checked with this plat or with some list of the real estate used in connection with the manufacturing plant the list of real estate that is included in the real estate investment which you take into account?

3557 A. No, sir.

Q. So that you don't know whether you have included all of it or not?

A. I do not.

Q. You said that this report is a complete and accurate abstract of all entries showing investment in the property of the Des Moines Gas Co. That of course is too broad isn't it? All you assume to show is some of the totals with certain variations, that is right isn't it?

A. With the reconciliation shown in the report.

Q. You don't attempt to abstract all entries that relate to these matters in this report do you?

A. I have an analysis of all figures that appear in the report.

Q. You have an analysis of the totals.

A. Yes.

Q. But the report does not purport to show an abstract of all of the entries in the accounts relating to the investment in the property does it?

Mr. BYERS: That is perfectly evident, not a matter of testimony.

Mr. GUERNSEY: The witness testified in answer to your questions on that very subject this morning that it was.

Q. Does this Exhibit 30 contain a complete and accurate transcript of all entries showin- investment in the property that is now owned by the Des Moines Gas Co.?

A. No, sir.

Q. Now does it contain a complete and accurate abstract of all entries as to costs of distribution of gas?

A. Subject to this reconciliation that I shall give you it will show all these entries.

Q. It does not show the entries does it, simply shows the totals.

3558 A. The totals, yes.

Q. A big difference between the entries and totals.

A. Well I understood you to mean——

Q. Not to mean what I said, is that right?

A. Yes.

Q. Assuming I meant what I said it is not an accurate abstract of all of thes- entries, but simply shows the totals?

A. Shows the totals.

Q. With certain changes, that is right isn't it?

A. Yes.

Q. Now you said you found a reference to certain mains where the company received a deposit in advance.

A. Yes.

Q. The balance of these deposits was less than $2,000?

A. Yes.

Q. And those were cases where in order to induce the making of the extension the property owner had put up some money to be returned as sales of gas paid for the extension?

A. That is as I understand it.

Q. The special privilege that these people had was that they paid to get the mains where the public generally didn't *it?*

A. That is so.

Q. On page 58 of his report Mr. Marks says the total cost of street mains from the beginning of the first gas company appears to be recorded in these books as $647,290.35. Is that something for which he asked you and which you gave him?

A. Well I say that he compared his totals with me.

Q. But that don't answer my question, is that something for which he asked you and which you gave him?

A. I don't remember Mr. Guernsey.

3559 Q. Will you say it was not?

A. I could not say one way nor the other.

Q. When you say he compared his totals what do you mean by totals?

A. Results which he arrived at.

Q. You don't mean his final result, that is his fourteen or fifteen hundred thousand dollars do you?

A. Investment in the plant?

Q. Yes.

A. No.

Q. What do you mean then by totals?

A. As regards his total estimate of the investment in mains services and differenc branches of the plant.

Q. You mean the various items that go to make up his total?

A. Yes.

Q. On page 59 of his report referring to services he said the total structural cost of services from the company's books appears to be $257,672.56 from the beginning. Did you give him that too?

A. From the beginning?

Q. I will quote that over again, the total structural cost of services from the company's books appears to be $257,672.56 from the beginning. Did you give him these figures also or something like that?

A. I don't recall.

Q. Well did you take up with him the matter of the cost of services as shown by the books?

A. I don't recall.

Q. Will you say you didn't?

A. No, I won't say I didn't.

Q. Did you tell him when you gave him these costs that
3560 they did not include any interest during construction or taxes during construction or overhead charges?

A. No.

Q. You knew they didn't include them didn't you?

A. Yes, I know that.

Q. Now taking up the matter of meters I find on page 61 of Mr. Marcks' report at the end of meters this statement, the total charged to meters on the books of the Des Moines Gas Company is $187,755.93,, from the beginning. Did you give Prof. Marks that information?

A. I really don't recall what I gave Mr. Marks.

Q. Well don't you remember this that when Prof. Marks was preparing his report here he called on you for information. You remember that much don't you?

A. He didn't come to me for information personally.

Q. Did you have any talk with him personally?

A. No, sir.

Q. None whatever?

A. Mr. Hall and he had an interview I think.

Q. Were you present?

A. No, I was not.

Q. Then of course you don't know anything about that?

A. No, sir.

Q. I wish you would turn to Exhibit 30 and find out what you ascertained to be the investment in real estate?

A. Page 21 states the investment in real estate as $35,765.26.

Q. Let me call your attention to this at page 77 of Prof. Marks' report, you will note that the structural cost of the land is taken by me from the records found as $35,765 and the present value of

the land approximated at $100,000 showing an appreciation,
3561 and so forth. Now did you give Prof. Marks that figure $35,765?

A. I may have, I don't recall.

Q. Would you say you did not?

A. No.

Q. So far as you know did Prof. Marks make any examination of these books himself?

A. No he did not.

Q. Do you know of any source from which he could have obtained this information except from your examination?

A. Now I do not.

Q. Unless he had gone to us?

A. That is right.

Q. Now which one of these exhibits shows in dollars the expenditures each year for the various items of repairs?

A. Exhibit "D."

Q. Under what head in Exhibit "D" do the repairs works for the year 1907 appear, where do we get them?

A. Under manufacturing, under the head of manufacturing.

Q. Repairs works?

A. Yes.

Q. They are how much?

A. $9,699.99.

Q. Now I find that at page 79 of his report, Prof. Marks says the Des Moines Gas Co. presents the following record of repairs covering a period of four years and giving yearly averages which probably are not as accurate as might be derived at a longer period. Des Moines Gas Co., September 24, 1907, repairs works $9,599.99. That checks with your figure here doesn't it?

3562 A. Yes.

Q. Did you give Prof. Marks that information?

A. I don't remember.

Q. Will you say you did not?

A. No.

Q. Now then take the next year, what was the repairs works?

A. $6,835.23.

Q. Prof. Marks gave it for the next year $6,835.23. Do you know whether you gave him that or not?

A. I really don't recall what I gave him in any respect.

Q. You do know you gave him something?

A. I recall he compared certain figures with mine, but I did not know that he took any figures from my statements.

Q. How *he* could he get this information as to costs as shown by the books except by your investigation?

A. Oh he would get it from *h*these figures certainly, but I may not have given them myself.

Q. He was while he was making up this report or while you were doing this work, he was coming to you for information as to these costs and you were furnishing it to him and these various other matters, that is true isn't it?

A. Yes.
Q. Did you give him your figures on working capital?
A. No, sir.
Q. Must have got that from Mr. Hall?
A. No, he didn't get any figures from Mr. Hall as regards working capital because Mr. Hall's figures were not made up until Mr. Marks left.
Q. What does Mr. Hall say is the working capital?
A. Page 20 $68,952.91.
3563 Q. And Prof. Marks shows $68,689. Do you think figuring working capital on two separate methods and making it a matter of computation two men can get as close as that?

Objected to as incompetent, immaterial and wholly unfair, it must be assumed that whatever figures Marks gave I think — so stated in his testimony, with reference to what the books show he got through Mr. Hall or Mr. Sangster.

Q. Do you think that it would be possible for two people working out the working capital on entirely independent methods to get as close together as $300 or less?

Same objection.

A. Well knowing in the first place that Mr. Hall made up his figures from the balance sheet after Prof. Marks left Des Moines it does not seem to me improbable.
Q. Didn't Mr. Hall make up part of his report here in Des Moines?
A. Yes.
Q. While Prof. Marks was here?
A. Yes.
Q. And wrote part of it in Chicago afterwards. That is the fact isn't it?
A. No, sir.
Q. Wrote it all in Des Moines while Prof. Marks was here?
A. Yes, he did if you put it that way.
Q. And they were in conference while the report was being written weren't they?
A. I was not aware of the fact if they were.
Q. You were not?
A. No, sir.
Q. Now on page 83 of Prof. Marks' report there is given the cost Per M in cubic feet for manufacturing and distributing gas
3564 January 1, 1906 to December 31, 1910. Those costs were furnished by you were they not.
A. Yes, sir.
Q. And do you remember talking to Prof. Marks about that?
A. Yes, I recall giving him those figures.
Q. You also gave him the figures that are contained on page 84 of his report showing the deductions from the operating expenses amounting to $16,746.88 for the five years' period didn't you? Will

you look at your reconciliation sheet and see if that is the gross amount of your deductions before the additions, 16,746.88?

A. Yes.

Q. Now then he got that information from you?

A. Yes, he did.

Q. And this interest on bank balance $1,508.54 does that check.

A. That is right.

Q. He got these figures from you?

A. Yes.

Q. Now you had a good many conferences with him after all didn't you?

A. No, sir I have not.

Q. Did he ask for all these things at once?

A. I clearly recall when I gave him these figures as regards cost &c.

Q. Did you tell him that this accident occurred in 1893 on account of interest on the floating debt?

A. I could not have said 1893 because I knew it was not.

Q. That was an error, it was 1903?

A. 1903.

Q. Did you give him this item $7,126.53 as a deduction on account of interest on the floating debt?

3565 A. Yes, sir.

Q. Now as a matter of fact as you went along you turned over to Prof. Marks what your examination of the books disclosed didn't you? I don't mean every detail but the substance of it.

A. No, sir; I gave him these figures that was all I gave him.

Q. Somebody gave him other figures, that is somebody gave him these costs?

A. I am referring to the costs.

Q. I mean the costs of the property, not the operating costs, investment perhaps I should have said, somebody gave him these figures as well, take the real estate figure for instance, that checks with yours within twenty six cents?

A. Yes, sir.

Q. Take mains, services, meters and manufacturing plant as you got it you gave him the information on all of these things didn't you?

A. I say we compared totals, that is all.

Q. Did you reconcile them?

A. No, sir.

Q. Did you give him the figures on the sales which are set out on page 85 of the report December 31, 1905, to December 31, 1910, including the sales and the collections?

A. Yes, I think I did.

Q. Clear back on page 36, referring to relief holder No. 18. Prof. Marks says the books of the Des Moines Gas Co., it appears they have a charge of $33,356 to this holder. You gave him that information didn't you?

A. No. 2?

Q. No. 18.

A. Which holder is that?

Q. 175,000 cubic feet capacity.

3566 A. I don't know, I don't recognize it from its capacity.

Q. Do you find cost of a holder there $33,356?

A. Yes, sir.

Q. You gave that to Prof. Marks?

A. I think I gave him details of this appraisal of January 1, 1895.

Q. Is that a holder that was purchased before January 1, 1895?

A. Yes.

Q. Did you go into the books to find out what it cost?

A. I took the book figure at that date.

Q. Read the answer to the witness and see if that is what he means?

A. January 1, 1895.

Q. From what did you get that figure as to that holder on that date, what book was it, some entry of that date as to the cost of that holder?

A. If I remember right the tank and holder are stated separately, but the total amounts to this figure here.

Q. On the books?

A. On the books.

Q. How did they happen to enter that *as* on that date on the books it was not nearly all the holder was it?

A. That was the balance standing at the debit of the account to the holder.

Q. It was not an appraisement of the holder as of that date?

A. Mr. Pratt stated the same figure in his appraisal.

Q. They agreed?

A. Yes.

Q. Now then take the next holder, Mr. Marks' report on page 37 says the books of the Des Moines Gas Company appear to have charged $40,057 to this holder. You find one of the same

3567 amount?

A. I find here tank and holder No. 3 $40,057.

Q. Did you give him this information, give Prof. Marks this information?

A. I say I think I gave him the details of that appraisal.

Q. Is this what you mean by simply comparing totals?

A. Totals as at December 31, 1910.

Q. You did a little more than that didn't you?

A. Yes, now that you bring it to my mind, I remember giving him the details of this appraisal.

Q. You gave him details of the costs as far as you got them didn't you?

A. Cost as shown by the totals.

Q. Will you say it was limited to totals now?

A. I gave him these totals and details of this appraisal.

Q. Do you remember anything more you gave him?

A. The cost per thousand cubic feet of manufacturing gas for the last five years.

Q. Can you remember everything that you gave him?

A. No, sir.

Redirect examination by Hon. H. W. BYERS:

Q. I suppose it would be fair to say that whatever Mr. Marks says in his report that the books of the company show that information he got either from you or Mr. Hall or some of these other young men that were examining the books?

A. Yes, I should say so.

Q. Of course the purpose of this cross-examination is to indicate that Mr. Marks got his appraisal from the figures that you got
3568 from the books. You say you compared totals, what do you have to say as to whether Mr. Marks made up his valuation from your information or Mr. Hall's as to the valuation of this physical property?

A. Well that is what I mean when his appraisal was prepared he compared the total of the appraisal with figures which we had arrived at.

Q. After he had worked out his valuation of the plant?

A. Exactly.

Q. First he figured it, then he compared the total valuation as he found it with this book investment as you found it.

A. Yes.

Q. That is what you mean by compared totals.

A. That is what I mean.

Q. It is not true is — that Mr. Marks in any respect made up his figures as to valuation of this plant from figures you furnished for any such purpose?

Mr. GUERNSEY: I think counsel has forgotten about leading questions again?

A. No, sir; it is not.

Q. You were asked to state whether or not you know that the real estate as it appears on the books checks with the real estate the company now owns. Did the company furnish you any information about any other real estate except what appeared on the books?

A. None whatever.

Q. So you have no means of knowing, so far as you now know as to what real estate they owned, except what appeared on the books?

A. Nothing but what appeared on the books.

Q. Now the Valley Junction matter, you were mistaken in the statement which you made which as I remember it was that
3569 there would be no way that the books could show the cost of extensions and improvements at Valley Junction. It would not be difficult at all would it to keep an account with Valley Junction showing the money expended there in extensions and improvements and additions?

A. I don't think it would.

Q. There is no such account?

A. No, sir.

Q. Now as I understand the Valley Junction end of this concern the only thing that the books do show in the way of separate and independent accounts is the gas sold, total of gas sold and the revenue?

A. Yes, sir.

Q. And if I understand your testimony in order to assertain so that the Master in the final decision, if he wanted to use it, the credits that are on the books of the company, what was involved in construction and improvements and additions at Valley Junction, it would be necessary to trace or take these authorizations that come from Philadelphia.

A. Yes.

Q. Then you might not be able to do it unless the authorization itself showed exactly where the improvement was to be made and the cost of it separate from the cost of any improvement in Des Moines?

A. Yes, it would be necessary to go to the authorization or some document.

Q. Now it would be no trouble at all would it to show on the books exactly what money was expended in Valley Junction for improvements and extensions and additions and then to charge a per cent of the expenses like general expenses and office expenses
3570 and operation at Valley Junction and get at a reasonable statement, comparative statement as to the value of the Valley Junction plant and the Des Moines plant.

A. With some little extra trouble they could ascertain that information.

Q. In one answer you said you had your instructions as to what should be included. What did you mean by that?

A. Included in what?

Q. In your statement or in this report you made, the memoranda that I have made here is I had my instructions as to what should be included.

A. I think you refer to operating expenses. Mr. Hall made a survey of the profit and loss account as su-mitted to us when we first started out in the investigation. He ran over the items and he said—he told me which to——

Q. That is he explained to you which in his judgment were proper charges and proper expenses and which were not?

A. Yes, sir.

Q. Now what other or different items, if any, did these instructions refer to than the ones Mr. Hall has already fully explained here to the Master?

A. None whatever.

Q. Now Mr. Guernsey had you say, he put this sort of a question to you, well then why didn't you use the United Gas Improvement Company's account in the report. It is in the report isn't it?

A. It is included along with the other items, the general account.

Q. It is in the same way that all the other items are.

A. Same as any other account.

3571 Q. The $105,000, there seems to be a little confusion yet about that ~~$105,000 and the~~ $120,000 allowed for the holder. If I understand the $105,000 item it was ~~the balance~~ due as shown by the books of the Capital City Gas Light Company from ~~that Company~~ to the U. G. I. on a running account?

A. Upon running account. On an open account and on bills payable.

Q. And much the same kind of an open account as has been carried with the U. G. I. by the Des Moines Gas Company since 1906?

A. Yes.

Q. And that $105,000 balance was if I understand you, if I don't correct me, was paid off or canceled rather with $120,000 of that $285,000 issue of bonds.

A. That is quite correct.

Q. And it is the other $120,000 after taking out the $45,000 for Valley Junction that you stated to the Master this morning was inferred by you and Mr. Hall to represent the cost of this holder?

A. Yes.

Q. Mr. Guernsey *had* you say that Mr. Hall's report shows conclu*d*ions only. That is not exactly so is it?

A. Conclusions based upon these statements and exhibits as appended to the report.

Q. And it reports and summarizes these—the report generally report- correct summaries of the book entries with reference to the different things covered and treated by the report?

A. Yes.

Recross-examination by N. T. GUERNSEY, Esq.:

Q. That is not just right is it?

3572 Mr. BYERS: Well I think we all understand what he is trying to get at.

A. I understood by treated in the report as shown in the treatment in the report.

Q. That don't make it very lucid to me. You don't mean to modify the statement you have made so many times that this report is based on these books entries with certain modifications do you?

A. I think that is quite well understood.

Q. This $105,000 that was about $48,000 of it bills payable, $48,700?

A. I can't recall the exact amount.

Q. Something like that?

A. Yes; something about that.

Q. Balance for accounts payable?

A. Yes.

Q. For material and supplies and things like that?

A. Yes, and interest I think, credits for interest on their account.

Q. Yes, there was a little interest there, $487.00 as I recall it.

A. Something like that.

Q. Were you in conference with Mr. Marks when he was preparing his report?

A. No, sir.

Q. Did you ever see his report?

A. I didn't see it until Mr. Hall I think it was was looking over it.

Q. As it was being prepared?
A. No, sir.
Q. Afterwards?
A. Yes.
3573 Q. Then you can't tell what use Mr. Marks made of these figures can you?
A. I never said that I knew.
Q. Didn't you, you said what he didn't do with these valuations a few moments ago when General Byers asked you whether he did this that and the other with these valuations, you said no, no, didn't you say what Marks did, as to the use which Marks made of these valuations in making up his report, you remember being asked about that a few moments ago don't you?
A. I don't see he could make any use of our figures.
Q. Don't you remember being asked about that a few moments ago?
A. Yes.
Q. As a matter of fact, you don't know just what Prof. Marks did do?
A. No, I don't.
Q. You haven't any information about it whatever have you?
A. No, sir.
Q. Referring to these questions asked you on redirect examination that have just been read to you about the use that Prof. Marks made of the figures furnished to him by you, you have no information whatever as to what use he made of these figures have you?
A. Well all I can say is that I inferred from the fact that his appraisal was apparently prepared, that he was comparing his totals with ours as a matter of interest?
Q. That don't answer my question. You have no knowledge whatever have you as to the use which Prof. Marks made of the figures furnished to him?
A. Of course not.
Q. You didn't have any when you answered a few moments ago that he didn't use them.
3574 A. Well I meant to infer just what I replied in my last answer.
Q. Now then you said that a separate account could be kept on the books as to Valley Junction extension. That would not help us any way would it if we were looking to the actual value of the plant instead of the mere book value?
A. I don't suppose it would.
Q. It would only be material when you came to questions of book value and things of that kind?
A. Yes.

Witness excused.

3575 JANSEN HAINES being recalled on the part of the defendants and examined in chief by Hon. H. W. Byers, testified as follows:

Q. I find in defendant's exhibit 27 on page 120 the following record: "Agreement with real estate operators. Authorized contract with certain local real estate operators for laying street mains and services in connection with development of property. Estimated cost $5,000 of which parties benefited are to advance $2,500 same to be refunded as consumers are obtained, form of contract approved by counsel." Just what does that record refer to?

A. You wil- have to let me see the record General.

COURT: What year was that?

A. That was February 19, 1908. I don't recall what this was from this record, I think I can find it for you.

Q. Do you know who the real estate dealers were, what firm it was.

A. Well I don't recall we have made that form of contract with a number of real estate men different times, but I can find out for you and let you know. We have copies of these contracts in our office.

Q. I wish you would find out the names of the several real estate dealers as shown in the contracts you have and the amount which was involved in each of the contracts if you will?

A. All right, be glad to do that. I wil- bring in the contracts.

Q. In your books for 1907 I find the following credits, expenses charged by U. G. I. company $2,365.13. Do you know what expense that covers?

A. Let me see what you have got, I don't remember.

3576 Q. This is not the book itself, just a memorandum.

A. What is the date of it?

Q. January 1907.

A. Where did you get it from, give me some clue where I can locate it on the books. That is very vague.

Q. The next item is repairs, stores and authorizations $7,527.04. What does that refer to?

A. I can't tell from that record until you tell where I can get that and I will get the books and show it to you.

Q. Interest $453.30. Do you know what that interest was figured on?

A. I certainly can't tell you that. You can read me a list of figures off if you want to, but I can't guess what they are. You will — to give me some place where I can locate them on the books.

Q. These items are totaled and then there is an item of $44,000 cash and the deduction of the charge $9,141.14 leaving $44,635.47 as due the U. G. I., and that was closed by note was it?

A. I don't keep these books in my head, if you will show me the books I will be glad to show anything I know about it.

Q. What I want to get at is the practice more than the particular item. You carry an account right along with the U. G. I.

A. An open account?

Q. Yes.

A. Yes, material, supplies, and various things, money advanced.

Q. That account is kept is it not or rather the entries are made here from directors or instructions from the Philadelphia end?

A. The entries here are made from bills furnished or bills rendered to us just the same as if we purchased material from
3577 any other concern?

A. The bills naturally come from the U. G. I. office because that is where they originate.

Q. When there is a balance due at the end of the year, that is if you want cash, if you want to use money the U. G. I. furnishes the money and then you prepare and execute or have executed a note covering the balance of the account together with the cash, close the account that way don't you?

A. The way it has been done, if I need money for extension and improvements as I frequently do, I make a draft on the U. G. I. for five, ten, fifteen, 25 or $30,000, whatever is necessary and the officers of the company execute a note of this company in favor of the U. G. I. company.

Q. At what interest?

A. At six per cent.

Q. In that note is included whatever balance there is to their credit in this open account?

A. I should have to go to the books to tell you that?

Q. Don't you know your practice is to pay the U. G. I. interest on all balances as well as interest on notes?

A. On open accounts over thirty days or over sixty days, just the same as we would any other firm.

Q. It is figured at six per cent isn't it?

A. Yes, the same as the bank rate, the same as the bank would loan it to us at.

Q. Commercial paper in this town for the last two years has been carried as low as three and a half?

A. I never put out any commercial paper for this company on the street.

Q. I am not talking about the street.

3578 A. That is what commercial paper is, is commercial paper put on the street.

Q. What difference does it make where you get the money so you get the lowest rate, whether you get it on the street or whether you get it in the bank?

A. It makes just this difference, that the commercial paper put on the street is paper which is absolutely met at the time it becomes due and must be met. The bank will carry an open account where payments can be made on the account at their regular banking rate.

Q. That is what you did then as you call it, you dealt with the U. G. I. the same as you would a banker and paid the same rate of interest.

A. Yes, we could defer our payments, we did not have to make payments when it became due, continue to pay interest on them but if commercial paper you would have to take up the paper.

Q. Let's just take this account here of the U. G. I. for the year 1907 as it appears on the books for the year ending February 28,

1907, there is charged to manufacturing $16.08. Now what did that represent?

A. Well I would have to look at the books. I could not tell from that statement.

Q. I am reading this from the books.

A. Yes, but I would have to go back of the books.

Q. Distribution $16.08, you might not be able to tell what that is. The next item is organization expense $993.52. What is that item?

A. That is all spread in the books, I can't tell you just from that statement.

Q. What do you think it is here?

Objected to as immaterial.

3579 Q. The next is office expense $882.72. What is that item?

A. The same as the other items, I can't tell you in detail what the items are you are reading from the paper.

Q. Don't you know what would be included in such a charge as that or credit on your books?

A. I could not carry these accounts in my head, we have some seven or eight thousand accounts in o-r books for the last four or five years and how on earth could I carry these accounts in my head.

Q. You don't have several thousand accounts with the U. G. I.?

A. No.

Q. Can't you tell what the U. G. I. was likely to be credited $882.72 for, for office expenses?

A. I am not going to guess on that when the books show the fact.

Q. Next is general expense $151.62, have any idea what that is?

A. Have the same answer to that.

Q. Works expense, $182.85. Any idea what that is?

A. You wil- have to go back to the books.

Q. Whom would know about this if you don't, you could not tell any more about it from the books than you can me reading what is on the books?

A. Certain books will show the details.

Q. Where in the books will it show what this office expense of $882.72 eas, where will we find that on your books just as I have read it to you?

A. I don't know where you got that statement, tell me where you got the statement from or let me see the statement and see the books and probably find out.

Q. It runs through the whole date of your company. Take the statement and check it up with the books and tell me tomorrow if you can't do it today.

3580 COURT: You don't keep the books yourself do you?

A. No, sir.

Q. Do you pay interest on accounts like this to the U. G. I.?

A. We pay interest on our notes which we give the U. G. I., and we would on balances I suppose over sixty days, but as a matter of fa-t when we have the money we pay the balances.

Q. But if you don't have the money you pay interest, credit up interest to the account?

A. Certainly if we can't pay the account we have to pay interest on it.

Q. Interest is always figured at six per cent?

A. Yes, sir.

Q. Can you give for me the extensions and additions that have been made to the Valley Junction plant since March 1906 without too much trouble?

A. I won't acce[illegible] your second qualification, it will be a great deal of *yt*oublе to get them, but I can have them gotten for you.

Q. I wish you would have some of the boys up there do it for me in the next day or two if you will. You have found Exhibit 18 have you?

A. Yes, I will bring it in in the morning.

Q. Who was your immediate predecessor in the management of the Des Moines Gas Co.?

A. E. G. Pratt.

Q. We call him Col. Pratt?

A. Col. Pratt.

Q. Do you remember when you were on the witness stand a good while ago at the beginning of this investigation or trial I asked you if there was any change in your salary because of the change
3581 in your title?

A. I don't recall the question, but you may have asked me that.

Q. Well there was a change in the salary wasn't there?

A. There was a change in the salary on the first of this year. Do you mean that? Change in the salary when?

Q. This summer, not the first of the year?

A. No, sir.

Q. When was the change?

A. January 1, 1911.

Q. Was it made then or made in July of thiss year to be entered as of date January 1?

A. I think that the minute book will show that it was made in January or February to date back a few weeks.

Q. Did you get that increase?

A. Certainly.

Q. That is not like the salary then of the Philadelphia gentlemen?

A. I don't know about the salary of the Philadelphia officers of the company. I get my salary and spent it.

Q. You know as a matter of fact that Douthirt's salary and Pearson's and Bodine's goes to the U. G. I., not to these individuals, do you know that?

A. Yes, I know it.

Q. That is not true as to any part of yours?

A. No, sir.

Q. You were to get me the contract, furnish me the contract with Brereton for the construction of one of these brick buildings down

here, will you have a jote made of that so it will be brought in in the morning.

A. Yes.

Q. In this defendant's Exhibit 27, Des Moines Gas Com-
3582 pany No. 1 stockholders and directors meetings on page 233 is recorded the following: "Expenditures made for additions to, extensions or betterments of plants of the Des Moines Gas Company or for acquiring other plants or property real or personal from March 1, 1906, to December 31, 1910, real estate $1,649.26, extensiojs and improvements at works $85,760.39, street lamp extensions, $2,039.65, extension of street mains $242,686.12, meters $68,364.93; services $72,493.28; total $472,993.63." Is that a correct record?

A. You are reading from the book?

Q. Yes.

A. Yes, sir.

Q. Now what real estate is that that is referred to there for which an expenditure of $1,649.26 was made?

A. I don't know, I will have to look it up on the books.

Q. Will you make a note of that and look it up for me?

A. Glad to, yes.

Q. Extensions and improvements at works $85,760.39, does that include improvements, extensions and improvements both here and in Valley Junction?

A. It would if there had been any made, but as a matter of fact I don't think there has been any made since that time.

Q. This is right up to January of this year?

A. I don't think any has been made since the first of March 1906 to works account at Valley Junction.

Q. What sort of works have you got over there?

A. We have a governor station there.

Q. So it would not be so very far wrong to mention works even at Valley Junction, of course I suppose that the works since the combination of the two plants practically all are at Des Moines.
3583 There are no street lamp extensions in Valley Junction?

A. No.

Q. So that would all be here. Now there have been extensions of the street mains over there since 1906?

A. Yes.

Q. In fact about all the mains you have over there were laid since March 1906?

A. No sir; I think nearly all laid prior to that. A few extensions since then.

Q. What have been are in this item?

A. I presume they are.

Q. Meters $68,364.93, that includes meters both here and Valley Junction?

A. Yes, that would include meters both here and Valley Junction.

Q. Would the same be true as to services?

A. Yes.

Q. I don't know whether it has ever went in the record and I want to make you our witness for that purpose, just what arrange-

ment you have for supplying Valley Junction—I wish you would tell us just how you reach Valley Junction with gas or mains and services?

A. We supply Valley Junction from our Des Moines distribution system on the end of it.

Q. So that whatever of the main that serves Valley Junction beginning at the dividing line between the Junction and Des Moines and the works is included in the distribution system of the city of Des Moines?

A. Yes.

Q. Do you have anything in the way of an additional aid to the services in the way of what might be termed Boosters and
3584 *and* high pressure mains, pushers, maybe that is a better word?

A. We have a high pressure distribution system in Des Moines and the connection to Valley Junction is made off that high pressure system.

Q. And where is that connection made?

A. Right at the line of Valley Junction.

Q. I understood Mr. Maul to say that the main served Valley Junction only served about a half dozen or dozen persons out in the west end of town and I wondered if that was correct?

A. That is not correct in quantity. The same main that serves Valley Junction serves 51st street and serves my recollection is, about 70 or 75 customers along the line.

Q. West of 51st street?

A. Some west and some east of 51st.

Q. How far east?

COURT: 63d street is the line?

A. Sixty third street would be, I think it is. It is called First street in Valley Junction. We supply high pressure service as far back as 44th street and one or two services this side of it, but I don't remember exactly where they are.

Q. When was the high pressure service put in?

A. The high pressure serivce was put in about the same time the Valley Junction system was put in.

Q. Was put in on account of the Valley Junction system?

A. Yes, put in because our supply was not adequate at that time to supply Valley Junction without high pressure.

Q. I don't know what pusher means in connection with gas, it was suggested I used a wrong term when I said booster. What are pushers?

A. Pushers are simply gas pumps at the works which are
3585 used to maintain a higher pressure on this line because of the fact that it supplies over the hill between what would be 46th street and 56th street.

Q. Forty-sixth street would be along about——

A. About Polk Boulevard.

Q. About the Park there, Greenwood park?

A. Greenwood park.

Q. Greenwood Park is higher than it is this side?

A. Greenwood Park is right where Ingersoll Park is on west Grand Avenue between 45th street and about 47th or 48th street the south side of Grand Avenue.

COURT: Valley Junction is north of the Coon river?

A. Yes, north of the Coon river and lies directly west of Greenwood Park, the west line of Greenwood Park I think is about 47th and Valley Junction's east line would be 63d.

Q. These pushers are pumps you use in forcing gas on beyond 36th street and to Valley Junction?

A. Yes.

Q. And those are located down here at the works?

A. We run those about twenty minutes or half an hour a day, something like that.

Q. Something has been said about a special deposit and I want to see if I have the right understanding about that. That seems where a residence is beyond the end of a main and the settlement not sufficiently dense to justify the company in putting in mains, you make some arrangement with the consumer by which he deposits the costs of the main and then later on as the business develops and other people settle in the money is returned, is that the idea?

A. That is the general idea. We have a standard form of
3586 contract with the consumer by which we will lay the main and he will pay us for the wages and material used and we will refund the money which he advances to us pro rated on the length of the main on a basis of one consumer for every ninety feet.

If he wants us to run 180 feet as soon as we have two consumers on that main, on that 180 feet we refund him the whole amount of money.

Q. So he finally does get it all back?

A. He gets his money back. It is done simply at the request of some of the real estate operators who want to develop their property.

Q. Do you know who took over the last issue of bonds of the Des Moines Gas Company?

A. I do not, no sir.

Q. Do you know who holds them now?

A. I have not the faintest idea.

Q. That sale was not made from this office?

A. No, sir.

Q. Made at Philadelphia?

A. Made by the treasurer.

Q. Mr. Lilley is treasurer?

A. Yes.

Q. Both companies?

A. He is treasurer for the United Gas Improvement Company and also for the Des Moines Gas Company.

Q. Was he treasurer when you first came here?

A. Yes, I believe he was.

Q. Mr. Walton Clark was Vice president of this company.

A. The minute book will show. I don't recall what changes there have been since I came here in the officers.

3587 Q. Under date of March 1, 1906, the records show the election of the following officers: President Samuel T. Bodine; 1st vice president Randall Morgan; second vice president Walton Clark; Treasurer, Lewis Lilley; assistant treasurer, W. B. Keffer. Secretary, W. A. McEwen; assistant secretary, W. B. Keffer. Mr. Lilley and Mr. Clark still retain the same relation to the company do they?

A. Yes, Mr. Lilley is treasurer and Mr. Clark vice president.

Q. Second vice president it is stated here. Do you know what Mr. Clark's official relation is to the U. G. I.?

A. He is third vice president and general superintendent.

Q. Was Mr. Clark vice president or second vice president of the company when you first came out here?

A. No, I think Mr. Albert B. Cummins was, Governor Cummins first vice president.

Q. I find from the records Mr. Clark was not an officer at that time, that is all I wanted to know. Now you don't know then I take it who made any of the purchases of bonds of the Des Moines Gas Company?

A. No, sir.

Q. Nor who holds them now?

A. No, sir; I do not. I have no way of getting that information.

Mr. BYERS: The defendant at this time offers from defendant's Exhibit 27, the record found on page- 233 and 234 under the head of betterment statement to December 31, 1910, and certification of $60,000 in bonds which reads as follows: The president submitted a statement prepared by the treasurer showing that the company had expended in making additions to or extensions or betterments of its plants or for acquiring other plants or property real or personal March 1, 1906, to December 31, 1910 the sum of

3588 $472,993.63 and showing the various items comprising this sum which statement was read and ordered spread upon the minutes and is as follows: Expenditures made for additions to extensions or betterments of plants of the Des Moines Gas Company or for acquiring other plants or property real or personal from March 1, 1906 to December 31, 1910, real estate $1,649.26 extensions and improvement at works $85,760.39, street lamp extensions $2,039.65, extension of street mains, $242,680.12, meters $68,364.92, services $72,493.28; total $472,993.63, less amount of bonds heretofore issued on account of same $412,000. Balance of amount for which bonds may be issued at par $60,993.62. Certification of $60,000 bonds. The president thereupon stated that it was proper to request the trustee under the company's first mortgage dated March 1, 1906, to certify and deliver bonds equal to the amount of the above balance of $60,993.63. The following was then unanimously adopted, whereas, this company has expended from March 1, 1906, to December 31, 1910, the sum of $472,993.63 for additions to, or extensions or betterments of its plants or to

acquire other plants or property real or personal and whereas, the Commercial Trust Company's trustee, under this company's first mortgage dated March 1, 1906, has heretofore certified and delivered on account of the above expenditures bonds of the par value of $412,000 leaving a balance of $60,993.63 to which amount the trustee may now properly be requested to certify and deliver additional bonds. Therefore, resolved that the trustee be, and it is hereby requested to certify $60,000 at par of bonds (leaving a balance of $993.63 on account of which certification and delivery of bonds may hereafter be requested) and to deliver the same to or upon the order in writing of the president of the company to be used by the company only for the purposes of making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal as above set forth. Resolved further that the secretary be directed to deliver to the trustee a certified copy of this preamble and resolution. The board then adjourned. W. F. Louthirt, Secretary. Entered and compared by S. L. E. and W. H. R.

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Q. Is Day street in Des Moines or is that in Valley Junction?

A. I don't recall offhand.

Q. Hartford street, does that run to Valley Junction?

A. Get the map. I find Hartford Avenue on the Valley Junction map on the Des Moines side of the line between Valley Junction and Des Moines.

Q. I take it then it runs on through Valley Junction?

A. It is called Maple street on the Valley Junction side of the line.

COURT: The line is the center of the street?

A. Cuts across the line, Maple street on the west side of the line and Hartford Avenue on the Des Moines side.

Q. Day street, where is it?

A. Day street is a little street between Laurel and School streets and between Thirteen- and Fourteenth streets in west Des Moines.

Q. I have found a record here. It was in July that you were elected president was it not?

A. Yes, sir.

Q. I find this record here contained in defendant's exhibit No. 28 under date of July 10, 1911. The resignation of Mr. Samuel Bodine as president was presented. On motion duly made and seconded Mr. Bodine's resignation was accepted. Election of Mr. Jansen Haines as president. Mr. Jansen Haines was nominated for president to fill the vacancy caused by the resignation of Mr. Bodine. No other nominations were made. The ballot having been taken the chairman declared Mr. Jansen Haines duly elected president in place of Mr. Samuel T. Bodine resigned. Resignation of Mr. Randall Morgan as first vice president. The resignation of Mr. Randall Morgan as first vice president was presented. On motion duly made and seconded Mr. Morgan's resignation was *excepted*. Election of Mr. Samuel T. Bodine as first vice president. Mr. Samuel T. Bodine was nominated as first vice president to fill vacancy caused by the resignation of Mr. Morgan. No

3590

other nominations were made. The ballot having been taken the chairman declared Mr. Samuel T. Bodine elected as vice president in the place of Mr. Randall Morgan resigned. And then this entry marked in red ink with an arrow, says insert this record, salary of Mr. Jansen Haines president. On motion the salary of the president was fixed at $833.33 per month from this date. That is July 1910. That is a correct record isn't it?

A. It may be a correct record, but my salary was increased on the first of the year.

Q. To how much on the first of the year?

A. To the $833.33.

Q. Your salary was raised just a short time before was it not, before the first of January?

A. Before the first of January, no sir.

Q. What was your salary for the year 1910?

A. $7500 as shown on the record there.

Q. When did that salary begin?

A. January 1, 1910.

Q. And then this change from $7500 to $10,000, when was it made?

A. January 1, 1911.

3591 Q. So that this entry was not a change in any sense, but it simply made that salary apply to the president?

A. Yes.

Q. To which you had just been elected so you were correct the other day when you said there was no change in your salary after the election?

A. Yes.

Q. And your term as president began shortly after this July meeting?

A. Began on July 10, I believe the date was.

Mr. BYERS: That is all if you will bring me in that estimate and take this exhibit I will furnish you and be able to state or have somebody else do it about this account of the U. G. I. that I refer to. I want also a description of the real estate covered by this item $1,649.26 and the extensions and improvements made in Valley Junction.

Cross-examination by Hon. GEORGE H. CARR:

Q. Will you explain or state rather whether the pressure in gas in mains, whether the resistance I should say, whether the resistance of gas in mains is greater up hill or down hill at the works?

A. The pressure will increase with the elevation.

Q. That is to say as gas leaves the works if the main goes up hill does it require more to overcome resistance of the gas than it would if the main went down hill?

A. Requires less to overcome resistance of the main if it rises leaving the works.

Q. Assume that the point of manufacture is on the same level as

3592 the point of consumption, but that between those points there is an elevation. Now I ask you whether it is necessary to have pushers to carry the gas to the highest point midway between the point of origin and consumption or whether the pushers are required to carry it down the hill on the other side?

A. You refer particularly to this?

Q. This Valley Junction line?

A. Pushers are really required to push the gas over the hill to the west limits of the city and the people in the west limits of the city had been kicking for some time for gas and we could not afford to supply these people at the same time unless we had additional consumption *of* Valley Junction and the whole system required the construction of these pushers and the high pressure system. Otherwise it would have meant a very large increase in the investment in mains which would not be warranted by consumption.

COURT: When you say you have a governor there what is that?

A. It simply maintains a constant pressure on the outlet, no matter what the pressure is on the inlet so we can overcome the frictional resistance of the main to that point by a high pressure on the gas and then when it reaches that point the governor automatically reduces the pressure if it is too high to the proper pressure at which it should be distributed. It performs the same function that a governor on an engine or transformer on an electric current.

COURT: Changes the pressure in there to suit the distribution system of Valley Junction. That is on the Valley Junction side.

Q. I call your attention to page 233 of the minute book which was read into the record and particularly to the recital near the bottom of the page as follows, the president thereupon stated that

3593 it was proper to request the trustee under the company's first mortgage dated March 1, 1906, to certify and deliver bonds equal to the amount of the above balance or $60,993.63, and I ask you whether you know what is referred to there as the company's first mortgage dated March 1, 1906?

A. It is the first mortgage authorized the first meeting of the directors as shown on page 19 of the minute book.

Q. Now will you refer to article 1 of that mortgage as found on page 26 of the minute book and read into the record article 1, showing the authorization referred to in the minutes that was read in the evidence.

Complainant offers and reads in evidence article one of the first mortgage bond beginning on page 26 and found on page 27 and page 28 of the record as follows:

A. ARTICLE 1. The issue of bonds to be secured by this mortgage is fifteen hundred (1500) bonds, of the par value of One thousand dollars ($1000) each aggregating One million five hundred thousand dollars ($1,500,000) at par, dated March 1, 1906, payable March 1, 1926, and numbered consecutively from one (1) to fifteen hundred (1500) both inclusive. Upon the recording of this mortgage all of the bonds hereby secured shall be executed by the gas company and delivered to the trustee

(1) Two hundred eighty five thousand dollars ($285,000) at par, of said bond- shall be issued at once certified by the trustee and be delivered to or upon the order of the president or vice president of the gas company.

(2) Four hundred thousand dollars ($400,000) at par of said bonds shall be retained by the trustee and shall not be certified until required to purchase or pay for, take up, exchange or replace bonds outstanding of the Capital City Gas light company due January 1, 1907.

3594 It is hereby agreed that the foregoing Four hundred thousand dollars ($400,000) at par of underlying bonds shall be taken up at their maturity and that their time of payment shall not be extended. Upon the maturity of said underlying bonds the trustee (in the event that said underlying bonds are not exchanged for bonds hereby secured and reserved) shall sell Four hundred thousand dollars ($400,000) par value of the bonds hereby secured and reserved at public or private sale as an- when requested by the gas company and out of the proceeds of such sale shall pay off and discharge so far as same are sufficient the said underlying bonds and pay the balance over to the gas company; and if the proceeds of such bonds shall not be sufficient to pay in full said underlying bonds the gas company shall pay to said trustee in cash the amount of any such deficiency for application by said trustee to the payment of said underlying bonds. All the said underlying bonds constituting the above mentioned issue when received in exchange as -foresaid or when paid shall be surrendered to and canceled by the trustee it shall, if practicable cause the mortgage securing same to be satisfied and discharged of record.

(3) The balance being Eight hundred and fifteen thousand dollars ($815,000) at par of said bonds shall be retained by the trustee and shall be certified and delivered from time to time by the trustee and shall be used by the gas company only for the purposes of making additions to or extensions or betterments of its plant or acquiring other plants or property real or personal. The trustee shall not deliver any of the bonds in this subdivision three referred to except upon resolution of the board of directors of the gas company calling for such delivery and stating that the bonds then called for are

3595 required for such additions extensions, betterments, repairs or costs as aforesaid, and also stating that said bonds or the proceeds thereof are to be used for one or more of said purposes; and a certified copy of such resolution under the seal of the gas company shall be conclusive evidence to the trustee of the truth of the matters therein set forth and shall constitute full and sufficient authority to the trustee to certify and deliver said bonds in the amount stated therein to be so required; and the trustee shall thereupon certify and deliver such amount of bonds to or upon the order in writing of the president or vice president of the gas company.

(4) The trust shall not be in any wise responsible for the application of any bonds or the proceeds of any bonds which may be certified and delivered by it in accordance therewith.

(5) Before certifying and delivering any bonds the coupons

thereon then matured shall be cut off, canceled, and upon demand the same shall be delivered to the gas company.

Redirect examination by Hon. H. —. BYERS:

Q. What is the name of that trustee?
A. Commercial Trust Company trustee.
Q. Where is it located?
A. It does not say here, but I believe it is Philadelphia.
Q. Who is president of it?
A. I don't know.
Q. Know any of the officers?
A. No.
Q. Judge Carr asked you about a pusher, a pusher is required to pus- gas down hill and not up hill, gas goes up hill all right?
3596 A. It is required to overcome resistance in mains whether it be a difference in elevation or a distance from source of supply.
Q. Where your system is loaded down with services at a long distance you use the pusher too don't you?
A. Depends on the size of the pipe.
Q. The truth of the matter is Valley Junction is higher than Des Moines, higher than where your plant is?
A. I believe about eight or ten feet higher.
Q. So really a pusher for Valley Junction is needed because it is so far away.
A. Yes, it is l-rgely to overcome the resistance. That depends of course on the size of the pipe, if you put it through a large pipe you would not need a pusher.

Recross-examination by Hon. GEORGE H. CARR:

Q. Do you know Mr. Haines how much higher the elevation is between the plant and Valley Junction than it is at Valley Junction. In other words, what is the difference between the elevation at Valley Junction and along about Greenwood Park?
A. The height or elevation we have to push over and down the other side, I think it is about 180 to 210 feet, it is along in there.
Q. The fact that Valley Junction is really higher slightly than the elevation of your plant make any material difference or does it tend to overcome to any extent the fact that between here and there there is a hill that you must go over?
A. It would tend to overcome that to the extent of the difference in elevation.
Q. That is the difference of the down hill?
A. Yes. Be very little practical difference if any, would
3597 not be measurable.
COURT: Is Valley Junction on the Coon river?
A. Yes. Well not right on the Coon river. I think about 400 yards from the river.
COURT: On a hill by the river?
A. No, sir; on the flat, right on the Rock Island tracks.
COURT: You say 800 feet high?

A. No, sir; I said Valley Junction itself is about 8 or ten feet higher than our plant.

Mr. BYERS: The main of course is about two feet under the river, the main is two feet lower than the bottom of the river here?

A. We would not measure from there, measure from the outlet of the pusher as far as pressure goes.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

3598 Tuesday Forenoon Session.

SEPTEMBER 19, 1911—at 9:30 a. m.

Counsel for the respective parties present, except R. O. Brennan.

Testimony on part of defendants resumed as follows:

JANSEN HAINES, continuing his direct examination, examined by H. W. Byers, Esq., testified:

Q. Mr. Haines, did you bring in Exhibit 18, I think it was?

A. I did.

Q. Now Judge Carr informed me that you would not be able to give me the information on account of the U. G. I. this morning?

A. I had four or five men working all night on it, but it is not ready; we have not been able to get it finished. I have here some of the contracts.

Q. I wanted the Brereton contract?

A. I haven't got that here; I looked for it yesterday but could not find it.

Q. What contracts do you have?

A. These are street main deposit contracts.

Q. Your counsel the other day, Mr. Haines, Judge Read, introduced into the record what was marked Complainant's Exhibit 27. I wish you would look it over and state whether it is correct, as you remember it?

A. This copy, as I understand it, has been made from the one on file; it appears to be all right.

Q. You signed it and swore to it?

A. Yes.

The MASTER: What is Exhibit 27?

Mr. BYERS: The tax statement for 1911.

The WITNESS: It is a statement that was made after the
3599 inventory was practically completed. The general contracts are enclosed in these envelopes.

Q. The memorandum on the outside indicates it?

A. Yes, the contract is enclosed inside and gives the form of the contract.

Q. Well, I will pick out one here that will answer my purpose. I have had the reporter mark as an exhibit the Percival-Porter Company contract, No. 10, on the envelope, under date of June 5, I think it is, 1909, and I ask you if that contract in its terms is the usual contract made by the company for this class of work?

A. You will have to let me see it, General. They are not all exactly alike, but practically all the same; sometimes there is some change in the street.

(Witness examines contract.) Yes, it is.

Q. You brought in five or six of those contracts, now let me ask you if that method has not been pursued quite generally in the building of these additions to the city of Des Moines in the last four or five years?

A. Well, it is by certain parties.

Q. Well, take the additions like Gil Mar Park and Hyperion Park Additions and the additions worked out and promoted by Witmar & Kauffman and that class of real estate men; it has been customary to give them that sort of a contract, has it not?

A. I can answer it better by giving the names of the people with whom we made contracts.

Q. All right, give us the names of the people.

A. Looking over the package here you will find the name of the party with whom the contract is made.

Q. Just give us the names of as many as you can remember?

3600 A. The Interstate Realty Company, Harwood of Gil Mar Park, the Percival-Porter Company——

Q. Is that the name of that concern now?

A. Harvey Porter is agent.

Judge CARR: Mr. Haines while you are calling attention to those, will you also give the date?

Q. Contract #3 is Interstate Realty Company. It was made under date of September 8, 1908; No. 5, J. W. Witmer—that is Joel Witmer.

Q. That is not the Witmer that is in partnership with Frank Kauffman?

A. No.

Q. The old gentleman?

A. No, it is another Witmer; that is under date of September 26, 1908. No. 6 J. M. Munsinger, under date of August 28, 1908. No. 7 John A. Larson, under date of October 7, 1908. Here is No. 4, the Interstate Realty Company, under date of August 29, 1908. No. 10, Percival-Porter Company, Agents, under date of June 15, 1909.

Judge CARR: Is that the exhibit referred to?

A. Yes, it is; Exhibit 37. No. 12, Percival-Porter Company, Agents, under date of 6-5-'09. No. 17, Interstate Realty Company, under date of May 25, 1910. Now you will notice I skipped some numbers and those perhaps are live contracts which have not been paid.

Q. Not cleaned up yet?

A. There are among those, I think there is one of—well I will bring you a list of those; I haven't got them here.

Q. If you will bring me such a list, I will be obliged to you. Now, the Brereton contract for the building, you haven't that?

3601 A. I haven't got that. I will look that up again; that is an old contract.

The defendants at this time, in connection with the examination of Mr. Haines, offer in evidence Exhibit 37, which reads as follows:

"DEFENDANTS' EXHIBIT 37.

Original.

JUNE 15, 1909.

Des Moines Gas Company, Des Moines, Iowa.

GENTLEMEN: If you will, at your own expense, extend your gas mains in Private Roadway West of an- running about parallel to 20th street from Washington to what would be Franklin Ave. and legally described as follows:

Commencing at a point 66.66 — South and 110 feet East of the North-west Corner of Lot Two (2) of the Official Plat of Section 33, Township 79, Range 24, West of the 5th P. M. in Des Moines, Iowa, there beginning: thence south 741.35 feet to the North line of Washington Street, thence East along said North line of Washington street 40 feet; thence North 741.35 feet; thence West 40 feet to the place of beginning (and bring connecting pipes for consumers inside of curb line in front of each lot on said streets) I will pay you the sum of Three Hundred Sixty and no 100 ($360.00) Dollars.

I make this payment solely that I may have the convenience of the use of the gas and for the improvement of my property, and clearly understand that by such payment I acquire no interest whatever in the mains (and connecting pipes) which you may lay in pursuance of this requesy.

Yours truly,

PERCIVAL-PORTER CO., *Ag't,*
By H. M. PORTER, *Sec'y.*

It is agreed upon the part of the Des Moines Gas Company that as each residence on the line of the mains above specifically described is completed, and said Gas Company commences to supply the occupant thereof with gas, that said Gas Company will return to Percival-Porter Co. Agent the sum of Forty-four and no/100 ($44.00) Dollars, until the whole said Three Hundred Sixty and no/100 ($360.00) Dollars is returned, provided that as soon as eight connections shall have been made, the balance remaining shall thereupon be refunded in full, and provided further that the agreement to return any balance that may then be unpaid shall cease after five (5) years from the day of the date thereof.

DES MOINES GAS COMPANY.
JANSEN HAINES, *Manager.*"

3602 Cross-examination by Judge CARR:

Q Now, Mr. Haines, will you explain to the Master the circumstances under which these contracts are made and the object and purpose of the contracts?

A. Well, these real estate men who are developing city property, platting ground, in order to sell their lots, find it desirable to have the gas mains extended in front of them before there are any buildings on the lots, and they make the request and make the offer to pay for the extension of those mains in front of their lots in the form of this contract to me, and we take the money and refund it to them on the basis of the proportion of one consumer for every 90 feet that is secured within a specified time, generally three *of* five years.

The MASTER: In other words, they are taking the risk of getting sufficient inhabitants there instead of you?

A. Yes, sir; if we undertook to put these mains in without any return, I think we would be called upon for 500 or 600 miles in Des Moines. Now if they want to put up their money, we are very glad to accommodate them to that extent. We do not encourage it, but are willing to do it if they want to invest their own money in the improvement for the sake of selling their lots; and when we do get a consumer for every 90 feet, we refund the money.

The MASTER: That is about the average distance of consumers in the outlying district?

A. That 90 feet is the distance required in our franchise; it is specified we shall run a main where a consumer can be secured for each 90 feet.

Q. You spoke, Mr. Haines, of this sum being paid to you. It is in fact simply deposited by these promoters as a guaranty that
3603 the Company will get the business?

A. That is in fact it.

Q. Then that deposit is returned to the promoter according to the terms of the contract.

A. Yes, sir.

Q. After a certain number of connections, a certain portion is paid back until there are connections enough to cover the terms of the contract, and the money is all paid back.

A. Yes, sir.

Q. Now your attention has been called to these other contracts and you say, while the terms vary slightly in principle, they are all the same?

A. Yes, in the contracts which we make now, we found it necessary to put in a little clause, by which if the grade of the street is changed before the termination of the contract we will withhold sufficient money to relay our pipe to the new grade.

Q. Mr. Haines, how long has this practice been in vogue?

A. About four years, I think; we have made some contracts in previous years, but hardly to the same extent they have been, because there have been more real estate additions laid out in late years than formerly.

Q. You spoke of a number of contracts you had made besides those that you have brought in some of them, were still live contracts?

A. Yes, sir.

Q. Do you remember making a contract of this character with a Mr. Walker, the man who was a witness here for the city on real

estate values; do you recall making a contract with him of this character?

A. I don't remember whether I personally made a contract with him, but a number of contracts were made with him in former
3604 years, when he developed this south Des Moines property.

Q. Just such contracts as these?

A. Similar to these, on the same principle. We make these contracts with anybody that insists on paying their money for the privilege of having the mains laid.

Q. Now, Mr. Haines, you were asked by General Byers whether the salary which you received from the Des Moines Gas Company for services rendered to the Des Moines Gas Company was paid over by you to the United Gas Improvement Company, and you said no; Now, I inquire whether the salary which you received from the Des Moines Gas Company is in full compensation for the services rendered by you to the Des Moines Gas Company?

A. Yes sir, if I understand what you mean.

Q. That is to say, now, the Des Moines Gas Company pays you for your services and pays you in full of your services for all your time rendered to the Des Moines Gas Company?

A. Oh yes.

Q. Now, are you under salary from the United Gas Improvement Co., for services rendered to the Des Moines Gas Company?

A. No sir; the only salary I draw is from the Des Moines Gas Co., and the only service which I render is to the Des Moines Gas Company.

Q. That being true, you receiving no salary from the United Gas Improvement Company for the services which you are rendering to the Des Moines Gas Company, is there any reason which occurs to you why you should pay over any part of your salary to the United Gas Improvement Company?

A. No sir, there is not.

3605 Redirect examination by H. W. Byers:

Q. I suppose you do not know really how bad they migh- need a little money, the United Gas Improvement Company,—I wanted to carry that joke a little further. If I understand this contract business, Mr. Haines, the Gas Company does not extend its mains unless the population of the consumers in sight are sufficient to at once bring a fair return for the cost of laying the mains, is that it?

A. Well, we do not determine the question whether it is a fair return or not; we are required to lay our mains where there is a consumer for every ninety feet; that is, we have construed our franchise in that way.

Q. That is under that socalled fifty year arrangement?

A. No sir.

Q. Before that?

A. Before that.

Q. As I said you now, you do not extend the mains unless there is a consumer within ninety feet of the end of the old one?

A. Yes sir.

Q. In order to extend them beyond that, or if a man wanted to secure gas service beyond ninety feet, you are willing to put it in and do put in the mains if the person interested, or a number of persons, as the case may be, if they will deposit with you the money to carry the original cost of putting in the mains with a contract, that will later on when a certain number of connections are made, he will get his money back.

A. It simply covers the cost of wages and material used in the laying of the main, that we may estimate is sufficient for
3506 the consumer to deposit.

Q. In other words, the company is not out any actual money for the laying of the additional main, if I understand you right?

A. Well, the company is out all the services incident to the cost of the main exclusive of the wages and material of simply laying the pipe in the street.

Q. What cost would there be?

A. Superintendence, engineering, and construction charges.

Q. You mean overhead charges?

A. Yes.

Q. The actual expense of the material itself, putting the mains in the ground, is covered by the deposit of the real estate man promoting the addition, or the individual who wants gas service beyond ninety feet.

A. Yes, wages and material.

Q. That you have been doing for about four years?

A. We have been doing it for a number of years in that way.

Q. The last four or five years there have been more additions added to Des Moines than in ten or fifteen years before.

A. There has probably been more of a gross in the city.

Q. How many consumers must be on a line to get the main?

A. In proportion of one to ninety feet.

Q. What is the average now in town?

A. I would have to figure that out General.

Q. I wondered if you knew?

A. No I do not keep track of that.

Q. That is the way that the extensions have been made under the contract similar to Exhibit 37 for the last four or five years

A. Not all the extensions; just simply extensions for the
3507 development of these real estate speculations.

Q. Of course that is what I am talking about, not the extensions in general which are made because of the necessities of your business; but with respect to all these additions where the real estate agents wanted gas at once before the addition was settled up, and filled up with consumers?

A. Yes, that is the idea.

Q. Now, Mr. Haines, what real estate has your company purchased since 1906 that they now own and use in the gas business?

A. I do not think there has been any additional real estate purchased since that time in the name of the Des Moines Gas Company. You are now referring to that $1,600.00 you noticed yesterday.

Q. I am just trying to find out now what real estate, if any, the

Company has purchased since 1906, or anybody else has purchased for them, which is now used in the Gas business.

A. None that I know of. I will say that $1,600.00, while I haven't got the details here, I think is to cover improvements to real estate and goes into the real estate account.

Q. I know Mr. Douthirt explained that to me last night.

Recross-examination by Judge CARR:

Q. Now, Mr. Haines, you were asked whether the extensions of these mains we have been talking about covered by these *con*contracts cost the company anything, and you pointed out that it cost them for expenses beyond the productive labor and material. Now, is that an accurate statement, doesn't when the money is paid back, after the promoter performs the terms of his contract, the Company is paid, are they not, for the extensions paying for the productive labor and material?

3608 A. Oh yes.

Q. So that it is not accurate to say that these extensions do not cost the company anything for the productive labor and material?

A. My understanding of the question was that it did not cost them anything at the time.

Q. So it is strictly accurate to say that this money paid in is simply deposited and goes back to the man who deposited it?

A. Yes. The total amount of these contracts do not exceed Two Thousand dollars for that street main deposit: the account will amount to less than Two Thousand Dollars at any one time and generally is very much less than that.

The MASTER: You simply are relieved of interest on the money.

A. Yes sir.

Redirect examination by H. W. BYER:

Q. You don't mean all of the contracts of that kind that have been made only amount to Two Thousand Dollars?

A. No, the amount in the open account of street main deposits. Some have been paid for, and more made.

Q. What you mean is that you probably haven't more than *Two* Two Thousand Dollars in money on hand on such contracts at any one time.

A. Not only probably, but actually.

Q. But the total amount of that class of contracts would far exceed Two Thousand Dollars.

A. Oh, I suppose it might run Three or Four Thousand Dollars.

Recross-examination by Judge CARR:

Q. You mean to say you have an average of Two Thousand Dollars of this fund in open account, or that Two Thousand Dol-

3609 lars is your estimate of the maximum which you had at any one time?

A. I think the figure is about $1,980.00, which is the maximum at any one time, which we have at present.

Q. At times it will be materially less than that?

A. Yes, particularly in the winter time, it will naturally run below that.

Q. The average for the entire period will be considerably below that?

A. Very much.

The MASTER: You spoke of some contracts that were not there; I don't know whether you meant to say whether the parties did not comply with the contracts, or what was said?

A. These contracts are made for periods from three to five years; that is to say, if the number of consumers required in the contract will be secured on that particular extension, are secured within that period, the money will be refunded, so much for each consumer. Now, the contracts are numbered from the first contract which was executed consecutively on down, and on some the total number of consumers required have already been secured, and the contract is paid off, and on others only a part has been secured and are not fully paid off.

The MASTER: Then there is still some money coming to them?

A. Yes, still money coming to the contractor.

Excused.

Mr. BYERS: The defendants now offer in evidence Exhibit
3610 39, being an affidavit of Edward T. Pratt, former manager of the gas company and filed in this court in the case entitled Capital City Gas Light Company, complainant, vs. City of Des Moines.

Objected to on part of complainant as being irrelevant, immaterial, and does not purport to show the value at any time, but merely an investment. It is also objected to because it does not purport to be a complete copy of the affidavit, but is in fact a copy of only one exhibit attached to the affidavit. It is objected to for the further reason that it is incompetent as going to the question of value, for the reason that you cannot prove value by the evidence of witness, or copies of them, relating to different matters made many years ago and where the witness is not produced for cross examination.

The defendants offer in evidence Exhibit 38, in connection with Exhibit 39.

The complainant interposes the same objection as last above made to Exhibit 39.

The defendants offer in evidence Exhibit 40, which is also offered in connection with Exhibit 39, and is a part of the affidavit
3611 and statement of Edward G. Pratt filed in this court in the same case above referred to, and certified by the Clerk of the Court.

The complainant interposes the same objection as last above.

The defendants also offer in evidence in connection with Exhibit 39, defendant's exhibit 41, which is the transcript of the *the* evidence attached to the affidavit of Edward G. Pratt, and shows or purports to set forth extracts of the evidence of Walton Clark, Wm. H. White,

as certified by the Clerk of the Court from pages 421 to 459 inclusive.

Complainant interposes the same objection as last above.

The defendants also offer in evidence, Exhibit 42, being the affidavit of Edward G. Cowdrey, filed in this court in the case entitled Capital City Gas Light Company vs. City of Des Moines, and certified to by Wm. C. McArthur, Clerk of the Court.

3612 Complainant interposes the same objection as last above.

The complainant moves to strike out each of the exhibits offered by the defendants, from 38 to 42 inclusive, for the reasons urged against the exhibits, and also because it appears from the exhibits, that they are exhibits filed in a suit, not between the same parties and to which the complainant was not a party.

W. F. DOUTHIRT, re-called on part of defendants, examined by H. W. Byers, and testified as follows:

Q. I am calling you now because you suggested to me yesterday on one or two occasions when Mr. Haines was on the stand, you could give me the information I was seeking at that time. Council for the complainant introduced and had read into the record as a part of the cross-examination of Mr. Haines, a certain mortgage executed by the Des Moines Gas Company in 1906, naming the Commercial Trust Company as trustee; where is that institution located, where is its headquarters?

A. In Philadelphia.

Q. What is its business generally?

A. It is a Trust Company and does a banking business; also acts as trustee under mortgages, trustee of estates, acts as registrar of stocks, and performs generally the functions of a trust company as they are understood in New York and Philadelphia.

Q. Do you have any connection with the Company?

A. None whatever.

3613 Q. Does it have any relation to the U. G. I.

A. None.

Q. Who is its President?

A. Mr. T. DeWitt Cuyler.

Q. Does he have any connection with the U. G. I.

A. No sir.

Q. This trustee, as I understand it, simply has the custody of the bonds of $1,500,000.00 in bonds that were authorized to be issued at the commencement of the business of the Des Moines Gas Company.

A. The mortgage is the best evidence on that subject; that is in the record.

Q. Well, aside from the mortgage, you know that to be the case do you not.

A. The mortgage fully describes the duties of the trustee with respect to the bonds.

Q. Well, but it does not state, at least not so that I get the information, just the method of handling these bonds.

A. Yes, it fully states the method.

Q. The trustee holds the bonds.

A. I prefer to answer these questions from the mortgage itself. The mortgage is the contract under which the trustee proceeds and it fully describes and defines the powers and duties of the trustee.

Q. I simply want to get at, if I can in my own way, the method of taking care of these bonds?

A. You want me to construe the mortgage.

Q. Well, the trustee has nothing to do with the mortgage, except that the mortgage limits the trustee's powers with respect to the bonds.

3614 A. The trustee has very much to do with the mortgage; the mortgage is the document under which the trustee acts, and the trustee must look to the mortgage for every step the trustee takes.

Q. The trustee begins by having possession of that $1,500,000.00 of bonds, is that correct?

A. The trustee begins by taking a copy of the mortgage before it is executed, and referring it to its counsel to determine whether the mortgage is in such form as to make the trustee willing to accept the trust.

Q. Then what is done?

A. If the mortgage is in form, satisfactory to the trustee, and the trustee's counsel so advises, then the mortgage is authorized by the mortgagor and executed both by the mortgagor and the trustee.

Q. And what becomes of the bonds?

A. The powers and duties of the trustee with respect to the bonds are fully set forth in Article I of the mortgage, which was read into the record by Mr. Haines yesterday, and which I shall be glad to read again, or if you prefer, construe it for you.

Q. What I want to know, were the bonds issued at the same time of the mortgage?

A. No sir; the bonds have not all been issued yet.

The MASTER: He wants to know if they were executed?

A. Yes, Article one of the mortgage provides as follows: Upon the recording of this mortgage, (which I understand means recording of it in the office of the recording officer, of the County where the property is located, in Polk County, Iowa) upon the recording of this mortgage all of the bonds hereby secured shall be ex-

3615 ecuted by the Gas Company and delivered to the trustee.

Q. So that at the beginning then, these $1,500,000.00 authorized issue- were delivered to the Commercial Trust Company at Philadelphia?

A. They were executed by the Des Moines Gas Company and delivered to the Commercial Trust Company, Trustee; but you will note that the bond itself contains this clause. This bond shall not be valid until it shall have been authenticated by a certificate hereon duly signed by the Trustee under the mortgage.

Q. That is all right. I simply wanted to find out how the business is done. Now, beginning then with the issue of $1,500,000.00 bonds of the Des Moines Gas Company, in the hands of the Com-

mercial Trust Company of Philadelphia, as Trustee, just what method does the Des Moines Gas Company pursue in directing and delivering the issuance and delivery of the bonds?

A. I think you will lead us into a misapprehension on the word "issue." These bonds although they were signed by the Gas Company at the time of the recording of the mortgage, and delivery to the trustee, signed by the Gas Company, are not a valid obligation until authenticated by the Trustee.

Q. And delivered for the proper purpose?

A. Yes. And they are not issued, as I understand the meaning of the word issue, until they have been so authenticated, by the trustee, and delivered back to the Gas Company, and further until the Gas Company for a proper consideration has parted with the title.

The MASTER: Then the Treasurer of the Gas Company disposes of them in the market.

3616 A. Yes, sir.

Q. This $1,500,000.00 in bonds, as I understand your testimony, and the terms of the mortgage, was authorized for the purpose of covering the extensions and improvements upon the Des Moines Gas plant.

A. In part; that is part of them were authorized for that purpose.

Q. What were not authorized for that purpose were authorized to pick up the then outstanding bonds of the Capital City Gas Light Company, which had been assumed by the Des Moines Gas Company.

A. In part.

Q. What do you say as to the purpose in making the mortgage at the time it was made and authorizing the issuance of the bonds, being to make it possible—in other words, to provide the means for the Des Moines Gas Company to pay for its extensions and improvements as they were made by the sale of these bonds?

A. It was the purpose and intention to provide bonds, which, if they could be sold, would provide the means to make these extensions.

Q. That was the purpose for which the Company had executed the mortgage in the first place, to provide bonds?

A. To provide for the future issue of bonds which if it could sell them would furnish funds for extensions.

Q. All the extensions and improvements that have been made by the Des Moines Gas Company in the last four years, and a fraction, since March 1906, have been taken care of by the sale of a portion of these bonds, is that true or not?

A. No, that is not true.

3617 Q. What is the fact about that?

A. The fact is, that the Company has not been able to sell the bonds for enough money to take care of its extensions and improvements.

Q. Who purchased the last issue of bonds?

A. The United Gas Improvement Co.

Q. Who purchased the issue just prior to the last issue?
A. The same company.
Q. Who purchased the first issue?
A. The same company.
Q. The truth is, that all of the bonds of the Des Moines Gas Company represented by that mortgage that has been read into the record, were sold by the Treasurer of the Des Moines Gas Company to the United Gas Improvement Company.
A. Yes.
Q. And the United Gas Improvement Company still holds them?
A. No, it does not hold all of them.
Q. What has become of them?
A. It sold some of them, or exchanged them for other securities.
Q. You say it has sold some of them?
A. Yes.
Q. What part?
A. I can't tell you exactly; I think something like Three or Four Hundred Thousand Dollars.
Q. When?
A. As much as two or three years ago.
Q. Does the United Gas Improvement Co. operate any gas plant anywhere except the Philadelphia plant, under lease?
A. Yes.
Q. Where?
3618 A. One at West Waterbury, Conn.
Q. Any other?
A. One at Vicksburg, Mississippi.
Q. Any others?
A. No, not that I remember.
Q. All of the other concerns you were interrogated about on a former occasion of this trial, the U. G. I. simply owns stock in them.
A. I wouldn't like to make such an inclusive answer as that. I will say generally speaking, the United Gas Improvement Co. occupies the relation of stockholder to most of the companies in which it is interested.
Q. I want to get back to this bond proposition, until I clear it up to my own satisfaction. On page 233 of this record that has been referred to several times as the Des Moines Gas Company, No. 1 stockholders' and directors' minutes, is set out what purports to be a statement prepared by the treasurer of the Des Moines Gas Company, which in substance states—that since March 1, 1906, to December 31, 1910, $472,993.63 has been expended for additions, extensions, betterments of the plant of the Des Moines Gas Company. Now, the statement also indicates that of that amount $412,000. has been absorbed or taken care of by the issue of bonds. The bonds referred to are the same bonds we are talking about now, and covered by the mortgage just referred to in your testimony.
A. Yes.

Q. Now, that left a balance as the treasurer states here, for which bonds may be issued at par of $60,993.63.

A. Does it say issued there?

3619 Q. Yes, it uses these very words. If I have studied this book to any purpose at all, what little time I had to look it over, I get this notion from it, and from these regular annual statements of your treasurer, Mr. Lilly, who, I understand, is also treasurer of the U. G. I., that during the year, whatever extensions, improvements and betterments are made, whatever money is needed for that purpose, the U. G. I., aside from what the local company has on hand, furnishes the money to the Des Moines Gas Company, and takes its obligation bearing interest at six per cent, and covering in addition to the money advanced for this purpose, such open account as the company may have, that is the U. G. I. may have, with the local company, and that paper is carried until the end of the year, the end of the year that Mr. Lilly has chosen in which to make his annual statement, and then upon his statement as to the amount that has been put into the property in the way of extensions, betterments and improvements, and whatever the U. G. I. has furnished in money and service, as the case may be, is taken care of by an issue of bonds and the sale of bonds to the U. G. I.; is not that about right?

A. No that isn't right at all.

Q. What is wrong with it?

A. If the reporter will write out for me a copy of that very long and involved question I will undertake to dissect it and show where it is wrong.

Q. Well, I will put it in another way; maybe we can get at it without going to that trouble. Going back in this defendant's exhibit 27, it is true, is it not, that the beginning with the first year of the operation of the Des Moines Gas Company, under

3620 that name, down to and including the year 1910, the treasurer of the company has made regular annual statements covering the expenditure of the Des Moines Gas Company.

A. No, I think that is not true; I think those statements are not made annually.

Q. How often are they made?

A. If you will let me have the record, I will pick them out for you.

Q. Can't you tell in a general way?

A. Yes, I can tell you for the last two years or so the statements have been made semi-annually and prior to that time I think the record will disclose they were made at irregular periods.

Q. Just find the last one before the one on page 233.

A. Wouldn't it be better to take the first one and go right through.

Q. If you want to take the time to do that, and if you prefer to do it that way—I want to know all you know about this business, just exactly how this property is handled, what is done with these bonds, what is paid for them, how they are gotten out of the hands of the trustee, upon whose order or direction they are turned

over, if at all, to the United Gas Improvement Company. I don't intend to leave anything under cover if I can get to it in any way.

A. The mortgage of March 1, 1906 with respect to the $815,000.00 of bonds which were reserved for the purpose of making additions, extensions and betterments, provides: That the trustee shall not authenticate and deliver any of these bonds except upon a resolution of the Board of Directors of the mortgagor calling for such delivery, and stating that the bonds at the time called for are required for the purpose of extensions, additions or better-
3621 ments, and stating also that the bonds or proceeds thereof are to be used for this purpose.

Q. Then, right there now, if I understand that, all that was necessary at any time for the U. G. I. to secure the delivery to it from this trustee of bonds to cover expenses, and improvements that were actually made, was to have a resolution passed by the Board of Directors of the Des Moines Gas Company setting forth the fact that the money had been expended or was needed for that purpose and directing the treasurer to certify the resolution and that fact to the trustee, and upon that certification the bonds would be turned over to the U. G. I.

A. That is not right. In my answer to the question preceding that, I was going on to describe the whole process.

Q. I beg your pardon for interrupting you; go ahead and do it in your own way.

A. Well, I will refer back again to my answer to the question preceding the last one, in which I stated the provisions of the mortgage with respect to the certification and delivery by the trustee of any part of the $815,000.00 bonds mentioned in Article I of the mortgage as reserved for the purpose of additions, extensions, and betterments. The provision is that the trustee shall not certify and deliver any of the bonds mentioned, except upon resolution of the Board of Directors of the Des Moines Gas Company, calling for the delivery and stating that the bonds are required for additions extensions and betterments and also stating that the bonds or the proceeds thereof are to be used for the purposes mentioned.

Q. I wanted to understand a word you read there. I do
3622 not have the mortgage before me. Does that say or required for extensions?

A. Stating that the bonds then called for are required for such extensions, etc., and also stating that said bonds, or the proceeds thereof are to be used for such purposes, and a certified copy of such resolutions under the seal of the Gas Company, shall be conclusive evidence to the Trustee of the truth of the matters therein set forth, and shall constitute full and sufficient the authority to the trustee to certify and deliver said bonds in the amounts stated therein to be so required. That is a provision which is quite customary in mortgages of this sort, and is intended for the protection of the bond holder, so that no bonds may be certified and delivered by the trustee unless the mortgagor has actually spent in extensions and betterments the money.

Q. That does not say it must be actually spent does it?

A. Well, it says the bonds which are required for that purpose and the course which has been follo-ed under this mortgage, is that the money has actually been spent before the trustee is asked to certify and deliver bonds.

Q. In the meantime, the Company has paid six per cent interest on the money?

A. Oh no, not at all.

Q. That is the way it looks to me.

A. Well, it looks wrong to you, I am sorry to say. Now you will note the date of that mortgage was March 1, 1906. On June 30 1906, the minutes on page 68 show that a statement was presented to the Board of Directors——

Q. What is the date of that?

A. This was presented to the Board at a meeting
3623 August 16, 1906, and appears on page 68 of the records. This statement shows from March 1, 1906 to June 30, 1906 the Company had expended the sum of $58,730.77 in making extensions, betterments, etc. The Board at that meeting passed a resolution certifying to the trustee that the sum of $58,730.77 had been expended for the purposes mentioned, and requested the trustee to certify and deliver $58,000.00 of bonds, leaving the odd amount out.

Q. Take up that case as a concrete case. Now, where had the Company gotten the money, the $58,000.00 it had spent up to that time?

A. I couldn't tell you without referring to the books which cover that period of operation.

Q. Part of it was gotten from the U. G. I.

A. I cannot tell you without referring to the books covering that period of operation.

Q. At any rate, the money expended up to that time had been provided in some way to the Des Moines Gas Company, either borrowed it here or it came out of the receipts, or the U. G. I. loaned it to them.

A. The money had been either the result of their operations; it had either been receipts from operations or borrowed from somebody.

Q. Now right at that point, this $58,000.00 that the record shows had been invested in the plant, all that was necessary to get bonds enough to cover that, was for the directors of the Des Moines Gas Company to pass a resolution setting forth the fact of the expenditures for the purpose for which they were made, and directing the treasurer to certify the resolution to the trustee, and upon that certification, the trustee would deliver the bonds to the U. G. I.
3624 A. No.

Q. Isn't that right?

A. No.

Q. What is the matter with it?

A. The U. G. I. had nothing to do with it.

Q. Let me put it in another way; of course I can see how you might answer that no and be right. Mr. Lilly was the treasurer of both companies.

A. Yes.

Q. He did the certifying to the trustee.
A. No.
Q. Who did?
A. The Secretary.
Q. Who was the Secretary?
A. At that time, Mr. W. A. McEwen.
Q. He would certify the resolution and the trustee would turn the bonds over to Mr. Lilly who was treasurer of the Des Moines Company, and was treasurer of the U. G. I.
A. The trustee would follow the directions of the resolution and the resolution I am now reading from the record authorizes the trustee to deliver the same to or upon the order in writing to the President of the Des Moines Gas Company.
Q. Who was president of the Des Moines Gas Company at that time?
A. I think Mr. Bodine was.
Q. What relation did he have with the U. G. I.
A. First Vice President.
Q. Then Mr. Bodine when these bonds were delivered to Mr. Bodine went through the form of selling them to the U. G. I.
A. I would say he sold them.
Q. He sold them to the U. G. I., the company you say took the bonds.
3625 A. Yes.
Q. Then the U. G. I. when the money was received, the treasurer of *of* the Des Moines company who was the treasurer of the U. G. I., would simply enter upon the books the credit to the Des Moines Gas Company, whatever it should be.
A. No, he wouldn't do that; he would collect the money, and deposit it in the Des Moines Gas Company's bank account.
Q. He would actually collect the money already spent, even though the U. G. I. had furnished part of it, is that the idea?
A. Why, he would carry out the transaction just as if the bonds were sold to you.
Q. Well that is to say, then that particular issue, Mr. Bodine would sell the bonds to the U. G. I., who would act for the U. G. I.
A. Probably Mr. Lilly, or perhaps the Board of Directors of the U. G. I., or one of its committees.
Q. And the U. G. I. then would pay him in cash the amount of the bonds less whatever discount might be agreed upon.
A. Yes.
Q. And then Mr. Bodine would turn that over to Lilly, the treasurer of both companies, the agency.
A. Yes.
Q. And Lilly would make an entry of it in the books that he keeps in Philadelphia.
A. Lilly would deposit it in the bank to the credit of the Des Moines Gas Company, and make the proper entries.
Q. That is the way it is done is it?
A. Yes.
Q. What was the discount on these bonds?

A. On that particular lot, I couldn't tell you without referring to the books covering the operations of that period.

3626 Q. No trouble about selling them; did they have to coax the U. G. I. to take them.

A. Yes, I have seen the U. G. I. very reluctant.

Q. It was the U. G. I.'s own obligation was it?

A. No.

Q. The U. G. I. owned the Des Moines Gas Company.

A Yes,—no.

Q. You came pretty nearly going wrong on that question?

A. You very nearly mislead me.

Q. The books show and you know it to be a fact that the U. G. I. held all the stock of the Des Moines Gas Company.

A. Yes.

Q. Nobody else had any financial interest in the property of the Des Moines Gas Company except the U. G. I.

A. No, I wouldn't say that was so.

Q. Can you think of anybody else?

A. Yes; at that time there was $400,000.00 bonds of the Capital City Gas Light Company outstanding at that time. Those bond holders certainly had a financial interest in the property.

Q. That is what you thought I was getting at.

A. I didn't know what you meant by financial interest.

Q. I meant financial interest in the property as owners or part owners of the property.

A. Nobody else held any stock.

Q. Except the U. G. I.

A. That is right.

Q. So that the bonds that the U. G. I. was taking was simply the obligation of the company in which it owned all of the stock?

A. That is right.

3627 Q. And they discounted the bonds ten per cent at that time.

A. I can't tell you that without referring to the books covering that period. I know we discounted some bonds ten per cent; Whether this particular lot or not, I couldn't tell you.

Q. Is this a correct statement Mr. Douthrit; Mr. Haines on the witness stand yesterday said, whenever he had to have money here for the purpose of making extensions and improvements, and so on, and he didn't have the money, he got the money from the U. G. I. and paid 6% interest on it and that the open account of the U. G. I. after thirty or sixty days, interest was figured on that at 6%. Now, from some time, say from the beginning of the life of this corporation, the Des Moines Gas Company, the business has been carried on just as Mr. Haines said, the U. G. I. furnishing the money, taking 6% interest on it until such time as it desired to have the bonds disposed of and then they were disposed of, is that right?

A. If I should answer that question, yes or no, it would lead to misapprehension.

Q. Is there any question but what the U. G. I. determined origin-

ally just when a bond sale should be made,—I use the *the* word originally there to get away from your resolution and getting back to the actual direction of the making up of the record of the disposition of the bonds.

A. No.

The MASTER: Right here I would like to ask a question. I notice by the report of Mr. Hagenah that between February 28, 1906 and February 28, 1907, there was $418,914.28 for total extensions and improvements to that time. I find there was only authorized bonds of $58,000.00 on extensions and improvements that were issued under the resolution dated August 15, 1906.

3628 A. Yes sir.

The MASTER: How do you account now for the difference between that $58,000.00 and $418,000.00?

A. $418,000.00 was the amount spent up to February 28, 1906.

The MASTER: No; Between February 28, 1906 and February 28, 1907 this amount $58,730.77 is the expenditure from March 1, 1906 to June 30, 1906.

A. There is a difference in the dates there.

The MASTER: But there is no other bond issue and there is a difference of over $360,000.00.

A. I don't get just what you are getting at.

Mr. GUERNSEY: Mr. Hagenah says the $418,000.00 includes that $285,000.00 bond item that went for the holder and that sort of thing.

The WITNESS: Does that answer you?

The MASTER: I don't know; I am asking you the question; I don't know whether it does or not.

A. At the directors meeting March 20, 1907, there was a statement presented to the board showing the total expenditures for additions etc., from March 1, 1906 to December 31, 1906 amounting to a total of $129,282.11.

Mr. BYERS: Is that the second?

A. That is the second.

The MASTER: In 1906?

A. Yes, December 31, 1906, the total from March 1 1906 which is the date of the mortgage, to December 31, 1906, was $129,282.11 from which is deducted the $58,000.00 certified under the resolution of August 15, 1906, leaving a balance of $71,282.11 at that time.

3629 The MASTER: That makes a difference still of something over $4000.00.

A. So there would be; Mr. Hagenah covers two months more than is covered here. We are working on different scales; That would undoubtedly explain the difference. No doubt the difference between this figure which you have here and Mr. Hagenah's figure which amounts to about $4000.00 is covered by the extra two months which Mr. Hagenah has included in his statement as he has made it up.

The MASTER: It is $4,622.17.

A. Yes sir that is covered by the extra two months which Mr.

Hagenah has in his statement. Under the resolution adopted by the Board on March 20, 1907, which appears on pages 87, 88, and 89 of the record, the trustee certified $71 000.00 in bonds.

Q. Well now, without taking the time to go through that all, that issue was disposed of in the same way as the former one was, that is, the resolution was certified by the Secretary, and the trustee in response to the certification would deliver the bonds to the President of the Des Moines Gas Company, who was an officer in the U. G. I., and then the bonds were sold by that officer to the U. G. I. at whatever discount was agreed upon at the time.

A. Yes.

Q. And the money or credit or whatever it was, actual money, that would be in the bank and credited to the Des Moines Company and whatever obligations or accounts there was between the *the* U. G. I. and the Des Moines Company, would be adjusted either at the end of the year, or at that time.

A. Adjusted, yes.

3630 Q. When the President of the Des Moines Company negotiated the sale of the bonds to the U. G. I. and receiver the money for them, if the U. G. I. at that time was holding the obligation of the Des Moines Gas Company, in the form of a promissory note, then that note would be paid out of that money; is that the way it is done?

A. Yes, the Des Moines Gas Company would want to stop interest on that note.

Q. All that class of obligations between the Des Moines Gas Company and the U. G. I., where they drew interest at all, was at the rate of 6%?

A. Yes.

Q. And these bonds drew interest at 5%.

A. Yes.

Q. So that every time the Des Moines Gas Company made extensions and improvements with money furnished by the U. G. I., at 6% interest, instead of disposing of the bonds and using the money from the bonds to make that extension and improvement, would be just one per cent short, wouldn't they?

A. I don't understand that.

Q. The mortgage provides that bonds may be issued before the extensions and improvements be made after certification.

A. It was never done.

Q. When you didn't do it and adopted the other method, it was more expensive to the Des Moines Company?

A. You assume the Des Moines Company could have sold the bonds at par.

Q. Certainly, or at least the same rate they finally did sell them.

A. That is unwarranteed.

3631 Q. The MASTER: After paying the interest on the bonds that is about the only fixed charge there is.

A. That and the interest on the preferred stock contracts.

The MASTER: What becomes of the balance of the profits?

A. They have always gone into the property. I want to modify

that; any cash remaining over has been used to retire preferred stock contracts.

Q. These preferred stock contracts are held by the U. G. I.

A. Yes.

Cross-examination, Mr. GUERNSEY:

Q. Now pursuing the same line of General Byer's examination, if the U. G. I. Company held all of the stock in the Des Moines Gas Company, as you say it did, can you imagine any profit the U. G. I. Company could derive, assuming there was one, by charging six per cent on these advances instead of taking five per cent bonds?

A. No.

Q. In the ultimate result?

A. Not in the final windup.

The MASTER: If I understand the question of interest here, so far as the cost of gas is concerned, the question of interest on extensions or notes or bonds, and all those things, don't enter into it at all.

Mr. GUERNSEY: That is right.

Mr. BYERS: That is not our understanding of it; we do not concede that at all.

Mr. GUERNSEY: I understood your Honor to be talking of our actual figures; the actual figures introduced on *on* both sides
3632 do not include the items of interest on the bonds and things of that kind at all.

Mr. BYERS: Does not include items of interest on bonds, but does include interest on these obligations.

Mr. GUERNSEY: That I am advised is an error. You will remember there cannot be any difference between us. These adjustments of their operating accounts with ours does not show anything of any consequence and could not affect the results at all.

Q. Now, to go back—Counsel ask whether the U. G. I. was coaxed to buy these bonds, or did the fact that the U. G. I. was stockholder and had to put up this money to enable it to do business coax it to take the bonds.

A. That helped, yes.

Q. In other words, a public utility in a place like Des Moines, growing rapidly contemplates not only the original investment but continual additions to it.

A. Exactly.

Q. So that the man who puts his money in it must expect that he cannot make an investment of a million dollars or two million dollars, but that he must constantly add to that investment.

A. He must face the certainty that fresh capital is going to be required every year, almost every day, and Exhibit 18 which is now in General Byer's possession will show the estimates that are made.

Q. So that if he makes this investment, he don't make the investment under circumstances where he knows if he is sick of it he can retire, but he makes it and he knows that he must continually add to it whether he likes it or not.

A. Yes sir.

Q. It he doesn't add to it, he is going to lose his original
3633 investment.

A. Yes.

Q. Was it this fact that the Des Moines Gas Company had to have money in order to protect the investment of the U. G. I. Company in its stock, that coaxed the U. G. I. Company to buy these bonds?

A. That was it.

Q. Now then, Counsel said nobody else held stock but the U. G. I. Company in view of that fact was there anybody else on whom the U. G. I. Company could call to advance this money.

A. Nobody.

Q. So that one benefit the Des Moines Gas Company has derived from the fact that the U. G. I. Company owned this stock was that it had somebody constantly to put up this money that it needed in connection with its business.

A. To perform its obligation to the public, yes.

Q. You said the U. G. I. Company bought these bonds. I want to ask you whether the U. G. I. Company tried to sell the bonds to *to* others.

A. It has.

Q. Has it found others to buy them on as favorable terms it gave itself?

A. It has not.

Q. Is it willing to sell the bonds it has now to our friends on the other side at par?

A. They can have them all if they want them.

Q. In other words, the reason they are carrying them, there isn't anybody else that will carry them on as favorable terms.

A. No.

Q. Is there any other reason than that?

3634 A. No.

Q. If the U. G. I. wouldn't put this money up what would be the alternative that would confront the Gas Company?

A. It would have to sell its bonds for whatever it could get for them, or it would have to go without making extensions and improvements.

Q. That would mean wrecking it ultimately?

A. Ultimately. I do not suppose the public of Des Moines would stand for that very long.

Q. So that if this stockholder had not advanced the money, the Des Moines Gas Company would have had to buy that service for whatever it had to pay for it in the market.

A. It would.

Q. In the meantime, assuming the fact that the U. G. I. Company was the sole stockholder and proposed to continue the sole stockholder, could it make any profit out of the transaction whatever ultimately.

Objected to on part of defendants as not proper cross-examination.

A. No it could not.

Q. The U. G. I. Company would get interest on the bonds as long

as it owns them, in return for that interest would have to put up its money to buy them.

A. Yes.

Q. And buy them at a price higher than the bonds were salable in *in* the market.

A. I think so.

Q. This also relieves the local people from all the work and anxiety that would be incident to trying to finance this proposi-
3635 tion if the U. G. I. Company did not furnish this financial backing.

A. Yes.

Mr. BYERS: Who do you mean by the local people,—the employees.

Mr. GUERNSEY: Yes, somebody would have to do the work of selling bonds.

Q. And it also assures the Des Moines Gas Company that whatever the financial situation is, it will have what money it needs without paying exorbitant prices for it.

A. Yes.

Q. Now then, I want to go for a moment to Counsel's proposition as to the way in which he would finance improvements and issue bonds at first. Of course a part of the improvements is paid for out of the earnings.

A. Yes.

Q. So that until it is completed, you wouldn't know how many bonds would be required?

A. Yes.

Q. In the next place if you issued the bonds, first sold them, your interest on the total amount would begin then.

A. Yes.

Q. The bonds also would have to be sold at a discount unless sold to the U. G. I. Company?

A. I think that is true, yes. I don't think a five percent bond on this gas property would sell at par, or I don't think that it would sell at the price the U. G. I. Company paid this company for them. That is, however, a matter of opinion largely.

Q. It would be necessary to emply a broker to sell them.

3636 A. Necessary to employ someone who knew how to sell securities.

Q. There would be some expense there?

A. Yes.

Q. So that it won't do in order to compare these two methods of doing the business to merely compare the rate of interest that a short time note bears with the interest rate of the bond.

A. No.

Redirect examination by H. W. BYERS:

Q. What do you mean by a man wouldn't put his money in; the U. G. I. is the sole owner of the stock in this company?

A. Yes.

Q. Have they ever put any money into this plant at all except the money that is represented by what they have taken these bonds for.

A. Oh yes.
Q. What other money did they put in?
A. Well, when they made the original purchase of stock.
Q. What did they put into it then?
A. Of the Capital City Gas Light Company, back in '86.
Q. What money, how much money?
A. I don't know.
Q. Did they put in a dollar except what was then represented by bonds.
A. I would have to investigate the accounts.
Q. The truth is, all there is to this whole proposition Mr. Guernsey has been inquiring about, is the fact that the U. G. I. has financed its own property, property in which it is the sole stockholder,
3637 by the purchase of these bonds, so called purchase of these bonds and the money that it has credited to this Des Moines Gas Company in exchange for bonds.
A. If you will cut that question off after the word bonds, where it first occurs, I will answer yes.
Q. The truth is that every dollar that has gone into this Des Moines Gas plant is represented by the indebtedness that stands against it today.
A. I wouldn't say that.
Q. What other money has gone into it except the earnings?
A. Well,——
Q. What other money, original investment, has gone into this plant, except what is represented by the outstanding indebtedness of the company today?
A. That requires an analyzation of the whole situation.
Q. Has any gone into it at all?
A. I would say yes.
Q. From the U. G. I.?
A. What difference does it make?
Q. Has the U. G. I. put in any other money into the Des Moines Gas plant than what is represented by the outstanding indebtedness, unless it would be what is represented by what has already been cancelled by the earnings.
A. As I understand it, some of these six percent contracts have been retired; some of these six percent preferred stock contracts have been retired.
A. Aside from that all the money the U. G. I. has ever put into this property is represented by outstanding indebtedness, is it not?
A. I could not answer that without analyzing the whole situation from the beginning.

Excused.

3638 At this time, 12 m. an adjournment was taken until 9:30 a. m. September 20, 1911.

Wednesday Forenoon Session.

SEPTEMBER 20, 1911, at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, being first duly sworn on part of defendants, examined in chief by Hon. H. W. BYERS, testified:

Q. Give the reporter your name and residence?
A. Edward W. Bemis; residence, New York City.
Q. How long have you been a resident of New York City?
A. Since January 1910.
Q. What is your profession or business?
A. I have been a statistician and student, an investigator of these municipal questions—monopolies, as I call them—public utilities, for a good many years.
—. I wish you would state just what your training has been along the line of public utilities, your general training?
A. After graduating at Amherst in 1880, and taking four years at the Johns Hopkins University in special studies, economics and history and political science, I went into college work. For five years I had charge of history and political economy at Vanderbilt University at Nashville, Tennessee; that was up to 1892. During the next three years, from 1892 to the summer of 1895 I was Associate Professor of economics and sociology in the University of
3639 Chicago; then fro two years I was doing general statistical work for the state of Illinois and the United States Government, and for several cities.
Q. I wish, as you go along, Professor, you would state the character of the work, beginning now with Illinois, the character, and the scope and so on of the work and investigation?
A. First let me finish the teaching period. From 1897, the summer of 1897, until the summer of 1899, two years, I had charge of economics and history at the State Agricultural College, Manhattan, Kansas, making in all ten years of college teaching. I had been always interested, and a student of public utilities, but my attention was especially directed to the subject by Professor Seligman, of Columbia University, in 1890, when he asked me to prepare a paper on the subject of municipal gas works in the United States for the American Economic Association. This I did and it led to a request that I enlarge it into a monograph or what might be called a small treatment of the subject, 150 pages perhaps, which was printed by the American Economic Association in 1891, I think. In 1892, while still at Vanderbilt University, I was interested in a movement for cheaper gas in Nashville, which led to our employing expert engineers from R. D. Wood & Company and Bartlett, Haywood & Company to investigate the subject. I forget whether we employed men from both companies or from one. We corresponded with both. Then I was employed in the first gas case I ever was on here at Des Moines, in the spring, I think it was, or late winter of 1892.
Q. 1892?

A. 1892, nineteen years ago?

Q. What was the character of that investigation which was on in that suit?

A. It related to a reasonable price for gas here in Des Moines?

3640 Q. What, if anything, did it have to do with the value of the property of the gas plant and apparatus and so on?

A. The value of the property and the operating costs were as usual two vital points in the matter.

Q. Both involved in that controversy?

A. Yes. The deposition was taken from me on the same subject, in the case in 1895, but the deposition was taken in Chicago, I think, and I did not go on to Des Moines at that time. In 1896, immediately after leaving the University of Chicago, I was employed by the state of Illinois to make a report upon the gas and street railway franchises of Chicago, which was published as a part of the report of the Bureau of Labor Statistics of Illinois for the year 1896.

Q. What was involved in the preparation of the material for that report?

A. I had to go through all the financial reports of the Company, all the documents of the companies, street railway and gas, and all the reports that had been filed, both in connection with various litigation, running through many years; in fact all the data that could be secured, of a financial or engineering character. I did not attempt to make an appraisal of the property, except that I did secure some important evidence on the subject which I used in my report.

Q. And what purpose or conclusion was sought to be reached from the report, or because of the report?

A. The report was not made with respect to any pending litigation, but there was a great interest at that time in Chicago on the subject, because of legislation that was pending at Springfield, Illinois, with reference to giving street railways fifty year franchises and with reference to giving gas companies perpetual fran-

3641 chises, and of the right to keep out competitors by requiring every competitor should have the consent of the majority of property owners on every mile of street, and so the public interest in the matter led to the request, I suppose, for the report. Then I went to Kansas, to the State Agricultural College, as already mentioned, and there wrote a book on municipal monopolies, which was published by Crowell & Company in 1899. I wrote about half of the volume and edited the rest, giving full credit to the others who assisted. This book passed through four editions and is now out of print. It has been extensively used in the colleges of the country as a text book for graduate students, I am told by Professors of political investigation.

Q. What investigation was made and used by you in making up the material and matter for that publication?

A. Data, so far as I could get it, upon the question of investment, operating expenses, rates of charges, franchise values, suc-

cess or the opposite of municipal plants in this country. It attempted to treat on almost all the sides — public economists were interested with respect to municipal utilities. In the spring of 1899 I was called to Detroit on leave of absence from Kansas, to appraise the franchise values of the Detroit Street Railways for a Commission consisting of Governor Pingree, who was then mayor, I believe, yet he may have been Governor at that time, and two business men of the city. This commission was desirous of a valuation with reference to a possible municipal purchase, and the Street Railway Company agreed with the City to leave to me the valuation of the franchises. The question had never been undertaken before in that form, and this was the first valuation of a franchise ever made, as I know of, in this country. Some of the principles
I adopted were followed by Professor Henry C. Adams in
3642 his appraisals of franchise values for the Interstate Commerce Commission. Professor Cooley, of the State University, had charge of the physical valuations and I of the other; that was made first and then I was called on to discuss the question of franchise values. At that time some of them were about expired and some of them had many years to run yet, making it a very technical question as to what to do with it.

Q. How long were you engaged in that work?

A. Well, in the neighborhood of two months. I gave to it, not all the time in Detroit, some of it back in Kansas. The report I made was accepted by both sides, but the purchase fell through, owing to a decision of the State Supreme Court that under the constitution the state could not have municipal ownership of street railways.

Q. That was a pioneer case in the state of Michigan?

A. Yes, sir. Since then the law has been changed. Immediately afterwards I went to New York and opened an office for a sort of a clearing house on municipal matters, particularly public utility questions. I called it Bureau of Economic Research, and there were two other men prominently identified with it, Professor John W. Commons, now of the University of Wisconsin, and Mr. George H. Shibley, largely at the head of the direct legislation movement to-day in the city of Washington. The chief supporters of the movement were Mr. Shibley, myself, and Mr. R. Fulton Cutting, leading citizens of New York, and Tom L. Johnson of Cleveland, the present Mayor Gaynor, of New York, B. Everett Macey, head of one of the largest gas companies to-day on Long Island, and some few others. It was the precursor of the present bureau of
recent research of New York City which has been carried
3643 on by Mr. Cutting and others recently. While I was in the
work, the United States Government asked me to go to Europe to study technical education in Great Britain, and I spent the summer of 1900 in that work in Great Britain for the United States Department of Labor. The report was published in a large volume, devoted to technical education throughout Europe. I had the British portion. While there, I took occasion, in all the cities I visited, to get acquainted with the managers of public utilities,

street railways, water enterprises, electric light and gas, getting all the information I could. I was favored in this by Mr. Livecy, at that time a recognized authority on gas and at present connected with one of the largest London companies. In connection with the work of the Bureau in New York, during the years 1900 and 1901, I was employed by the City of Haverhill, Massachusetts and Springfield, Massachusetts, in gas cases before the Massachusetts Gas Commission, and was the only one they did employ outside of the attorneys.

Q. What did that investigation include and cover?

A. The question of reasonable rates.

Q. What other questions were necessarily involved in that?

A. The question of their profits, the question of the reasonableness of the profits, the question of operating expenses, the value of the plant, and everything connected with it. In both cases the Commission gave a decision favorable to the city. In 1901, in the spring, Mr. Johnson was elected Mayor of Cleveland and urged me to come to help him——

Q. That was Tom L. Johnson?

A. Tom L. Johnson. I had for a few months in the early spring been at Columbus, Ohio, in an investigation of the
3644 street railways of that city, having been invited to do that by a paper, the Press-Post, at that time of Columbus, at their special request, and by Rev. Washington Gladden, an old friend of mine. Then Mayor Johnson asked me to come to Cleveland and assist, in fact take charge of representing the City's interest in the appraisal of the street railway and electric light and gas companies of Cleveland before the taxing boards, and to represent the City also in the assessment of steam railroads of the State of Ohio, because of the fact that the cities obtained a portion of the revenue of the state tax, they were interested in a proper assessment. I did that for a while, for several months, and issued a report on the subject of steam railroad assessments.

Q. With respect to these several public utilities, this investigation or examination covered and included what part of the business of the operation of these companies?

A. Those investigations very largely included a careful study of their reports, everything that the financial journals gave, and the engineering journals gave about them; and they were obliged to submit to cross examination, or examination before the taxing boards in which I sometimes helped, with regard to the valuation of their property, or improvements during the year.

Q. Covering operating expenses?

A. Yes.

Q. And cost of operating?

A. Yes, and their renewals, maintenance, depreciation, all these items had to be taken up. Then Mr. Johnson urged me to leave the Bureau in New York and take charge for him of the water department of Cleveland. He was one of the supporters of the Bureau in New York. After consulting with Mr. Cutting and others
3645 of his associates, it developed that Professor Commons had a flattering offer also, and Mr. Shibley had very important

work he wanted to do, and it seemed perhaps well for us to accept these various new fields of work and discontinue the New York office. So I went to Cleveland and took charge of the water department about the 20th of September, 1901.

Q. Now, give us a statement as to the scope of that water department, what it was and how large a field it covered, and what you did with respect to it.

A. I was in charge from September, 1901, until the end of December 1909, somewhat over eight years. The department had a physical value that was carefully appraised, not only by our own men but by a Mr. —— the head of the Peoria Water Company, I have forgotten his name—who was a prominent engineer of a private water company. I recall now his name is Dabney H. Mowry, and acting in behalf of a national organization, organized to investigate municipal and private plants on a nonpartisan basis, that appraisal showed the physical property, without any allowance for anything except the investment cost was over 11 million dollars. During the time I was there we put in more miles of street mains than all the street mains of the Gas Company of Des Moines, and averaging much larger in size for we had many mains 36 and 42 inches, a good deal of 30 inch. We had occasion to build a large pumping station at a cost of over a million dollars. The contractor had failed in an attempt to give us pure water by building a tunnel nine feet interior diameter, five miles under Lake Erie, and we took hold and finished the job directly, the Water Department. The work that I took special pride in was the metering of the city.

Q. I wish you would explain that?

3646 A. Hitherto there had been no universal metering of large municipal water works in this country. From my studies of the gas question, I was convinced that it was very desirable to know accurately the measurements of all quantities sent out and used, and the result was that I undertook what was said to be an impossible job in a municipal plant, to meter everything and make it popular while you were doing it and get the support of the city council in the process. For a while there was opposition, but with the support of the Mayor during the critical period it was finally carried through to a successful determination and it became so popular that appropriations for it were given unanimously during the last few years. I put in more water meters than ever had been put in up to this time by any man in America—put in over 70,000 and reduced the per capita consumption about one half in Cleveland.

Q. That resulted in saving about one half of the water used to the consumer?

A. Yes, sir; at the same time everybody had all the water they wanted; simply the waste was stopped, and the plumbing leaks. Then I took great interest in introducing accounting reforms and helped the Mayor a great deal in the Street Railway controversy that was going on, which finally resulted in a settlement by Judge Taylor in the United States District Court. In fact I devoted a large amount of time to that work the last five years I was there. I also represented the City in the negotiations frequently carried on

as to the natural gas and artificial gas companies of Cleveland. Natural gas was introduced while I was there. I helped write the ordinance which was passed.

Q. During that nine years, or eight years, of your service with the City, how much of the field of the operations of the
3647 water plant did you personally cover?

A. I visited frequently all the branches of the work from the laying of the mains and services and meters and construction of the pumping stations; they had three stations; but I devoted my special attention to the financial results and accounting end.

Q. How much attention if any, did you give to the question of increasing the efficiency of the apparatus and the economy of operations?

A. I devoted a great deal — attention to the economy of operation and efficiency and believed that the work could be made, what I think it was recognized as being towards the close, quite on a par with any water works, public or private.

Q. Was this a municipally owned plant?

A. Yes.

Q. Belonged to the city?

A. Yes. I took special pains to seeing that it could be as well managed as the U. G. I. managed its gas works and their other plants and took a great deal of pride trying to do it. Then I had some gas investigations on yet outside of Cleveland.

Q. Tell us about that.

A. I was employed in gas cases by the cities of Saginaw, Cedar Rapids, Lincoln, Syracuse, Buffalo, in rate cases, and by Boston and New York. I did some work on a gas tax case for the city of Baltimore. I did a large amount of work for Boston and an amount of work equal to an equivalent of a year for the city of New York while I was in Cleveland during the four year controversy. I used to get a leave of absence for two or three weeks and go to New York a week or two at a time. Professor Marks and I were the only men employed continuously, first by the old State Gas Commissions, to the final preparation of the briefs for the United States
3648 Supreme Court.

Q. In these several cities which you named, leaving Boston and New York for the moment, were they all rate cases?

A. Yes.

Q. And involved what sort of investigation and examination?

A. An examination of the books of the company so far as possible; the preparation of information called for by the cities, which I generally helped prepare; furnishing such data as I thought ought to be called for; it consisted in engineering investigation so far as it could be made. I did not attempt to do a great deal of engineering work, except sometimes in the matter of the distribution system. Of course, I had accumulated more or less information on all phases.

Q. Your engineering experience, however, is entirely field work?

A. Yes; I never claimed to be a gas engineer.

Q. You claim no technical knowledge?

A. No technical knowledge, but I had a very large amount of data available as time went on. Of course the distribution system problems were very analagous to those I was handling in Cleveland.

Q. And during the Cleveland experience I suppose you had something to do with the engineering and water end during all those years?

A. I suppose there is no industrial plant like water or electric light, revenue producing plant of any large city in the country in which the head of it was so completely the monarch as I was. I ignored politics entirely; boasted that I had no politics; I didn't recognize the politics of anybody that I appointed or removed among the 900 employes. And I had to do with the general policies of the pipe-laying and constructing of the reservoirs and
3649 and the location of the improvements, more or less.

Q. And the soil?

A. The questions of where pressure needed to be improved and what should be done for it. Of course, I called for engineering reports all along the line constantly, and frequently called in experts from other cities.

Q. Now, then, barring Boston and New York for the moment, what if anything was involved in these cases in the way of ascertaining the cost of manufacture in a general way, operating expenses, and the construction cost of the property and all that sort of thing?

A. Always the attempt was made to get all that information.

Q. Now in Boston, I wish you would tell us what that work involved there, give us a good, broad description?

Mr. GUERNSEY: Let us have the date.

A. My recollection of it is it was 1905. The people of the city of Boston were paying a dollar for gas. The attempt was made to secure a reduction. The hearings were before the State Gas Commission and lasted for many weeks. There was some engineering data furnished by others and I analyzed the accounts and reports of the companies that had been made for years; that company and other plants in the state to the State Commission. It resulted in the Company claiming they could not possibly sell gas at hardly anything below a dollar, but the matter was thrown into the legislature and resulted finally in the adoption of a sliding scale under which within two years the Company was furnishing gas at the price of eighty cents, which was what we were asking for before the commission.

Q. How much is the field covered by you during that investigation, the part that you put in most of your time on?

3650 A. The time I devoted on the subject was mostly in an analysis of the reports for a great many years, not only the Boston company, but there was several companies—Dorchester, Roxbury, the old Boston company, the Bay State and two or three others, Brooklyne; they all had their own systems and reports to the State Commission, and I compared them and analyzed them in connection with the reports of the other larger Massachusetts cities, such as Lowell, Lynn, Lawrence, Fall River, Cambridge etc.

Q. During these hearings, what if anything did you do in the way of being present and hearing the reports and testimony and evidence as to the valuation of apparatus and the distribution system and all that sort of thing?

A. Oh, yes; I was present during nearly all of the hearings and it was my duty to read all the evidence during the days I was not there. I was given an opportunity to visit all the works and plants as far as I had time to do.

Q. And examined the testimony of the engineers and other persons who placed valuations upon apparatus and so on?

A. Yes.

Q. In the New York matter, I wish you would give us more of a detail of what you did there

A. The state legislature, acting on the advice of Mr. Hughes, I think he had become Governor at the time, had passed an 80 cent gas ordinance; but the matter came up for further investigation before the State Gas Commission, and I think on their recommendations the law was going to be revised perhaps it had not been passed at all; I am not quite sure as to that. The State Gas Commission heard the testimony for three or four months and made
3651 their report. Then the law went into effect fixing absolutely 80 cent gas for private consumers, and 75 cents for city, public use. Then an injunction was issued by Judge Lacomb of the United States Court and a Master appointed to hear the testimony as to whether the rate was confiscatory or not. So the case again came up before Mr. Arthur H. Masten, who was the Master, and those hearings lasted through a good share of 1906, and part of 1907, and his report was followed by briefs and arguments by counsel before Judge Huff, who reviewed and reversed in some respects the Master's opinion, and then further briefs were prepared taking the case to the Supreme Court. I assisted in the preparation of the briefs, the facts of the case, but all the work previously had consisted in attending the hearing and testifying for twelve or fourteen days on the witness stand and in studying the testimony and getting all the data available on the cost of construction and operation and comparing with the other gas companies, New York, Brooklyn, Boston, Chicago, and wherever data could be secured. Very much as had been done in the other cases.

Q. During that time were you in touch with the men who were making up the inventory of the property and the physical valuation of the property?

A. Yes.

Q. And heard their testimony?

A. Yes.

Q. And read it?

A. Yes.

Q. Analyzed it?

A. Yes.

Q. Now, down to the end of your service at Cleveland——

3652 A. There is one matter I omitted. I might say, I probably omitted several cities with which I have been identified. I

recall for example, I was engaged by Montreal to make a report on municipal gas works; they had some idea of establishing, which they never did.

Q. Did you put in some time in making that report?

A. Yes.

Q. What did your report include?

A. It covered the items of cost, both construction and operation; but the conditions were very difficult in Montreal, for the reason that the pipe had to be buried very deep on account of frost and there was rock there.

Q. To make up the report for the city of Montreal, what if anything did you do for the purpose of informing yourself, in addition to the general information that you had secured from all these former hearings?

A. Applying the unit costs to holders I thought necessary; to the coal gas and water gas plants; to the sizes of the mains; to the meters and services which I had thought necessary to cover the entire city.

Q. From what sources did you get all this information, that is the information that you thought was sufficient upon which you were willing to rest your judgment and make a report?

A. I got it from the accumulated data in the many cases I had been in, not only that, but I had access to all the data filed from time to time by every gas company in Massachusetts with the State Gas Commision. Whenever they wanted to issue stock or bonds they would have to put in all the extensions they made.

Q. Is that information helpful?

3653 A. Very helpful. Of course I had no data with conditions as they were in Montreal and I made a large allowance.

Q. Of course, I assume there were some conditions involved in Montreal that were local and peculiar to that place?

A. Yes.

Q. What if any examination and investigation did you make?

A. I visited the city and had a long conference with the city engineer, went over the territory some with one or two other engineers connected with the city, so as to get all the data I possibly could and the character of the soil and the conditions of the city generally.

Q. And the cost of labor and material?

A. Yes.

Q. And the character of the country or city in which the plant was?

A. I also paid a good deal of attention to the character of the administration, how efficiently or inefficiently they were doing their lines of work.

Q. In other words, you covered the entire field you thought necessary to make up an intelligent report for the purpose of advising the city as to whether or not it should go into the enterprise?

A. Yes. Then during the same period the National Civic Federation desired to have an investigation of the relative conditions of

municipal and private management of all public utilities in this country and Great Britian——

Q. What National Civic League was that?

A. The National Civic Federation of which Senator Hanna for a long time was president and Seth Lowe and I think August Belmont was president at the time this work was undertaken. The Secretary
of it was Mr. Easley, formerly of Kansas, and for many
3654 years in Chicago and New York. A large fund was raised, about $100,000 for the investigation and a committee of about twenty-one members——

Q. I wish you would name the committee?

A. It was some time ago and I shall probably omit many, but Mr Ingalls, President of the Big Four Railroad, was head of the Commission. Mr. Walton Clark of the United Gas Improvement Company was a member; Mr. Egdar, President of the Boston Edison Electric Light Company; another Mr. Clark, William G., I think; John Ferrán, Sales Agent of the General Electric at that time—I am not sure what position he holds now; Professor John R. Commons, I mentioned before, of the University of Wisconsin at present; Professor John H. Gray, of the University of Minnesota.

Q. Was Lewis Lilley on the committee?

A. No. And Professor Goodnough of Columbia University.

Q. Marwick Mitchell?

A. No. There were four or five men connected with labor organizations on the committee.

Q. You were a member of the committee?

A. I was a member of the committee. Then there was Mr. Winchester, head of the Municipal Electric Light plant of South Norwalk, Connecticut. A sub-committee was formed by the full committee, of five members.

Q. Who were they?

A. Mr. Walton Clark, Professor Goodnough, Dr. Milo Maltby, now one of the members of the Public Service Commission of New York City, First District, they call it; and a labor member, Sullivan, and myself, and we constituted the committee until at one time through one illness of one of the members, I believe Mr. Edgar
for a while was on the committee. We were the executive
3655 committee that carried on the investigation and employed the experts.

Q. What was the investigation; what did you do?

A. We had an engineer connected with private plants and an engineer connected with the municipal plants to go together and investigate the character of municipal gas works and private gas works, selected ones in this country; the same of electric light, and the same of water. We did not touch street railways in this country. In Great Britain we did include street railways, but did not include water; we included street railways, gas and electric light. We also agreed on an accountant. Marwick-Mitchell & Company was employed to do all the accounting in this country. In Great Britain another firm was employed and other engineers in Great Britain avoid expense. We had appraisals made of properties and we went

into their accounts fully and made an exhaustive report in over three volumes. After the general report of only two or three pages was adopted by a vote of about 20 to 1, then the evidence was summed up more fully from the municipal side and private side by five men—Maltby, Parsons and myself summarized the public side and Mr. Walton Clark and Mr. Edgar, and I think somebody else some of the time assisting, summarized on the private side. I should have stated, on this commission was Mr. Walter Fisher of Chicago, very prominent, now Secretary of the Interior. He did not go to Europe with us but took a very active part in all the meetings in this country. There were fifteen of the twenty-one of us went to Europe.

Q. How long were you over there?

A. About three months.

Q. What did you do, if anything, in the way of personally going over the field with the experts?

3656 A. We did that in this country and Europe. We visited every plant together as a commission, and the sub-committee of five made visits that the general committee did not make, constantly studying the work.

Q. The report of that work is bound in three volumes, and what is it called?

A. I forget the exact title, but it is probably called Public Utilities or Municipal Ownership or something like that, of the Investigation by the National Civic Federation.

Q. Is that the three volumes I have here on the table a week or so ago?

A. I think you got that from Mr. Hall, perhaps.

Q. Now, have you had any other employment covering this same field that you can now think of and have not mentioned, if so, I would be glad for you to do so before we start on this plant?

A. Perhaps I should say that in December, 1909, when Mr. Gaynor was elected Mayor of New York, whom I had known for some years, he wanted me to come to New York to put in effect the same policies in the Water Department I had carried out in Cleveland. I understood this to mean movement towards the universal metering and having meters and services put it and owned by the city, with city labor, and introducing other economies, and accounting methods and so on. I went to New York with that idea and found very soon great antagonism in the department and outside of it; the meters all privately owned; they were soldered into place; they had not been tested since they were put in; many of them had been in twenty or thirty years; they were all put in and repaired by private plumbers at enormous charges, and in general matters were about in as

3657 chaotic a state as possible; prices for meters generally were so high, about two-thirds more than any individual could buy a meter for in any other city in the United States. I started in to change that and we was making considerable progress, despite the opposition, until the Mayor was shot. Then my support was falling off. The interests that didn't like this work insisted on my leaving, and I did not care to resign and insisted I would not resign unless I

could first see the Mayor and I thought I would be able to as he was gradually gaining in strength.

Q. Now, next after that, did you have some further employment with some large cities?

A. Yes, I left the department then at the end of October, 1910.

Q. In New York City?

A. Yes, I was Deputy Commissioner of the Department of Water Supply, gas and electricity. Then after leaving the Department at the close of October, I did considerable writing for engineering journals and was engaged by the City of Toledo to take charge, represent the City in the entire charge of the appraisal of the street railways of Toledo, and began work on it. But the company insisted that they had no objection to my representing the city but they thought there should be a third man chosen as an arbitrator and the city refused to do that at first, but finally insisted that all questions of dispute should be threshed out between the Mayor and President Lange of the street Railway, as it had been in Cleveland between the Mayor and the President of the Street Railway Company there. Finally, however, the City said that they would recommend Judge Killis of the United States District Court, living at Toledo, as the third arbitrator. The Company said, no there must be a street rail-
3658 way expert, and the case has hung fire ever since, the City refusing to go on. I was engaged in Chicago about the same time to investigate the Peoples Gas Light & Coke Company with respect to what should be a reasonable price for gas.

Q. That is still on?

A. Yes, I made a report, and the council took action following very largely the recommendations of the report, and then it was taken into court and is still pending.

Q. That is the ordinance by which the price of gas was fixed at 75 cents for the first two years?

A. 75 cents for the first year and 70 cents for the next two years and 68 cents for the last two of the five years. Following that report I was engaged to take charge for the City of Chicago of a report, telephone reports, which I am engaged in now.

Q. That you are at work on now?

A. Yes.

Q. That Chicago gas situation, as I understand it, the Gas Company now is furnishing gas under the order of Judge Gibbons at 80 cents?

A. Yes.

Q. The price before the passage of the ordinance based to some extent on your report was how much?

A. 85 cents. I forgot to say when that price was fixed five years before, in 1906, or December 1905, and January 1906, I was called in by the City and advised with it in regard to the matter at the special request of Mayor Dunne. The price was a dollar at that time and was reduced to 85 cents.

Q. There was an abrupt reduction of 15 cents?

A. Yes; the council was considering a larger reduction.
3659 The Company has some claims against the City for lights, I believe furnished for the streets, etc., which had been a large question of litigation for some time, and other questions were at issue. Finally a compromise was reached by which the whole matter was settled and for five years the price fixed at 85 cents.

Q. When did that five year period expire?

A. It expired, as I recall, about the middle or some time in the spring of this year.

Q. Anyway, before the passage of this last ordinance?

A. Yes, either the spring of this year or some time near the latter part of last year.

Q. Did you have anything to do with the adjustment of the traction difficulties in Chicago?

A. No, I was not engaged on that.

Q. And this work that involved the charge of the Chicago Peoples Gas Light & Coke Company, was your field about the same for your investigation and examination, about the same as in these other cities you have already told about, or was it limited?

A. It was far more limited, because I had not access to the books and records of the company. But I have at various times had Occasion to go quite fully into certain phases of the financial history of the Chicago companies, running back to the first gas company in 1894, following the various sworn statements they made from time to time in the courts and other places in connection with litigation and reports made public and to their own stockholders, etc.

Q. In all these years you covered so far in your testimony have you devoted any time to the examination and investigation of financial matters that involved the selling prices and quoting prices of bonds, stock and other securities?

3660 A. Yes, I have had occasion to devote a great deal of attention to that.

Q. In a general way, tell us about your experience?

A. I have had occasion to follow the weekly quotations and daily, and more often though weekly and monthly summaries in the Commercial and Financial Chronicle of New York for the last 25 years; perhaps more fully the last 15 years.

Q. How broad a field does that Chronicle cover?

A. It covers all the securities listed in any big stock exchanges of the country. Also includes reports of the companies and listings of the stocks for exchange wherever they have to make sworn statements of that condition. I did not mean to confine my suggestion of sources to that alone. Of course there is a great deal which appears in the technical gas journals.

Q. Have you devoted some time and attention to those?

A. Yes.

Q. How much?

A. I tried to keep in touch with the Progressive Age particularly, which I have taken for twenty years or more, since way back in 1890, and I get a good many English reports every month.

Q. How old are you, Professor?

A. I was fifty-one last April.

Q. Now, in your work, what do you have to say, as to whether you have devoted time and attention to informing yourself right along as to the prices of the materials and apparatus, etc. that is involved in and used by these public service corporations you have been testifying about?

A. I have devoted a good deal of attention to gathering such data. I have not used very much of it, however, in my report, as that was being covered in other ways and I have not had time to
3661 utilize most of it.

Q. Now, you know something about the Des Moines Gas plant?

A. Yes.

Q. As I understand you up to this point in your testimony, your first acquaintance with the property, or part of it was in 1892?

A. Yes.

Q. Now, at that time, did you have occasion to examine the statements of the officers of the Company as to valuation investment and operating costs and so on?

A. Yes.

Q. And did you hear any evidence or testimony that was given in that case?

A. I heard a little of it, I believe, and I have read all of it since I came here.

Q. Then your next acquaintance with the gas plant here, if I understand your testimony up to date, was in 1894?

A. The hearings were in 1894 or 1895; I thought most of them were in 1895, in the spring.

Q. Anyhow, in 1894 or '95.

A. Yes. It was in connection with that case that I have read more evidence than in connection with the 1892 case. I find very little now bearing on the 1892 case on the flood below, except a few affidavits.

Q. Was Mr. Walton Clark a witness in one of those cases?

A. Yes, he was in the 1892 case and the 1895 case too.

Q. And Col. E. C. Pratt?

A. I think he was in both cases.

Q. Mr. Lewis Lilley?

A. He was in the second case; whether he was in the 1892
3662 case, I don't know.

Q. Have you devoted some time and attention to the Des Moines gas plant recently?

A. I have, yes.

Q. When were you first interviewed with respect to any employment that involved the Des Moines gas plant and by whom?

A. A letter came to me in New York, I think from Mr. Brennan, the first I heard there was a case, I think it was early in the year.

Q. Early what year?

A. Early this year, asking me if I would help or come out and serve the city in the case.

Q. And when did you first respond with your presence here, if you did respond in that way to that letter?

A. Well, the testimony had been going on about a week or two, I should think, somewhere in the neighborhood of the 20th of July perhaps. As soon as I could get away from the Chicago case I came here.

Q. Was that your first visit to Des Moines following your experience here in 1892 and 1894?

A. Yes.

Q. You think it was about the 20th of July?

A. I think it was.

Q. You say some testimony had been taken when you came here?

A. Yes.

Q. Anything other than the testimony covering the real estate?

A. Very little. I know that neither Mr. Lea nor Mr. Baehr, nor Randolph had testified, but I think Mr. Haines had testified and some experts on real estate. Mr. Moul, I think, was on the witness stand when I came into court.

Q. Mr. Moul was one of the men at the works, either foreman or in charge of some department at the works?

3663

A. I won't undertake to say what his position is.

Q. He was testifying about the distribution system?

A. Yes.

Q. Were you present during the taking of the testimony of Mr. Lea, Mr. Baehr, Mr. Hagenah and Mr. Randolph?

A. Yes, during nearly all of it, not perhaps every day, but nearly every day.

Q. I wish you would tell the Master in your own way just what efforts you made to inform yourself and qualify yourself to testify with respect to the operations of the Des Moines gas plant and cost of its property and the price at which gas can be manufactured here in Des Moines and delivered to the consumer, and so on; state in a general way how you have covered the field since the 20th of July, without going into the report?

A. Aside from one visit to the works to get some general idea of the situation there and following some studies I had made of the inventory, blue prints and maps, and aside from several trips around the city getting the lay of the land, I devoted most of my time to a study of the exhibits and testimony and gathering further data that I thought illustrative of the situation here.

Q. Now, you referred to the inventory, that document has been marked in this case Complainant's Exhibit 15, did you look that over?

A. Yes.

Q. Who had it when you first examined it?

A. I did not look it over with the care that I looked over and specially studied the summary that Mr. Lea and Mr. Baehr used in their evidence.

3664

Q. But you did look it over?

A. Oh, yes.

Q. And Exhibit 15, was the part of the inventory that covered the

items of property and there is another exhibit, Exhibit 16 which contains certain sheets and photographs and other information with respect to the plant?

A. Yes.

Q. Now in looking over the inventory as it was prepared by the complainant, did you observe anything about it that indicated any unusual situation with respect to any part of the property? What I mean by that, whether there was anything about the inventory that indicated different conditions here with respect to the gas property than is observable generally in gas properties of this character and towns of this size?

A. No, the only thing I specially missed in it was any attempt to inventory the Valley Junction property; but aside from that I did not see anything in the inventory that I thought at all out of the ordinary.

Q. You did, however, did you not, observe either from the inventory or some other papers or records you found that the Des Moines plant was serving a plant outside of the city?

A. Yes, that was in the testimony.

Q. Aside from that, there was nothing that indicated it was necessary to make any special study of the apparatus or works or distribution system or anything of that kind?

A. That is right. There appeared to be no dispute in regard to the inventory and no particular controversy as to its omitting anything and it was a pretty complete and good inventory.

Q. There was nothing about Exhibit 16, the maps and
3665 sketches and photographs that indicated any unusual or extraordinary conditions with respect to soil or the lay of the land or any thing of that kind?

A. No, I watched particularly the testimony and exhibits and other data to see whether there were exceptional difficulties in laying mains here or foundations for buildings and I didn't discover there were.

Q. Now, in addition to the examination that you made of the inventory as furnished by the Company, I wish you would state in a general way now how you devoted your time since with respect to the record in order to inform yourself fully as to the situation?

A. Why, I have made special study, first of the exhibits and of the testimony, and then I have studied the stock and bond quotations I refer to in my report. Also the Massachusetts experience of several cities seemed to be comparable in a measure with the situation here, and have drawn on my previous studies. I may say I have neglected one line of investigation which I forgot to mention and that is, the study of the rate decisions and rulings of commissions and courts on rate cases. Of course, I have not been admitted to the bar, but have had occasion during the last fifteen years to follow up the studies of constitutional law, or at least constitutional history in its various forms and to go right into the decisions and rate case decisions. I suppose I have read most of those decisions, both with respect to steam railroads and municipal utilities for a good many years.

Q. What have you done—for instance, we will start with Mr. Lea's testimony and Mr. Lea's report—have you examined or thoroughly analyzed it?

3666 A. Yes.

Q. What have you done in the way of reading what testimony has been given here that you did not hear from the witness?

A. I have endeavored to do that and I think I have done so, except perhaps the last two days I have been so busy I have not read much or known much of what has occurred; other than that I have kept pretty well posted.

Q. The testimony largely the last few days of the hearing was given by Mr. Sangster and covered the details that were furnished to Mr. Hall for the purpose of making up his tabulation and report. Now, Mr. Baehr, have you analyzed his report and read his testimony?

A. Yes.

Q. Examined the tables and schedules furnished by him?

A. Yes.

Q. And Mr. Randolph's?

A. Yes.

Q. Gone over his testimony carefully?

A. Yes.

Q. And his report carefully?

A. Yes.

Q. Examined all the tables and schedules and comparisons that were made?

A. Yes.

Q. And Mr. Hagenah, have you gone over his work carefully?

A. Yes.

Q. And informed yourself with respect to the theory upon which his conclusions were worked out and finally reduced to typewriting?

A. Yes.

Q. And the same is true as to Mr. Baehr's and Lea's theory

3667 of arriving at valuations, have you gone over that carefully?

A. Yes; and I know Mr. Alvord very well and talked with him in months past; he has been called the parrot of the theory of going value sometimes.

Q. He is not in this case.

A. No.

Q. I am referring particularly to the men who have appeared here. What have you done to inform yourself of the prices of material so far as possible?

A. I have tried to inform myself to some extent on that, more particularly with regard to the distribution system.

Q. Which involved the cast iron pipe, the laying and ditching and specials?

A. Yes.

Q. And the paving question and all that sort of thing?

A. Yes, but I have not studied the paving very carefully.

Q. What have you done, if anything, in the way of going over the records and books of the Company, either in their original form or abstracts from them or reports made up from the books?

A. I have specially interested myself in that; everything in Mr. Hall's exhibits and testimony for example, and wherever data was given by the witnesses for the Company on these lines, I followed them.

Q. Have you fully informed yourself as to the facts that are set out in Mr. Hall's report?

A. Well, I have not gone back of his report to the vouchers at all, but I have assumed that his report was correct.

Q. You examined the report carefully?

A. Yes.

Q. And checked it up?

3668 A. Yes.

Q. Now at any time since you came here have you made an investigation to ascertain just the beginning of the Des Moines Gas plant, that is, how it was acquired first by the old Des Moines Gas Company?

A. Yes.

Q. And where did you find the information with respect to that?

A. In the testimony by the witnesses for the Company in 1895, and particularly by Mr. Lilley the accountant of the Company, and now I believe secretary.

Q. What was he then?

A. He said at that time he was employed by the United Gas Improvement Company to come out here and spend a few weeks studying their accounts and history for the purpose of testifying.

Q. That is, he was an accountant?

A. Yes.

Q. You said he was now secretary, I think he is treasurer?

A. Treasurer, yes.

Q. Did you find from an examination of the records here anywhere just how this property came into the possession of the old Des Moines Gas Company?

A. Yes, and I should have added to the answer to your previous question, from the testimony also of Mr. Pratt at the same time.

Q. Col. E. G. Pratt?

A. And other witnesses, Mr. Clark.

Q. How did you find the property was acquired in the first place?

Objected to on part of the complainant as being hearsay, secondary and incompetent. The copies of the testimony of these witnesses themselves would not be competent in this case and much less are the inferences drawn by witness from the copies of this testimony.

3669 A. It was bought, according to Mr. Lilly, at sheriff's sale for about $38,000 in about 1876, a little before the first closing of the books of the Capital City Gas Light Company, January 26, 1878.

Q. Did you get that information when you were here before also or at this time?

A. I don't remember whether I did before or not.

Q. That purchase at $38,000 at sheriff's sale as you found it from the examination of the records was just preceding the closing of the books in the year 1878?

A. The year ending January 26, 1878.

Q. Have you so far as it was possible for you to do in the time followed the history of the Company from that time down to this and noted the transfers and changes in at least the name of the owner?

A. Yes.

Q. How much time have you devoted to this work, Professor?

A. When I have been in the city, all my time. When I was in Chicago probably half of my time during the interim here of a couple of weeks.

Q. How much of the time during the early part of this trial, in the long ago, were you in touch with Professor Marks while he was making up his report of the valuation of the physical property?

A. I had not seen him or had no information about his work during the weeks that he was here, three or four weeks, or all the time in fact that he was here prior to my arrival about the 20th of July, or thereabouts.

Q. When did you first have an opportunity to examine Professor Marks' report?

3670 A. When he had reached his total of $1,700,000 he called me into his room and he said he had something interesting he wanted to show me and he showed me that table just in the form it appears on page 75 of his report; that portion of the page which contains two columns of figures, but I never did see or care to see or had time to see his detailed appraisals until after he had begun to testify.

Q. Then you were furnished with a complete copy of his report and what do you have to say as to what you have done in the way of studying that report carefully and verifying it in so far as it was possible, his conclusions?

A. I have heard all the testimony I think that he gave, both direct and cross, except possibly the last day and that I read and I went through his exhibits more or less, and I have had occasion to refer to it a few times in connection with the report that is here.

Q. And after the report was delivered to you and you had an opportunity to examine it, what if any talk did you have with professor Marks during the days that he was being examined, and other witnesses being examined, with respect to prices of materials and labor as he had worked them out here?

A. I don't remember any concrete figures. I asked him how he had secured his figures of prices.

Q. That is what I wanted to know. You were informed with respect to the manner in which he ascertained the information in regard to local prices?

A. Yes, I particularly asked him about that, and in a measure he told me, but I do not suppose he told me some things he did on the witness stand afterwards.

Complainant moves to strike the answer as being hearsay
3671 and incompetent.

Mr. BYERS: Yes, that may go out.

Q. Now, Professor Bemis, during the time that you have been going over the situation here at Des Moines, I wish you would state

what your purpose was in all the work that you have carried on here, what you were trying to ascertain?

A. What the facts were as closely as I could learn them, as to the cost of investment, the cost of duplication on the basis of recent extensions, of the earnings, the questions raised in the trial, the depreciation, the overhead charges, going value, etc.

Q. Investment value?

A. Yes.

Q. Investment in the property and business?

A. Yes, land and paving, duplication, costs.

Q. And for the purpose of finally determining what question, in so far as it was possible to do?

A. Determining the probable effect of the ordinance passed last December.

Q. Reducing the price of gas to 90 cents?

A. Yes.

At this time an adjournment was taken until 1:30 P. M.

3672 1:30 P. M., WEDNESDAY, *September* 20, 1911.

EDWARD W. BEMIS being continued on direct examination by Hon. H. W. Byers, testified as follows:

Q. Prof. Bemis have you reduced your calculations and findings to writing?

A. Yes, sir.

Q. What do you say as to whether or not you have made up a complete report covering the investigation of the matters about which you have been so far interrogated?

A. So far as I have had time to do.

Q. Do you have a copy of your report and conclusions?

A. Yes, sir.

Q. I wish you would hand the original copy to the reporter and have him mark it as defendant's exhibit No. 43.

(Report here marked defendant's Exhibit No. 43.)

Q. I wish you would state first in a general way the several heads or subheads you use in making up your report?

A. Well as shown by the index at the beginning, I take up the cost of the property first. The amounts that should be allowed for depreciation. The net investment after deducting the depreciation. The working capital. The amount inclusive of the working capital. I discuss the question of overhead charges, discount on bonds, rise in the value of the land, the question of paving over the mains. The question of going value and claims for appreciation, then the matter of operations, the cost of reconstruction as shown by the books, the investment theory versus the question of duplication and the
3673 facts as shown by the books of the company, by the books of the company and by Prof. Marks' testimony. Then I take up the question of operating expenses, manufacturing or in the holder, putting gas in the holder, the question then of leakage in connection with it or unaccounted for gas, then the other operating

expenses such as distribution and general new business, etc., donations, bad debts and the question of increased cost of collection by virtue of not having any penalty, the rate litigation expense and what should be done with it, taxes, the abnormal character of the operating expenses, particularly distribution and general in 1910 indicating that it is fairer to take the previous four or five or six years. Profits at 90 cents, what they would be on a basis that I use in the previous part of the report, what rate of return is necessary to secure stocks and bonds at part in a city situated like Des Moines, Qrospects of future growth and the bearing of these prospects on costs and profits. Finally gives some experience from Massachusetts relative to some of these points.

Q. Now taking this exhibit up more in detail, beginning with your report on page 6, I wish you would cover the matter that is included in page- 6 and 7, as briefly as you can and still give a fair explanation of it?

A. One method of determining the cost of the property I thought to be the cost to the present company, the Des Moines Gas Company, as shown by what they paid for it March 1, 1906, together with increase of surplus since then.

Q. How did you work that out?

A. The evidence shows——

Mr. GUERNSEY: We object to this testimony in the first place as irrelevant, immaterial because value and not cost is the ma-
3674 terial question and next because it is purely argumentative and quoting from the testimony of other witnesses and not the expression of any opinion or statement of any fact by this witness, but as an argument under oath.

Q. Go ahead Professor.

A. It shows that the Des Moines Gas Company on the first of March 1906 assumed outstanding bonds of $400,000 of the Capital City Gas Company and a debt of $240,000 to the parent company, the United Gas Improvement Company for property in the city of Des Moines, and also a debt of $45,000 for property at Valley Junction. Aside from the holder and the amount at Valley Junction the bonds were $640,000, these were five per cent bonds, then there were preferred stock contracts of $800,000 paying six per cent which were issued at the time of purchase by the Des Moines Gas Company and that total of the two is $1,440,000 of interest bearing securities. Then the $2,250,000 common stock issued but that has never paid a dividend and the stock that it displaced $600,000 of the Capital City Gas Company had paid very little in the line of dividends, consequently it is right to say that the payment that was really made was represented entirely it seemed to me by the interest bearing securities, bonds and preferred stock contracts. Now beginning with March 1, 1906, with $1,440,000 that was paid for the property there has been since in extensions $484,000 odd dollars, according to Mr. Hall's or defendant's Exhibit 30, page 21. This brings the total present cost of the property to the Des Moines Gas Company practically $1,925,000, less the depreciation of say $75,000 since the purchase of the property five years ago.

Q. Do you explain that item just at that point how you arrived at the $75,000?

3675 A. It is based on an amount substantially that I find it necessary in my later computations to put into a sinking fund covering three years.

Q. To take care of the depreciation of the property?

A. Yes. So that leaves in round numbers $1,850,000 as the cost of the property to the present company. That I do not accept as my theory as the value of the property, but it would appear to have been the view taken at the time by the Des Moines Gas Co.

Complainant moves to strike out the last statement commencing it would appear as a mere conclusion and incompetent on that account and also as contrary to the record that as a matter of fact has been introduced.

A. That I would have to take as to this $1,925,000 before the deduction of the $75,000 represents the securities as shown by the books as abstracted by Mr. Hall.

Objected to because it is not competent for one witness to testify as to the testimony of another witness, the testimony of the second witness being predicated upon some books of account that is as to the contents of the books.

A. From both the data introduced by Mr. Hall and also introduced by Mr. Hagenah I discover no conflict with regard to these figures. Apparently the only question I can see at issue would be whether that stock was supposed to represent any value, the common stock or non dividend securities.

Q. Now if you will, proceed and explain anything further that you care to with respect to these two pages.

A. I think that has been covered sufficiently.

Q. Now page 8 gives what plan?

A. I have divided that into four periods, the first preceding the year 1876, the second from that time until December 31,

3676 1894, third from that time until the change of the nominal ownership February 28th or March first as you may call it, 1906, the fourth period from March 1st, 1906, until the close of 1910. I see in my copy, I don't know whether it is just this one that it is until December 1, it should be of course December 31, 1910. If it is December 1st, it should be changed to December 31st, 1910.

Q. Go right ahead and explain how you arrive at that conclusion.

Mr. GUERNSEY: I want to object to the testimony set out commencing with the words "with respect to the first period which the witness is about to read, and which purports to be copies quoted from the testimony of witnesses in some other suit to which the complainant was not a party or to the statements of the results of the testimony there as being evidently incompetent as hearsay and secondary.

Q. Go ahead, I don't care to have you state anything more than is necessary to make your explanation clear.

COURT: Let it be understood that these objections apply to each and all testimony and each and every part thereof with the same force and effect as though made at the time.

Mr. GUERNSEY: I have no objection to that, of course we will have other objections to other parts of the testimony.

A. For the period prior to 1876 I have no evidence except the testimony of Mr. Lewis Lilley, the accountant of the United Gas Improvement Company at that time, now its treasurer, who testified under oath in 1895 as quoted here in substance that the property was brought at Sheriff's sale by the Capital City Gas Light Company for $38,828.36, a little before 1878. He testified that the first closing of the books was on January 26, 1878, and at that time the purchase had been made only a short time so the first period contains merely that reference to that purchase.

3677 Q. The second period, how did you work that out?

A. The second period from the time of that purchase until the close of 1894 is again based upo nthe testimony of Mr. Lilley where *e* he again refers to this $38,828.36. I see one copy is $39,000 it should be thirty eight in that second reference to it near the bottom of the page, Commencing with that purchase Mr. Lilley and Mr. Pratt give the amount that went into the property from that time until the close of 1894. They reach a figure given on page 10 of $466,532.93 as the total amount that had gone into the plant in cash by the close of 1894. They also refer to about $200,000 a little over that, that went into the plant in the shape of electric light property and water gas patents, or gas patents, I don't know as they were all water gas. Mr. Pratt as shown on page 11 considered that the amount of $449,500.77 up to the close of 1891 was a fair and reasonable prese-tation of the cost of the property having reference to the time at which the investment appeared to have been made according to the books as quoted and then he went on and gave the corresponding cash investment for December 1, 1894, as $466,532.93, the same figure that Mr. Lilley had used for December 31, 1894.

Q. Now you take that do you, as the figure for that period.

A. Yes. On my next page 12, I refer more fully to what I was just mentioning about the total investment, December 31, 1894, of 681,000 odd dollars and Mr. Pratt's statement that $215,000 of it was made *yp* as shown in this table. He again refers to the cash investment as $466,532.93 of which the material and supplies was $11,559.49 and cash and bills payable $25,546.61. This left as the plant account for the gas business, aside from the electric light $429,426.83. That is the figure Mr. Hall started with.

3678 Q. That is the figure you took for the figure covered?

A. Yes. Now in connec- with that that affidavit of Mr. Pratt there are two long sheets and wide sheets purporting to be copied from the Auditor's statements of the company, giving the investment for each year since 1877 and under each item, fifty or seventh five items covering two pages, showing investment each year under each item. There are five or six items marked with a red cross in several columns and in the right hand which is similar

to these items here, the one given here on page 12. Mr. Pratt in his affidavit said the cash investment consisted of $681,000 less the items marked with the red cross representing as he stated the exact figure which I use here and the statements that appear opposite figures on page 12 are quoted from that Auditor's sheet.

Q. The third period from January 1, 1895 to March 1, 1906, How do you get that period, how do you work it out?

A. Perhaps I should add before leaving the previous page that the reason it seems to have appeared in the mind of Mr. Pratt——

Complainant objects to the statement of the reason that appearing in the mind of somebody else eighteen years ago by the witness as incompetent on any theory whatever.

Q. What is it you want to state?

A. The facts was that it was stated——

Objected to as a conclusion and quotation of the testimony of somebody else.

A. It showed this $172,096.94 was part of the payment of $200,000 in bonds to the United Gas Improvement Company by the Capital Gas Light Company for water gas apparatus and patents. It was stated that $27,903.06 was for the water gas apparatus and $172,096.94 was for patents. It was a payment to the parent 3679 company by the Capital City.

Q. Now the next period?

A. That runs from January 1, 1895 to the sale *to* the Des Moines Gas Company February 28, 1906. During that time the new construction was $648,760.90 as shown in defendant's exhibit No. 30. The books of the company agreeing with this except that they show a writing up of the value of the property without any corresponding new construction of $131,744.44 on May 1, 1897, as explained on page 30 of defendant's Exhibit No. 30, and in defendant's Exhibit 35. A little was written off during that time I might say for depreciation, except what they wrote off in connection with repairs and renewals, charg- operating expense.

Q. Your information with respect to that, you got from the testimony here and Mr. Hall's report.

A. From the testimony of Mr. Hagenah and others and the testimony of Mr. Hall, Exhibits and testimony.

Q. The period March 1, 1906, to December 31, 1910, give us your analysis of that period.

A. During that time the books of the company in Des Moines shows an expenditure of $529,487.94 for construction including $45,000 in Valley Junction and my calculations and additional amount of $120,000 not reported on the books of the company here to pay for the new holder, the 1,132,000 feet capacity.

Q. You include that?

A. I include that although I have been unable to find any testimony from anyone connected with the company that they knew of its costing that amount and seems to me that vouchers should be produced. Now as to the $120,000 which has been accepted and

is given in this statement as having cost fully that much. The holder, however, appears in the inventory as having been
3680 built in 1903.

Q. That is the holder for which this $120,000 was allowed by Mr. Hall?

A. Yes, sir.

Q. Seems to have been built in 1903?

A. It is so stated in the inventory. It is also so stated in Mr. Hall's exhibit, but it did not come into the testimony directly except in connection with the transfer March 1, 1906, Mr. Hall put it in at that place. I have probably done so in this report but in my thought of it since I wrote those pages I have felt it should go in in 1903 and 1904, if that were done it would very greatly change the diagram of Mr. Hall with reference to the relation of net investment to earnings. There would not be as big a peak or jump of net investment relative to earnings March 1, 1906.

Q. In other words as Mr. Hall shows that item in his report it is more advantageous to the company.

A. It shows a greater irregularity and fluctuation of the ratio between earnings and investment than I believe would be shown if this were placed between the three previous years when according to the inventory it was constructed.

Q. But you have treated it as in at the time Mr. Hall put it in?

A. Yes. Now there are two items appearing on the books of the company as construction during this period which are excluded. One is bond discount of $33,950.00 and the other reorganization expense of $6,922.82.

Q. Why did you exclude those?

A. I excluded the bond discount because in the case of a company in a city of this size either the present company or a
3681 new company starting in with a practical monopoly bond or stock discount for that matter has nothing to it but a function of the rate of return. In other words whether your bonds shall have a discount or not does not depend at all on the cost of construction, depends only on what rate you are willing to pay for your bonds. A five per cent bond at 85 or 90 has a discount while the same bond at six per cent would not have any. The question has got to be taken into account, but I think the place to take it in- account is on the rate of return. It is perhaps a little better to have a low interest bond even at a discount, rather than a bond a litle higher rate at par. I — refer to that again later.

Q. Another item you took out here is re-organization expense, why do you think that should go out?

A. It does not seem to me that that enters into the cost of the property, only a transfer and whatever organization expense had been met in the plant first had been carried into construction account if the books had been properly kept previously, and if you would put it in the account now you would be duplicating the item unless you assume that the mer- cost of transfer should be charged up. It does not seem to me, however, that the mere transfer of

ownership from one company to another, both owned by the same parent company should mean an increase of capital account.

Q. As I understand this situation it was a mere change of the name of the company so far as the real ownership of the property was concerned?

A. Yes, sir.

Q. Where you say here both being entirely owned by a third company I wish you would explain that?

A. The testimony shows, states positively that all the
3682 stock of the Capital City Gas Light Company was owned by the United Gas Improvement Company and the same is true of the Des Moines Gas Co.

Q. That among other things is the reason you exclude—you may state whether that is one of the reasons why you exclude that item?

A. It is.

Q. And is there any other or further reason now you think of?

A. I question whether it should be included in any event. The courts have frequently ruled——

Complainants object to the witness testifying as to the rulings of courts as incompetent and argumentative.

A. That when one company buys out another and pays for franchise that franchise can't be capitalized for the fixing of rates and if a payment for franchise cannot be capitalized I don't see why a payment in a mere organization transfer expense can be.

Complainant moves to strike out the answer as argumentative.

Q. What is your judgment about the item as to whether or not it should be included?

A. It should not be.

Q. On page 15, under the subhead summary of construction cost I wish you would go through that table on page 16 and explain it.

A. Page 15 merely gives a combination of what has been given before, combines what has been given before in the introduction to the table on the next page and explains how the table does give that.

Q. Go over the table briefly and explain it.

A. The chief point brought out on page 15 is that $25,000
3683 known in the early accounts as old gas works, $25,000 out of $38,000 as old gas works consisted principally more of mains and services than old gas plant, but was retained on page 16 under total to works and has been so classified.

Q. What difference does it make in the final outcome?

A. Does not make any practical difference. A little difference in apportionment is all. On page 16 I place in the first column the amount that the books show had been put into the property as a cash investment prior to 1895, in other words how the $429,426.83 was apportioned. I might say that first column is the testimony of Mr. Pratt and Mr. Lilley.

Q. Taken from Mr. Pratt's statement?

A. Yes. The next column is taken from Mr. Hall's testimony shows the apportionment from January 1, 1895, to the sale February 28, 1906. The third column the subsequent period and the last column combines it all into the total of $1,727,675.67 which is construction cost at the close of December 1910, aside from working capital and without any allowance for depreciation or for appreciation and that is not in the cost item, that would be in another form.

Q. Now page 17, I wish you would enlighten us as to the matters shown on that page as far as you deem it to be necessary to understand your report?

A. In order to apportion the $45,000 an arbitrary division was made which is not of any special importance but is mentioned here.

Q. You make it how, on your own judgment?

A. Done without very much careful study. I felt that the amounts would be very much larger proportioned and the meters and services charged there than they would be in the city limits and the distance- that have to be traversed by the mains to
3684 reach the consumers and that raises the total investment of mains, meters and service as indicated in the second table on page 17. It cannot be but very little out of the way. Then -eferring again to the $45,000 I state that some subsequent investments of the company have undoubtedly gone into the business at Valley Junction in which case the investment in the city has been correspondingly reduced, that is correspondingly less out of the total which is obtained by giving the investment in the city everything but the $45,000 by as much as the investment in Valley Junction has been increased to an amount over $45,000 by so much, must that in the city be reduced as the total is in fact $1,727,675.67 given on the previous page and referred to again here. The working capital was given by the company December 31, 1894 as $37,-106.10. Mr. Hall takes it at $50,000 from then until January 1, 1910, when he made it $68,952.91. The company claims $150,000. I pos-pone that to later.

Q. Cover that in a later part of your report?

A. Yes.

Q. Now, appreciation, before you start in on that page I wish you would state how much study if any you have given to that branch or the different methods of determining value of property that is used for public service and how definite a rule there is if any as to what figure should be used or how that item should be worked out in any given case.

A. In principle I don't differ very much from the position taken by Mr. Lea and Mr. Baehr in their testimony as to method to reach depreciation, only I think they started with too high a figure on which to base it. They use the sinking fund method.

Q. What do you have to say about using the figure they
3685 took as to how you would come out in the end as to whether or not the final amount would be larger than was necessary under your notion of proper depreciation?

A. Their method of application would be about the same as I

have always urged, the sinking fund method, only I believe in taking straight four per cent sinking fund which I believe one witness did while the other had a slightly different rate for long investment or property of great age, but the difference there is very slight and hardly need be referred to perhaps, but I think the sinking fund method that the straight line method is the one because what we are after in depreciation is not at all to determine the actual depreciation from year to year, but to determine how to finance the depreciation, that is the real issue. If you were determining the depreciation from year to year most of the depreciation would come the last year or two, that is if you take depreciation to mean the real decline in the service to the company of a given piece of property. That property being kept in good repair will be about as useful the next to the last year of its life as previously, but it will come to a period, not exactly next to the last year of course but approaching that period when its utility to the company will fail rapidly and it will be scrapped up. Of course if you were to look at depreciation as merely what you could sell the property for you would have a depreciation which was tremendous the first day after installation because after it has been put in the place it could not be taken out and sold for very much value, it would be a difficult thing to do and cost a great deal. On that method of course a tooth brush would depreciate to nothing after one person had used it for one minute, but that is not the kind of depreciation sensible to use in any case of this kind. Neither
3686 do I think it is safe for a company really to wait until they — actually about to throw their property away before they take care of loss in the investment. The question then is one between the straight line depreciation and the sinking fund method and the difference might be illustrated in this way, suppose a building had 41 years' life and cost $100,000. Call it for short, however, 40 years of life and cost $100,000. It is about as useful the thirty eighth and thirty ninth years we will assume as the first, but the 40th year it is going to be torn down. You must have your $100,000 in hand. Now if you're going to set aside as both Mr. Hall and Prof. Marks did, a straight line depreciation fund without giving any interest on it, the company or the owner of the building would have to take 1/40 of that $100,000 and set it aside every year or $2,500 put into a sinming fund and invested anywhere would become worth $250,000 at the end of the forty years in a four per cent investment and five per cent it would be worth a good deal more than that. But $1,000 a net one per cent of the investment put into a four per cent sinking fund will amount to $100,000 at the end of forty years. Put it in another way, suppose at the end of twenty years a person wants to buy the building, and is willing to pay for it just what it is worth on the basis of investment, say he paid $65,000 on the ground that one half the life is gone that shows he paid what would have been in the sinking fund at that time towards the hundred thousand to cancel it at the end of the fortieth year, it probably would not be more than $30,000 in the sinking fund. In other words, would not the building be worth $60,000 or $70,000 rather than $50,000 at the end of half. Seems to me it would. I believe the sinking fund

method is the method for financing that and that does not
3687 mean the company should put the depreciation fund into a sinking fund, they can put it back into the property and earn that four per cent or five or six or seven or whatever they are able to, very presumably more than four, probably more than five. If you ask them to put aside enough to earn say, four per cent, on the amount in the property and they agree and earn more than that I should say there should be no reason why they should not keep the extra balance as a reward for their enterprise in investment of it in their own property. The consumer should grant them enough in rates so that in the most unprofitable method of investigating a depreciation fund, namely a four per cent sinking fund they would cover their costs. If they can make more than that that is their gain which I should say they should be entitled to.

Q. On page 18 you deal with depreciation, I wish you would make such explanation as may be necessary?

A. In general I take the position I think I have just been referring to although not so fully. I do make a point there that I think it would be fair to invest say, in a five per cent sinking fund in order to give the company rates sufficient to redeem the property on a five per cent sinking fund, cost of their plant or funds now in use and the company can invest and be secured at five per cent for example in its own bonds or in the bonds of other approved public service or railroad company. While I urge that I do not adopt it in this case, but use the most conservative figure of four per cent.

Q. With your experience what has been your observation or what do you have to say as to the effect of the company using what ought to be set aside for depreciation in say dividends or securities
3688 of the company and not carrying it in a depreciation fund to take care of the wearing out of the property.

A. If they did not carry it in a depreciation reserve or in a sinking fund, then they are in the situation of a capitalist who is earning we will say for convenience six per cent and appears to be earning seven, but the extra per cent should be devoted to depreciation reserve. Suppose, however, getting his seven per cent he treats it as all profit and distributes it, divides it as dividend or in any other way then what he is doing is withdrawing his capital to the extent of one per cent a year and if he does that then at the end of the time he is in the position of having used up all his capital.

Q. Now you take a plant like the Des Moines Gas Company plant where it has been in operation for a number of years such as this one has and no depreciation fund has been set aside there on the basis you think it ought to be or any other way and the plant is found to be in say 85 to 95 per cent condition, what would that indicate to you with respect to the manner in which the plant had been kept up to its highest point of efficiency, how it had been done.

A. It would indicate repairs, renewals and maintenance had been sufficient to keep the plant in excellent working order and to have covered therefore most of the depreciation, but not entirely. Anything short of 100 per cent would indicate to that extent an impairment.

Q. In this case what have you found if anything about the present

condition of the property as stated by the company itself or its witnesses?

A. As stated by the company and illustrated by their small leakage account, and in other ways like lack of complaint as to
3689 service rendered and the appearance of the plant I should consider that it was kept up in a good state of efficiency and no dispute with the witnesses that have already testified to that effect.

Q. The fund to do that has been charged to what account?

A. It has gone into operating expense although by reason of not having written off any depreciation the company having used any of the profits and meeting depreciation by putting some of them into their books as a depreciation reserve part of what has gone into capital account would be really an investment of the depreciation reserve.

Q. In the property?

A. Yes.

COURT: To what do you refer there?

A. There appears to have gone into property $1,700,000 we will say in round numbers. That really does not all represent new capital. The capital has depreciated. If they had covered the matter as I think it could have been done more scientifically they would have called part of that investment, not capital investment at all, but investment of depreciation reserve. It is merely a method perhaps of acounting for a thing on the books and it perhaps might result in confusing the matter for me to go into it in that way. Perhaps to take the books as it is that fund charged as investment of $1,700,000 and then consider you had property as depreciated is better than to go into these refinements as it really does not make any difference in the end.

Q. Comes out the same place in the end?

A. I think so.

Q. On page 19 what does that first table represent and how do you get at it?

3690 A. The first table on page 19 shows the amount of depreciation that has accrued and not been met by repairs according to the testimony of the various witnesses quoted. Mr. Lea for example has $380,000 of accrued depreciation. Mr. Baehr $310,000.

Q. These figures were worked out from their report?

A. Yes, at the page quoted in the right hand column.

Q. They are here for comparison?

A. Here for comparison. Mr. Randolph's was $282,331. Prof. Marks 364,363 before taking out appreciation on the land. Mr. Hall $245,862.00 which was arrived at arbitrarily by a six cent allowance per thousand feet of sales since 1894.

Q. You have an analysis here on part of page 19 with respect to Mr. Lea, Mr. Baehr, and Mr. Randolph, I wish you would explain that?

A. Take first Mr. Lea's estimate. He estimated the cost new of the property aside from the part that had no depreciation, the going value part and the land and perhaps one or two other things as $2,580,140 and the annual investment necessary to meet this in a

four per cent sinking fund as $37,385. These are his figures. This implies according to sinking fund tables an average life of 34¼ years and an average payment into the sinking fund of 1.41 per cent. per cent of the investment. In other words on every hundred dollars of investment you put in $1.41 a year for 34¼ years and you get the thousand principal. So the figures he uses are just the same as if he had said he reckoned the average life as 34¼ years which he would meet in this way. Similarly Mr. Baehr estimated in his sinking fund at $33,359.00 or 1.262 per cent of his cost reproduction now on the depreciable property which was $2,642,467.

Q. That was the amount he worked out in his report.

3691 A. Yes, and that implied an average life of 36¼ years.

I turn next to Mr. Randolph whose figures in a similar way imply an average life of 39 years.

Q. And is still smaller than either of the other two?

A. Yes. I think under the circumstances thirty six years is a fair average of these three witnesses and is certainly very conservative for it is rather shorter than the usual figures of average life of a gas plant of this character, rather nearer forty years or over. For example I think it would have been safe to say forty one years and the payment of one per cent a year into a four per cent sinking fund or if it only had been thirty eight years the payment of one per cent into a five per cent sinking fund to cover the depreciation. But I have adopted the four per cent sinking table and that required 1.289 per cent a year on the investment and further that sinking fund really should be reckoned on the average investment which would mean the investment—the cost of the land to be excluded because that is not depreciable as a matter of fact, but it was rather difficult to exclude that as the data on the cost of the land was not very clear to me in the evidence so I left it all in there as the books had it $35,000.

Q. Turning to page 21 under the sub head, if that is a correct term, valuation at the beginning of each year with one half the additions of the year. I wish you would explain what that tabulation indicates.

A. Beginning with January 1, 1895, 429,000 odd dollars without the working capital which is put in later, but it is not supposedly depreciated any more than the land, starting with that it takes depreciation——

Q. Right at that point if you were — put in working capital as an addition to the value of the property and then work out the
3692 depreciation method would that be to the advantage of the company and disadvantage of the consumer or the opposite?

A. It is thought, I believe, it is about as broad as it is long, you would get a little larger requirement or yearly fund from the operating expense, you would have to add a little more operating expense, on the other hand, you would get a little greater depreciation at the end to deduct from the investment. Capital account therefore a little less and operating expenses a little more. I don't think there would be much difference.

Q. If you will, go through the first line there.

A. Take the investment as January 1895, as sworn to by Mr. Pratt and Mr. Lilley at $429,426.83, adding one half of the additional investment of that year as *tes* testified to by Mr. Hall on the theory that the investment is more or less uniform through the year, an investment in the whole year is equivalent to half of it, as a matter of fact for the year, the whole of it, for half of the year as the whole exceeds half, then we come to the next column average investment aside from working capital by taking the other two columns, then apply depreciation 1.289 per cent and the last column gives what the proceeds in the sinking fund would be, the first year it would be merely this depreciation, the second year it would be four per cent interest on that fund together with the new depreciation of 1.289 per cent applied to the average investment of the second year and so on down.

Q. Then down at the bottom of the page what does that last row of figures represent then?

A. That shows that the average investment at the end of the year aside from working capital was $1,667,000.

3693 Q. The average investment, is that you call it?

A. Yes.

Q. The value of the investment at that time?

A. It is the nominal investment on the books of the company and proceeds that should have been in a sinking fund and which I in another table charge to operating expense which it may be said would be $241,000 in round numbers. In other words, the plant items is not really worth the $1,667,000 which appears on the books, but $241,000 less which might have been accumulated by this small amount in the sinking fund.

Q. For each year?

A. Yes.

Q. Now page 22, explain that as rapidly as you can.

A. There I take the last year, taking the year 1910 which more directly concerns the future in the matter of what it means to operate in for and that $21,490.00 used on the previous page is again necessary to set aside last year and is equivalent to 4 cents per thousand feet of sales of 1910.

COURT: Mr. Marks made it six cents.

A. Both Mr. Hall and Mr. Marks made it six, but they did not assume that the investment put into sinking fund drew any interest and if you are going to use operating expense in an amount sufficient for the depreciation, that depreciation must be set up somewhere it seems to me. The plant in other words has depreciated some amount between $200,000 and $400,000, that is the agreement of all the witnesses. Now what I am trying to find out, I attempt to base it typical of the future, for that is what seems to me the important thing is the future under the new rate ordinance, for example beginning the first of January, 1911. The thing to do is to try to determine from the history of the past how much it would

3694 be necessary to set aside to meet depreciation, that is one of the problems. Now the amount that had been necessary to

meet depreciation in the past has not been more than 1.289 per cent of the investment which is now right around or about 4 cents per thousand feet of sale. Therefore, I assume that it won't exceed that in the future, the immediate future at least. Then another important point from the study of this past is what has the company got of value in its investment today. It has not got the $1,667,000, that is what it has put in. I am now leaving out working capital, it has put in that amount, but that is depreciated. All the witnesses say it is depreciated from $200,000 to $400,000. The company has not charged that up in any way and it must be deducted from their investment. They have an actual investment today of 1,600,000 odd thousand dollars less depreciation. In other words they can't have the cake and eat it too. They have really withdrawn the fund or put it into the plant under the name of capital when it is not there properly as capital, but part of it is there as depreciation reserve, if at all. The actual depreciation being taken at a little over $240,000 we must start with the value of the depreciated property. Of course if it could be shown that the company had made no money whatever in the past, and I refer to that later, if it could be shown that it made very little money or a very unreasonably low amount of money so that it could not have taken care of this depreciation, then as the Massachusetts gas and electric commission has always held special consideration should be given in fixing the rates to that fact and if it should appear as I thin- it will later that the profits of the company have been sufficient to have allowed it to have set aside a sufficient depreciation fund and still have
3695 had good profits then that need not bother us now.

Q. Now beginning right there with the year 1910, the figure you work out in your table there of $21,490 which you say is equivalent to four cents per thousand feet of the sales of that year, am I to understand from what you have just stated and what appears here on page 22 that an investment of that amount in say four or five per cent bonds, say five per cent bonds or five per cent sinking fund would take care of the depreciation to the property in your judgment?

A. I say that four per cent will take care of it to the extent of $241,000 which I think is probably all the depreciation.

Q. Up to that time?

A. Yes, sir.

Q. You say something here about investing that in their own bonds. The bonds of the company as you understand it draw five per cent interest.

A. Yes. Furthermore, there are two points to be observed on this. While Mr. Lea and Mr. Baehr as shown on page 19 took a depreciation of between $300,000 and $400,000 and Mr. Randolph $282,000 they based that on a duplication cost or a cost new or a very much larger amount than the books show to have been the cost of the investment. And their percentage and their method of reasoning seems to me all right, it is only that their base figure, the figure to which they apply depreciation is on an investment greater than has taken place.

Q. What do you say as to whether or not that is accounted for in the fact that both Mr. Lea and Mr. Baehr were working out a valuation based wholly on a reproduction theory.

A. Yes.

Q. And without reference to book cost of the property?

3696 Objected to in the first place as leading and in the second place as incompetent because purely argument and nothing else the witness being asked to argue the effect of the testimony of other witnesses and not being asked to state any fact or any opinion as to any matter of expert knowledge.

A. They have rec-osed the depreciation as it seems to me upon a proper method upon what they think it would cost to duplicate the property and not upon what it has cost the company. They would therefore have the consumer pay to them a fund sufficient to finance the depreciation and give them back 100 per cent of the property as it would cost to duplicate today and not on what it ever cost the stockholder.

Q. Why do you figure interest on the appreciation reserve as you set it out?

A. Because the amount must either lie idle that we set aside to meet depreciation or it must be profitably employed. It is absurd to think that a company having set aside a certain fund to meet depreciation would allow it to lie uninvested and bring no return. It would naturally and the least profitable thing it could do with it would be to put in a four per cent sinking fund.

Q. What about the situation or liability to be drawn at any time for renewals or repairs?

A. That I meet in a large measure by saying that not a cent of it has been drawn. This is in addition to every cent that has been spent by the company. Now a cent has ever been drawn. This is purely and absolutely additional to any and all repair and renewal account. And furthermore in fixing upon an average life for the plant in determining a sinking fund, no matter what average you take, assume for a moment you take 37 years and I think Mr. Baehr at one time testified in this case 37½ average years which is
3697 a little longer than he really used in his table, suppose you took thirty seven years as the average life and you see that before that thirty seven years was up some of the investment in the depreciation reserve must be withdrawn to meet some property that has to be renewed at the end of twenty years. There are other parts of the property like most of the mains that won't have to be renewed for seventy five or a hundred years and that was all taken into account supposedly in fixing thirty five years. When Mr. Lea and Mr. Baehr and all the men who attempt to work that theory of a sinking fund they reach an average age only at the end of a long series of computation.

Q. What is there about the life if it has ever been determined or wearing out of the mains and services?

A. Where electrolosys is not present any more than the testimony shows has been present here, practically not at all, and where the

soil has not any particular assets, principally ashes and salts to corrode and injure the mains, there appears to be no known life. Mains are in existence today in some parts of Versailles and Paris and elsewhere that have been in much over two centuries. There appears to be no limit to the life, yet it is customary in getting a sinkind fund and in questions of age to give a life of seventy five to a hundred years.

Q. About what portion of this plant for instance speaking of the value of the property or the investment is covered by the mains as distinguished from the rest of the property?

A. That is given on page 16 where I use that $650,000 approximately out of $1,727,000 or some what over one third is in the mains.

COURT: That don't include services.

A. Oh services will not last anything like that. They won't last more than fifteen to twenty five years generally. Of course
3698 that depends a good deal on local conditions.

Q. You are speaking more particularly of the mains?

A. Yes.

Q. In this matter of depreciation, Professor, this reserve fund as you have figured it out on page 21 defendant's Exhibit 43, while that fund has been accumulating, what do you have to say under your method and plan of carrying on the operation of the plant could be done in the way of maintaining the efficiency of the plant aside from piling up this reserve?

A. If a plant is kept to such point of efficiency as this plant has been which has been testified variously from 85 per cent to 90, along in there it is sufficient.

Q. How is that to be done?

A. It has been done from the repair and maintenance account here. This is the depreciation which Prof. Marks referred to as residual depreciation, it is over and above what was taken care of.

Q. In other words this fund, $241,117.06 as accumulated under your table here at the end of the year 1910, is to cover that residual decay or depreciation that goes on, notwithstanding repairs.

A. I want to add that I think that the figure $429,426.83 taken as the valuation January 1, 1895, for it was given by several witnesses like Mr. Walton Clark and Mr. White and others, Mr. Cowdry and others is about the same Mr. Pratt had given as the investment January 1, 1895, and I believe that there was some depreciation in there which had not been accounted for. That the nominal investment was $429,000 as shown by the books or cost about that amount to duplicate it is the testimony of Mr. Cowdry, now manager of the Peoples Gas Company of Chicago, and Mr. Pratt, as I recall it and
Mr. William Henry White, a big gas engineer of that time and
3699 Mr. Walton Clark of the parent company. And I believe that in its then condition there was a depreciation there and that it would have been proper to have started with a lower figure than is taken here, but as this was the testimony of all those witnesses at that time, I believed it was certainly not unfavorable to the company to start with what their witnesses had at that time testified.

Q. Accept that as a basis?

A. Yes.

COURT: When was that?

A. 1895.

Q. On page 24, is another table following the statement that it shows the investment at the end of each year as found by Mr. Hall. I wish you would explain what that table indicates.

A. You are referring to what table?

Q. On page 24.

A. It takes the investment starting with 429,000 odd dollars at the close of 1894 adds to it the new investment of each year as given by Mr. Hall from the books of the company, in the next column it shows the proceeds of the sinking fund, the last column shows the investment less that depreciation fund.

Q. So that the last three columns or last line of figures in the three columns opposite the year 1910, indicate, what?

A. They indicate that assuming there has been a depreciation of over $240,000 in the property and therefore that it is not worth today the investment of $1,727,000. It is an attempt to show how that depreciation could have been financed in a sinking fund and that an investment, therefore, less the proceeds or cumulations of the sinking fund would be this figure.

3700 Q. In other words, if I understand the table correctly it indicates how the investment could have been maintained at 100 per cent.

A. If they had placed an additional amount to operating expense which I refer to later, they would have had a sinking fund of this amount to take care of the depreciation.

Q. You mean an operating expense?

A. Yes, if they had charged operating expense the depreciation fund of 1.289 per cent a year on this investment in the first column they would have had enough to take care of this depreciation and they would not have to face the fact today of a depreciated investment.

Q. Mr. Brennan suggests that he finds a mistake in the subtraction there. Will you subtract the last line of figures in the first column, the last line in the second column from the last line in the first column and see if you get exactly the result that is shown here.

A. I get $1,486,540.61 instead of 558.

Q. That is an error there of $18, that should be 540.

A. I think so. The last line, last column page 24, instead of $1,486,558.61, it seems should be $540.61.

Q. On page 25 you take up working capital. I wish you would give us whatever explanation on that subject you think is necessary to make clear what you think about it.

A. I first call attention to the recent decision of the Wisconsin railroad commission of last year.

Objected to as argumentative, really it would come with more propriety from counsel than witness.

A. Well I didn't dwell upon this to any extent, but just on that

page I refer to their setting aside a little less than fifteen per cent for working capital in a company, a gas company of about two thirds the size of this one and the reasons they give for not setting
3701 aside a large amount.

Q. Now give us your own conclusions about it?

A. Then I state that two months of operating expenses is I believe all that is necessary to have in hand to meet the needs of working capital.

Q. Why?

A. Because in a gas company the receipts come in every month, and in fact a good deal all through the month and the bills——

Q. Right at that point, why do you say all through the month?

A. Because they are not all paid on one day, but the month may be taken as the unit and every month they get paid for the gas sent out and that means that in that month's receipts they must have enough to meet that month's expenditures, the expenditures of the previous month since the receipts are larger than the expenditures. The laborer has to be met every month, twice a month I think they pay here. The larger bills for coal and oil are met every month, but need not I believe be met more largely than one or two months' supply at a time or three months say at the most for while coal may be delivered along under a contract made to cover three or four years duration as is done in such cases and is done here, the deliver-s of course are not all at once for three years, but deliveries are largely as needed along from time to time and therefore two months' supply —to supply a working capital sufficient to meet operating expenses for two months would appear ot me o be sufficient and I have given a slightly larger amount, an amou-t equal to the fifteen per cent of the gross income allowed in the recent Wisconsin decision or $80,000.

Q. Before leaving this question of working capital, this figure of $80,000, what period was it your judgment that that amount
3702 of working capital for the business, or that that would be sufficient working capital for this company under this present condition or for the future.

A. The $80,000 was the estimate I assume as fair for the year 1910. If you will notice page 27 it is gradually increased, the amount from 1894 on. It is for 1910 15 per cent of the gross income. It is more than two months, it is nearly three months. That $80,000 is in reality nearly three months' expense account as shown on page 26, the page before. During the following year I should assume it would be increased somewhat just as it had been increased in the previous years.

Q. Passing from pages 25 and 26, working capital, you may state enough with regard to the table on page 27 to show what it is intended to indicate, what it does in fact indicate?

A. The first column on page 27 indicates a net investment after deducting depreciation or after deducting the amount necessary to finance the depreciation. After deducting in other words, the sinking fund that we have been talking about. The next column gives the working capital which is to be added to the net investment.

Q. Then the three last lines of figures in the table indicate what?

A. The last column indicates the net investment with the working capital given as it should be so that at the close this is the net investment after deducting the amount necessary to be in the depreciation fund, $1,486,000, add the $80,000 for working capital and get $1,566,865.

Q. Am I to understand from that statement and explanation you have just made that upon your method of working out the investment, the net investment in the business, that at the end of December 1910, the total net investment or the total amount of money used
3703 in the business at that time was $1,566,865.

A. That represents the investment that is put in. It is does not mean a question of whether the land is worth more now or not, but takes account of what has gone in as investment, less depreciation.

Q. And with no appreciation for real estate?

A. No.

Q. On page 28 you deal with overhead charges. In a general way what do you include in that term, what do you cover by overhead charges.

A. As stated in the first paragraph I refer to engineering and to supervision during construction, drafting, interest charges, legal expenses and contingencies casualties, and omissions, there are all sorts of items which you perhaps do not see in the finished plant, but which must — existed.

Q. In the examination and investigation you have made here and information you have gathered during this trial what do you have to say as to where in the accounts of the company if at all the money used for the purposes just mentioned has been charged.

A. It has been charged I believe so far as spent to operating expenses.

Q. Why do you refer in your statement there as one of the overhead charges to omissions and contingencies?

A. Because the claim is always made that there are omissions, and cases differ greatly as to the extent of omissions. In an inventory of the kind that has been prepared here omissions have been shown to be very slight.

Q. Have you gone carefully through the reports of Mr. Lea and Mr. Baehr and Mr. Randolph for the purpose of analyzing those overhead charges and working out the amounts that they have carried into their final figures and their conclusions?

A. I have I think except Mr. Randolph, I think he did not give opportunity for the consideration.

3704 COURT: He added 20 per cent, so if you divide by 120 you will get it.

A. The other two witnesses, Mr. Lea and Mr. Baehr gave figures from which I have tried to compute the overhead on all the property except the paving because their overhead on paving I think should be included with the whole question of paving and the problem of overhead on the cost of the property could be taken out by finding

total overhead. I tried to do that, if I did not succeed exactly, I think I am very near to the figure.

Q. What result did you reach?

A. I have the result on Mr. Lea's overhead on all property except paving was $387,739 and Mr. Baehr's $443,839. In other words they were both in the neighborhood of $100,000.

Q. Now what was their original figure of overhead before you tried to work out these final figures.

A. You will see the figure in the table practically by adding for Mr. Lea the first and third lines.

Q. Up in the body of the page there?

A. Yes, I use it there too, $567,780 for Mr. Lea beginning the second paragraph and Mr. Baehr $615,603.

Q. From these figures what was it you deduct?

A. I deduct overhead on paving, overhead on the rest of the property and I do that on the basis that the overhead on paving—the overhead on the cost of the property could be taken out by finding what proportion the paving bore to that class of property.

Q. What were you trying to ascertain as these overhead charges, just the amount that was included by these gentlemen in the property?

A. In the property now.

Q. Of the plant?

3705 A. Of the plant.

Q. Without reference to paving.

A. And when I gave you figures a minute ago of how much they had in the overhead after deducting paving, it was the latter figures of the last two lines of the table on page 28 which was aft- I had the property depreciated as they depreciated it. If you take it on property in the third and fourth lines shown in the table, Mr. Lea had apparent overhead aside from that on paving of $455,892 and Mr. Baehr $502,934.

Q. Then you make some further reduction from these figures?

A. Yes.

Q. For what reason?

A. I was trying to get to some extent the present depreciated value of the overhead. I do not have to use the figure in any direct computations afterwards and did not go into the matter quite as fully and minutely as I should have done if I had needed to use it in any later computation. This was intended as a rough approximation of those items.

Q. Did you figure out the proportion or per cent that Mr. Lea and Mr. Baehr had included in their overhead, the per cent of the whole?

A. Yes, I gave that on that last line of that page. It was 26⅔ in the case of Mr. Lea and about 28⅔ in the case of Mr. Baehr.

Q. On page 29 you deal with the book cost of the property and the investment and the increase of the property. I wish you would make whatever explanation of that page you think necessary?

A. I first call attention to the fact at the top of page 29 that — repeated investigations of the subject only 12 per cent has been allowed in all Wisconsin rate cases.

3706 Q. What was the per cent allowed here by Mr. Baehr and Mr. Lea?

A. About twice that, little more than twice. As I stated here at the top of page 29 Mr. Lea raised the property aside from land to 28 per cent and Mr. Baehr about 30 per cent for overhead charges.

Q. That covers any omissions and engineering?

A. There is no difference between page 29 and the figures on page 28 are the figures of value of the property only at the top of page 29 the per centage is added to get the total.

COURT: On new paving, according to Mr. Lea, it is $112,000?

A. That is overhead charges. These overhead charges alone I refer to on a later page. In other words while the fund was paid in by the city they get an overhead on it as a credit.

COURT: The total amount of that overhead by Mr. Lea is a little over $120,000, that is about one third.

A. May be.

Mr. BYERS: It was $567,780.

COURT: No the total amount of his paving, replacing paving.

A. I think if you would turn while you are on it, to page 33, give exactly the figures on pacing with overhead in it of both Mr. Lea and Mr. Baehr and you will find that the overhead on the paving, the base figures of Mr. Lea $419,685 new, $375,098 present value. Mr. Baehr $393,000 new and $344,890 present value.

Q. Is there any further explanation to be made of pages 29 and 30?

A. Page 29, the last paragraph points out a new thought.

Q. Tell us about it please?

Objected to as purely argumentative, not the statement of any fact or of any expert opinion and purely an argument on a ques-
3707 tion of law as to whether this paving charges should be allowed.

A. First the consumers as a part of the taxes have paid for the paving. They are now asked in the price of gas to pay interest on it to the gas company on the theory that a new company would have to cut into the paving and duplicate the system. The other point that I make is still more important and is that if the company is to receive an ingrease of value from year to year through an unearned increment or unearned benefit from the city in paving, it is likely to continue to receive such favors for only half of the mains are now under paving, according to the testimony and the paving now over mains is not as good as it will be 20 years hence as an improvement in the character of the paving always follows growth of a city. Now then in the past this paving has amounted to $300,000 to $400,000 and this divided over the entire sales for the last twenty years amounts to over 8 cents a thousand feet. That should be cents instead of per cent, the second line on page 30. If there has been an unearned revenue to the company to be capitalized in fixing the rates of 8 cents a thousand feet in the past it is likely to be something like that figure in the future, anyway several cents per thousand feet and I think that should be taken into account in fixing the rates as a further revenue if the theory is adopted that the company

has the right to increase its capital with the increase of pavement over the mains paid for by the consumer or tax payer then that also becomes a revenue of the company, that increase becomes a revenue of the company which they realize on in the capital on which they charge a return for gas.

Q. It was not quite accurate was it to say that the pavement had been paid for already by the tax payers.

3708 A. Well bonds may have issued for it or the abutting property owners may have paid, but the gas company did not pay for it, does not claim to own it, never returns it for taxation, don't keep it in repair. The main point is there is an unearned increment there is allowed to figure that. It is so broad and as long one way as another and whatever you put one place you have got to take off another.

COURT: Twenty five per cent of the mains were laid under pavement and about 21.1 per cent as I figure it have been paved over since according to the evidence. In other words, twenty five per cent according to the testimony of Henry Moul, and that is the only testimony on it, of the mains that were laid were laid under pavement and the whole amount of pavement now I think is 46.1 per cent so that they stand in the relation of 25 and 21.1 per cent. I call your attention to that so if you want to make any statement, you may.

A. The amount, 25 per cent was put in you und-rstood from Mr. Moul after the paving was laid.

COURT: That is his testimony and that is the only testimony I think on the subject. That was in response to a question put by Mr. Brennan or Mr. Byers, I don't know which. I figured it myself taking Mr. Lea's statement, I figured it myself as 46.1 per cent of the whole amount of mains are under pavement, that makes 21.1 per cent that was laid before the pavement was put down.

A. Of course all the cost of laying mains that were laid after the pavement is included in this investment already used.

Q. Then with these figures stated by the Master your statement that half of the mains are now covered by pavement is not quite correct.

3709 I knew it was not exactly. I used half as nearly 50 per cent, his figure is 46.1 as I understood. I knew it was not quite half. I have the figures in my room. But I should believe from my knowledge of the city and all other such cities that the paving now laid is more expensive than the paving originally there in many cases, in the case where mains were laid without paving. In other words the figures Mr. Lea and Mr. Baehr give here as cost of paving over mains is a larger item with respect to those mains that have paving over them,—that had to be laid through paving than the original cost of cutting through that paving because the paving then in many cases, I can be morally sure was not as good paving as they are now because the whole tendency of paving is to increase in value, in costliness, poor paving being extensively replaced by better and more expensive paving.

COURT: That is of course something you don't know one way nor the other.

A. No not a thing. Simply the general tendency.

Q. As far as their figures are concerned they base them on the character of the pavement as it existed at the time and as shown by the inventory do they not?

A. They base their figures on the paving as it was January 1, 1911 or in November, 1910, as it was in the inventory and not on the paving that was there when the mains were laid.

Q. Are you sure about that?

A. I am talking about Mr. Lea and Mr. Baehr. They were putting a price on the inventory made last November.

Q. For pavement at that time?

A. Yes. That is certainly the time I read the inventory and their testimony.

3710 Q. On page 31 of your report under the subhead of total discount on bonds, I wish you would tell us what you work out there if you will and what importance if any it has in connection with this matter?

A. It has a reference to what I stated a little while ago that discount on bonds is a question of the rate of return and not a question of the cost of property and a bond, five per cent bond bearing a ten per cent discount is not very different from a five and a half per cent bond at par. I worked that out very precisely in a later point in the report. But the entire point is not very important in this case since the entire bond discount shown by the books is only $53,950.

Q. Now on page 32 you deal with the rise in the value of land. Let me ask you about that before taking up your report just as you work it out here. You were down at the plant and looked over the property were you?

A. Yes.

Q. Did you observe anything about the real estate that indicated to you any increased value for the purpose of manufacturing gas in the real estate itself or anything about it from its original character?

A. It would not appear to me so no. It had the same advantages then that it has now.

Q. What change if any is noticeable down there in the ch-racter of that real property now from what it was evidently twenty five or thirty years ago.

Mr. GUERNSEY: Allow me to ask the witness to state whether he saw it twenty five or thirty years ago, that might be material to the question?

Mr. BYERS: You can ask him that later on, you are going to have a lot of time.

3711 A. There are few new improvements that I notice in that neighborhood.

Q. I don't mean that, is there anything about this land itself that in any way has changed the value of its use, I don't mean the value of the property itself, but has anything about the land itself in the way of a change of its surface or conditions of the surface that has changed the value of its use for manufacturing gas?

A. No.

Q. So that whatever increase if any there is in the value of the

land itself, is an increase in the market value of the property for general purposes, real estate for general purposes, is that so?

A. Yes.

Q. With your experience and the information you have gathered during all the years of your busy life, how would you deal with that kind of real estate in a rate case if you dealt with it at all, that is the increase in the value of the real estate.

A. Until a property is sold when the increased value would be subject to division as surplus I don't think it should be capitalized at all.

Q. What difference is there between the increased value of the real estate and the surplus or earnings on deposit and subject to division among the stockholders.

A. It is a surplus of the same general character perhaps, I have thought it would be more similar to the surplus over paving. It is a surplus of course not directly earned by the company. I hold that in a regulated and more or less protected monopoly the investment is the sole question, we give the right to earn a depreciation fund, the right to develop and promote business out of oper-
3712 ating expenses and having done that we have the right to restrict the possibility of speculative earnings more than is ever attempted under competitive business.

Q. What do you have to say for a company now for the purpose of fixing a fair charge or rate for services is to be allowed to capitalize the appreciation on real estate, increased value of the real estat where there has been no increase in the value of the use of the real estate, in cases where they are allowed to consider that increase for the purpose of rate making, then wha do you have to say as to what should be done on the other side of that question with that increase.

A. It should be considered just as I explained in the case of paving. It should be considered as an increase likely to continue, certain to continue and that probable yearly increase should be considered a revenue of the company as has just been decided to be the case in two decisions by the New York Public Service Commission of the 1st district.

Q. That is to say the average annual increase in the real estate over and above its original cost is carried into the revenue of the company?

A. Yes. But I don't know how much the land here cost for while I used the figure and thought at the time when I wrote that that it was $35,000 basing it on some exhibit of Mr. Hagenah's I think since then that I learned that some further purchases were made, but I believe $50,000 would perhaps be an estimate of the increased value of the land on the city's witnesses and the company claims much more than that, but even $50,000 increase in the value of the land is over 1.10 cents on every thousand feet of sales from the starting of the company and there is no reason to doubt
3713 that such increase will continue in the future and if more than $50,000 increase has been had in the past it might be reasonable to say more than that would occur in the sales in the future.

Q. If that theory was carried out rigidly and the increase in the value of the real estate was large enough it would after awhile absorb the entire rate that was charged for gas would it not?

A. What is that question.

Q. Suppose a large manufacturing plant was located within a block and a half or a block of this land down here and would increase its value several hundred per cent over what the company now claims, what effect would that have on the consumer if the rate for gas was to be based on the increased value of the land?

A. Would have to be a very big increase in the price of gas. If a great railroad terminal was established next to it, or a big oil well discovered near the land, natural gas wells.

Q. Or a civic center like has been built over here?

A. Yes.

Q. Even gold mine?

A. Perhaps a coal mine.

Q. Returning to page 32 you may state if there is anything further you wish to add with reference to the matter that appears on that page. That summarizes what I have just bee- saying. Calls attention to the decision in New York state which has taken that position.

Q. Is that the district in New York that the complainant referred to here during the taking of the testimony of one of the witnesses, I think Mr. Randolph perhaps, but one of them anyhow referred to some method of the first district in New York, is that the same district?

A. I don't recall what you refer to, but it is the district
3714 that *that* covers Great New York City. The state of New York is divided into two districts, one called the first district having New York City or Greater New York and the other in the rest of the state.

Q. This district is the district from which the gas case went to the supreme court?

A. Yes.

Q. The Wilcox case?

A. Yes. And this decision was made in the district where that decision was rendered.

Q. Just recently?

A. This decision was rendered in 1908 I believe.

Q. This decision of the commission?

A. The decision of the commission was rendered this summer, rendered in August I believe, rendered last month, one decision last month and one a -onth or two earl-er of the same character, two decisions. Both since this case opened.

Q. What I had reference to as being offered by the other side was some publication showing the system of bookkeeping that had been adopted in that district especially with reference to donations and that class of operating expenses?

A. I think a reference was made to the classification of accounts that was adopted by both commissions of New York state in some joint conference.

Q. Now page 33, have you covered that as fully as you care to in your testimony up to this time?

A. I think so. It shows how much is allowed for paving by the witnesses new and upon depreciated value.

Q. I wish you would explain that a little more fully if you will.

3715 A. On the lower part of the page is shown the mains and services as a whole, Mr. Lea gave a value new of $1,963,027 and a present value of $1,732,963 a depreciation of 11.72 per cent. If there was that depreciation on the mains and services including the paving, there must have been from the way they testified I judge the same depreciation on the paving alone for they testified they did not take the depreciated value of the paving as paving, but how much it had depreciated as part of the system of mains and therefore applying these percentages of depreciation to the value they give for paving new as shown in the first table on page 33 I get what appears in that table and last column as present value of paving.

COURT: If they use both the pavement, cost of replacing pavement and cost of laying mains and cost of mains, if they depreciate all of it that would be the depreciated value of payment and that would not depreciate at all as far as they are concerned.

A. Pavement depreciates much faster than street mains?

COURT: They don't have to keep it in repair?

A. No. By assuming that the paving had equal depreciation to the extent that the mains depreciated they retain a larger value than if they had assumed the paving had depreciated as much as it actually has for paving has a shorter life than street mains.

COURT: To my mind that is an advantage rather than a disadvantage in other words the same proportion of depreciation is there used.

A. Yes. I am trying here merely to see how much is involved in the pavement question.

COURT: I understand that, but while we were on that point I wanted to call attention to it and get your idea of it.

3716 A. My idea is that the paving has depreciated as a matter of paving much more than the mains have depreciated and if the court allows the pavement theory as they have given it and deducts that you may have to deduct annually that same percentage on the pavement as on the mains. But the point that strikes me as necessary is that the same amount of increase in the value of the property by virtue of the paving becomes also a probable revenue in the future, there is a probable increase in paving in value.

COURT: Prof. Marks said I believe, he said the dry ground under a pavement where mains would be *made* them practically last always, that is to say there was nothing that would deteriorate them. I just want to call your attention to that, if that was true then does it affect the question of depreciation quite materially.

A. I have not understood from all the evidence I have ever come across that paving affected the life of the main one way or the other.

COURT: That is his testimony I think that made it so they practically last always, that is not the exact language.

A. I heard his testimony but the thought I understood him as meaning is that all mains were practically without limit of life, I didn't understand that he meant the paving would increase the probable life. If he did say that it is a new point to me.

COURT: Paving has to keep a dry foun*b*ation?

A. That does not affect the life of a main, dry foundation.

COURT: That is what I am calling attention to as to what he said.

A. I will have to look that up but there is as long life to water mains as gas mains and water mains of course are full of
3717 water. The mere presence of water along or about a main is not what affects the life, it is acids or electrolysis.

COURT: There would be less electrolysis with dry ground than there would be with wet?

A. That is true, yes. Does not seem to be much of it any way here.

Q. On page 34 you say something there about what would follow if next year the paving to the extent of $300,000 should be made over these mains.

A. Of course that would not affect this matter in any way unless it was necessary to make a new rate.

Q. Then it would that is your notion of it?

A. Yes. Well it would be my notion tha- if the theory is maintained that the company is entitled to a return on the paving that such increase of paving they could go to the court and say we can no longer have this o-dinance for our capital has been increased by this paving, and we must have more return on our investment.

Q. It is your notion that readily follows this paving theory?

A. Yes. In a perfectly stationary town and perfectly stationary sales and stationary expense, but nevertheless with an increase in its interest, if pavements have been greatly increased the price of gas would increase under the system of regulation of rates where you attempt to have the regulation always just enough to give a reasonable return on the investment.

Here the further hearing was adj-urned until 9:30 A. M. tomorrow.

3718 Thursday Forenoon Session.

SEPTEMBER 21, 1911—at 9.30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, continuing his direct examination, examined by Hon. H. W. Byers, testified:

Q. Professor Bemis, in arriving at your conclusions as to values and operating costs and in making up your tables of figures and

conclusions, did you consider or allow in any way the element called going value?

A. No.

Q. I wish you would explain the reason why—what if anything you did do about it.

A. Going value may represent either one of two different things. According to one theory it represents the cost of getting the business, or the difference between the profits of a going company and the profits that a new company would make during the years assumed necessary for construction and for securing the same amount of business. According to another theory, which has been used to some extent in Wisconsin, it represents the losses, or early losses of a company—the failure to make at least what is assumed to be some reasonable rate of return. According to that theory the more unprofitable the company has been, provided ordinary good management can be shown, the more going value it is entitled to.

Q. That is, the more unprofitable the business?

A. Yes. According to the other theory, the more profitable the company and the larger the company, the more going value it is entitled to; but the theories in a measure contradict each other.

3719 Q. Now the first theory, the one arriving at the going value by taking the difference between hypothetical operation and the existing plant, in the theory adopted, as I understand it, by Mr. Baehr and Mr. Lea?

A. That is right.

Q. And the other theory, the — of arriving at going value by capitalizing early losses, is the theory adopted by Mr. Hagenah?

A. Yes.

Q. Now, is there any other method that you know of that has been used?

A. There is a third method—which also should have been mentioned—adopted by Mr. Randolph, which, as he explained it on the witness stand, consists of studying the history of the last year, or last few years, finding a certain increase in the number of meters and noticing what percentage of increase there would have been to have kept pace merely with the increase of population—assume that to be an increase that would have cost the company nothing in the line of solicitation and new business expense. The other increase *increase* would be assumed as due to some special efforts on the part of the company, provided the price remained the same; find what that total expense of solicitation has been or of trying to get new business and dividing that over this amount of what might be called extraordinary increase assumed to be due to the special efforts of the company; find the ratio per meter between the two and in that way get the figure of cost per consumer or per meter; that cost due to special effort. Then I would understand that would have to be applied not to all of the meters in use, as I rather think Mr. Randolph did, but to that proportion of the meters in use due to those exceptional

3720 efforts. A figure is arbitrarily reached of $20 to $30 a meter—Mr. Randolph reached such figure himself by that method.

Q. As a matter of fact, is it not true that all three of these methods in a way are arbitrary and the result reached rests entirely upon the judgment of the particular person who is making up the computation as to the base figures or the foundation of the final result?

A. I have never understood any claim made that it rested on anything more than the judgment of the witness.

Q. Now you worked out from the reports of these several gentlemen the amount included in their final figures as going value, did you?

A. I gave the figures that they allow for going value on page 37 of my report; that is not based upon any computation of mine—that is based on their direct testimony.

Q. As to the amount that they included for that element?

A. Yes.

Q. Now you go over that quite fully and give your views and judgment about it, do you not, on page 37, 38, 39, 40 and 41 of your report?

A. That is true.

Q. Now, resting your answer upon your own experience and judgment in matters of this kind and what you know about the operation of gas plants and the method of carrying on the work of manufacturing gas, what have you to say about that question of going value; what relation, if any, or what consideration, if any, it ought to have in a rate case?

Mr. GUERNSEY: Of course our objections go to all of this testimony——

3721 The MASTER: The objection applies to each and every answer of the witness, to each and every question and to each and every part of the same as fully as though repeated to each.

A. I do not think that in a rate case going value should be included as a basis for fixing rates. As between the various theories, I think that the idea back of the Wisconsin theory has some validity, but I think the application of it made by the Massachusetts Commission is a better application.

Q. And that is fully explained here?

A. Yes.

Q. The matter found on page 42 of your report, I wish you would explain that briefly—what reference, if any, that has to the going value question?

A. I attempted to show that the profits of the company had been on the physical investment, or the book investment, during the entire period of its life.

Q. And how did you attempt to show that; what items if any were included or excluded?

A. The next page, page 43, shows part of the process.

Q. I wish you would explain that quite fully, that table on page 43.

A. Beginning with 1893, with the gross revenue as reported by Mr. Hall, and the operating expenses also as reported by him, that

I think I included—I intended to; and I think I did included in the operating expenses an accident or series of accident claims.

Q. Amounting to $3,689?

A. Yes, which Mr. Hall by mistake had omitted. The deduction of the operating expenses from the gross income for each year gave the nominal net income, which is in the third column,—that income would be as it appears on the books of the company, with
3722 slight amendments and changes that Mr. Hall had made in them to cover the deduction of certain payments for interest charges which are no part of operating expenses, and adjustment of the federal tax and a few things of that kind; but this is substantially as the books show the income which they treated as income. But since their witnesses, as well as the City's, indicate a depreciation so that the *the* amount that has nominally gone into construction has not a value to it equal to that nominal amount by over $200,000 I built up in the fourth column a sufficient allowance to take care of that depreciation. In other words, I assumed that the Company's income was really not as great as appears in the third column and as would appear from their books, provided they had met the depreciation from year to year.

Q. As they went along?

A. Yes, as they went along. Therefore I have to take out from the income in order to get the last column the true net income, the amount that would be added to operating expenses and taken from the net income in order to get into the sinking fund at four per cent. Now it would not be necessary to deduct as much as this income if we assume that they find a more profitable investment for their depreciation reserve than four per cent, and they probably would; they could either put it in a five per cent of their own or other good companies or into a plant where they could earn this; so that it would as a matter of actual business history and common experience, it would not be necessary to set aside as much for depreciation yearly, I think, in order to reach the same total of $240,000 at the close. But since there can be no dispute that it could earn 4% anyway without trouble, I have adopted the 4%, although I
3723 believe I would have been justified in taking 5%.

Q. What would have been the effect of the final outcome of the fourth column here if you had accepted a higher rate?

A. I have not computed it.

Q. Would it have resulted in a larger net income?

A. It would. The additions that go into the sinking fund each year are the 1.289 per cent of the net investment which was explained in a previous table and work out there, on page 27 the net investment was given, including depreciation, and on page 24 the net investment was treated further, and on page 21 perhaps appears the table most important in interpreting page 43.

Q. Now, if I understand you correctly, if I understand this table correctly as it appears on page 43, beginning under date March 1, 1906, the gross revenue from the business of the Des Moines Gas Company was $390,833?

A. Yes.

Q. The gross operating expenses for the same period were $252,218?

A. Yes.

Q. Income over operating expenses $138,615?

A. Yes.

Q. Deduction for sinking fund purposes to cover depreciation $13,186.95.

A. Yes.

Q. Net income $125,428.05?

A. Yes.

Q. Then pursuing the same method the table, if I understand it, shows a net income for the year ending with 1908, of $147,607.16; and the year ending 1908 to 1909 $174,172.64; the period between March 1st and December 31st, 1909, $134,811.53; and the year ending with December 31, 1910 $170,618.40, is that correct?

A. That is correct.

3724 Q. To go a little farther with this table, worked out upon the plan you have adopted here, what does this $170,618.40 represent?

A. It represents the income from operation that can be divided in the dividends and interest and still leave the plant investment intact.

Q. In other words, that amount can be taken out of that year's business, divided among the stockholders without affecting the capital?

The MASTER: Right there let me ask a question. What was that amount that you gave you figured depreciation on?

A. It was 1.289 per cent. That is the amount necessary to put into the 4% sinking fund to redeem the principal in the period taken. I use this on page 21 in the table there which became the basis for this table.

Q. The figures are found too on page 23?

A. Page 24 rather, the previous table right through, 21 and 24 particularly.

Q. Now, the table on page 45 of your report, Mr. Bemis, what is that and where do you get it?

A. That is from Mr. Pratt's affidavit as here repeated verbatim.

Q. That has been referred to heretofore as having been filed in this court in the trial involving the Capital City Gas Light Company?

A. In the text here I state, however, that the totals at the bottom are mine. I made those totals merely to show what the average rate of profit was on the cash invested in that table.

Q. In the table made up by Colonel Pratt the totals were not carried out?

A. The last column was carried out, but the totals were not, no.

3725 The MASTER: But there is no depreciation?

A. I think I said yesterday the testimony indicated that they had not charged anything for depreciation; whether their maintenance and renewal account was sufficient to take care of it is not stated. I do not believe it was sufficient, although the testimony given at the time by Mr. Clark, Mr. Cowdry, Mr. White and Mr.

Pratt himself was to the effect that the property could not be duplicated for less than this sum; but they seemed to assume a new plant.

The MASTER: That would leave the average there to be reduced by that percentage 1.289 and would make the average percentage 5.52?

A. Yes, it would be 1.289, practically 1.290 taken from 6.81 would be 5.52. The Company, however, is given the full allowance of $466,000 in the net investment in the computations I gave and Mr. Hall gave, so that the Company is allowed a return on the full investment and not on a depreciated investment as was left at the close of 1894.

Q. So that for the purpose of this case and as made up from your computation the result would be the same?

A. I won't say it exactly; I have not computed it, but the result would not be as great a discrepancy as appears from that figure, because if you started your computations in 1895, that sum figured less than the investment shown here. To allow for depreciation at that time then the profit since then would be correspondingly increased, so that the net result of a change to harmonize with my belief on the early theory of depreciation, or early history of depreciation, would lessen the profits the first few years before 1895, and increase the rate of profit since then, but I did not make that change, because
3726 I had no real authority for making that assumption as to that testimony before 1895.

Q. At the bottom of page 43 there is a little error in subtraction. The last two items, the subtraction made between the third and fourth column. The third column figures are $192,108; the other $21,490.40?

A. $170,617.60 instead of 618.40.

Q. Which would be 68 cents?

A. $170,617.60 instead of $170,618.40, a difference of 80 cents, I think.

Q. What is the figure in the third column of your report?

A. It is $192,108.

The MASTER: Do you reject in that the $5,621, and the $10,000 of increase of salaries?

A. Nothing is rejected of that character in that computation I believe, except possibly the rate regulation expense; but not the $10,000 increase of salary.

Q. I notice on page 42 you have an explanation there as to what you put in and what you leave out—rate litigation expense $9,305, in 1895?

A. Yes.

Q. And then you include the accident item of $3,689?

A. Yes, I think there I leave everything in; I think I did. The correction then at the bottom of page 43 is only a small one and instead of 170,618.40 it would be 170,618.60.

Q. Before we leave this item, having in mind the suggestion of the Master, that the ten thousand dollars salaries, and the five thousand dollar rate expense, I wish you would turn—there is a table there showing the actual gross revenue without taking out anything, and the actual operating expense as shown by the books without
3727 subtracting that $10,000 and let us see if it is out. I think $192,108. is just what is shown in Hagenah's report there.

Mr. Hall was asked to make up a statement showing just what the books showed without his changes or modification?

A. Mr. Hagenah, I find in Exhibit 26, gives operating expenses for the last year $353,600. I think that difference was made up of the allowance for interest and a few other things not connected with the $10,000 of increase in salaries, and the $9,000 litigation expense, whatever it was. I used the same figures Mr. Hall used on page 19 for this last year and I am quite clear in my mind that when I prepared this I had before me the full operating expense with no changes from Hagenah, except interest allowances and one or two slight matters of that kind. The salaries were allowed to remain in that computation. But I can verify that this noon.

Q. I wish you would look that up and verify it?

A. I will.

Q. What page on Mr. Hall's report was it you referred to just a moment ago?

A. One reference is at page 19.

Q. Now on page 7 of Mr. Hall's report, I call your attention to that page Mr. Master, in response to your question there, there is a table made up showing, as Mr. Hall said, what the books show before any adjustment, and that shows as he stated it, the net revenue available for interest and other charges $192,107.65?

A. That is the same figure as I have.

Q. Now what do you have to say as to whether or not anything is left out or that $10,000 salary item or the $5,000 and some dollars replacement?

3728 A. All that and all the donations and everything is in. The only thing excluded was some payments for interest, and some adjustments may have been made, I am not sure in regard to the federal tax.

Q. So that the figure then $170,617.60 in the table at page 43 would represent the net income of the Company based on the books as Hall finds them, with a depreciation figure out on a sinking fund basis, as you have it?

A. Yes, sir; exactly.

Q. On page 47, will you explain what that table represents and how you arrived at the figures that appear there?

A. That represents in like manner the conditions since 1894 as they were given in Mr. Pratt's table for the previous period, only now depreciation has been taken out of the net income, or out of the nominal net income, to give the true net income. Of course in order that I might be exactly exact, I would have to change that last line now, of 170,618.40 to 170,617.60 but that is too small I think and had better let it stay as it would change the footing and everything.

Q. Now, Professor, I wish you would, for our benefit, and to have the matter in the record from you, state just how the operations of the Company would work out upon the basis of the Pratt statement and affidavit, and the operations of the Company since March 1, 1906, with the sinking fund reserve taken out, as you have taken it out in the former table, give the figures and return that the Company would receive on that basis, or has received on that basis.

A. During the period from January 1, 1895 until February 28,

1906, there would have been an average rate return of 8.187 per cent on the investment, the average investment of each year.

3729 If, however, we had made an allowance for depreciation in the earlier period before 1895, it would have left that return some less. This return would have been greater because it would have been reckoned on a smaller investment.

Q. Beginning with March 1, 1906, I wish you would give us the figures?

A. Beginning with March 1st, 1906, the first year, to March 1st, 1907, the investment with the working capital and after deducting depreciation was $1,311,524. The net income after setting aside a depreciation fund $125,428.05, leaving a percentage of return of 9.56 per cent. During the next year, ending March 1st, 1908, the investment would have been $1,384,163; the net income, after deducting for depreciation, putting that into a separate fund, $147,607.16, or an average return of 10.66 per cent. The next year ending March 1st, 1909, the investment would have been $1,403,081, and the net income, $174,172.64, and the rate 12.41 per cent. The next ten month- from March 1st to December 31, 1909, the investment would be $1,473,181, and the net income for the ten month- $134,811.57, or at the rate of 10.98 per cent. That rate of return is equivalent to a return on five-sixth- of the capital for the whole year. Again, the last year, 1910, the investment is $1,566,865, and the net income $170,618.40 and the per cent 10.89. The average return for the period of 10.92 per cent. Before I leave this page, I would like to call attention to the point I was referring to yesterday on the chart of Mr. Hall. He puts in that new holder in the year 1906 on March 1st. That brings down the rate of return on the investment for that year to about 9 per cent, while in 1904 and 1905 it had been 13.

If however the holder had been put in in 1903 and 1904,

3730 probably going into use in 1904, as the inventory states and as Mr. Lea states in his Exhibit, then the revenue would have been somewhat less in 1904 and 1905, the rate of return would have been somewhat less and that would have pulled down the average per cent. On the other hand there would not have been this apparent irregularity of fluctuation in the rate of profit which appears in this table.

Q. That is between 1906, 1907 and 1908?

A. Yes.

Q. Now on page 48 of Exhibit 43, I wish you would explain the matter that appears there?

A. I there show what the average profit has been for the three periods grouped into one period.

Q. Just explain that?

A. I take the totals of each of the three periods and add them together, the total profits for the first period $371,450, according to Mr. Pratt. The second period as given in previous tables $655,598.; the third period $795,618, since March 1, 1906.

Q. What result do you reach by that method as to the rate of return, covering the entire period?

A. 9.15 per cent.

The MASTER: The first period has not got depreciation?

A. The depreciation has not been taken out. That will show just what I was referring to a few moments ago. If the depreciation had been omitted then 6.81 would have somewhat fallen, a cent or perhaps 1.3 per cent. On the other hand, the sum of the actual investment would have fallen, the rest being in the sinking fund, then the total sum of the investments given here $19,443,222. would
3731 have been reduced and the rate per cent would not have been probably much affected; whether it would have been slightly increased or decreased I wouldn't want to say off-hand; but it would not have been much affected either way.

Q. What do you have to say; you say it would not have been much affected?

A. Not more than one-tenth of one per cent.

Q. Would it be safe to say it would not wipe out .15?

A. Yes. Of course it is fair to the Company to say that a small return in that earlier period might be considered as somewhat more important than a smaller recently, if you are going to compound a return; but it is not customary to compound in that way, even preferred stock dividends. If you get what you have originally been promised in some form that is cumulative, you do not generally get interest on it also. Furthermore it appears to me that as handled here, giving them the full benefit of what they claim the first of January, 1895, is quite a fair method of treatment. In other words, let them have, as I put it here, the investment as they computed it without taking depreciation out and give them interest and profits on it up to date.

Q. And in that way you worked out the conclusion that is found here on page 48?

A. Yes.

Q. Now at the bottom of page 48 you say something about dividends; I wish you would enlarge upon that a little and state into the record what you have to say about it?

A. The dividends paid prior to 1895 and the interest was very small, and since then likewise. The interest had been paid right along on all the bonds, the dividends were small and scarcely have there been any since 1894, I believe. But the bonds bearing
3732 6% for quite a while and now 5%, together with the net earnings appear to have paid for the plant. As I stated here the $800,000 preferred stock contracts bearing 6% issued in 1906 and accumulated surplus today of over $300,000. has been the equivalent of good dividends on the property from the start, so far as not paid for by outstanding bonds. On March — 1906 these bonds amounted to $685,000 bearing 5% interest, and the preferred stock contracts at 6% issued then, amounted to $800,000 or a total of $1,485,000 interest bearing securities. As I figured it, the net investment at that time was only $1,027,802, which you will find on page 47 for that period.

Q. So that the dividends, whatever there were, if they may be called dividends, was included in the interest bearing securities that the stockholders of this company received?

A. Yes. There were $800,000 issued of 6% preferred stock contracts which did not represent any immediate investment in the plant, but appeared to cover the investment that had been made in the past out of the earnings. Since that already bore interest at 6% it was in a way a payment for dividends not received in the past.

Q. Now turning to page 50 of your report, do you there to some extent deal with the cost of reconstruction—on pages 50 51, 52 and 53—I wish you would give us the benefit of your judgment with respect to the cost of reconstruction?

A. The attempt is here made to fall back on the book statements about the cost of the property. On page 50 I state how Mr. Baehr estimates the cost new without overhead, of the works and office furniture as $504,891. The books had shown a little more than that $525,274. as the cost; and is a difference of only $20,000 or 4%.

3733 Q. This $504,891. that you use of Mr. Baehr's computations is without overhead charges?

A. I just said so here. It is what he calls his base figures. It includes as I understand it, some contractor's profits on machinery and apparatus furnished, but did not include what is generally known as overhead. Then as to the meters the books show a cost of $187,755.93. Mr. Baehr's estimate, without overhead charges, was $206,472. or about 21% more. There is a larger difference there than in any other items. On the two items, works and meters combined, the difference is largely neutralized. The books show a cost of $713,030, while Mr. Baehr has $711,363, a difference of only $1,700, or less than one-fourth of one per cent. It is a remarkable evidence of close approximation by Mr. Baehr I think, and confirms also, I think, the accuracy of the books and records and tends to estabilsh the fact that the over-head charge either was not as large as Mr. Baehr estimated or was paid for in operating expenses; probably something of both. It also confirms I think the position taken by the Wisconsin Commission that 12% is ample for over-head charges; at least that the larger amount by Mr. Baehr is too large.

The MASTER: Mr. Randolph's was 20%?

A. Yes.

Q. Now, the next is house and street lamp service?

A. The books show $284,129.60; Mr. Baehr gives the cost new with paving $375,453, but deducting the paving given by him $42,322. there remains for the service, independent, $33,131. His paving was 11.272 per cent of his total reproduction new value, and deducting this from his total overhead on services and paving of $83,433. there remains as the overhead properly apportioned

3734 services $74,028.43. The services then without overhead or paving estimated by Mr. Baehr at $259,102.57 or $25,000 or 9% less than the books show to have been the cost. This may indicate the discontinuance of some services or street lamps, or it may indicate that a very small portion of the services were laid under pavement originally.

Q. Now right at that point, is it possible to find those figures, the figures you have given here $259,102.57 without a careful working out of Mr. Baehr's tables and schedules?

A. I think one has to go through some such process as I have done here.

Q. The separation is not made in the report so that it can be ascertained without careful examination?

A. I didn't see any way getting at it except this way. This matter of services is along the same line as that of the meters and works already referred to. There is a remarkable uniformity between the book cost and Mr. Baehr's figures, when you get out his overhead and pavement.

Q. Did you take up Mr. Lea's figures and analyze them the same way?

A. Yes; I did not go into his figures quite as thoroughly because I did not have the time.

Q. What did you do?

A. He gave the investment of the last five years on services as 26.263 of the total investment if I understood his method of computation. Now the books show a cost new of services the past five years $74,263.59. Now if this is 28.263 per cent of the total investment it would show a cost on the basis of the last five years of construction $262,758.15 or only $3,000 more than Mr. Baehr's estimate without overhead and $22,000 less than the total book cost.

3735 Q. That is, his figures, if that percentage you worked out there is correct, would show $22,000 less valuation than the book cost?

A. Yes.

Q. Now, Professor Marks—did you take up his method?

A. He reached the conclusion that the buildings and contents, yard structures, in other words, the works, amounted to $482,639. new, or about 12% less than the books show to have been the cost of all that property, to-wit, $525,274, but if the stable equipments are added, and I think they should be, which he gave as $15,192. for these matters, then the difference is only about $28,000 or 5½%. Professor Marks included in his estimates all overhead. Some of the property included in the book cost has entirely disappeared, such as the first holder.

Q. I suppose there are numerous smaller items and apparatus down there that have disappeared?

A. Yes.

Q. Either by actually wearing out or obsolescence?

A. Where it has not disappeared as in the case of the old gas *gas* works, it has been so nearly scrapped that it practically has disappeared.

The MASTER: They eliminate these old gas works entirely?

A. Yes, but it has not been eliminated from the book cost.

Q. Now, Mr. Marks estimated the meters?

A. He estimated the meters new $220,000 or $33,000 more than the book cost, while his house and street lamp services he esti-

mated at $293,300 or $59,300 more than the books show. Combining the two items including his overhead—all his figures include overhead as far as he allowed it, it is $513,672, while the books show a cost of $471,885.53. So there is a very marked agree-
3736 ment all through between these figures.

Q. That is when you eliminate——

A. From Mr. Baehr's figures the overhead and paving. In case of street mains Professor Marks allowed $652,947. Mr. Hall finds the book cost $649,750. Mr. Baehr's estimate of $1,346,823. is reduced to $774,577.78 if we deduct his paving allowance of $350,939. and his overhead on the mains alone of $221,306.22.

Q. Does that figure $221,306.22 represent the overhead charges in Mr. Baehr's report on mains alone?

A. Yes.

Q. Does that figure appear in the report or did you have to work it out?

A. I had to work it out, if I recall; yet I think that does appear.

Q. Did you have it worked out carefully for you?

A. Where it appeared in his report I took it exactly as he had left it without any effort to work on it further.

Q. Now, will you proceed with your explanation of page 52?

A. I then attempted on the mains to take the unit costs of the last five years as given by Mr. Hall from the books and where he did not give any figures, as in the case of the smaller mains, three inch and under, I used Mr. Baehr's estimate of that without overhead or paving, and in that way taking the cost for everything above 3 inches, and of course that is nearly all the investment, I reached another set of figures of the cost of the mains on the basis of construction cost of the last five years and that is $654,150.65; and it would appear as if it were proper to apply such a method to the system if we did not take into account paving. The new mains doubtless were mostly laid before paving, as the old mains were.

Q. How does that total compare with the total book cost
3737 as found by Mr. Hall?

A. It is within $5,000 of it, less than one per cent. In other words, this total $654,150.65 or the duplication cost on the basis of the last five years is to be compared with $649,750.66 shown by Mr. Hall to have been the total cost of the mains. I put those all together in a table on page 54.

Q. Turn to page 54 and explain the table.

A. The first column of figures shows——

Q. Read them into the record.

A. Perhaps I had better read across. The meters shown by the books of the company cost $187,756. Professor Marks appraised them new at $220,298. Mr. Baehr appraised them new, omitting overhead charges, at $206,472. The duplication cost on the basis of the past five year prices is $206,997.

Q. Now as to services?

A. Perhaps I ought to stop there and say that I shall refer again to meters later as to how that figure was made up. As to services the books of the Company show $284,130. Professor Marks' appraisal

is $293,374. Mr. Baehr's base figures without paving or overhead, $259,103. On the basis of the last five years $262,758.

Q. Now as to mains?

A. As to mains, the book cost is $649,751. Professor Marks' appraisal $652,947. Mr. Baehr's base figures, without overhead or paving, $774,578. Duplication on the basis of the last five years' costs $654,151. That shows the total according to the books of the Company up to that time, aside from works and office $1,121,637. Professor Marks' appraisal was $1,196,619. Mr. Baehr's appraisal without overhead or paving, $1,240,153. Duplication on the
3738 basis of the last five years' cost $1,123,906. To my mind that is a very wonderful similarity between costs arrived at so independently.

Q. Now as to the works and office.

A. They are shown by the books as being $525,274. Professor Marks' appraisal $497,831. Mr. Baehr's, $504,891, without overhead and of course the land is not included in the works. No attempt was made to determine duplication costs on the basis of the last five years as it seemed to me there was not quite enough data at hand for that. The total is given therefore in the following way: Grand total, the books of the Company showed aside from land, $1,646,911. Professor Marks' appraisal $1,664,450. Mr. Baehr's appraisal, without land, paving or overhead, $1,745,044. There is no attempt to give any grand total.

Q. You did not attempt to carry out the works and office on the question of duplication for the last five years?

A. No.

Q. Now this table is explained further on page 55 of your report?

A. Yes.

Q. Is there anything further you desire to say with respect to the matter found on page 55 as to meters?

A. I introduced on page 55 a further analysis of how the meter duplication costs were obtained.

Q. I wish you would go through that for us?

A. I had started on my table, using the number of meters and each size given by Mr. Lea before I noticed there was a slight difference in the apportionment of the sizes between his table and Mr. Baehr's, but the total did not seem to vary, and the differences were too slight, so I adhered to Mr. Lea's table, although I did use in one case Mr. Baehr's figure. I did not use the number of meters
3739 given by Mr. Hall, because that seemed to include Valley Junction, probably included in the $45,000, but not all perhaps, but that was not included in the estimates of the others. Now the unit cost of meters—there is a mistake here where it says "are those not given" it should be "are those given".

Q. The word "not" should be stricken out?

A. Yes. The unit cost of meters employed are those given in Defendants' Exhibit 30, schedule 5, page 3, on page 55 of my report. There are certain meters, 66 meters of certain sizes where the unit cost were not given and I used Mr. Baehr's base figures. Now there comes something which I obtained in a different way.

Q. Explain that, please.

A. The unit cost did not include freight and day before yesterday, I think it was, I asked Mr. Sangster to go to the Company's office and see what he could find as to recent freight consignments and costs. And he came back with certain figures that seemed to compute about 40 cents on certain consignments, and I took 45 cents. Then locks, as to prepayment and standard meters seemed from the books to be $1.50; I think it is high. I think it is possible to set six or eight meters a day easily and the material necessary to go with it, I should think should bring the setting down to a dollar. But I allowed the figure of $1.50 because I didn't want to err on the side of being too low. I reached the unit cost for each size of meters as on an average of $1.95 for freight and setting. Of course it would be more than that in the very large sizes, and less in the smaller. In the case of prepayment meters fifteen cents is added for locks etc. These unit costs were applied to all the meters, and 853 are in stock and
3740 strictly speaking the cost of setting should not have been applied. That gave a further increase of $1,300, so that the figure $206,997. for meters based on the prices of the last five years appears to me a little high, approached in this way; yet there is an agreement with Mr. Baehr's figures so close that it may indicate on the whole, the figures of the two being so near together, may be correct, although at first I was inclined to believe that it was a little high for setting, and this allowance for meters in stock should not of course have been allowed.

Q. On page 56 is a table showing just how you arrived at your total?

A. Yes, that is merely a summary of the application of the unit costs to the meters.

Q. On page 57 you deal with services?

A. I deal with that as I previously explained; that is rather a repetition.

Q. On page 28 you deal with wrought iron pipe, I wish you would explain that table to the Master and just what is covered by the table in the center of the page?

A. On all sizes except 3 inch and under, and 14 inch, the book costs are given.

Q. That is on page 58 of the report?

A. Yes. There is a typographical error in repeating the figure 45.30 unit cost per foot; it belongs opposite the 4 inch, if any figures put in there under the 3 inch.

Q. That is, the first 45.30 should come out?

A. And 36.01 should be substituted. It does not change the total. It is only a unit cost per foot. That unit cost per foot was obtained by reversed prices. The first line is not obtained by Mr. Hall.
3741 It is obtained by taking Mr. Baehr's total and divide it by the total number of feet.

Q. And this table shows how you worked out the final result $654,-150.65, the figures that you have used in your former tables and in your testimony up to this time?

A. It is entirely based upon Mr. Hall's report as to the unit costs per foot during the last five years, with the exception of the first line.

There were no 14 inch unit costs given; there were only 622 feet of it, and I applied to it the unit cost for 16 inch.

Q. I note on that page you refer to the number of feet of pipe that is still without any paving over it?

A. Yes.

Q. And you give the number of feet as 522,110.

A. Yes; those figures I have here, they are not very different from the figures that the Judge recalled yesterday as having been given by Mr. Moul. I think the percentage would work out just about as stated yesterday.

Q. Now on pages 59 and 60 are found some comparisons of investment costs which are self-explanatory, are they not?

A. I believe they are. I wish to make the point merely that there was no selection of companies but every company was taken above a certain size. There are seven companies next in size to Boston which were taken.

Q. Take the matter that appears on page 60 and let us know what you worked out of the table as it appears there?

A. The sales were given——

Q. Take Cambridge for instance, and the figures following that name represent the sales in feet of gas?

A. For the last year for which we have any reports.

Q. And the next column, what does that represent?

3742 A. The amount of assets reported by the Company to the State Commission.

Q. And the same explanation would follow the figures as to Fall River, Springfield, Worcester, etc.?

A. Yes.

Q. And the total of $3,968,475.62 represents the sum of the sales in those towns?

A. Yes.

Q. And $13,964,600. the sum of the assets of the Gas Company?

A. Yes.

Q. Out of that, what average do you find per thousand feet?

A. $3.52 per thousand feet.

Q. How would those figures compare, and what application would you make of them to the Des Moines situation?

Objected to on part of complainant for the further reason that this is incompetent for the purpose of showing costs in Des Moines and being a comparison with the situation here and the alleged statements in some published reports, which certainly cannot be a proper basis for determining the value here. We ask that this objection shall apply to everything relating to the Massachusetts reports and also other statistical matters taken from various sources and set out here.

The MASTER: The same order is made as to the objections heretofore made.

A. The Des Moines Company, if it had the same assets per thousand feet sales as the average of those seven Massachusetts companies, would have $1,872,608.

Q. As worked out from a comparison of these Massachusetts Companies?

3743 A. Yes. If we take, however, Fall River, the only exclusively water gas plant, the assets there 2.90 this would be $1,542,774. for Des Moines.

Q. All you claim for this, as I understand it, Professor, whatever it is worth as a matter of comparison?

A. It is set out here and it is stated at the close that it is not conclusive, but I think it is a comparison of some use and help.

Q. On page 61 you deal with the operating expense and have set out some figures and tables, I wish you would explain?

Mr. GUERNSEY: We make the further objection to the testimony as to operating expenses, and applicable to each portion of the testimony, that it does not appear that the witness is competent, because it does not appears he ever had any practical experience in the operation of any gas plant.

The MASTER: The same order is made with reference to the application of this objection as heretofore.

A. The operating expenses are next taken up, and first the manufacturing cost, or the cost of gas in the holder, which is 29.75 cents per thousand feet in 1910; per thousand feet made, or 31.1 per thousand feet sold. The difference, 1.35 cents is due to leakage and unaccounted for gas.

Q. What did you find with respect to this manufacturing expense from your examination and investigation here as to whether they were rising or falling or had in the past been rising or falling?

A. In the table at the bottom of the page, 61, I compared 1910 with the average of the previous four years and show that the repairs were considerably higher in 1910; they were abnormally high. It
3744 is further proven by a fact not mentioned here, that Mr. Baehr in his estimates of the future manufacture of the plant have lower repairs.

Q. Oil had fallen in 1910 to 4.26 cents; that is, it was that much below the average for the four years?

A. Yes, there has been a large fall all over the country, especially in the west since the new wells in Oklahoma, Indian Territory, Kansas, Mexico and Texas. The other expenses have fallen slightly.

Q. The manufacturing expense, as distinguished from other expenses, what do you have to say as to whether or not they have been steadily going down?

A. They have been steadily going down; the expense of labor, coal, boiler fuel and generator fuel have been slightly falling; so that the cost as a whole in 1910 was lower than the previous four years, and that had not been noticed for the first time then; there had been previous experience which I give further down the page. There is a statement here in the middle of page 62 that should be slightly added to. I stated here, if we go back to 1904, and I should say to 1904 and 1905.

Q. The figures 1905 should be added there?

A. Yes, if we go back to 1904 and 1905 we find the total manufacturing cost was 42.25 and 39.28 respectively per thousand feet of gas made, and somewhat more per thousand feet of gas sold. If we go further back to the only other point of which I have infor-

mation, 1891 to 1894 inclusive, then the figure was 51.6 per thousand feet sold. So we have a decline from 51.6 in that four years to about 40 cents in the two years 1904 and 1905, 34 cents in the next four years and 29.76 cents in 1910.

Q. What does that indicate as to the cost in the holder,
3745 whether it increases or decreases as the sales of gas increase?

A. With the sales of gas and the improvement in the art which is being made, there is this tendency to decline in cost, which is endorsed, I notice, by Mr. Lea in his estimates in the next six years, which I refer to on page 62; he gives a slight decline.

Q. Turning to page 63, you have set out there some statistics showing the percentage of unaccounted for gas in numerous cities and towns?

A. Yes.

Q. What did you find the percentage of leakage to be here in Des Moines of unaccounted for gas?

A. The Company's witnesses gave it as 4.31 per cent and spoke of it as being lower than any other cities, most other cities in Massachusetts. They referred to many of these same cities and the same reports from which I took these figures.

Q. What did you find the average to be?

A. Well the average of the rates of these eleven cities was 4.28.

Q. Net rates?

A. The rates of leakage unaccounted for. About the same, just a trifle less than Des Moines.

Q. Now, Professor Bemis, turning again to defendants' Exhibit 43, your report, page 64, you deal with operating expenses other than manufacture and leakage?

A. Yes.

Q. On pages 64 and 65 is there anything on there that is not self-explanatory?

A. I think not.

Q. Then we will go to page 66; you deal on page 66 with donations and bad debts. There is nothing there but what could
3746 be readily understood?

A. I think so.

Q. On page 67 you deal with rate litigation expenses; what do you have to say whether you set forth there your views with respect to allowing that sort of an item to be included in investment or value for the purpose of rate making?

A. Yes, I do.

Q. At the top of page 67 the year 1909 should have been 1911, in the sentence "the city of Des Moines fixing rates for 1909 and subsequently", that should be 1911?

A. Yes.

Q. Now on page 69 you deal with expenses other than manufacture and leakage and show what you term to be an abnormal condition for 1910?

A. Yes.

Q. And the matter appearing on that page is fully explanatory?

A. Yes.

Q. The same is true of page 70?

A. Yes.

Q. Now on page 71 you deal with the profits of the Des Moines Gas Company at 90 cents. I wish you would state briefly just what you worked out on pages 71 and 72 and the rate of return you find under the 90 cent rate and how you get at it.

A. At the bottom of the page the matter is summarized——

Q. I wish you would state that into the record.

A. Following Mr. Hall's computations of net revenue on the basis of the manufacture cost and leakage of 1910 but on a four year basis in one column there being four years prior to 1910; on a five year basis in the second column, which includes 1910, for all costs
3747 excepting manufacture and leakage. The first line, the net revenue $145,173.06 on the four year basis; and $135,863.22 on the five year basis.

Q. I notice you add a figure for adjustment; I wish you would state where you got that figure?

A. That I add for adjustment to the net revenue as estimated by Mr. Hall $7,237.01 on the four year basis, and the same amount on the five year basis, making a total of $152,410. on the four year basis and $143,100. on the five year basis. The adjustment comes from three facts or three changes. The accident claims and expense on account of accidents are increased above the average of the period as given by Mr. Hall to include the payment of the accident claim in the first two months of 1906 for some claims accruing before that, and the amount that is thus added is .16 of a cent on the average sales of the entire period; and the taxes are increased by .44 of a cent to cover the fact that the taxes in 1910 are higher than the average before that for the previous four or five years; not higher than it had been at one time, and that made an addition of $2,340.76 for the one year, and the total increase of expense, $3,191.95.

Q. Is that the addition to the expense?

A. That is the addition. On the other hand the depreciation allowance is reduced from six cents a thousand feet to the amount found necessary for the sinking fund, which was substantially four cents in the last year. It would have been higher in some earlier years per thousand feet of sales. Taking the exact figure from my own previous table $21,490.40 instead of Mr. Hall's figure $31,919.46 there remains a net reduction of the depreciation allowance of $10,-429.06.

Q. That would represent the additions?

3748 A. That would represent the addition to revenue.

Q. Rather the reduction?

A. So the net reduction in expense from this readjustment is $7,237.01 and that is added to the net revenue, and as the expenses become reduced the net revenue correspondingly increased.

Q. Those totals upon your method would work out what return?

A. On the investment of $1,566,865. it would work out on the four year basis 9.61 per cent, and on the five year basis 9.13 per cent. Then I show that those profits would be 8% on the four year basis on $1,905,126. and on the five year basis it would be 8% on $1,788,753 and show that on other percentages; what it would be or

what it would show at 7% on $2,191,572. on the four year basis, and 7% on $2,044,289 on a five year basis, and 6% on $2,540,168 on a four year basis, and 6% on $2,385,004. on a five year basis. The profit per thousand feet of sales of 1910 is 28.65 per thousand feet, on the four year basis; 26.9 on the five year basis. In the parenthesis at the last line I see the figure, for sales was given 531,991. and it should be instead 996.

Q. Did you have any time, Professor, to check up this typewritten part before we called you here?

A. No, it was finished about breakfast time yesterday morning and I had not read it over last night. I was tired and I did not check it over then. In fact I did not read it last night.

Q. What do you have to say as to whether or not, taking the four years, leaving out the year 1910, and then adding to it two prior years, whether the averages run along so as to indicate to you that the four years would cover a period of operations that was normal?

A. The four years prior to 1910 are very much like the
3749 six years prior to 1910 in all matters outside of manufacturing, leakage and taxes. While the six years are about the same in these respects in distribution in general and all these expenses we are now talking about.

Q. On page 72, the second paragraph, you deal with the increase in the value of the land and work out what you claim to be the proper method if an increase in land is to be allowed?

A. Yes.

Q. And show the increase should be added to the revenue as earnings of the company?

A. Yes.

Q. And the matter is self-explanatory?

A. I think so.

Q. On pages 73, 74 and 75 you deal with the market return on bonds. I wish you would state briefly just what conclusion you reach from these quotations?

A. I used the quotations at the time I made this up, which was when I was here before and in my stay in Chicago afterwards. I took the first week in August and took the Commercial Financial Chronicle, the bank and quotation section in that period, and perhaps in a few cases supplemented it with what I could find in the Progressive Age, but practically everything came from the Financial Chronicle.

The MASTER: I do not see any Iowa companies here?

A. I gave every five per cent bond I found of an artificial gas company. Des Moines being represented through the United Gas Improvement Company, their bonds are not on the market, owned by the U. G. I. As to other companies they are probably small and not quoted on the stock market; they may be locally quoted.

3750 Q. You quoted everything you could find?

A. I believe I included everything; I aimed to do so. I stated here that I omitted one company on page 75; that is Toledo, because of exception- conditions, owing to its street railway portion of the investment, has brought down the rest. There are 97 companies represented; 125 securities, 5% bonds, and the average quo-

tation was 97.6 per cent. I can file with the testimony, if you wish, that copy of the Commercial and Financial Chronicle.

Q. Now on pages 76 and 77 you deal with these bond issues and market quotations, and the matter set out on page- 76 and 77 is self-explanatory, is it?

A. Probably.

Q. I wish, if you care to say anything about it, you would?

A. I don't know that it is necessary.

Q. From your examination of these quotations and basing your answer on your experience in the numerous cases you have referred to, and upon your general experience over the years that you have observed the stock markets and investment in stocks and bonds, about what rate of return is usually received by the holder of stocks and bonds in a fairly profitable business?

Mr. GUERNSEY: I want to make the further objection to that because it is irrelevant and immaterial, and because it is not limited to the gas business; further it is incompetent because it asks the witness to determine one of the ultimate legal propositions involved here; and further it is incompetent because it does not appear that he knows.

The MASTER: The same order is made as to the objections heretofore made.

3751 A. I have had occasion in other cases to make similar tabulations and the results were not strikingly different. In other words, 5% gas bonds are usually selling in the market—I have given here the prices bid not prices asked—at a very slight discount. They usually run from 95 to 100.

Q. How about stocks of gas companies and other similar companies; what is the usual rate of return as shown by these quotations and as you know from your experience with stocks and bonds upon the stock that is considered and used as the basis for arriving at the par value of the stock?

Complainant interposes the same objection last above made.

A. I have in the same way frequently tabulated in the last ten years the return to the investor buying at current quotations stocks and sales of bonds of gas companies, and it is rare that you can go into the market and do better than a 6% return on stock, or 5% on bonds. There may be a 3% discount there.

Q. Take the financial market, if that is a proper term, and for a period covering recent years, the last two or three years, take a gas company's stock, or a similar public service corporation, that is earning a net return of say 6%, what would be the value of the stock as fixed by the stock market and by men generally who deal in stocks?

Complainant interposes the same objection last above made.

A. You mean net return to the investor?

Q. Yes, sir.

A. He will not usually be able to do better than a 6% investment.

Q. Suppose you were fixing the value of an investment in a share

of stock for the purpose of quotations and you should ascertain as the basis of your judgment as to its value that the property, the plant was earning a net return of 6% on that stock, what
3752 valuation would you give to the stock?

A. If the probability was that would be paid out, if it were a dividend paying property and then if the dividends were pretty certain to remain at 6%, it would be rather difficult to pick it up at par. If, however, the dividends ultimately increased to seven the par value, the market value would correspondingly rise.

Q. In other words, if I understand you, a share of stock that is earning in one of these public service corporations anywhere in this country, produces a net return to the holder of 6%, is quoted and ought to be quoted on the market at at least par?

A. As a matter of fact it is quoted at par.

Q. Now take a case, if you were going to make up a market quotation for the use of the public, or if you were going to ascertain the value of a share of stock for an investor who had employed you to ascertain the value and you found that the stock in the particular plant or corporation was earning a return of five per cent on par, what would you say as to that share of stock on the market and what the quotation ought to be and what would you quote it at?

A. Of course, in this as in some other questions you ask, you couldn't really answer fully without taking into account one or two other factors. One would be whether the stock and bonds were sufficiently near to the physical value of the property, so that in any question that might come up, of rate regulation, the company could show its real investment was about up to these securities, and therefore that the rate would not fall, probably below a return on the investment; another question would be whether the company had been paying these dividends for some time and was likely to continue to do so.

3753 Q. What I am trying to get at in my awkward way, is the per cent of return that investors generally throughout the country accept and do receive upon their money invested in the stock of public service corporations, in order to fix a par value in the judgment of the investor and the stock market makers and all that sort of thing?

A. I should say about 6%.

Q. And what do you have to say as to the effect upon the general market value of a stock or shares of stock upon which there is a regular and continued return of over 6% covering a period of years?

A. It usually sells at a premium.

Q. That is to say, the effect of that condition would be to increase the value of the stock above par?

A. Yes.

Q. Do you know of any class of securities, either stocks, bonds or mortgages or other evidences of indebtedness of service corporations or any other character of institutions where more than a six per cent return is expected and received continuously?

A. Why there are companies that are paying dividends in excess of 6% and the stock in these cases is usually much above par.

Q. And the investment is correspondingly larger?

A. Yes.

Q. That is to say, for every dollar you go above par the holder of the stock on the theory of the stock investments has that much more of an investment in the property?

A. For example, the Massachusetts Commission has under the law to pass upon all these securities, and they fix the price at which the stockholder can take the stock and the bond, and if he does not take it at this price, it must be sold on the market. The price is
3754 on the basis of 6%.

Q. There are numerous states now in the Union, are there not, where the state has undertaken to regulate the issuance and sale of stocks and to regulate the return that may be received upon the stocks?

A. Yes.

Q. Do you know any such cases where the rate of return is figured above or allowed above 6%.

A. I don't think of any. I am thinking just now of another case in Toronto. There they allow and pay 10%, but all their stock must be sold in the open market at auction, and it is selling at 1.90 to 2.00; so that the investor only gets out of it five to six per cent. A very thorough investigation was made in Cleveland and the stock was fixed at 6% and never can exceed that. The fares can be adjusted in certain limits and not to exceed four cents. These 6% stocks are now selling at about 100 or 100 and a quarter.

Mr. GUERNSEY: You mean stock in the Cleveland Street Railway?

A. Yes.

Q. Is there any such regulation in Cleveland or any other cities you know of as to the rate of return upon bank stocks?

A. No.

Q. As to how much a man may make on his stock in banks?

A. No.

Q. Or any manufacturing establishments like the Casket Company that makes the coffins we talked about here in the beginning of this hearing?

A. The fact is these public securities, they are accompanied with certain, more or less practical guaranties against competition,
3755 and that the rate shall be sufficient for a fair return on the actual investment. There is no, perhaps absolutely legal guaranty; there is pretty nearly that in the tendencies of to-day.

Q. When you use the term guaranty do you refer to actual personal or written guaranty, or to a guaranty of conditions, or rather conditions making the guaranty?

A. Conditions, and the tendency of public thought. The tendency of thought in the country is against competition in these things, tearing up streets is becoming such a nuisance—that is another protection to a company.

Q. For instance, you take the Gas Company here; the undisputed record in this case shows that it already has laid under the streets of this city 180 odd miles of mains and almost half of it, as you have shown, and I think is undisputed, under pavements; so that to lay

new mains, for a new company to come here and do that by going through the present pavement, isn't that a condition that amounts to a guaranty almost against competition?

Mr. GUERNSEY: We further object to this question on the ground that it is not a matter of expert testimony, but a pure matter of argument, and is not something upon which any witness could properly testify.

The MASTER: I think that is wholly for the court. But I am perfectly willing to hear his opinion about it.

A. Well, I believe it in a protection to a company, a very large protection.

Q. And was that one of the things you had in your mind when you used the term guaranty?

A. I stated it here somewhere in the report, and I think I mentioned it as not a legal guaranty but a practical guaranty; no
3756 legal guaranty in most states; in a few there may be. The tendency of thought is altogether against competition and rather the tendency is to regulate rates rather than establish rival companies. That is one reason I think why those securities are quoted as they are in the market and that there is a certain degree of stability to these companies.

Q. The matter on page- 78, 79, 80, 81, 82, 83 and 84 covers quite generally what we have just covered?

A. Yes; I think on top of page 81 there is a table that might be noticed.

Q. I wish you would explain that table, what it represents?

A. A 5% bond is generally preferred by the companies, even if it sells at a slight discount, than a 5–1/4% bond which would sell at par or a 5–1/2% bond. Yet that is no reason why we can not reckon a return on our bonds. But doing it in a different way as I have illustrated in this table—assuming for the moment bonds are selling at 93, 5% bonds, and 6% stock at 93, although the average of these bond quotations was 97–1/2, but I assume there are some expenses necessary with the bonding company in floating them, and the difference between 93 and 97–1/2 would cover probably all those expenses; so that we may take 93 as a return to the company, although this company has the last two years, the return of 5% bonds, quoted at 95. Taking 93 here as the basis for the bonds, and 93 also for the stock, as I have it, the interest at 5% on the par value of say $100,000 bonds is $5,000; the annual dividend of 6% par value of stock, $6,000; the annual additions to the sinking fund required to redeem $14,000 in thirty years, assuming that to be the life of the bonds, $250 in the 4% sinking fund—total charges on the cash investment of $186,000 $11,250; per cent of burden
3757 on $186,000, 6.05. In other words, that is precisely the same thing to the company as if it issued 6% securities at par leaving out .05 of one per cent. On page 83 the third paragraph the year 1901 as used there should be 1911. I did not have time to go over that. On that same page there is a date, 1804, which should of course be 1904 in the last paragraph.

Q. And 1808 should be 1908?

A. Yes.

Q. Now, on page 82, the middle of the page is a table which I wish you would state what it represents and where you got the basis for these figures and the information with respect to them?

A. As stated in the text, that came from the Commercial and Financial Chronicle and the Progressive Age.

Q. What is the Progressive Age?

A. That is one of two gas journals of the country having been devoted for twenty or thirty years to technical information on gas.

Q. What does this table represent as set out here?

Mr. GUERNSEY: We object to this for the further reason that this table appears to be quoted and the witness should hardly be asked to explain what was in the mind of the person who wrote it.

Q. I want you to state what it represents in your report and what you claim for it?

A. In my report I assume a 6% gas stock could be sold at 93. A stock that would net the investor, in other words, a little over 6%. But here are six of the leading gas companies of the United States, including the United Gas Improvement Company, where according to this editorial in the Progressive Age the investor is getting less than 5% who buys in the stock market today. I use a figure higher than that and more conservative.

At this time an adjournment was taken until 1:30 P. M.

3758 1.30 P. M., THURSDAY, *September* 21, 1911.

EDWARD W. BEMIS being continued on direct examination by Hon. H. Byers, testified as follows:

Q. Calling your attention Prof. Bemis to first the table found on page 43, you remember there was a correction made in the figures at the bottom of the last column of the table?

A. Yes.

Q. Now since adjournment what errors have you found in the totals in the tables on page 47 and 48 and what corrections if any have been made?

A. On page 47 the last line before the final total I think had better be changed to the exact figure that we have just noticed on page 43 in other words to $170,617.60. Then the total of that group since March 1, 1906, in other words, the final total on the page should be changed in this way, the first column which now appears in the record and the report as $6,893,284 should be $7,138,814. The next column, $752,637.82 and the last column 10.54 per cent. That will mean the same changes at the top of the next page to harmonize with those just made. The third line of the table where it is now, $6,893,284.00 should be changed on the previous page to read $7,138,814, the second column third line likewise should be changed to harmonize with the previous page to read $752,638, the third column should be changed to read 10.54 per cent as on the

previous page and then the totals and average should be changed so that the first column instead of reading $19,443,222 should read $19,688,752, the sum of the profits should read $1,779,686 and the per cent should be 9.04. That is referred to, these per-
3759 centages are referred to in the next paragraph and therefore in the last full line of the next paragraph at the middle of the page should read which has bee- 10.54 or an average of 9.04 throughout the thirty four years to harmonize in other words with the table. 10.54 per cent pr an average of 9.04.

Q. In the first paragraph of the written portion of the page——

A. The last line beginning with the words months it has been, change the figure to read 10.54.

Q. Instead of 10.92?

A. Yes, or an average of 9.04 where it now reads 9.15. In other words to harmonize with the table.

Q. Wherever that same computation appears the same correction should be made if we have not already made it.

A. Yes. I should like to show on top of page 81 what would happen if the stock and bonds could only be floated at ninety.

Q. Do that please.

A. Then the first line and second line would remain as they are top of page 81, but the third line would require an addition to the sinking fund to redeem which would now be $20,000, 10 points on stock and ten points on the bonds, it would require $358.00 on that basis instead of $250 on the basis of 93. Then the total annual charges would be $11,358 and that would be on a cash investment of $180,000 if ninety was realized on the stock and ninety on the bonds and that means a percentage of 6.3.

Q. I don't quite follow you to get the eight on the $358?

A. That is the annual additions to the sinking fund required to redeem $20,000 in thirty years.

Q. Instead of $14,000?

A. Yes, that table I am not speaking of as an error, I am
3760 simply showing what would work out at ninety points on the stock instead of ninety three. That means if the stock and bonds could only be sold for ninety without paying for brokerage charges then the investment would require 6.3 per cent—that is the company would be paying 6.3 per cent on the money it got.

Q. Instead of 6.05?

A. Yes.

Q. Turning to pages 85, 86, 87, 88, 89 and 90, you deal with certain statistics and figures under the head Massachusetts experience all of which are self explanatory are they not?

A. I think so.

Q. And pages 91, 92 and 93 carry those computations and comparisons of the Massachusetts case farther and are self explanatory are they not?

A. They are I believe.

Q. Now Professor, basing your answer and letting your judgment rest upon the experience you have had in dealing with gas cases, gas properties, and general experience that you have already related

that you have had in matters of this kind and upon an investigation and examination that you have made of the Des Moines Gas plant, the conditions in Des Moines and upon such other information and facts as you may have secured and about which you have already testified, including those that are covered in your report what in your judgment was the reasonable value of the property of the Des Moines gas company used in the business of manufacturing and distributing gas in the city of Des Moines on the 31st day of December, 1910.

Objected to for all of the reasons heretofore urged against parts of the testimony and because it does not appear that the witness is competent as an expert to answer this question.

3761 A. $1,600,000.

Q. Resting your judgment upon the same series of facts and the same experience referred to in the former question together with such information as you have secured with respect to the profits of the Des Moines Gas Co., by your independent investigations and by the statements of the officers of the Des Moines Gas Company and such of their books and records as you have been able to examine, keeping in mind the experience of gas companies somewhat similarly situated and keeping in mind also the conditions in Des Moines, the character of this property, the state of efficiency, capacity and all of the other facts and information which you have gathered for the purposes of this case, what do you have to say as to what gas can be manufactured and sold for in Des Moines per thousand cubic feet at that time.

Same objections.

A. Eighty five cents.

Q. I want, Prof. Bemis, an answer to the question limiting it to the cost of manufacture and leaving out the question of profits. What would be in your judgment the actual cost of manufacturing gas in Des Moines under the conditions that exist here and distributing it to the consumer without respect to the question of profits now?

Same objection.

A. But including depreciation allowance?

Q. Yes.

A. Sixty four cents.

Q. Now resting your answer and judgment upon the same facts and information as covered by the former question, you may state what price per thousand feet of gas manufactured and sold would in your judgment furnish a fair return upon the valuation of

3762 this property as you have fixed it.

Same objection.

A. 85 cents. I thought a moment ago you asked me the outside price.

Q. What I want in this question is the difference in cents between the cost and the fair price on the whole as you later fixed it in cents.

Same objection.

A. Twenty one cents.

Q. Now Professor, resting your judgment upon the same experience and information with respect to the property of the Des Moines Gas Company, conditions in Des Moines, population of the city, its prospective growth and all the other conditions that you have observed here with reference to gas manufacture and the facts and information that you have gathered together in your report and what you have been able to find from the books and records of the company, what in your judgment could the Des Moines Gas Company furnish gas to the consumers of this city for per thousand cubic feet and make at least a fair return upon the value of the property?

Same objection.

Q. As I understand you are asking in another form the same question of the reasonable price to give a reasonable return and is I understand it right and that be your question I should say again 85 cents.

Q. Putting that question in another way, Professor Bemis, and resting your judgment upon the same facts and same information you may state what in your judgment the Des Moines Gas Company with its present facilities and appliances will be able to furnish gas or ought to be able to furnish gas to the consumers of Des Moines during the year 1911 with a fair profit upon its investment.

3763 Same objection.

A. I should say for that year again 85 cents although the marginal profit will be a little greater than on the 1910 basis.

Q. Assuming for the purposes of this question and resting your judgment on your experience and knowledge of these matters, with $1,600,000 as the fair value of the property of the Des Moines Gas Company used in the business of manufacturing and distributing gas what return in your judgment would the Des Moines Gas Company receive based upon gas at 90 cents per thousand cubic feet, what rate of return?

Same objection.

A. Somewhat over 9 per cent.

Mr. BYERS: The defendant in connection with the testimony of the witness Professor Bemis offers in evidence defendant's Exhibit No. 43.

The exhibit is objected to as irrelevant, immaterial because predicated upon so called investment costs instead of on the value of the property, the same objection being made to each part of it; and it is also objected to as incompetent because not a statement of facts or of opinions of the witness as an expert on matters of fact, but purely an argument and this objection is made to each part of it; and it is

is also objected to as hearsay and secondary and therefore incompetent, this objection being made to each part of it.

A. I will change my last answer from over nine per cent to over eight, I have not figured it out exactly, but it is over eight and one half.

Cross-examination by N. C. GUERNSEY, Esq.:

Q. What is your present profession of business, Prof. Bemis?

3764 A. Special investigator of public utilities?

Q. When did you cease to be employed by the water department in New York.

A. October 22, I think it was 1910.

Q. And since that time you have had an office in New York as an investigator of public utilities?

A. I have not had an office in what — often known as New York, Manhattan, but at my home, where I have my home and study and my books I conduct in a way an- an office.

Q. You said you graduated from college in 1880?

A. Yes, sir.

Q. Then took four years post graduate course at Johns Hopkins?

A. Yes.

Q. And there you took up political economy and hi-tory and allied matters?

A. Yes.

Q. That would take us to 1884. You had intended then to prepare yourself for work as a teacher?

A. Yes.

Q. And after you had taken the post graduate course you went to Vande-bilt University and talked history and political economy.

A. Yes. There was a little time before I went to Vanderbilt in which I gave courses of lectures in other places. At Amherst I conducted the seniors in political economy from January until July of 1885 or 1886, I think it was 1886, and I conducted courses at Ohio University, at Vassar, Mt. Holyoke, Carlton College and Aldebert, as it was then called in Cleveland and started the University extension work, I was the first lecturer in University extension work.

Q. Then you continued teaching at Vanderbilt University until 1892?

3765 A. Yes, until that summer.

Q. Then for three years, 1892 to '95, you were assistant professor of economics and sociology in the University of Chicago?

A. Yes.

Q. Then for two years you were doing general statistical work for the state of Illinois and the United States government?

A. Yes.

Q. And for several cities. Now what was that statistical work for the cities?

A. During that time I remember having been employed at Albany for several weeks by the New York American at that time it was

called I think, possibly the New York Journal for dollar gas in New York city.

Q. My question was your employment in statistical work for several cities. What cities employed you?

A. I think that was a misstatement, at least I don't remember at the moment. I did statistical work, but just what cities—what period did that cover in my previous testimony?

Q. Then for two years, which was after 1895, I interp-lated that it was after 1895, I was doing general statistical work for the state of Illinois and the United States and for several cities. Now for what cities is my question?

A. The work at Albany in connection with New York City which was, however, not paid by the city, but work in connection with an effort at that time made for dollar gas in New York, which was then $1.25 that is the only work that I remember at the moment of that chara-ter, but I realized that that was not exactly work paid for by the city although it was altogether a case of investigation with respect to the city of New York.

Q. Then to get back to my question there was no such cities?

3766 A. I did a good deal of work in that time for Mayor Pingree in Detroit in connection with the work he was doing as Mayor.

Q. That answer- the question that far. Now then what was the character of the work which you did for Mayor Pingree, the statistical work?

A. It was not in the shape of formal reports, but I investigated for him at his request the matters of water and electric light in the city of Detroit. The city was then about to adopt the policy of municipal ownership of the electric light plant and I made some investigations for him of municipal electric light plants.

Q. Now it was this statistical work for the state of Illinois, was that this matter you refer to in connection with the street railroad and gas franchises in Chicago?

A. Yes.

Q. What statistics would you collect with reference to the street railroad franchise matter?

A. In the report that was furnished by the bureau there was if I recall right, a financial history of these companies to some extent.

Q. I don't think you caught my question. I asked you what statistics you collected with reference to the street railway franchise there if any?

A. It related to the whole situation of the street railways of Chicago.

Q. I know, but I am limiting myself to your statement you did statistical work there and I want to eliminate the work that is not statistical work and want to ask you what statistics, you in fact collected if any.

A. Statistics of the investment, operating expenses, divi-
3767 dends and profits. I have not had occasion to refer to it for many years, but I know that was the line of work and I re-

member more directly what I did on that case again for the same reason.

Q. Just wait until we get through with this please. Now then did you collect any statistics as to matters we have been referring to in connection with the street railroads, and if so, where did you get them?

A. I certainly did and wrote a report on the subject that was printed.

Q. You can write a report, but what I want to get at is just what statistics you collected with reference to these street railroads and where you got them?

A. I delved into all the old records that I got hold of in the reports of the companies to their stockholders and the data given in the financial journals, data sworn to in the New York Stock Exchange when they listed stocks and bonds, data that I could get by acquaintance with men in Chicago that knew of the financiaal history of the company. I believe I studied the taxation records and assessments and consulted real estate men, as to the true value of the lands and buildings. I consulted men like Byron J. Arnold with reference to——

Q. You don't call consulting men collecting statistics and data.

A. I asked him for some statistical data at the time and I think he gave me some, bearing on some records in his office, but I do not recall now, I have not had occasion to use it since practically and I do not recall much about it.

Q. What you did there as a matter of fact, was not collecting statistics and data, but was going over the reports of this street railroad and making an argument against the legislation it desired for its franchises?

3768 A. I attempted to do more than that. I attempted to do something a little different from that, attempted to go into the whole history and financial conditions of the company.

Q. And make an argument against the proposed legislation there.

A. I don't remember what I had in the report. I know I did make an argument against it at one time. I was at that time secretary of the Municipal Committee of the Civic Federation of which Lyman J. Gage was president and we made some reports to the Civic Federation on the subject.

Q. Was this the work you did for the state of Illinois, this street railroad and gas work in Chicago?

A. Yes.

Q. Were the books and records of the street railroad and of the gas company open to you?

A. No.

Q. So you could not get any very complete information could you?

A. No, not complete.

Q. Now then what was the statistical work which you claim to have done for the United States government during this period?

A. They printed a monograph of considerable length on the power of co-operation in the United States and its then condition.

Q. I am talking about statistical work?

A. That was full of statistics, gathered from every co-operative enterprise in the country that we could possibly get in this country for information, from co-operative creameries, building & Loan Associations and store and occasional manufacturing enterprises. Also I prepared and they printed another report on the benefit features of American trade unions, their insurance features, which was full of statistics and data that was secured from all over the United States.

3769 Q. Where did you get the statistics on these things?

A. They had never been gathered up to that time and I secured reports in writing of the secretaries of these national organizations so far as they had benefit features, some of them had quite extensive ones like the railroad brotherhoods and some did not have much of any. But what they had I got their constitutions and by-laws and the secretary's financial reports and treasurer's reports. Occasionally there were accounts of the history of these enterprises in the official organs of the National unions, the typographical union, and the German American Typographia and several other of the organizations, union machinist-, union National Cigar Makers, carpenters and joiners, National Brick Layers' Union, many of those used the benefit features and they never had been compiled before I did it, been added to since that by other investigators.

Q. That was the statistical work which you did for the United States?

A. So far as I remember it now.

Q. To go back to this work at Albany that was done for whom?

A. Mr. Hearst of New York, owner of one I think then morning paper.

Q. What you expected to do was to furnish am-unition for the newspaper campaign for dollar gas.

A. My work was principally devoted in making some investigation and giving them such information as I could on the subject in New York City as to the reasonable price for gas.

Q. Was it before a committee?

A. The joint committee of the New York State Assembly and senate appointed to take up a bill specially pending.

Q. You were employed then to make an argument before the committee in favor of dollar gas, lower gas?

3770 A. I looked into it and was convinced it was the proper thing and was in favor of it and appeared before the committee several times and argued for dollar gas which was obtained a little later.

Q. As a result of your argument?

A. Oh I don't say entirely, I think it may have had a little influence.

Q. The paper that employed you to do this work was advocating the dollar gas?

A. Yes, that paper and the New York World were advocating it.

Q. How long did you stay in Albany at that time?

A. Well I made two or three trips back and forth from Chicago.

I suppose in all I was there six weeks, but it was in between a longer period, perhaps three months.

Q. Did you make personal appeals to the different members of the committee besides making arguments before the committee?

A. No.

Q. Then you spent the six weeks in preparation for this argument?

A. Yes.

Q. And what were the statistics available at Albany for that purpose?

A. A very exhausted series of reports, on- in one volume and one in two or three volumes made in—the first in 1884 and the second in 1885 by the New York Senate and Assembly Committee in connection with the consolidation of the gas companies in New York City that had occurred in 1884. Mr. Youlden, a famous accountant at that time had written many hundred pages of this report as the result of an exhausted examination of the accounts of all companies from 1821 for the start of the first one and the engineering data of the cost of construction and of all costs, some of which had
3771 been built by Mr. Roland, who testified in regard to it. Then there had been some reports of this gas company at various times to the public or to the financial journals, there had been some evidence furnished by the companies themselves in opposing this legislation at Albany. I don't remember now fully of course all I consulted, but everything that came up before in the capitol at Albany or that year or that I could rake up in New York I tried to look through.

Q. Quitting that you continued as a teacher in Kansas?

A. Yes.

Q. Until 1899, is that right?

A. Yes, I was there two years from the summer of 1897 to the summer of 1899.

Q. And then you prepared a paper on gas works in the United States.

A. It was not confined to gas works, a book on municipal monopolies in which electric light, street railway and——

Q. I am not talking about that, I said a paper which you afterwards enlarged into a monograph on municipal gas works.

A. That was done earlier while I was in Vanderbilt, in 1901.

Q. How many municipal gas plants are there in the United States now?

A. I have not looked it up the last few years, but I think in the neighborhood of twenty.

Q. Where can we find a list of them?

A. So far as they existed at the time of the national civic federation investigation they appear in that three volume report.

Q. You don't give us the title of that?

A. No.

Q. It is hard to find it by simply calling it three volume?

A. It is. Mr. Walton Clark has a copy I am sure as he was on the commission.

3772 Q. He is not here and he may have lost it the last twenty years, I don't know.

A. This investigation is only four years old, this is the investigation of the national Civic Federation. Mr. Klumpp was employed by us in some of the work. The secretary of the National Civic Federation who can be addressed simply that way, Metropolitan Building, New York City, can probably send a copy.

Q. There is a copy in the library here isn't there?

A. I am told there is not, I have not looked it up.

Q. I thought you said in direct examination you referred to a copy you had here?

A. A copy was loaned Mr. Byers, as I understand it, by Mr. Hall because he could not find a copy in town and I had none short of New York. I think it is called the National Civic Federation Report on Municipal Utilities, but I am not quite sure. The whole set can be obtained probably if not out of print for $10.00, the first volume $1.00 in paper or $2.00 in cloth I understand the secretary sells it for that, if anybody wants to send for it.

Q. In 1892,—did you start this movement in Nashville for cheaper gas?

A. I am not quite sure I started it, I was very active in it, but whether I can be said to have started it I don't remember, I don't really know. Probably not. I think the movement was started there rather spontaneously and by the Chamber of Commerce, I think, took it up or the Merchants' Association, whatever it is called.

Q. Then the first gas case in which you were employed was in 1892 here in Des Moines?

A. Yes.

3773 Q. And at that time you had had the gas experience which you have stated?

A. Yes.

Q. You testified for the city there as an expert?

A. Yes.

Q. Much as you have here?

A. Well not as fully and I did not prepare a report course.

Q. I mean the same general plan, of course I don't mean the same facts?

A. In a measure, I don't feel that I did anything like as full gave as full or as much study to the question. I came here to the city only long enough to testify if I remember right and went away again.

Q. You testified again in the same controversy in 1894 or '5, simply giving your deposition in Chicago?

A. I think a deposition was taken in Chicago, as I recall it.

Q. Now then you continued teaching down to 1896 in the University of Chicago?

A. The summer of 1895. There was two years I did not teach.

Q. What did you do in the next two years?

A. That was when I was doing this work for the state of Illinois and some work for the United States government.

Q. Then you went to teach again and that was where?

A. That was in Kanass at the State Agricultural college, Manhattan.

Q. That was 1898?

A. Summer of 1897, to the summer of 1899.

Q. 1899 you went to Cleveland?

A. No, went to New York City. Two years I was in New York City, nearly two years not quite.

Q. It was while you were in Kansas that you wrote the book, municipal monopolies?

3774 A. Yes.

Q. Throughout all of those or both of those books you have advocated municipal ownership?

A. Yes.

Q. Your attitude has been uniformly that the public utilities were earning more than they ought to have?

A. Not in all cases.

Q. But that has been the general basis of your argument in favor of municipal ownership has it not?

A. One of my arguments has been profit to the city financially and another argument has been the civic one.

Q. Your argument in favor of municipal ownership has involved constantly for the last twenty years the claim that the public utilities were receiving more than they ought to receive?

A. More than municipalities would receive or attempt to charge if they were running the matter efficiently? I have not always claimed though that municipalities in America were efficient.

Q. Oh I don't want to go into that, that is too much of a side issue. You have uniformly contended that the public utilities were receiving greater profits than they ought to have for the transaction of business haven't you?

A. As a general proposition in a general way I would say yes, always exceptions.

Q. Of course you know a great many of them that have failed don't you?

A. Yes.

Q. And you have been advocating and making these arguments for twenty years any way?

A. I have been on the public side of all these questions,

3775 always.

Q. That don't answer my question, you have been making the arguments I refer to for twenty years?

A. I believe so.

Q. And have been very active in the matter haven't you?

A. Part of the time I have been. Not so much so the last ten years as earlier because I have felt the greatest thing now was to make a success of what cities were undertaking rather than to talk about it.

Q. There was objections while you were in the University of Chicago wasn't there on account of your so called socialistic view in these matters?

A. There was some objection to it at one time, but in connection with the Pullman strike upon the railroads, it was thought that I was not conservative enough.

Q. And your designation for these utilities, the word you have adopted, is monopolies?

A. I usually use the term municipal monopolies although I recognize public utilities is equallly appropriate, using it more of last than formerly.

Q. But it is not quite so apt to attract attention and create prejudice as the use of the word monopoly?

A. I don't think monopoly creates as much prejudice now as formerly because more and more it is recognized that these enterprises ought to be recognized as monopolies, natural monopolies.

Q. The word monopoly is obnoxious to the general people isn't it?

A. It has been and is to some extent still, depends of course on conditions.

Q. The title you adopt for your books published 20 odd years ago was municipal monopolies?

A. Yes.

3776 Q. Now you were asked in connection with this book what investigation you made with the preparation of the book and stated that you had, quoting from page 3641, data so far as I could get it upon the question of investment, operating expenses, rates, charges, franchise value stock of the municipal plants in this country. You don't mean to have us understand in the preparation of that book you either had access to or examined the operating or investment records of any large number or any large proportion of the public utilities in the United States do you?

A. I did a good deal in Massachusetts, but not much elsewhere as far as their own records, their records were sworn to and deposited at the State House in Boston for the Commission, had been at that time for a good many years, but outside of that state I had not such access to their own returns except as sometimes given in Wall Street listing the stocks or bonds.

Q. You said on your cross examination and on your direct examination that applications or lists of securities on the New York Stock Exchange we- necessarily sworn to under the rules of the Exchange. That is an error isn't it?

A. It may be an error as to their being sworn to, they are recognized in Wall Street as absolutely true, a man I think could be ruled off the Exchange who was caught making a false listing.

Q. What I wanted to get at is whether anybody swore to it or not?

A. I will have to say I don't know that an oath is taken on it.

Q. A man that made false representations in these matters would be treated just as a man who made false representations in other matters if caught?

A. I think Wall Street is more stringent in regard to stock matters than would be in ordinary business.

3777 Q. The fact is that about the only source of statistics with reference to public utilities that is or has been available to you has been these Massachusetts reports, isn't it?

A. You mean up to date?

Q. Yes.

A. Oh no not up to date. I was speaking of the time when I wrote that book.

Q. What states aside from Massachusetts have required reports from public utilities generally for more than a very few years.

A. None in this country. Of course in Great Britain I had access to their reports.

Q. I know, but that is a long way from home.

A. Yes.

Q. I don't recall your saying you were ever there more than three months?

A. I was over there on two occasions three months each and I have their reports or final compilations of them for a good many years.

Q. But all that has been until recently available for statistics has been these Massachusetts reports in the United States.

A. In every case I have been in there has been a good deal produced by the companies, the New York case for example.

Q. (Question read.) Isn't that true aside from occasional cases where there may have been a law suit or something like that? Haven't the Massachusetts reports been the only general source of information?

A. A good deal has appeared in the Progressive Age, in the Gas Light Journal, a good deal has appeared in Miscellaneous reports, occasionally, in United States Cen-us volumes, and in these later cases frequently a great mass of data was made of record in

3778 other states than the one under discussion.

Q. In the gas cases.

A. Yes.

Q. Which case do you refer to where there was such massing of data?

A. In the Consolidated gas case in New York.

Q. They massed the Massachusetts cases didn't they?

A. Emerson McMullen testified as to the experience in decreasing price of gas and the effect on the increased sale in Detroit and Milwaukee?

Q. I am talking about the statistics of gas plants where a man can go if he wants to find compilations of the statistics of gas plants in the United States.

A. You won't find anything to approach the Massachusetts data anywhere else. Of course in the last two or three years you will get a good deal in New York and Wisconsin.

Q. Coming back to the same proposition until within the last two

or three years the only place where any statistics purport to be taken or compiled was in Massachusetts?

A. Yes, I should say so, general and complete in this country.

Q. You went to Detroit in 1899 and took up street railroad franchises values?

A. Yes.

Q. That would be interesting to me, but I don't believe it would be very material in this case so I will pass it. After that you went to New York and opened this clearing house on municipal matters?

A. Yes.

Q. Particularly public utility questions?

A. Yes.

Q. That was called the Bureau of Economic Research?

3779 A. Yes.

Q. That was a municipal ownership organization wasn't it, advocated municipal ownership?

A. Not exactly that, our theory at the time was a clearing house of all lines of municipal work, cost of paving, cost of maintaining and cleaning streets, park systems, water supplies and contracts of all kinds that could be taken up and we worked together along that particular line and Prof. Commons to keep up labor conditions.

Q. Did a question like that have a bearing on the question of whether municipalities were handling the business they did do on a business basis so as to warrant the turning of more business to them?

A. It was used as to the improvement of efficiency of cities. I was very much interested at that time in the league of American municipalities.

Q. Let's stick to this concern, the bureau of research.

A. We were thinking that we could perhaps affiliate with them as a bureau of information for them.

Q. Did this bureau of economic research publish anything?

A. There were one or two monographs published by Prof. Commons on his work. I was engaged in several investigations, one for the State of Massachusetts on the lease of the Boston & Albany railroad to the New York Central and while that data was published in the Boston newspapers there was no monograph or magazine article or anything of a book or official publication of our work.

Q. How long did this bureau last?

A. Two years or nearly so, not quite.

Q. Then you went to Great Britain during this period,

3780 that is the summer of 1900.

A. Yes.

Q. Studying technical education?

A. More particularly what are known as polytechnic institutes or trade schools of Great Britain.

Q. You said on your direct examination that in connection with the work of the bureau in New York, this was this bureau of economic research, as I understand it, during the years 1900 and 1901, you were employed by the cities of Haverhill, Mass., and Springfield, Mass., in gas cases before the Massachusetts gas commission?

A. That was in connection with the work of the bureau. They corresponded with us and asked for my assistance. I don't know just what relation it had directly or officially with the bureau, except that they wrote us and wanted to know if one of us would help.

Q. And there you were endeavoring to cut down the rates of gas?

A. Well that proved to be the result of it. I was employed by the city in a hearing before the Massachusetts Commission in which the city was contending as here for a lower price and I was employed to analyze their reports to the state commission and to testify on the subject.

Q. And you did testify and testified there didn't you that the rates they were receiving were too high, that they were getting more than a fair return and that the rates ought to be reduced.

A. Yes, and the commission did so reduce.

Q. And you did the same thing in Springfield?

A. Yes.

Q. And you did the same thing in Des Moines here? Now let me ask you—let me digress for a minute. Have you ever been
3781 on the other side of this proposition?

A. No.

Q. Have you ever failed to testify in any case where you have testified that the actual operating of the company was too high?

A. I don't know that I have a remembrance of stating that their operating expenses were too high. At the same time as a general thing remarked that the price could be reduced.

Q. Can you name a single case in which you have testified where you have not said that the operating expenses were too high, the actual operating expenses?

A. I don't remember sufficiently to say as to that, as to the operating expenses.

Q. Can you give us a single case in which you have testified in which in order to reduce operating expenses you have not taken one item from one place and another item from another, putting together some low items?

A. I don't think that has been the case.

Q. Well name one of them please?

A. Well I think for example in New York City that was not done.

Q. That was not done in New York?

A. I think not.

Q. Can you name another?

A. Well I think the way it was treated in Boston and Springfield and Haverhill was the principle used previous years and with other cases. I don't think that I picked out we will say insurance from one year and taxes from another and accident claims from another or anything of that kind.

Q. Didn't do the way you are doing here, this is invented for the sole benefit of Des Moines?

A. In Cedar Rapids or in Saginaw where we had the oppor-
3782 tunity of *of* using five year periods I think that both Hall and myself criticised some increase in expense just before the litigation.

Q. Now then in 1901, you went to Cleveland at the request of Mr. Johnson?

A. Yes.

Q. And you were there how long was it, I have forgotten?

A. From about the 20th of September o4 22d, somewhere in there of 1901 until the close of 1910.

Q. Is that right?

A. No, excuse me, the close of 1909.

Q. And during that period you were in the wa-er works business?

A. I was superintendent of the city water works in Cleveland.

Q. Now then you said that you made an investigation of the street railways of Columbus?

A. That was before.

Q. That was in the spring of this same year?

A. Yes.

Q. What do you mean by investigation there?

A. All I was able to do there was to get reports of the company and data that they had filed at various times with the state as to cost of their extensions and the city engineer helped me some in regard to their street work, I got such data as I could from the company, they gave me some.

Q. You did that for a newspaper?

A. I did that for the Press Post.

Q. What was the controversy on between the city and street railway at that ime?

A. Yes.

Q. And this paper was opposed to the company?

A. It was seeking for a lower fa*ir*.

3783 Q. This paper was opposed to the company?

A. It was opposed to the franchise they were seeking.

Q. You were employed by the paper to get ammunition for it?

A. I was employed by the paper to find what I could get on the whole subject.

Q. This was one of those impartial newspapers like the Hearst papers that simply wanted the actual facts and not ammunition for its side.

A. I don't know anything about the ownership or methods, I have not ever read the paper before or since, unless passing through the city perhaps some time I might b-y an issue at Columbus.

Q. Now then you went to Cleveland to take up the city's side of the public utility controversy there?

A. Yes, in a measure.

Q. And you devoted s-veral months to that?

A. Yes, three or four.

Q. This was a street railroad and electric light controversy?

A. It was a taxation question of the proper assessment and taxation of all the public utilities of the city and also the question of steam railroads and interurban lines.

Q. Did you have access to the books and records of these companies at that time?

A. Not to any considerable extent. They brought in a great deal of data which they swore to as official from their records and the

officials of the various companies I often conferred with and they gave some information, but there was no attempt made to go into a full analysis of their books.

Q. Well you didn't have access to them did you?

A. No.

Q. Did you have access to any of their books?

3784 A. I think not.

Q. And in September 1901, you went to Cleveland and took charge of the water department there.

A. Yes.

Q. You were there until you went to New York to the water department in New York?

A. Yes.

Q. How many miles of main were there in the water department there in Cleveland when it was appraised as you stated, when you got an investment value of eleven million dollars?

A. I would say in the neighborhood of 700 miles, but I a- not sure exactly, I have never thought to look that up.

Q. What was the date of that valuation?

A. 1906.

Q. And you thin*m* then there were about 700 miles of mains?

A. My recollection is not very clear on the subject, but I think so.

Q. That would be about how much a mile?

A. Oh at that rate it would be about 15,000 dollars wouldn't it?

Q. Yes, somewhere around $15,000 a mile?

A. Of course that included the five mile tunnel out into the lake.

Q. Was this investigation made before or after that tunnel was built?

A. After.

Q. Also included the pumping station?

A. Of course, three of them. About seventy thousand services in use.

Q. What was the population then?

A. The population in the census of 1910 was about 560 odd thousand, in the previous census I think it was 382,000, growing

3785 fast in that period, I know the last census was 560,000 in the city limits. We supplied about 100,000 people in the suburbs also, 75,000 say.

Q. The work to which you devoted special attention was you said metering of the city?

A. That and the systematizing of the accounts of the department some reorganization of the business management to get as much efficiency as possible.

Q. And the metering proposition is simply a plan to measure water so that people won't waste it?

A. The primary object of that is of course to accomplish that?

Q. I think you said that in your judgment under your superintendence you brought the plant up to the standard of well managed private enterprises?

A. I believe so.

Q. Now I have gone over this somewhat in detail to get at your

experience either as an engineer or as a -ractical gas man. Now you are not an engineer are you?

A. No.

Q. You have never had any engineering experience have you?

A. No.

Q. You have never had any practical gas experience?

A. No.

Q. You never have either managed or financed or operated a gas plant?

A. No.

Q. You are not familiar with the details of the operation of a gas plant?

A. No.

Q. You could not tell us how to make gas?

3786 A. Well I didn't try to do that. Of course I know something about it and read a great deal.

Q. Oh in a general way just as we learned by these law suits.

A. Yes.

Q. That is where you have learned about making gas?

A. A good deal of reading and visiting plants. I don't claim to be a gas engineer, but I don't think it would be quite fair to say I have no engineering experience because in the supervision of the water department, I did have a certain type of experience in engineering, but not what would technically amount to technical training.

Q. You did not do the technical work?

A. Not to look into it.

Q. Certainly if I were building a house I woul- look over what the architects are doing?

A. Yes.

Q. But that would not make me an architect?

A. But the fact being that for ten years you would become something of an architect.

Q. I would learn something about it I hope. Now then you have never bought or sold gas machinery have you?

A. No.

Q. You never have as a practical proposition taken the operating cost of any plant and actually tried them out by operating the plant or watching it as it went along?

A. No.

Q. You never have had the resul-s of such work available for your information except in connection with some lawsuit where they brought in some exhibits showing operating cost?

3787 A. Oh yes; in addition to that I have had the data filed in great detail in the Massachusetts Gas Commission office and more or less I have had access to the data we got in the investigations that were given for the National Civic federation, there more particularly with regard to English plants, we went into a most complete study of engineering and construction costs on gas.

Q. Do you think that the English results would be a fair criterion to apply to Des Moines?

A. I have not tried to but I *I* think I should add in answer to your

question that the situation is not absolutely different between England and here so that the experience there is not of any help.

Q. Did you ever make an investigation of these statistics except for the purpose of sustaining some contentions in connection with a controversy over rates, the Massachusetts statistics?

A. I have in addition frequently, when I had any spare time on my hands would go into it because of a desire to get al- the data I could, keep up abreast of the times.

Q. Have you the results of these investigations compiled in any way?

A. No, but I have great quantities of notes taken on such visits that are in my home in New York.

Q. How often have you visited the office of the Massachusetts Commission in the last five years?

A. Oh I should say eight or ten times and I have employed assistance, clerical help, the secretary in the office there or his assistant and sometimes others to copy for me, complete detail returns of several of these companies.

Q. Which companies?

A. Boston and the seven referred to in this report Cam-
3788 bridge, Lawrence, Lowell, Lynn, Fall River, Springfield and Worcester.

Q. And was the Boston copy done in connection with the Boston case?

A. Since then.

Q. Recently, was done in connection with the New York case?

A. I have a lot of copy in my hoom in the hotel, the official certified copies of the last reports of four or five of these companies that were made about five or six months ago, four months ago, I was in Boston and engaged to have it done, it was done for me, I have forgotten just how long ago, but in the spring, that was the last I had done.

Q. Was the Boston record copied in connection with the New York case?

A. Yes, I introduced in the New York case a lot -f data from Boston in 1906.

Q. So as a matter of fact isn't it true that this information has been collected by you in order to support your contention that gas somewhere or other was too high, isn't that as a general proposition true?

A. I should say that fully two thirds, perhaps three fourths has been gathered in connection with cases, that a certain other proportion, quite a considerable amount has been gathered simply because it came handy to me to gather it and I wanted to get al- I could.

Q. So that as a general proposition or as a seventy five per cent correct proposition the information has been gathered in connectio- with fases where you were trying to cut down the price of gas?

A. It has been ga-hered in connection with gas cases where I have needed information.

Q. Now is there any case in which you have appeared where you have not urged a reduction in the price?

3789 A. I think not.

Q. So that my first statement was correct that three fourths

of this information has been gathered by you in connection with cases where you were seeking to bring about a reduction in the price of gas?

A. You can put the two facts together if you please, although I wanted to get the information and every time felt I thought I must have it, and it is also true three fourths of the information was gathered in connection with cases in which I was representing the city and the city was seeking a reduction of price.

Q. When were you employed in this case?

A. The correspondence requesting I come on was from Mr. Brennan some time early in the year, I don't remember what month, probably February or March and then I received a statement that the case had been indefinitely postponed owing to some change in court proceedings. Then I received another letter saying they would like to have me come on soon after the 4th of July. I could not come immediately, but I came as soon as I got through with the most important parts of the work in Chicago.

Q. Then your employment began somewhere around the middle or latter part of July?

A. Yes.

Q. Now what have you done in connection with this case?

A. I have listened to most of the testimony, taken notes on some of it, some of it I have read. I have studied a good deal the exhibits put in by the various witnesses for the company and the city, particularly Mr. Lea's, Mr. Bachr's, Mr. Hagenah's, Mr. Randolph's Prof. Marks and Mr. Hall's. They put in a good many exhibits, some of them, some of them only one or two. I tried to
3790 study them all, so far as I had time, somewhat limited time, then I studied the various matters that I refer to in my report such as these stock exchange quotations, the Massachusetts gas reports, I looked over some notes and things I had gathered previously so far as I had them in Chicago at the time I was there. I am somewhat at a disadvantage at long range from home.

Q. Is that all you have done in connection with this case?

A. Well I have testified perhaps to some things which might be considered as included, I visited the gas works one day.

Q. How much time did you spend at the gas works?

A. Well not over about an hour and a half probably. I don't remember, I didn't keep track of the time.

Q. How much time have you spent going over the city?

A. Well I have been upon probably a half dozen auto rides with Mr. Byers and Mr. Brennan, gone over a considerable of the city a little in street car rides and a little in walking.

Q. And how much time have you spent yourself on the books of the company?

A. Well that would amount of course to where I spent it in the office. I have access to no books except at their office and I did not ask for any other. I went there two or three times to ask some question of Mr. Sangster who was there and one day I stopped and looked into vouchers a little*lm* saw he was doing the work.

Q. You have not made any examination of the books, so far as you are concerned?

A. No.

Q. You have omitted one thing haven't you, during all of the examination of the experts, you sat at the table with counsel and aided in the cross examination where it was by the city?

3791 A. To some extent where I was asked to do so.

Q. I assume you did not do it in spite of them. Didn't you during the entire cross examination of Mr. Lea, the entire cross examination of Mr. Baehr and the entire cross examination of Mr. Hagenah at least sit by counsel and continually suggest questions?

A. There were some days in which I did I think, there were other days in which I did not. I think there are one or two or three days in which I was not in the city.

Q. When Mr. Hagenah went on the stand you were not in the city were you when his direct examination was commenced?

A. I think I was not.

Q. You were advised that he had been put on the stand and came here from Chicago to be here didn't you?

A. I don't think I received any message from here to come back or that he was on the stand.

Q. Are you sure about that?

A. Well I am almost positive about it. As I understand it, I left here with the request that I come back as soon as possible. I had a little work I felt I must be in Chicago and I went back and attended to it and came back again as soon as I could. That is my first visit to Chicago after I had been here. Then the second time was when there was a vacation to be taken by the court.

Q. For instance when Mr. Lea's exhibit was offered the city's copy was immediately turned over to you and you took it up and suggested the line of cross examination didn't you?

A. I fe/l that you are implying that I am responsible for more of General Byers' and Mr. Brennan's work than I am.

Q. Please answer the question, isn't what I said true?

3792 A. I occasionally made suggestions, but I should say nine tenths of all they did was entirely irrespective of anything I did.

Q. You remember sitting here a day at a time and writing questions and handing them to counsel?

A. I remember sitting here writing many days, but I was not always writing questions for counsel. I have a way of working on a case making computations while the testimony is going on.

Q. Do you usually hand that work to counsel while he was cross examining witnesses?

A. In many cases not at all, I remember some days in which I was making computations that had no connection with the witness on the stand and did not go to counsel at all and other times I did such things and handed such things at the request of counsel.

Q. Are you a member of the bar?

A. No.

Q. You have been acting as counsel in this case haven't you?

A. Well technically I don't know what you might mean by the question, if you mean as adviser I could say I have been helping as far as requested to do in a humble way although I don't claim to be a lawyer.

Q. After a month or so constantly in the performance of duties as counsel and advocate, do you find any difficulty in divesting yourself of that character and avoiding argument and so on when you get on the stand?

A. No, because in all these cases I have been doing just what I believed to be the facts in the case and I have had my convictions pretty strong all these yearsm but it does not mean the divesting of myself of these convictions in either capacity.

Q. You have had these convictions, and have argued them
3793 all these —?

A. To a large extent, they have changed and been modified somewhat by continual contact with them, but not the result of a night's thought.

Q. This Exhibit 43, was intended by you was it not to be an argument of this case in behalf of the defendant?

A. No, I did not think of it as an argument, I thought of it as my views of the case.

Q. You intended did you not to take up and discuss the testimony of the various witnesses?

A. Not in the way it would be done in a brief for the court. It was rather a summary of the evidence bearing on the views I held showing my thought on the case as the result of all testimonics and exhibits.

Q. You did not know when you were writing this Exhibit 43 that you were writing an argument?

A. Why I suppose some of it can be called argument, but it was expression of my thought and my views.

Q. Now you say in the introduction to it which is addressed to the counsel for the city as requested by you, I have studied the testimony and exhibits in this case. Now as a matter of fact that is what you have studied isn't it, the testimony and exhibits?

A. That is my chief work here, nine tenths of it. That does not mean that I have not brought out the results of previous study of course.

Q. You have not studied the property?

A. Approximately not.

Q. You have not studied the books of this company?

A. No, not directly. I have taken the exhibits and the testimony as showing what the books did contain.

3794 Q. You have taken the exhibits and testimony and you have attempted to weigh it and discussed it in this Exhibit 43 haven't you?

A. Some of the data I have got is not anything that has appeared in the case before.

Q. That is true, that don't answer my question, however. You

have taken the exhibits and testimony and you have attempted to weigh and discuss this testimony in this Exhibit 43 haven't you?

A. Partly that and partly to contribute as far as I could from my own views and thought and data so far as I have time to give it.

Q. And you have not confined yourself to an argument on questions of fact, but have also argued the questions of law?

A. To some extent.

Q. Do you still say this was not intended as an argument upon this testimony?

A. I have not thought of it as such, I had thought of it as a presentation of my views and beliefs of the case.

Q. And do you want to come here and argue these questions of law as well as these questions of fact under oath?

A. Why I consider that my studies of the decision of other cases is just as important as if I had been shoveling coal under a boiler and had gradually risen to a higher position in the work, I think——

Q. Do you think you ought to argue questions of law and questions of fact under oath?

A. I leave to the attorneys as to what questions shall be argued and I have tried to answer them, I supposed I was within my right to present this report. In almost all cases I have been cross examined, if not direct examination, along all these lines.

3795 Q. They have argued the questions of law with you while you were on the stand I suppose?

A. Yes, often. Matthewson often did it in New York.

Q. I guess it was a waste of time.

A. I don't know the supreme court decided it all right.

Q. The supreme court decided on the questions of l-w about the way you claim they ought not to be decided didn't they?

A. No, I think not.

Q. Do you concede the correctness of the supreme court's decision of the legal propositions in the Wilcox case?

A. I think there are some positions they will change later.

Q. Are you willing to concede that any of the legal propositions announced by the supreme court in the Wilcox case are correct?

A. They are binding of course, they are the supreme law of the land.

Q. I don't mean that, are you willing to concede that any of the legal propositions announced by the supreme court of the United States in the Wilcox case are correct?

A. Why of course.

Q. Now you start your argument here with the statement with the exception of half a million dollars the plant appears to have been entirely built from earnings. Give us the figures from which you deduce that statement?

A. The fact that the difference between the book investment and the outstanding bonds——

Q. What is the book investment you take for that computation. Give it to us in dollars please?

A. The book investment in the neighborhood of $1,600,000.

Q. Can you give it to us exactly, whatever you took for the basis of this statement?

3796 A. I think it is $1,667,000 on page 21.

Q. Don't you know what was the basis of this statement in your report?

A. Yes, but I was trying to find the place in my report in which I gave the investment. Investment at the end of the year, average investment given on page 24 as $1,720,000.

Q. What did you take as the basis for this conclusion which is the first sentence in your report, give us the first figure you took now?

A. That 1,727,000.

Q. Now what was the next figure?

A. The outstanding bonds $685,000.

Q. That is not the amount of outstanding bonds is it?

A. No, that was the amount in 1906.

Q. I know, but this don't say in 1906.

A. The extensions since 1906 have nominally been paid for by bonds and the earnings have been used to pay off preferred stock contracts, but that is no different in substance from taking——

Q. You are getting away from the question, what was the next figure.

A. $685,000.

Q. That was the bonds in 1906. Did you use any other figures reaching this conclusion?

A. The earnings I took of course. The earnings on page 48 after deducting depreciation was about $1,779,000. A large portion of these were represented by preferred stock contracts of $800,000 issued in 1906 and a good deal of the rest has gone into surplus since.

Q. How many of these preferred stock contracts are not outstanding?

3797 A. About half of them.

Q. What is the present surplus on the books?

A. I don't recall at the moment. There are an increased issue of bonds since then and nominally these bonds have been put into new construction, but practically you can say that the new bonds have paid for the new construction because the entire outstanding surplus is only twenty or thirty thousand dollars if I recall right, greater than that five years ago.

Q. You gave me here as cost $1,727,000, then you gave me $685,000 of bonds which is not the bonded debt at the time and the significance of which I do not just understand which you gave me as earnings net after taking out depreciation $1,779,685. Depreciation was not as a matter of fact taken out was it, that is the depreciation that you referred to?

A. No.

Q. Well how much had we ought to add to that then because that has only been taken out theoretically.

A. In case I should say that the true investment——

Q. We are not talking about that at all, talking about this first

question with the exception of half a million dollars the plant appears to have been entirely built from earnings. Now then the gross earnings would be $1,779,685 plus that depreciation that has not been taken out wouldn't it?

A. If you don't take out depreciation you have to add it to earnings on the one side and to the plant on the other so it is as broad as it is long.

Q. Don't your figure $1,727,000 represent some actual figure or is that merely a hypothetical figure which varies according to the method with which you finance depreciation.

A. That represents the profits after taking out the depreciation.

3798 Q. You have got the wrong figure, the figure just given you is the one you told me represented the investment.

A. I am looking at the sum of profits on page 48, $1,779,686.

Q. How much is that depreciation have you figured it?

A. $241,000.

Q. Will you add that for me to the $1,779,685?

A. $2,020,000.

Q. What is the amount of preferred stock contracts that have been retired out of these profits as you say?

A. It is between four hundred and 450 thousand I think.

Q. Isn't it nearer 389?

A. I will accept your figures if you say so.

Q. That is my recollection. Now deduct that will you please?

A. *One* $1,631,000.

Q. That leaves your earnings to be used in building plant don't — except a negligible item of about $12,000 that was paid out in the way of a dividend?

A. What do you say that leaves?

Q. (Question read.)

A. I don't think so. I think you ought to add the bonds to-day outstanding bonds I mean.

Q. I am not talking about bonds, I am talking about earnings. You have first the net earnings after you have taken out depreciation, $1,779,685.

A. Yes.

Q. The depreciation you charged against that was $241,000?

A. Yes.

Q. You have testified that depreciation was not as a matter of fact set aside?

A. No.

3799 Q. Well have you so testified.

A. Yes, I have testified it was no- so set aside.

Q. That would leave $2,020,685 of the total net earnings?

A. That is true.

Q. Now then you say we retired $389,000 preferred stock contracts with it?

A. Yes.

Q. That would leave available to go into plant $1,638,685.

A. Yes.

Q. Now add a half million you refer to in this sentence to that and see what you have got for the cost of your plant?

A. $2,131,685.00.

Q. You told me it cost $1,727,000, that was the total investment.

A. Yes, I gave you that figure I think.

Q. Now there is something wrong in these figures isn't there, they don't check out?

A. I didn't try to give you the exact check, but there are an excess of earnings there over the $1,727,000 and my statement——

Q. The $1,727,000 is the investment?

A. That is the investment and while technically according to your books the outstanding stock contracts are not any more — $800,000 but only $389—$800 less $389, nevertheless practically as your books show there has been an increase of only a few thousand dollars in securities in the last four or five years.

Q. You are getting clear away from this question here which is how you justify the first sentence in your report with the exception of a half million dollars the plant appears to have been entirely built from earnings. I want to know whether you can justify that with figures.

— ——.

Q. How do you do it?

3800 A. I do not make the claim there that there is only $500,000 which you are entitled to capitalize you notice.

—. ——.

Q. Please get back to the question, the question is how do you with figures justify this statement with the exception of a half million dollars the plant appears to have been entirely built from earnings or was that just thrown in there as sort of a nice thing to start with?

A. No. Now let us study these figures a moment, $2,020,685 were net earnings, $389,000 have been retired of the preferred stock.

Q. For the purpose of this discussion I am conceding it was retired out of net earnings as you claim?

A. I don't know that I recognize the reason for deducting $389,000 it would strike me at first thought that the net earnings were $2,020,000.

Q. Let me suggest this, if the $389,000 were net earnings, and was used to retire preferred stock contracts, could it also have gone into the plant?

A. No, but——

Q. Then if you say that was used to retire the preferred stock contracts, in order to conform to your theory we ought to deduct that from the total amount of net earnings?

A. I say that the books nominally seem to show that as I understand from Mr. Hall, but that is not I think substantial and practicable point. *What* the practical point is that the bonds, new bonds retired the preferred stock contracts, some of the new issue of bonds were the same day in which the preferred stock was retired.

Q. How many were?

A. I have forgotten.

Q. Don't you remember that it was just about ninety two
3801 or ninety three thousand dollars?

A. I think as far as I have any figures they are that, but I don't know what the dates are as authorized, I haven't dates as to that.

Q. You don't require $380,000 of contracts with $92,000 of bonds do you?

A. If you will notice the total outstanding preferred stock and bonds now as compared to five years ago you will find there has been less than 50,000 increase in these securities and I think that the point may be considered practically, I don't say that is on your books you did it that way.

Q. I want to know how you got this statement here. I want to get down to brass tacks and not glittering generalities?

A. First you have got to divide this into two periods, take everything before March 1, 1906, as one period and then since then as another.

Q. Why is it necessary to divide it into periods if you know the total amount of earnings in both periods. You would have to add them together then wouldn't you?

A. It is not necessary except to show the amount of my analysis there.

Q. You see you are getting away from this all the time. I want to know the basis for your first sentence in your report. If that is true it is because it is a proper deduction from some figures that have been introduced in here?

A. Yes.

Q. Now then will you give me those figures from which you made this deduction?

A. I did so in this way. I first studied the period before March
1, 1906, and found an investment value of the property as
3802 given by me on page 47 as $1,019,603. Now the bonds outstanding at that time or on the next—take out $500,000 only as my statement is half a million, leaves $519,603. Now the net income given on the same page after deducting an allowance for depreciation was $642,129.40. Therefore my thought was that the net income which had gone back largely in the plant or $542,000 had been what had been used to pay for that $519,000 of investment. Now in the same way take the second period, I can find it in a minute if you want me to take the time.

Q. I would like to have you take the time.

A. I would have to find Mr. Hall's exhibit. If you will turn to Exhibit "F" in Mr. Hall's report, defendant's Exhibit 30, you will find that the total fixed liabilities on March 1, 1906, are given as $3,734,000 and on December 31, 1910, only $3,758,000 an increase of only $24,000 and the amount of liabilities increased to the same extent which is shown a little lower down in the table, accrued liabilities increased from $21,015.83, to $58,817.07 so the total increase in liabilities was $24,000 in the fixed liabilities in the five years and about $37,700 in the current and accrued liabilities—wait a moment that was accrued liabilities I was rendering such as

interest and taxes there was in addition an increase in current liabilities from $18,227.80 to $51,836.57, increase in that item of about $33,600. The total increase was about $93,000. Now the rest of the extensions amounting to several hundred thousand dollars, about four hundred thousand dollars if I recall right, possibly 500, but anyway I think they are four, must have been paid off by surplus earnings all but $100,000 in round numbers the last five years the position I was taking in that page you refer to it was paid off
by surplus earnings while the surplus earnings before that
3803 had exceeded the construction and the $500,000 allowance.
So it was that which I had in mind when I made the statement in the table.

Q. That was the basis for this statement.

A. Yes, but I do not assume that the investment should be counted on that basis at all and do not use that as a basis of reckoning at all in future in the report.

Q. What is the significance or what is the purpose of that first sentence in your argument here?

A. It was an industrial statement as to how the property had been built which was by leaving the earnings in and then dividing them in $800,000 of preferred stock contracts afterwards and was intended to meet the statement so commonly made, I remember it — made in this case two or three times that there had been no dividends during these long periods of years, the implication being there had been no profits. It seemed to me that the profits had been made, they went into the plant, then they were taken out in preferred stock contracts, the preferred stock contracts here being paid off nominally by earnings while new bonds are ordinarily issued for extensions, but practically the securities remain the same and the extensions since 1905 was earned and a paid out of earnings much as before.

COURT: I want to call your attention to the fact that there was $400,000 of bonds of the old company at that time, that evidently was used in construction of the plant. Then there was $120,000 of this sum that was used to pay off for material evidently?

A. I think this can be said if we take the investment as I have just given it of $1,019,603 on the first day of March, and only allow $500,000 which was my statement here, there remains $519,603 and the earnings were $642,129, the earnings were $123,000 more
the than necessary to build the plant aside from the 500,000.
3804 But some of it was distributed in dividends and interest before 1895 and of course some of it since, and more bonds were issued than $500,000 and I think that statement in the spirit in which I meant it is correct.

COURT: You didn't use apt language then?

A. Perhaps not.

Q. And that was meant to answer the argument you have referred to with reference to or based upon the alleged statement that no dividends had been derived from the property?

A. That and what followed was intended to.

Q. Can you remember any one of the complainant's witnesses who testified to that or made that averment?

A. I don't remember now. I remember Mr. Lilley made it in 1895 and I thought it had been referred to in this case. I really thought there had been some reference to no dividends.

Q. You didn't intend it to answer the argument to Mr. Lilley in 1895?

A. No. I had that in mind first and I still remember some statement somebody made here.

Q. By some of the defendant's witnesses and not the complainant's witnesses.

A. May be. I thought by the company's witnesses, may be not.

Mr. Byers: Counsel himself brought it out did he not?

A. My impression is I heard it here in the court room.

Q. You next take up here do you not the cost of the property to the Des Moines Gas Company as measured by the securities which were issued for the property.

A. Yes.

Q. And you get a total of $1,440,000?

3805 A. Yes.

Q. By ignoring the common stock.

A. Yes.

Q. If you take common stock in, of course this total would not be correct?

A. That is right.

Q. Common stock was issued under the same resolution, part of the same transaction under which the others were issued?

A. Yes.

Q. Now then you say the last part of this page 6 that we are to add here some $484,467.94 for extensions since March 1, 1906?

A. Yes.

Q. Where did you get that figure?

A. I refer here to this figure Exhibit 30, page 21.

Q. Now then what is the tota- of the extensions given by Mr. Hall on page 21 from March 1, 1906 to December 31, 1910?

A. He gives the figure that I use $484,487.94, he adds then $45,000 for Valley Junction and the added cost of the holder $120,000.

Q. So that what does Mr. Hall use as the extensions from March 1, 1906, to December 31, 1910, at page 21 of his report?

A. $549,487.94.

Q. You are $165,000 less than what appears at Mr. Hull's report, page 21.

A. No.

Q. You are not?

A. No. That is in the bonds issued March 1, 1906.

Q. What you say is this if there be added the $484,000 of extensions since March 1, 1906, defendant's Exhibit 30, page 31—you say the $1,440,000 is included in the $640,000 of bonds?

3806 A. In the $1,440,000 is included the $640,000 of bonds as you will notice higher up on the page and that $640,000

of bonds includes the $240,000 issued for that holder, the $45,000 at Valley Junction is not in there, but in the city limits the property is there.

Q. The reason you did not take Mr. Hall's total was that you thought you would duplicate that holder if you did?

A. The holder was in the $640,000 and I thought to take it again would be to duplicate it.

Q. Then you do leave out the Valley Junction property?

A. Yes.

Q. You reach a figure of $1,850,000 which you call net value, line 2 of page 7. You mean cost figured on the theory which you have adopted don't you?

A. Yes, although I consider in this case on the basis I reached the previous page that the dividend and interest bearing securities issued in 1905, represented the estimate of the Des Moines Gas Company of its value because I assume that the stock had little value, but in so far as it had a value——

Complainant moves to strike out the latter part of the answer of the witness as purely an argument and statement of his conclusion as to what he believed the Des Moines Gas Company thought five years ago and as clearly incompetent.

A. You are asking whether the value as carried is correct from my point of view?

A. I was asking you whether or not this net value ought not to be net investment?

A. And I wanted to say I thought it should be value.

Q. It should be value on the supposition that the stock represented little value.

3807 A. This $1,440,000 represented value in 1906, plus something for the stock which I do not allow for.

Q. You don't know what it is?

A. No.

Q. But it did represent something didn't it?

A. Yes.

Q. So that if you get back to what you have adopted there namely what your inference is as to the idea of the Des Moines Gas Company in 1906 as to the value of its property, it would be something over $1,850,000 provided its idea of depreciation compared with yours, how much over you could not tell because you don't know what they regarded the stock was worth, that is about the straight of it.

A. Yes. I don't use that figure you notice in my further report?

Q. That is what I was going to ask you. From this time on, you do not refer to the $1,850,000?

A. No, I do not.

Q. Now you say this figure will be henceforth referred to as cost to the Des Moines Gas Company?

A. When I dictated that I thought I might be referring to it again but I didn't get around to do so.

Q. Now you say a sounder view, however, and the one more in

line with court and commission rulings, is obtained by ignoring and so on? Tell us just what ruling did you have in mind there?

A. The investment in the plant instead of what was paid on charge of ownership has been the basis of most of the rate decisions in Massachusetts and largely in Wisconsin, especially in Massachusetts and in New York. A few of these decisions have gone to the courts as in the case of the Cedar Rapids Gas Company and affirmed by the supreme court of the state.

3808 Q. Now let's get back to my question. The Cedar Rapids case you refer to is a court ruling?

A. It went to the court finally.

Q. Is that one of the court rulings you have in mind here in this part of your argument where you say it is more in line with court and commission rulings?

A. There was no change if I recall right of ownership there.

Q. You have forgotten the question I asked you, whether the Cedar Rapids Gas Company's case decided by the supreme court is one of the cases you referred to there?

A. I think I had in mind several cases where matters went up from the eastern decisions.

Q. Now then what are they?

A. The Haverhill gas case.

Q. That went to the courts?

A. And has not yet been settled.

Q. That is not authority for this statement is it?

A. The commission ruled in the way I interpret it.

Q. I am talking about courts.

A. The courts have not yet acted on that, this claim made by the company the decision of the commission should be ignored. The commission refused to recognize a transfer as an excuse for increased security.

Q. Is that undecided court case the only case you relied on?

A. No. I don't recall at the moment, but I have been familiar with a great many but just where and that the decisions were at the moment I cannot recall.

Q. Can you give us a reference to a single decision by a court or a commission, give us the reference by name that will sustain this statement in your report?

3809 A. The Haverhill case was a decision of the Massachusetts gas commission on that very point.

Q. Where was that reported and when?

A. In one of the annual reports of the commission in the early nineties.

Q. And it is still in the courts?

A. Yes. I think I can give you other cases. I am very positive I read of that attitude in some of the commission decisions besides the Haverhill case, very positive of it.

Q. This opinion or statement here as to decisions by courts or commissions that you will give under oath?

A. Yes.

Q. Don't you think you ought to be able to refer us to something that sustains it?

A. I am very positive I have read that in court decisions too.

Q. Now which one?

A. I don't recall at the moment, I will try to think it over.

Q. Will you please give us references to the decisions which are the basis for this statement I have just referred to?

A. Yes, I will try to think that over.

Q. Now then you say the true investment of the gas company is $1,727,676 including Valley Junction. Where did you get that $1,727,676?

A. It is in one of these tables.

Q. But you didn't get it from that table did you?

A. Yes, I made up this table before I wrote that statement I believe, that is my recollection of it.

Q. Well give us the table?

A. On page 25 it is in that place.

Q. Isn't 16 the table which that is made up from?

3810 A. It appears in both tables, the same figure in both tables, but it appeared first in Table 16.

Q. And that is the first table, then the other table on page 24 is made up from table 16.

A. That came in on page 16 first.

Q. Turn to page 21 of Mr. Hall's report and tell us whether those figures are all taken from that report.

A. Yes.

Q. Just rearranged a little.

A. I intended to do so.

Q. So that this statement of $1,727,676 is something that is adopted by you from the report of Mr. Hall?

A. Yes, I think he made the mistake which I followed not at the time realizing it of putting $120,000 into holders when it should have been the middle period.

Q. If you had put it in there you would have straightened out that curve?

A. Partially. I did not discover when writing this table, dictating it that the inventory and Mr. Lea's testimony gave the holder as 1903, but afterwards discovered that.

Q. Now referring to this table on page 16 you testified that this was the amount that the books showed had gone into this property didn't you?

A. Yes, I think so. I don't remember just what I stated.

Q. Basing your testimony on your own information these are the figures shown or some of the figures shown at page 21 of Mr. Hall's report rearranged by you?

A. That is what they are. I do not intend to state anything contradictory to that.

Q. What I want to get at is this, your testimony that

3811 these are figure- shown by the books is not based on any knowledge of your own at all?

A. No, I have taken Mr. Hall as authority on the books.

Q. If you had simply told us the plain facts without anything else you would tell us these are certain figures shown by Mr. Hall's report and adopted by you?

A. Yes, and that is what they purport to show as I understand.

Q. That was what I was getting at, you testify to what Mr. Hall testified when you said they were what were shown by the books?

A. As to that point. But I used the figures as a basis for computations on depreciation, etc.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

3812 FRIDAY FORENOON SESSION.

SEPTEMBER 22, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, continuing his cross examination, examined by N. T. Guernsey, Esq., testified:

Q. Professor Bemis, yesterday you referred to the Boston adjustment—you are entirely familiar with that, aren't you?

A. Why, largely familiar; don't know that I am entirely so.

Q. I believe that adjustment was made by legislative enactment, wasn't it?

A. Yes.

Q. And you did not state, did you, yesterday that that enactment, notwithstanding the 4% rates you talked about at which securities were selling there, fixed 7% as the basis for return?

A. For a sliding scale, I think it did.

Q. Fixed 7% as the minimum?

A. Well it was the basis; if they raised the price——

Q. I will get to that later. Then it further provided that whenever the price of gas—it provided a normal or standard price for gas?

A. I believe it was 90 cents.

Q. And it further provided that whenever the price of gas was decreased five cents they might increase their return or dividends one per cent?

A. Yes.

Q. And as a matter of fact the dividends that are paid are 9%, are they not?

A. I believe so.

3813 Q. And the plan*d* did not stop there?

A. I believe it goes right on; they can go on with further increases.

Q. That is not what I mean—the plan further provided for the creation and maintenance of a fund out of earnings to cover contingencies and emergencies?

A. I am not sure whether it did or not. I don't think there is

any such fund accumulated as I recall the last report; whether the law provided it, I don't know.

Q. Aren't you familiar enough with this situation in which you took such a prominent part to be able to tell us whether I am correct in my recollection that the law provided there for the creation of what might be called an emergency fund out of the earnings, and provided that if it was encroached upon on account of necessary expenditures, they could proceed to take the earnings and bring it back to the original amount?

A. I don't remember, and I will explain why. I was not in the case at the legislative feature of it, only before the Commission; so I had nothing to do with the final passage of the law.

Q. Haven't you carefully studied all these things since then?

A. I have carefully studied the reports of the Boston Consolidated Gas Company in which I find no such accumulation as you refer to.

Q. So that they have there what they call a sliding scale, as a matter of fact?

A. Yes, it is the only city that does have it, I think, in this country.

Q. Now your attention was called to the inventory—you said this with reference to the inventory, referring to page 3663: "I did not look it over with the care that I looked over and specially studied the summary that Mr. Lea and Mr. Baehr used in their ev-
3814 idence." Now you took Mr. Lea's report or Mr. Baehr's report as a description of the property, is that right?

A. Yes, so far as related to all I needed it for. I do not claim it was a complete description of the property.

Q. All you needed it for was to analyze and answer their testimony?

A. It was to analyze it——

Q. And to attempt to answer it in your argument here?

A. A good deal of it I agreed with and a good deal of the testimony I agreed with, and I commented on it and expressed my views on it.

Q. And of course the inventory would not do you any good for that purpose?

A. Yes, I am assuming for the moment that the report was based correctly on the inventory, which there seemed to be no dispute about.

Q. On page 3667 in this preliminary examination you stated that you had examined Mr. Hall's report carefully and had checked it up. What do you mean by saying "checked it up?"

A. I had compared one portion of it with another to see that it was consistent with itself. I had very carefully followed the cross examination and the various exhibits which are supplementary to the report to see whether errors or omissions were being shown in the report.

Q. You checked these exhibits for the defendants as they went in in connection with Mr. Hall's examination?

A. No.

Q. They were turned over to you as they were introduced, were they not—all that referred to accounting or anything like that?

A. I tried to get them all; I don't know whether I did get every one or not.

Q. That was true not only as to Mr. Hall's testimony but
3815 as to all testimony during the part of the trial you were in Des Moines?

A. Yes, I tried to get all the exhibits to look them over; I did get nearly all of them.

Q. That don't answer the question—they were turned over to you immediately after being introduced to be checked over by you, were they not?

A. They were turned over; I can not say the purpose was I should check them over, but the purpose was to make such use of them as I wished to make.

Q. A part of the work you did was to examine these exhibits and see whether they were right or not and make suggestions as to the treatment to be accorded them?

A. Yes; I did not attempt a careful checking of all tabulations or even computations indicated in the reports; I did not have time to attempt to see if there was anything arithmetically out of the way; I assumed it was all right.

Q. Now when was it that you checked up Mr. Hall's report?

A. The copy was in my hands all through his testimony and I carefully studied it—in fact I got it about the time I reached Colfax.

Q. You checked it up before he testified?

A. Not to the extent you refer to. I studied it and it did not result in any changes in his report. I was at work studying it just as soon as I could get hold of it.

Q. You were at Colfax with him two or three days before he went on the stand?

A. Yes.

Q. He had his assistant, Mr. Sangster, there and you had your stenographer there?

A. Yes.

3816 Q. And you were both working on this report of Mr. Hall's?

A. No, I was working on data that I might want to use, extracting from his report such data as I might want to use. He was working on, I don't know just what at that time.

Q. And when was it you and he collaborated with reference to Exhibit 33, this going value on the Wisconsin theory and so on?

A. That treatment of the going value is entirely original with Mr. Hall.

Q. You had nothing to do with that?

A. No; except he told me about it.

Q. You don't want to claim any responsibility for that?

A. I had nothing to do with it, except he told me about it.

Q. When did he tell you about it?

A. I think on the train coming in in the morning he presented it.

Q. He didn't tell you while you were at Colfax?

A. He worked it out the night before, along the middle of the night, as I recall it. We had to make an early start and on the train we talked it over.

Q. Now you were asked this on page 3669 of the record: "Have you so far as it was possible for you to do in the time followed the history of the Company from that time down to this (referring to the sheriff's sale) and noted the transfers and changes in at least the name of the owner? A. Yes. Q. How much time have you devoted to this work, Professor? A. When I have been in the city, all my time. When I was in Chicago probably half of my time during the interim here of a couple of weeks." Now, to what source did you go for your information as to the history of the Company?

A. The testimony and exhibits of the case of 1895, and for the subsequent period the testimony and exhibits in this case. I
3817 think there was an addition which may have been put in as an exhibit, some city volume which gave a list of franchises and agreements that had been made between the city and the company, and I glanced through that; it may have been put in as an exhibit, I don't know; it included the ordinance passed last December, etc.

Q. What you looked over was the record of that earlier case and the record in this case practically?

A. Yes.

Q. Now, last evening I think I asked you for a citation of the authorities upon which you based your statement in page 7 with the view in line with court and commission rulings as you stated there; can you give me those authorities?

A. I did not bring with me the data on that subject, but one of the rulings which had always been in my mind as along the line that I refer to here is the Knoxville Water case decision of the United States Supreme Court in which they ignored the securities and insisted that was not of any great importance in the matter. Then before that there had been the Nebraska rate case——

Q. You mean the Nebraska rate case in the United States Supreme Court?

A. Yes.

Q. Smythe vs. Ames?

A. Yes, that and the Standish Laus water case. In those three cases, at least, there had been insertions, as I recall them, that the securities were at least only one element and not a leading element in the valuation of property for rate purposes.

Q. Which is not the proposition which you assert here, but is a different proposition?

A. Well, I had in mind, that here was changes in securities coming about when property was transferred, and I had
3818 in mind, not exactly a court decision, although I think it has been upheld and it is law still, the Massachusetts law of three or four years ago, that directly prohibits all securities in case of consolidation or sale of gas and electric light properties.

Q. That is a statute that applies to Massachusetts, but not to Iowa?

A. Yes.

Q. So that so far as the real proposition that you assert here goes, you don't know of any decision that even involved the question, do you?

A. I consider that the tendency of the Supreme Court to ignore capitalization is along that line.

Q. Do you know of any decision by any court that involves this question?

A. I haven't my data with me; that is the nearest approach to it; I didn't say exact decision; it was along the line, the spirit of these decisions.

Q. Now, in my copy of your argument here, referring to these quotations on pages 8, 9 and 10, those pages are all of them quoted, except the single paragraph on page 9, are they not?

A. I think so.

Q. And in that paragraph you have in my copy stricken out what was oribinally inserted, showing a failure to earn operating expenses in the earlier period?

A. Yes, but I did not take the pains to have a new copy made.

Q. Now, on page 11 there is nothing, is there, except what purports to be either copies or statements from testimony given in this earlier case?

A. That is true.

Q. And did you correct that date, December 31, 1910, at the last line on page 11 yesterday?

3819 A. I thought I did; I did in my copy at least. The last line on page 11 should be December 31, 1894, instead of 1910.

Q. Now taking this document so far as we have gone, is there any thing that relates to the present value of the property in these pages, 6 to 11 inclusive?

A. It depends on what is meant by the word value.

Q. Taking the word value in its ordinary sense?

A. I should say, as relates to its value for rate making purposes, the history of the investment is vital.

Q. Taking the word value in its ordinary sense, is there anything so far as that has any bearing upon it?

A. Yes.

Q. All right. Now, then, you say at the top of page 12, the ledger showed an investment in construction and working capital on December 31, 1894, of $681,646.04; did you get that from the ledger?

A. I secured that from the exhibit of Mr. Pratt which purported to contain a copy of that.

Q. So that was as far as your information goes, and it would have been more accurate to have stated here that you found that Mr. Pratt said on December 31, 1894 this was the ledger investment?

A. Yes; I think I found Mr. Lilley testifying to the same effect.

Q. That statement is not based on any examination you made of the books, but simply based upon what somebody else said in 1892 or 1894?

A. Oh, yes; I did not go to the Company's books at that time.

Q. Now, then, you have a statement here showing $215,113.11 deducted, or to be deducted from that investment?

A. Yes.

Q. The deductions made by Mr. Hall on page 22 of his report were $211,468.16, were they not?

3820 A. On page 22, that appears to be so; I should judge that was his.

Q. Where did you get this $215,113.11 which would make it up?

A. It may be a mistake in addition, but I certainly intended to add those figures correctly.

Q. Well, aren't they added correctly?

A. Yes. Now the data from which the total was obtained was taken from that exhibit of Mr. Pratt's and Mr. Lilley's which contained those items. In the affidavit of Mr. Pratt it is stated in introducing the cash investment of $466,532.93, that that is obtained by omitting from the book investment the items marked with a red cross, in the long sheet of items, and I looked for the items, those marked with a red cross, and I found them to be these, and deducted them and reached the exact figure Mr. Pratt had used, and that seemed to confirm his statement.

Q. Then it looks as though Mr. Pratt deducted a little too much, if Mr. Hall is right?

A. Yes. I don't know how Mr. Hall reached that figure.

Q. It shows in his report, don't it?

A. His report is about $3,700 less.

Q. Does not Mr. Hall's report show very clearly how he reached this figure on page 22?

A. I think Mr. Hall failed to deduct the first three items given in my report on page 12.

Q. As far as you are concerned, you simply followed Pratt?

A. I certainly did, in that table.

Q. That is what we are talking about.

A. Why I made the remark in the way I did is, at first perhaps I had it in another table, but I believe I did follow this conclusion right through.

Mr. BYERS: I will call your attention, you will notice

3821 further down in the Hall report the first time you used on page 22.

Q. What is this reference on page 22 to which counsel has called your attention?

A. I didn't really notice what he was saying about page 22.

Q. All right. You haven't really checked Mr. Hall's report carefully enough to know whether it agrees with you on this item or not, have you?

A. No. But I believe that he started in his further tables with the Pratt statement of $429,426.83, aside from the supplies, materials, cash, bills payable, an aggregate of $37,106.10. So I believe whatever difference there was was merely in some explanation of how the $429,426.83, or the $466,532.93 was reached. But I think Mr. Hall further on started with Mr. — figures, the same as I did.

Q. So far as you are concerned, you are taking either the one or

the other; you are not basing your figures on any independent investigation of your own; you are simply accepting one or the other of these men for these figures?

A. I accepted Mr. Pratt for the starting point, January 1, 1895, and it is the same thing that Mr. Hall took. Further on I took Mr. Hall.

Q. You simply took what you found in somebody else's report?

A. Yes.

Q. I notice both in this argument a*b*d in the early argument, you called attention to the fact that you claim that this $466,532.93 has never been reduced by any depreciation charge; now is there such a statement, or is that a mere inference of yours and a mere claim you make from these facts as you think you found them.

A. As I found them, and as I listened to your cross exami-

3822 tion of Mr. Hall.

Q. In other words, this is a pure deduction on your part that you put in here for whatever it is worth argumentatively?

A. It is my reading of the evidence and listening to the evidence.

Q. It is not based on any examination of the books by you?

A. I think I stated I did not go over the books of the company.

Q. Do you think it would have been fairer if in the same connection you would have called attention to the same fact that Mr. Pratt said the property was actually worth more than this?

A. I thought I had brought out either in my testimony or elsewhere that there were appraisals made by Mr. Walton Clark, Mr. Cowdry, Mr. White of New York, and I think one or two others, which were not very different from this statement of Mr. Pratt's. I don't think they vary $20,000. There were some, I think, were higher and some lower, but they didn't vary $20,000 either way. I think I referred to that; anyway I thought I did; I intended to in my testimony. I am very positive I referred to those appraisals.

Q. (Last question repeated.)

A. I referred to all I remembered on the subject; I do not at the moment remember; I cannot answer it directly.

The MASTER: That don't answer the question.

A. If I had in my mind such a statement, it would have been fairer to mention it. I don't remember such a statement; I don't even recall having seen the statement.

Q. Will you turn to page 10 of your report and look at the last sentence?

A. Oh, yes; $470,000.

Q. You forget those things, I suppose?

A. That is only $4,000 difference.

3823 Q. It is more than that, isn't it? After you talked about depreciation and after you took out your working capital and things like that?

A. No; because I left the $466,000 I stated in there; I didn't take any of it out for depreciation.

Q. But you say it ought to be done, and then you say certain

other things about the working capital and you call attention to every reduction there?

A. But you notice I leave in my report the full $466,000.

Q. Oh, certainly. What I want to get at is this, whether if you wanted to create a fair impression as to the result of Mr. Pratt's testimony, you would get at it by taking the low amount and saying really that ought to be reduced, and omit his higher amount?

A. His amount of less than $3,500 was so near the same, I would call it the same for all practical purposes.

Q. Do you remember any item of $3,400, where it would be taken into account for the benefit of the city, that you omitted?

A. I put back into the operating expenses that amount for accidents which Mr. Hall had not allowed.

Q. That is not a mere matter of discretion, it is not a sort of gratuity from you, to put into operating expenses what ought to be there?

A. You misunderstood the use of the word ought. I tried to put data as I thought it should be put. I still believe, as I stated, that the property was valued new, rather than in a depreciated capacity prior to 1895; so it was necessary for me to state it as I believed it then and now.

Q. That is, it was necessary if you were going to argue views and facts; but it was not necessary if you were testifying as to
3824 matters of fact?

A. I was testifying also as to matters of opinion.

Q. But as to matters of opinion your testimony is not limited to opinions that are matters of expert knowledge, is it?

Objected to on part of defendants as being a mere argument and improper cross examination.

Q. This matter of opinion you are referring to is an opinion as to conclusions to be deduced from certain testimony?

A. It is that, and also based on studies of depreciation, and I don't know but they have some relevancy.

Q. Now, then, you say on page 13, that from January 1, 1895, to February 28, 1896, the new construction was $648,760.90; that is not based on your own investigation; that is simply taken from Mr. Hall's report?

A. As stated here. I tried to give credit for it.

Q. Now you say the books of the company agree with this, have you checked them?

A. No. But I listened to all the testimony in which the matter was brought out.

Q. So that statement is not based on any investigation of your own; it is simply your statement of the effect of the testimony?

A. Yes; I repeat, I did not go to the books of the Company at all.

Q. And then we go on with this—all of these paragraphs then are mere statements of your conclusions from the testimony of some of the other witnesses in this case; none of it is based on anything

of which you have any more direct knowledge, for instance, than I have?

A. That is true, I should say.

Q. We both of us heard the testimony here?

A. Yes, you are referring now to page 13?

3825 Q. I am referring to the first paragraph of page 13.

A. Yes.

Q. Now let us go on with the next one; your first sentence there is of just the same character?

A. Yes.

Q. Now you say it is the claim of the Company that an additional amount of $120,000 not reported on the books of the Company was paid for the new holder of 1,132,00- feet capacity; that is a mistake, isn't it?

A. I don't think so.

Q. What witness for the Company made such a claim?

A. Mr. Hagenah.

Q. Mr. Hagenah, you understood him to say what?

A. He said he had been unable to find anything on the books, but he had been told that the money had been paid for the holder, as I recall it, and Mr. Hall I think testified——

Q. I am talking about the Company's claims.

A. Yes.

Q. As a matter of fact the Company has made no investment claim aside from the mere general showing of what Mr. Hagenah's theory would work out; but it has based its estimates of that holder, not on the cost, but on what it is worth?

A. Aside from Mr. Hagenah, I think that is true; I don't think there is any other evidence about its cost except Mr. Hagenah's.

Q. Did the company through Mr. Hagenah put in any evidence about its cost?

A. Well, it may be that it was on cross examination; I am not sure as to that; all I remember is that I heard him testify about it.

Q. Now, take your next sentence, none of the Company's

3826 witnesses in a position to know about it have testified that the holder did cost this much; pure argument, isn't it?

A. Fact, I think.

Q. Pure argument?

A. I consider it a fact that has a very important bearing.

Q. Upon what?

A. Upon the value and cost of this property.

Q. Now what one of the Company's witnesses who testified had any knowledge so far as you know about the cost of that holder?

A. I suppose Mr. Douthirt did.

Q. I am not asking you to suppose.

A. I couldn't say positive; from his knowledge about the Company, as he testified, I should say he would know.

Q. Was Mr. Douthirt one of the Company's witnesses?

A. No.

Q. To get back to the question, was there one of the Company's

witnesses, so far as you know, that had any more knowledge than you have as to the cost of that holder?

A. No witness put on by the Company apparently did, unless it was Mr. Haines.

Q. Do you know whether Mr. Haines knows anything about it?

A. I couldn't say that he wouldn't know; it would be rather assuming a good deal to say he didn't know.

Q. Notwithstanding that, in this argument that you swear to, you bring this up for the purpose of practically criticizing the Company for not showing that cost?

A. Yes.

Q. Now, then you say—for the present, however, this $120,000 is conceded to the Company—what do you mean by that?

A. I mean in this computation I will take it, although a
3827 little suspicious of it.

Q. You know the Company has the holder?

A. Yes.

Q. You know if you omitted the holder you would not get the value of its property?

A. Certainly; it is only the amount.

Q. Now, then, where did you get that $529,487.94?

A. That is from the testimony of Mr. Hall, which I used on page 16 in that table and referred to it as having come from the defendant's Exhibit 30. It is on page 21 of Mr. Hall's exhibit.

Q. You state this is the amount of expenditures during this period from March 1, 1906 to December 31, 1910?

A. Yes.

Q. Now, have you included that $120,000 in there?

A. No; Mr. Hall said it wasn't on the books; but I do include it in my computations later.

Q. So that the statement of the amount of expenditures would be misleading at least?

A. I think it is accurate, taking it in connection with the next sentence.

Q. The next sentence—it is the claim of the Company?

A. Yes.

Q. You go on and say you conceded it and that would lead to the inference you included it?

A. I did.

Q. In that amount?

A. No, in the further amount which follows.

Q. Now, passing on to this matter of preparation and reorganization expenses $6,922.82; you throw this out altogether?

A. I understood they were expenses, from Mr. Hall's testimony, connected with the transfer of title from the Capital City
3828 Gas Light Company to the Des Moines Gas Company March 1, 1906.

Q. Well, Mr. Hall didn't testify as to the details of those expense-did he?

A. I don't recall it; I think in his testimony he stated what it was for.

Q. What were they as a matter of fact; you threw them out and you didn't throw them out without knowing what they were?

A. I understood from his testimony they were the legal expenses connected with the change of ownership of the properties, traveling expenses, anything incident to the mere change—might be some new incorporation expenses, but they were in the nature primarily the cost of transfer of ownership.

Q. What I want to get is this: did you throw out this expense without taking the trouble to find out just what they were?

A. Yes, I only learned their nature.

Q. Do you think you could very intelligently determine whether they should be thrown out without finding out what they were?

A. Yes, if they were the expense of transfer of ownership.

Q. I want to know whether you think you could intelligently determine whether they should be thrown out without first ascertaining what they were; you cannot answer that by assuming you did know what they were?

A. Yes; I do not need to know the details, or what they were, if they were for transfer of ownership.

Q. Now, then, I have a memorandum of these expenses and I hand you a copy of it. Referring to this Exhibit 63 now, which is a memoranda showing the items of these expenses, there are first as you indicated, a few items of traveling expenses; then the notary services; then an item of $800 services of A. B. Cummins
3829 re opinion respecting franchise of the Capital City Gas Light Company; then an item of $400, services of A. B. Cummins, re articles of incorporation of the Des Moines Gas Company and advice respecting the same; without going further at present, if it was proposed to organize a new corporation and have it take over this property and issue new bonds, there was no impropriety in getting the best possible legal advice as to both the franchise situation and the organization of the corporation, was there?

A. No.

Q. That was practically a moral obligation to the men who might afterwards acquire these bonds?

A. Yes.

Q. So that you would not say, so far as these expenses are concerned that they were improper expenses?

A. No.

Q. Now, then the next item here is $2.265 paid to the Secretary of State under the laws of this state on account of incorporation; would you say that was an improper expense?

A. No.

Q. Then the next item, the purchase of a seal for $2.45, would you say that was an improper expense?

A. I am willing to concede if the company is to chang ownership, all the expenses are proper.

Q. The other items are printing mortgage, engraving bonds, for some legal services, publication of the incorporation notice and for other legal services, and printing stock certificates; when you

made your account, did you put those items into the operating expense?

A. I don't think so.

3830 Q. They had to go somewhere?

A. I should take the amount of dividends, out of the profits; it was a mere scheme of taking the property from one pocket and putting it into the other of the U. G. I.

Q. Wait a minute—let's see. You know under the situation existing prior to this time, the corporation, the Capital City Gas Light Company could not issue a dollar's worth of bonds to get additional money to make extensions to this plant; you know that?

A. It had to be done by stock, as I understand it, if at all.

Q. Now, then, you know from your broad experience in the gas business that constant and additional capital would be necessary, don't you?

A. Yes.

Q. And that it was necessary to finance that in some way?

A. Yes.

Q. Here was a situation where they were up to their bond limit; they had $600,000 of stock; under the laws of this state they could only issue two-thirds as many bonds and had issued all of them.

A. Yes.

Q. It was necessary to do something?

A. Yes.

Q. Under such circumstances it is usual to recognize, is it not, and to provide for a new trust deed that will give some lee-way, have some flexibility and afford means for securing additional funds?

A. It is against public policy to do it the way you did it.

Q. I didn't ask you that. Answer the question.

A. It is rather common, but fortunately going out of use with the change of public opinion. That thing would be for-

3831 bidden in Massachusetts and several other states I think. I think New York state now forbids it.

Q. Passing those things which are all interesting, if true, it was necessary to do something?

A. Yes.

Q. And this expense was in your judgment a legitimate expense—without asking you to approve of the method that was adopted for meeting this situation?

A. If you were to meet it that way, I assume those expenses were necessary.

Q. Now, then, when you entered them on the books of the Des Moines Gas Company—these expenses were incurred of course at the very time they were organized—there were no profits out of which to pay them?

A. There were many hundred thousand dollars accumulated profits that had gone into the plant.

Q. You couldn't use that to buy bonds or pay lawyers?

A. No.

Q. To what account would you charge those things when you paid the bills?

A. Well, not being a book keeper, I am not going to say. I think they were properly chargeable to some expense account to be paid out of earnings of the next two or three years.

Q. Then to make this thing correct, if you throw them out of capital, you would have to put them into operating?

A. I wouldn't call it operating expense. I meant payable out of net earnings; just as discount, however I will keep free of the discussion for the present.

Q. You throw those out for the same reason you throw out the discounts on bonds?

3832 A. I don't think so exactly; I realize that is a slightly different situation with the discount; it is not analagous.

Q. Have you ever in connection with your investigation of these questions looked into the classification of the Interstate Commerce Commission?

A. I have as I have other classifications, but I do not think I looked into it with reference to this point particularly.

Q. The Interstate Commerce Commission, when it comes to the question of how you shall classify the expenditures for the cost of steam railroads, for instance, says that discount on bonds is a capital expense, doesn't it?

A. It might say that; I am not sure; if you say it does, I will accept it; I don't remember.

Q. And that is the way in which the accounts of every railroad engaged in interstate business in this country are kept today in the United States?

A. I don't know; I consider it a defective method if it is.

Q. I assumed that, but adopting the language of your own argument, paraphrasing it, where you say Mr. Baehr, for instance, in overhead ignored the Chicago Traction Ordinance, you have ignored all classifications, including the classification of the Interstate Commerce Commission, in throwing out this item?

A. I cannot remember the classifications of all those sufficient to say.

Q. Do you know of any classification that sustains it?

A. I know commissions that are agreeing with me.

Q. Which commission, let us get its classification and see?

A. The New York Commission, first district.

Q. Any others?

3833 A. Massachusetts. I do not recall at the moment, but I think the same thing is true in the Second District of New York, and of Wisconsin, but I am not so positive about Wisconsin on that point.

Q. Now, somehow these expenses have to be met, haven't they?

A. Why, if you have to make the transfer they have to be met. I do not say you had to make the transfer.

Q. Oh, well, as far as that goes, you might go back and say we did not have to buy a holder?

A. No; it is very different.

Q. Now, then, there was an actual discount on securities—put it in another way: in the operation of this Company amounting to $33,950.

A. Yes.

Q. This Company following the precedent fixed by the Interstate Commerce Commission and a great many other people—you concede that, don't you?

A. Yes.

Q. Charged it to capital?

A. Yes.

Q. You took it out of capital?

A. Yes.

Q. Now, did you put it into operating?

A. In regard to the future I did, considering the rate question later on.

Q. When you were figuring on the past, showing what our returns were and all that?

A. No, because I did not recognize that as a transfer that the gas consumer should pay for in any shape or manner.

Q. But you forgot in your eagerness in arguing this thing,
3834 that you stated in your report that these figures on return were based on facts and not upon your theory of what the situation ought to have been?

A. Yes.

Q. Now, then, they are not based on the actual investment, are they?

A. So far as relates to those two items which I distinctly mention here, I did not intend to deceive at all about it.

Q. I did not suggest you intended to deceive; they are not based on the actual investment, not only as to these two items, but as to a great many others?

A. I don't recall many others, nothing of importance, the rate litigation expense I believe was the only thing taken out of the operating expense and these, as I recall now—of course something may slip my memory at the moment—there two were taken out of construction.

Q. But you do recall the testimony of Mr. Hall to the effect that if you had taken actual investments and had not started with Mr. Pratt and had not thrown things out, your investment amount would run over two million instead of $1,727,000?

A. Yes, if you had not included this hundred thousand dollars for water gas right; that dummy company invested that hundred thousand dollars to the parent company.

Q. What significance do you give to the dummy company?

A. It is a dummy out of the U. G. I.

Q. Do you know of any corporation that is not owned or controlled by the holders of the majority of stock?

A. That is true of course.

Q. Is every company where the majority stock happens to be in the hands of one person a dummy company?

A. No, but if one corporation owns another, the second is
3835 a dummy of the first, I should say.

Q. Now, to go back, where you talk about actual investment, as shown by the books, your figures which are based upon Mr. Hall's are subject to just exactly the exceptions and limitations that he reiterated as to his, are they not?

A. Yes.

Q. And they are not based on the investment as shown by the books?

A. No, in using the word exactly.

Q. Accurately they are not based on the investment as shown by the books?

A. They are based on the cash investments as shown by the books, as Pratt testified.

Q. Suppose that you are organizing a corporation today to start an opposition plant in Des Moines, would your organization expense be a capital account or what?

A. It would be temporarily a capital account, *im*mortized; that is, cancelled out of the sinking fund payments as soon as possible.

Q. I dislike the way you put it exactly. I want to know what you will do with it?

A. I should charge it to capital at the start.

Q. What is the nature of the account changed afteewards—you say at the start?

A. It should be wiped off the slate.

Q. I didn't ask you that; stick to the question a minute. If that is a proper capital account when the expense is incurred, does its nature change afterwards?

A. Yes.

Q. And it becomes some other account afterwards?

A. Yes.

3836 Q. All right.

A. That is the view taken by Byron J. Arnold, and I think it is entirely correct.

Q. Do you think your testimony always needs to be supported by saying somebody agrees with you?

A. No, but I would like to have it.

Q. Do you think it adds weight to it by saying somebody agrees with you, where that man is not present for cross examination; do you think that adds weight to your testimony?

A. In this case I believe it did. I still believe I quoted him correctly.

Q. I happen to have here the Wisconsin classification for gas and on page 66, under construction and equipment accounts, intangible capital, and another sub-head, organization, it *it* says, charge to this account all fees paid the governments for the privilege of incorporation and all fees and other expenditures incident to organizing the gas utility business. This includes the cost of preparing and distributing prospectus; the cost of soliciting subscription of stock (but not for loans for the purchase of bonds or other evidences of indebtedness) cash fees paid promoters and actual cash to promoters

for services in organizing the enterprise, attorneys' fees, the cost of preparing and issuing certificates of stock and the cost of securing certificates, conveyances, etc., from the Railroad Commission, and other similar expenses?

A. That is one of the things I referred to as included in their overhead on page 29 of my report.

Q. Will you let me finish the question or will your eagerness for argument not permit?

Objected to on part of defendants as being improper?

3837 A. I thought really you had come to the close of your quotation.

Q. I had closed my quotation but had not finished my question. Would you construe that as authorizing a charge of this matter to the capital account?

A. Yes, that is the way I think the Wisconsin Commission does it.

Q. Now, then, the only reason, as a matter of fact, that you threw out this organization expense was that the U. G. I. happened to own all the stock; if the stock in the Des Moines Gas Company had been owned by other persons, you would have passed the item without any question?

A. No, I think not; only in the case of a new company I should have allowed it for a few years, but in perpetual, if the company becomes profitable enough, *im*mortized it.

Q. Now, then, take these pages you have been referring to, 13 and 14, is there anything in them aside from the argumentative matter that is not shown by the testimony of somebody else?

A. No, I think not.

Q. Now take page 15, is there anything in that that does not appear from the testimony of the other witnesses, and so far as that is undisputed, except what you have either taken from Mr. Pratt or Mr. Lilley, and except what is merely argumentative?

A. That is true, save there is some union of accounts on page 16.

Q. Well, I am talking about 15?

A. Nothing on 15.

Q. I think I asked you a little about this rearrangement of the figures on page 16. Column 1 is made up of figures taken from Mr. Pratt?

A. Yes.

Q. Without any verification by you?

3838 A. Yes, I accepted his figures.

Q. You made the addition, or did you just take that too?

A. I don't remember now.

Q. Now, column two is taken from Mr. Hall's Exhibit, page 21, isn't it?

A. Yes.

Q. And column 3 is taken from the same source?

A. Yes, I think in both cases there was a little rearrangement, otherwise the substance is there, all of it.

Q. Let us see how much there is in there that is new?

A. It is in works.

Q. What about the works?

A. In one line is placed the sum of several lines on page 21.

Q. We are talking about $205,760.39.

A. Talking about the table as a whole?

Q. The works is not the table; which item of the works did you have in mind when you made this statement?

A. The $233,440.61 in the first column is made up of additions of items that belong there in Mr. Pratt's statement, such as the tanks and holders, etc.

Q. Now, to get back to this third column we were talking about, that is taken from page 21 of Mr. Hall, is that right?

A. Intended to be; yes, it is.

Q. And where did you get the $205,760.39?

A. That is the addition of gas buildings and machinery $75,220.84.

Q. That is an error, isn't—did you make those figures up yourself?

A. I did.

Q. This $205,760.39 obviously is right?

A. Yes, I was looking at the wrong column.

3839 Q. When did you make this up?

A. Two or three days ago.

Q. You don't remember how you did it?

A. I started to simply rearrange the works.

Q. Let me see if I can help you. You find in Hall's column number 6 shows March 1, 1906, to December 31, 1910 in your report?

A. Yes.

Q. You would naturally go to the same column and you will find $85,760.39; then you add the holder to that, $120,000, and you get your $205,760.39?

A. That is it.

Q. Are you sure that is right?

A. Yes.

Q. Are you entirely familiar with your own report?

A. Well, I tried to throw it off my mind after I worked on it. I think that checks up.

Q. Why it does; nobody suggested it didn't; I wanted to know how you got at it and how familiar you were with it. Now there is nothing new on this page except the rearrangement of some of these items?

A. That is all.

Q. So that this figure $1,727,675.77 is simply the adoption of Mr. Hall's work?

A. Yes.

Q. Now let us have exhibit 35 in Mr. Hall's summary, showing the actual investment. Now you entirely agree with Mr. Hall, don't you, that the total book cost is $1,994,314.09 without adding the holder?

A. Yes.

3839½ Q. You couldn't disagree with him or agree with him very well; you haven't looked it up?

A. I wrote this when it was presented; I accepted the statement at the time I wrote it as correct.

Q. So far as that goes you have no personal information about it one way or the other any more than I have, for instance?

A. That is true.

Q. You stand in just the same position the rest of us do; you heard him testify to this and so far as we know it is right?

A. Yes; of course I looked up somewhat the basis he started with in 1895, but otherwise I attempted to make no check.

Q. In this Exhibit 35, he did not start with that basis?

A. No.

Q. You know just as much so far as any actual knowledge goes about his total of $1,994,314.09 as you do about his total of $1,727,625.67?

A. Yes.

Complainant offers and reads in evidence Exhibit No. 63 as follows:

3840 COMPLAINANT'S EXHIBIT 63.

Des Moines Gas Company.

Organization Expenses.

3/31/1906.	Expenses of F. C. Morgan	$69.10
"	Expenses of D. D. Reinhardt	117.92
"	Notary Services	6.50
"	Services of A. B. Cummins re opinion respecting franchise of Capital City Gas Light Company	800.00
6/30/1906.	Services of A. B. Cummins re articles of incorporation of Des Moines Gas Company and advice respecting same	400.00
3/31/1906.	Fee for incorporation, to Sec'y of State	2,265.00
4/30/1906.	S. H. Quint's Sons Company for one seal press	2.45
5/31/1906.	Allen, Lane & Scott, printing mortgage Des Moines Gas Company to Commercial Trust Company, Trustee	98.00
"	Allen, Lane & Scott, printing twelve interim bonds Des Moines Gas Company	16.00
"	Carr, Hewitt, Parker & Wright, re legal services and recording deed	70.85
"	Register & Leader Company, publication of incorporation notice	45.00
"	American Bank Note Company, engraving 1500 bonds	2,015.00
"	John Briar, for certified copies of publication notice of Des Moines Gas Company.	2.00

7/31/1906.	Charles E. Morgan, services in matter of Capital City Gas Light Company and Des Moines Gas Company.....	500.00
"	John G. Johnson, services in matter of Capital City Gas Light Company and Des Moines Gas Company.....	500.00
8/31/1906.	American Bank Note Company, printing 250 stock certificates.....	15.00
	Total	6,922.82

3841 Q. Now passing to page 17, that is mostly original, isn't it, except of course you have taken figures from various sources there?

A. I merely attempted to apportion roughly the $45,000. It does not have any special bearing on anything that follows, I don't think.

Q. Now, then, you say from this total investment of $1,727,675.67 should be deducted depreciation; you don't have to deduct depreciation to get at the amount actually invested?

A. No.

Q. And the deduction of depreciation from investment don't give the present actual value necessarily either, does it?

A. Not if there is some appreciation that ought to be added.

Q. To assume that gave the present actual value, you would have to assume that there had been no appreciation whatever?

A. Yes.

Q. And that things had remained during a period of some thirty or forty years stationary?

A. Yes.

Q. What do you call that result you get after you took the investment and deducted depreciation from it?

A. When I said yes to your last statement of thirty or forty years, I should correct it to since 1894, in other words, that is sixteen years.

Q. I don't know that I care to discuss it with you particularly; my question was not predicated on the assumption of 1895; my question was general, that is why I used the figures more closely approximating the real life of the plant. I want to go back to the former question which I merely overlooked and I want to know what you call this amount that you obtained by subtracting from the

3842 investment what you call in your investment here your theoretical depreciation?

A. It is the net value of the investment today, aside from appreciation. There is no one word probably that will express it fully. It is net value of the investment today aside from appreciation.

Q. If it happens to coincide with value it is an accident?

A. Whether there has been appreciation is a question to be further considered.

Q. If it happens to coincide with value it is an accident, that is a fact, isn't it?

A. I don't know of any good word to give it.

Q. I didn't ask you that. If it happens to coincide with value it is an accident, isn't it?

A. Leaving out the depreciation feature it ought to coincide with value for all purposes of rate making.

Q. If it happens to coincide with value without limiting or changing or modifying the word, it is an accident?

A. If you use value as what it will sell for in the market as a property, it might be an accident.

The MASTER: What is usually said to be a coincident.

Q. Now there are one or two things in connection with this matter of depreciation I want to ask you about. On page 3685 of the record, referring to your direct examination, talking about depreciation you say: What we are after in depreciation is not at all to determine the actual depreciation from year to year but to determine how to finance the depreciation, that is the real issue?

A. Yes, I said that.

Q. That expresses correctly your attitude with reference to the matter?

3843 A. Yes.

Q. And that expresses correctly what has been your purpose in the consideration and discussion of this matter of depreciation?

A. Yes.

Q. Then you go on to say: If you were determining depreciation from year to year most of the depreciation would come the last year or two; that is, if you take the depreciation to make the real decline in the service to the Company of a given piece of property; that also is true?

A. Yes.

Q. You do not care to modify that?

A. Of course, some property will deteriorate considerably before the last year or two.

Q. What I wanted to get at, whether you still adhered to those two statements or whether you wish to modify them in any way?

A. No.

Q. Then of course, your deduction of depreciation computed upon your method, would not amount to a deduction in the actual depreciation in the property? It would amount to the depreciation in the value of the investment?

A. Yes, I think I could say yes, exactly as you asked it, that is in the value of the investment.

Q. I am not talking about the value of the investment.

A. What we are after is to keep the capital in tact I thought.

Q. I guess I know what you are after. Most of your actual depreciation comes at the latter part of your period?

A. Yes.

Q. And if you were getting at the actual conditions, they would not be shown by your computations?

A. Actual conditions of value would be. You must sepa-

3844 rate between utility and value. The utility of the property does not suffer very much; its value has declined proportionally to the accumulated sinking fund, no more nor less by a cent.

Q. In other words, it is the sinking fund that determines value of the property in addition to the property itself on your theory?

A. Yes; providing the sinking fund has been itself in the first place properly worked out and I assume it has been by Mr. Lea and Baehr.

Q. So that on your theory that is adopted in your argument here, it is not the actual condition of the property which determines the question of the depreciation, but it is the computation which you make?

A. Always subject to one modification which I did not mention here. There may be some extraordinary conditions which were not referred to by Mr. Lea or Baehr, and therefore—which might have collapsed it before its time—but taking normal conditions as they did; they found the normal life not taken care of by repairs and that they financed by a sinking fund depreciation.

(Last question repeated.)

A. Yes, because I assume a normal condition of the property. If lightning or fire would destroy some of it, I should say you must check it up all the time; that is why I refer to the actual statement of Mr. Baehr and Mr. Lea.

Q. Let us see if we can get an answer without any argument. Is is not true that so far as this defendant's Exhibit 43 is concerned, the depreciation is determined, not by the condition of the property, but by the results of your computations?

A. No more than in the case of those two witnesses.

Q. Can you answer that question without arguing?

(Question repeated.)

A. No.

3845 Q. It is not?

A. No. I recognize my answer is a little misleading, but if I cannot enlarge on it, I will have to let it stand.

Q. The theory which you advocate here is what you call the sinking fund theory?

A. Yes.

Q. And you say that you used the most conservative figure of 4%?

A. Yes.

Q. Do you know of anybody that has used a higher figure in computing a sinking fund in a case like this?

A. Yes.

Q. Who?

A. Mr. Hagenah used eight.

Q. You refer now to his testimony in this case?

A. To Exhibit 26 and several other exhibits.

Q. You say that in Exhibit 26 Mr. Hagenah adopts 8% interest as the basis for a sinking fund computation in a case like this?

A. So I interpret his exhibits; I may not have understood them.

Q. You want to stand on your statement, do*d* you?

A. I think that is what he did.

Q. Going back, you say on page 3687 that you used the most conservative figure of four per cent. Do you know of any other

instance than Hagenah where anybody in your experience has used a higher rate?

A. I do not.

Q. So that the rate you have taken and which you have designated as most conservative is the highest rate you know of being used outside of this case?

A. It is the common percentage, but it is a common rule to put depreciation into the property where it earns more than 4%;
3846 4% is the common sinking fund.

Q. It is not a rate that ought to be designated most conservative?

A. I consider they could put in 5% without difficulty.

Q. It is not a rate that ought to be designated as most conservative?

A. It is much more conservative than what the company can do——

Q. Will you please answer the question?

A. It is not the most conservative imaginable, because they could make it 3%.

Q. Will you please answer the question? (Question repeated.)

A. A conservative, rather than most conservative would be better.

Q. To designate it as most conservative would mislead people who are not familiar with these matters?

A. Well I think in connection with the pages along side of it in the report it is not misleading.

Q. The result of your sinking fund method as you have applied it in your argument here has to upon your theory keep the capital unimpaired?

A. Yes.

Q. And leave the owner without any return on it?

A. He has the ownership of the proceeds of his sinking fund investment; that is his.

Q. Now your sinking fund theory here contemplates setting aside each year such an amount as that at the end of the period you will have by compounding it your capital unimpaired, 100% of your capital?

A. Yes, at the end of the assumed life, this case, 36 years.

Q. That is the theory?

A. Yes.

Q. You set aside one dollar, for instance, today, and you take that dollar and the earnings on that dollar for the period to
3847 the end of the life, and you set aside another dollar in a year and so on, and when you get the aggregate of these dollars and the aggregate of these earnings, you have your capital unimpaired?

A. Yes.

Q. Now, then, in the meantime you deduct the amount of this depreciation from the amount upon which you figure your return here?

A. Yes, I do.

Q. Now I call your attention to Exhibit 64, which is purely arbitrary, in order to illustrate this graphically. Now we will assume a

twenty years' life and the figures, 1, 2, 3, 4 and up to 20 at the bottom of the chart indicate the years and then the 100% and 95% and so on indicate the condition of the property. Now upon the straight line theory, you will notice in this chart I have given 5% per annum?

A. Yes.

Q. On the straight line theory, at the end of the year, the investor would have 95 cents left in his plant upon which you grant him a return?

A. He would have more.

Q. Assuming now that this is a straight line?

A. Oh, yes; then he would have 95.

Q. And that is the amount on which you grant him a return?

A. If you accept the straight line, but I do not accept it.

Q. For the purpose of this question we will have to accept it. Assuming the straight line depreciation, your investor would have at the end of the first year 95% of his investment in there earning the return?

A. Yes.

Q. He would have had a 5% return which he could invest otherwise and earn a return on it?

A. Yes.

3848 Q. So that he would have 100% of his investment earning a return?

A. Yes.

Q. Now at the end of the second year he would have 90% in the plant earning a return and 10% out of it earning a return?

A. Yes.

Q. At the end of three years he would have 85% in and 15% outside?

A. Yes.

Q. And so on so that during all the period if he got the straight line depreciation he would have 100% of his investment and would be in a position where it would all be earning him a return?

A. Yes.

Q. Now, then, if you take it on your theory, suppose your plant depreciates as rapidly, he would have at the end of the first year 95% in the business?

A. Yes.

Q. Then he would have say, two or three per cent that you had invested.

A. Yes.

Q. But that would not earn him any return, because you got to take the return on that to return his property to him?

A. At any time, I assume he has title to it and could draw it out.

Q. In order to return him 100% at the end of the period, you must add to what you took out for depreciation all that amount so taken out earns?

A. Yes.

Q. So that at the end of one year on your theory, this investor would have 95% of this investment paying a return to him?

A. In the plant, yes.

Q. He would not get a return outside if he took the return on your depreciation, then he would not have 100% left at the end
3849 of the term, would he?

A. I depreciate the investment only to the extent of the proceeds of the sinking fund. I do not depreciate the investment 5% a year.

Q. You are getting away from my question. My question is this: Your investor earns at the end of the first year only on the depreciated value of his plant, if he wants to have his capital unimpaired at the end of the term, on your theory?

A. Yes.

Q. That is undoubtedly true, isn't it?

A. But he may be earning on the sinking fund investment just as much if he puts it back into the plant.

Q. But the sinking fund earnings must go into the sinking fund to preserve his capital unimpaired?

A. That is, assuming that he adds it outside in a 4% investment.

Q. What I want to get at is this: on your theory, and you say here in your testimony, that the company is entitled, as against the public, to have this fund invested on this 4% basis, and you have got to keep to that to work this thing out to its theoretical conclusion?

A. I can see where you may have misunderstood me.

Q. You say on page 3687 the consumer should grant them enough in rates so that in the most unprofitable method of investing a depreciation fund, namely, a 4% sinking fund, they could cover their costs, and if they can make more than that, that is their gain which I should say they would be entitled to.

A. Yes, but it is the difference between the four and eight that makes the point you are making.

Q. If you will forget the point I am making, in other words, cease to be an advocate, you will get along very much more rapidly, to say the least. To go back, at the end of the first year you
3850 allow this investor a return only on the depreciated property, do you not?

A. Yes.

Q. Not on his original investment?

A. That is true?

Q. Now, then, if he is to have his original investment unimpaired at the end of the term, he must take the fund that you took out for depreciation and add to that fund to the sinking fund all of the interest which what you took out earned?

A. He must add the interest on the sinking fund certainly. I do that.

Q. So that at the end of the first year, with an investment of 100%, if we assume we took out 5%, he is only getting a return on 95%?

A. Yes.

Q. But his investment is 100?

A. Yes; but his other 5 has gone into the sinking fund.

Q. But he is getting no return on that?

A. He is getting according to what I call the sinking fund method, 4%.

Q. If he takes that 4% return which the sinking fund is earning, then he won't have his capital unimpaired at the end of the period?

A. No.

Q. Now, then, at the end of the second year on this basis, he is getting a return on 90%.

A. Yes.

Q. He is going to have his investment unimpaired but that is all the return he is getting?

A. Yes.

3851 Q. So that if you run it through the 20 years, his average return on this 5% basis would be on 50% of his investment?

A. On the straight line method, excluding the sinking fund earnings that would be true; I mean assuming 5% on a straight line course.

Q. So that if a man had $100 invested for 20 years in farm mortgages at 6%, at the end of that term you would have $100; if he didn't spend any of his return he would have 120% in interest?

A. Yes, I should think so.

Q. While if he had invested it in a public utility, on your theory, if we assume this depreciation was charged off equally here, he would have his capital unimpaired but would only have a return on half of the money or for half the time?

A. That is why the investment at 4% I think is misleading, if the investment is making 8. We may assume he can find an 8% investment for his sinking fund.

Q. Let us stick to the 4%. You say that is the highest rate as far as your information goes that has been adopted for a sinking fund computation?

A. Yes.

Q. So I think that is a reasonable rate in use here. To get back your man cannot take that return that this sinking fund is earning without getting out at the end of the term with his capital impaired, can he?

A. Oh, no; he cannot do that.

Q. So that if he has to have his capital unimpaired at the end of the term, on your theory, on the theory on which you made this statement, he will not be earning on his entire capital during the whole period, and he will be worse off than if he just made a loan?

3852 A. If you assume that he is going to set aside just the amount you referred to, his capital would be unimpaired always through the end of the 20 years.

Q. His capital would be unimpaired during the entire period?

A. Yes.

Q. Take the illustration and say he has run ten years on your sinking fund theory; you say on your 20 year life you would have 30% at the end of ten years; so that at the end of ten years he would be earning on 70%?

A. Yes. The other 30 would be in the sinking fund.

Q. But he would not be earning on it at all; you don't give him any return on it, do you?

A. Why at 4% he is only getting half the return he is getting on his investment——

Q. Assuming now that he adopted the plan of financing that you suggest here and invested this in a 4% sinking fund basis, on a 4% basis, at the end of ten years he would have his capital unimpaired, but you allow him a return on only 70% of it?

A. I can't see anything in that except——

Q. Can't you see whether it is true or not?

A. I can see in that the argument for computing the depreciation back into the business as is commonly done, so that it will earn as much as the other capital.

Q. Will you stop your argument and assume that the depreciation is not put back into the business; assuming it is invested in a 4% sinking fund basis; that at the expiration of ten years amounts to 70% of the value of the plant; tell me whether at that time the capital being unimpaired you have allowed them to earn on anything more than 70% of it?

A. I should have to think that over. I don't see myself just how to answer it, but I say, I was going to add if he is entitled
3853 to earn on the full value of his investment at the end of the 20 years, he has got double his investment and he has got his sinking fund of 100% and the consumer has given him $2 where he had $1.

Q. Suppose he invested this in 6% mortgages we talked about, at the end of the time he would have his entire investment?

A. Yes.

Q. He would more than double it; he would have 120% of it in interest?

A. Yes.

Q. That would be just what he is entitled to?

A. Yes.

Q. Let's go back to our case. The 120 is the interest and he has had his full return during the entire period?

A. Yes.

Q. To go back to our case, at ten years we had 70% earning and 30% protected by a sinking fund but was not affording any return to the investor, at the end of another five years you would have about 25% earning, and you would have more than that at the end of another five years, you would have 45% earning probably?

A. Very possibly.

Q. And there would be then 55% that was in a sinking fund to take care of the capital, so that the man would have his capital unimpaired, but would be earning only on 45% of it, on your theory?

A. I should have to think it over further. It wouldn't mean the capital was worth any more than I have taken it.

(Last question repeated.)

A. Well, it may be; I would have to think it over further.

3854 Q. By the time he got to the end of the period he would have his capital unimpaired but wouldn't be earning on anything?

A. His capital would come back to him then, or he can have it back any time from the sinking fund.

Q. So that the difference between your method of computing depreciation and the method that has been adopted, you say by Mr. Hall, and Professor Marks, is that your method results in only giving to the investor a portion of his return?

A. Well, I think so far as there is a difference it is due to the fact that a pure sinking fund method does not give you the same return you would get by putting it into a property, which I concede you have a right to do.

The MASTER: It seems to me you are wasting a lot of time on this argument. I think I understand your theory and his and I think anyone will understand them.

Mr. GUERNSEY: I do not like to run counter to the suggestion of the court; if I do, I hope the Master will give me credit for good intentions.

Q. Now, I want to apply this to your report a little. In all of your computations on net investment the net investment is not upon the actual amount which the investor has put in, but it simply on the amount less your sinking fund?

A. Yes.

The MASTER: It seems to me the only answer that is possible to give to the question is as Mr. Hall stated. Mr. Hall said that while it is true that is depreciation, that depreciated capital would still earn the same amount of money; that was practically his answer. That is the only answer that can be made to your proposition to my mind; that is to say, the depreciated machines or ma-

3855 chinery was earning the same amount.

The complainant now offers in evidence Exhibit 64.

Q. Now on page 19, you give at the top of the page the amounts charged off by these various witnesses?

A. Yes.

Q. And you say that there is evidently what seems to me a typographical error below here: the question is how much to allow the company to set aside yearly from operating expenses to finance depreciation in the most expensive way to the company, at least advantageous to the consumer. Is that what you mean?

A. It is the most expensive to the company to finance by a sinking fund——

Q. All that I want to get at is whether this language here is what you intended?

A. I think it was, it seems to express what I still think on the subject.

Q. How do you get the figure $2,580,540 as Mr. Lea's cost of labor and material?

A. In one place in his exhibit I think I saw some figures like that.

Q. The reason I ask the question is that it does not agree with our computation by $60,000 or $70,000?

A. I think it may be connected with his legal and organization expenses $68,000; it may be that was included.

Q. No, but this was too low; there is a difference there of some sixty odd thousand dollars and I wondered if you knew how you got it?

A. I had his exhibit before me and I thought I had it the way he had it. (Witness computes.) I get the same figure again.

Q. Where do you get it?

A. In his introductory letter to Mr. Haines in the be-
3856 ginning of his exhibit. I took his fourth line: Building $106,934; Works equipment $510,179; distribution system $1,963,027. These three together make $2,580,540. That omits real estate working capital and going value and really omits his organization and legal; they were not considered by him subject to depreciation.

Q. You took here Mr. Lea's amount and took a 4% basis and from that got a life?

A. Yes.

Q. But Mr. Lea did not compute his depreciation that way, so that his is not based on that life?

A. He reached the annual investment necessary at that figure.

Q. What I am getting at, this 34¾ year is not his composite life?

A. No; this is worked backwards from his total. Of course the way I took it is not the natural way to arrive at it. In the first place you have to take each item by itself and having got your result, then you can take your——

Q. Mr. Lea figured his sinking fund with different rates and with varying times of investment?

A. Yes.

Q. You say at the top of the page that Mr. Randolph estimated depreciation $282,331. on $2,520,514. of depreciable property. This implies 1.12 per cent yearly payment to a sinking fund and an average life of nearly 39 years. Do the figures Mr. Randolph gives imply anything?

A. In the sense that he didn't use a sinking fund, it does not. But to reach that depreciation by a sinking fund would require 1.12 per cent.

Q. You have got to assume your rate first?

3857 & 3858 A. On, 4%; I thought it stated it here somewhere. On the previous page, 19, I refer to a 4% sinking fund.

Q. On page 21 you worked out your theory beginning with 1895?

A. Yes.

Q. Now, how did you get at the amount of your sinking fund?

A. The percentage 1.289 you mean?

Q. Yes.

A. I took 36 years as an average composite life. It was somewhat lower than Mr. Baehr said, and about the average of the way

I worked out these three tables as shown on page 19. Taking 36 years I look into the sinking fund table to find what rate per cent, 4% interest, was necessary to cancel the principal in 36 years.

Q. That is what I supposed; so that it has no relation whatever to actual conditions; it is simply a figure that is taken from the life?

A. Like all such sinking fund tables it is of course a theoretical estimate.

Q. And does not purport to, and does not in fact represent actual conditions?

A. It is merely an attempt to show how the depreciation could have saved to the company by such a fund.

Q. And the figure you get by making this computation is the basis for the four cents a thousand that you use later?

A. Yes.

Q. So that four cents a thousand is based upon purely theoretical computation and not upon actual conditions?

A. Yes, based upon the application of the sinking fund table.

Q. You say, we take a life of so long and then we take four per cent, and then we look at a table and that shows what per

3859 cent we have to invest?

A. Yes, taking 36 years as an average life is not a pure guess.

Q. That is predicated on Mr. Baehr and Mr. Lea?

A. And on previous experiences in many cases. Gas engineers very rarely place a shorter life than that.

Q. Now there is one thing you testified to yesterday in connection with this table that was misleading to me. I doubt whether it is just what you meant. You referred to the item $1,667,215.24 at the end of the page, in other words, the plant items *is* not really worth $1,667,000 which appears on the books, but $241,000 less which might have been accumulated by this small amount in the sinking fund: and you refer to that $1,667,215.24 as the value of the investment at that time. Now that is incorrect, isn't it?

A. Working capital is not in there.

Q. But aside from that it is incorrect, isn't it? You gave us elsewhere the working capital, as $1,727,625.

A. You mean the total investment?

Q. At this same time?

A. Yes, that included the working capital.

Q. That is not an explanation of it, is it?

A. I am not sure that it is.

Q. See if you can tell us what the explanation of that is?

A. The one is an average investment, while I think what I was using on page 24 is the investment at the end of the year.

Q. *Do* that this testimony I referred to, where you treat this $1,667,215.24 as the investment at the end of 1910, ought to give $240,000 was based on a misapprehension?

A. Yes, I could have used the other figure.

Q. Your trouble is right here: you add in 1910 only

3860 $60,460.44 one half of the additional investment, and to bring this up to the investment you should have added that amount again?

A. Which I did add on page 24.

Q. Which you did not do in your testimony; that is right?

A. That is right; I did not have that in mind when I answered the question.

The MASTER: Mr. Hall's testimony that we referred to a while ago is found on page 3450, I think.

Q. One other thing I want to call your attention to in connection with these comparisons of depreciation: Lea and Baehr take nearly or a 4% basis?

A. Yes, I think Mr. Baehr does take exactly that.

Q. But both Lea and Baehr at least base theirs on a life, rather — on an age of the property which is entirely dissimilar from yours. You start with 1895 and they took the actual age.

A. They took things today and estimate the present value and the amount in the sinking fund necessary to meet the yearly depreciation.

Q. They in making their computations have taken the actual ages of the portions of the plant involved?

A. I think so.

Q. Now, you have not?

A. No; but a comparatively small portion of depreciable property older than 1895.

Q. That is something that would have to be taken into account in drawing any inferences from comparisons to these various results, as well as the fact to which you call attention on page 22 of your argument that the depreciation figured by you is based upon a very much smaller amount than theirs?

A. I should say that should be taken into consideration, although I do not think it would make much difference with the result, since it is in harmony with such average life of such property.

Q. Now you say here on page 22, just referred to, that the Company's witnesses in connection with depreciation took into account or assumed a value greater than the cost?

A. I said that practically at the bottom of the page.

At this time an adjournment was taken until 1:30 p. m.

3861 1:30 P. M., FRIDAY, *September* 22, 1911.

EDWARD W. BEMIS, continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. Taking this up where we stopped this morning, you say on page 22 making this allowance of appreciation the estimates of Messrs. Lea, Baehr and Randolph would not exceed the figure of $241,117 here taken. Do you base that on a computation?

A. That was a rough estimate.

Q. What Prof. Marks calls rough work?

A. That was a rough estimate on page 22. The ratio between the value of the depreciable property as I reach it and the value with the overhead, paving, etc., allowed by Messrs. Lea and Baehr,

is such as to amount to about the same percentage as represented by the difference between their depreciation of 300, to 380,000 and the 241 which I have taken. I think it will show that on that basis the 241 would be a little high.

Q. That has not been computed then?

A. Not accurately.

Q. Now your next table on page 24 simply works out this depreciation theory, that is all there is to it isn't it?

A. Yes.

Q. You take Mr. Hall's figures for the investment?

A. Yes, sir.

Q. Then you work out in the concrete this theory?

A. Yes.

Q. So that there is only one thing I think I care to refer to there the actual deductions for depreciation are $191,328.22 are they not?

A. I added them up and reached about that figure some-
3862 where, I don't remember whether I put it in here or not, I think not.

Q. I think you did. Turn to the top of page 22, the second line.

A. That is right, I did insert it.

Q. That is the actual amount that you charged off out of the earnings?

A. Yes.

Q. And the difference between that $241,117.06 is the accumulated interest?

A. That is right.

Q. And what you deduct from investment is the $241,117.06?

A. Yes.

Q. You next take up the matter of working capital and you reach the conclusion of $80,306.10. How do you get that?

A. I take 15 per cent as I recall it of the gross income of 1910 of the company. I believe I state it here the second paragraph page 25.

Q. Well do you remember how you did get your working capital?

A. I took fifteen per cent of that figure.

Q. Of what figure?

A. $538,893.

Q. Now turn over the page, didn't you work it out from December 31, 1894?

A. Yes, but I worked it out to reach that figure, that is I decided that $80,306.10 at the percentage given or 15 per cent, and considering that the amount reported by Mr. Pratt December 31, 1894, of $37,106.10, then as I stated at the bottom of page 26 to reach the figure of $80,000 in sixteen years would require substantially $2,700,000 a year with the exception of the last year.

Q. How much did you add the last year?

3863 A. On page 27 next to the last column I think it is about that is $2,700.

Q. In other words you found that somewhere the Wisconsin commission had said they would allow fifteen per cent in a case?

A. In the Madison gas case last year.

Q. So you took fifteen per cent.

A. Yes.

Q. Did you think that the fact that the actual working capital of the company for the last five years has averaged very much more than that is a material factor at all?

A. Well that was the average working capital as you worked it out with Mr. Hall for January 1st., whether it is the average for the year we don't know.

Q. In the same way you don't know whether your basis for instance of $37,106 in 1894 is for some specific date?

A. That figure was taken by Mr. Pratt as of January 1.

Q. Now then as a matter of fact when you get simmered down these three pages on working capital it amounts to this don't it, so far as this case is concerned that the Wisconsin commission in the Madison case took 15 per cent and you therefore charge 15 per cent of what now?

A. Of the gross income.

Q. Of the gross income for the year 1910?

A. 1910.

Q. And all the rest of it is an arbitrary adjustment of that figure $80,306 to Mr. Pratt's figure in 1904?

A. Yes.

Q. And has no bearing whatever on the actual facts?

A. No. I think Mr. Hagenah did the same thing with a different figure.

Q. Well do you have to have somebody do something to justify you doing it?

3864 A. No, but again as I said this morning, it is always interesting when your view is taken by another.

Q. Passing that digression for the present and getting back, all of that page 27 is immaterial except the last line isn't it even from your point of view?

A. No, I don't consider it immaterial for the general development *much* have been substantially along that line if I am right in my conclusion as to the last line. The business increased more rapidly the last few years than it did the first so relatively the working capital might be considered a little too large here in this column for the first few years.

Q. The result of this column is to make the working capital on December 31, 1909, of perhaps a hundred thousand dollars under the actual capital at that time.

A. As I remember your witnesses testified to $150,000.

Q. No, our witnesses did not testify, your recollection is in error as to Decefber 31, 1909. The only witness who figured that out for us was Mr. Hall.

A. 1910 was when they gave an estimate.

Q. Yes, but I was talking about 1909.

A. I thought Mr. Hagenah gave a computation for 1909.

Q. Mr. Hagenah, I don't recall any attempt on his part to figure it then.

COURT: He gave it $128,000, but I don't remember the date.

A. I think he added a certain amount each year over a certain straight line until he reached 1910.

Q. That is not material so far as my question is concerned. We find this that by Exhibit No. 57 which was based upon Mr. Hall's Table, Exhibit "F" the average working capital for the five
3865 years which ended December 31, 1910, including current liabilities less bills payable was $197,229.97.

A. I accept your reading of it. I have not the exact figure in memory.

Q. If you wanted your table on page 27 to show something correctly with reference to the books, you would have to add about $120,000 to that $77,606 there wouldn't you December 31, 1909?

A. If I wanted to take all the books covered of cash on hand I would I suppose.

Q. I don't know just what you mean by that limitation.

A. I mean part of that cash on hand I believe was there for construction and hardly would be called ordinary working capital in the operation of the business.

Q. You also remember do you not that by Exhibit No. 58 Mr. Hall computed the average working capital for the five years that ended December 31, 1910, upon his own basis for computing working capital and made that average $121,708.13.

A. Those are about as I remember them and I assume they are correct without looking it up.

Q. So if you make this table on page 27 conform to the facts it would give you a decidedly different investment result here would it not?

A. That average would be increased by that computation.

Q. And that would be the difference between what the books show on the subject and this theoretical working capital which is not shown anywhere?

A. Would be about $40,000 difference I should judge.

Q. So we cannot accept this table on page 27 as showing anything more than a theory?

A. That shows the theory of working capital applied
3866 to——

Q. We can't accept it as showing facts?

A. It is not based on the books of the company with the exception of the first year although the last year is larger than Mr. Hall found the books of the company. The intermediate years have no relation to the books of the company.

Q. And as showing the general result is also different than the actual facts unchanged would give you?

A. So far as relates to the three or four years preceding the last it seems to be true. I don't have any information on the earlier years. I am pretty sure that in the first four or five or ten years perhaps following 1895, the reverse would be the case.

Q. Then that calculation is not predicated on any knowledge of the facts?

A. No, predicated on the growth of the business.

Q. Now to get back to where I started before this digression, do you think that the actual working capital that has been used in the business for the last five years would have any bearing at all on the determination of the question of what would be a fair and reasonable amount of working capital?

A. It would be some indication of it.

Q. And you have ignored it have you not?

A. I did ignore it except as to the last year and in fact it is more than the last year's showing.

Q. And the result that you get is on one theory less than one half of the average working capital for the last five years and on another theory about sixty six per cent of it?

A. Yes, sir.

Q. Now then you said that the Wisconsin commis-ion allowed fifteen per cent of the gross income?

3867 A. Yes.

Q. That was the gross income of the company for the year 1910 as shown by Mr. Hall's report, turn to Exhibit "C" in Mr. Hall's report and you will find it.

A. $566,540.47 if I read that right.

Q. And what did you state in your report was the total upon which you figured your fifteen per cent, turn to page 25.

A. $538,893.00. At the moment I don't remember the reconciliation but I am quite sure that I had that figure from Mr. Hall's report in some form when I made this out the other night.

Q. Will you reconcile that for us if it is something that can be reconciled?

—. ——.

Q. That would add something to your fifteen per cent?

A. The difference between these two figures or about $28,000 fifteen per cent of that would be a little less than $6,000.

Q. Be closer to 4,300 wouldn't it?

A. Yes, it would.

Q. And there again we seem to have gotten the worst of it?

A. That was a small amount.

Q. Yes, just a trifle, but we seem to have gotten the worst of it?

A. That seems to have worked against you, yes.

Q. On page 28 you commence your argument on overhead by the statement of the company's position. That is the fact isn't it?

A. Yes, sir.

Q. And put them there for the purpose of indicating clearly what it is you intend to refute?

A. Yes.

Q. And then you take up and analyze Mr. Lea and Mr. Baehr and then after making your *cla*culations you go and argue the proposition from the results of it, isn't that right?

3868 A. Yes.

Q. Now then in the first place I want to ask you this if a man were constructing a plant like the Des Moines Gas plant could he avoid expenses on account of engineering for instance?

A. No.

Q. Could he avoid expenses on account of lost interest?

A. No.

Q. Can you assume that he could avoid expenses on account of taxes charged against his property if it took two or three years to construct the plant?

A. No.

Q. In other words, you did not controvert the proposition as I understand your position here that every single item of expense that these men mentioned is an expense that would be incurred in the construction of such a plant as this?

A. I think they exaggerated in the amount, but the nature of it is there.

Q. It is all there isn't it?

A. I only say it may be exaggerated in the amount.

Q. So that your argument here is devoted solely to the question of amount as to these charges?

A. No.

Q. It is not?

A. No.

Q. Then what do you take up besides the question of amount here in what other respect do you attack their position?

A. That is not the correct theory in fixing rates, the consumer has paid for it all in operating expenses.

Q. That is a mere matter of argument as to the legal proposition?

A. I suppose it is a matter of argument?

3869 Q. As to the legal proposition involved as to whether that is a proper factor to take into account?

A. Yes, and you asked me my reason.

Q. I want as far as I can to avoid argument of the legal proposition, it would be interesting I think to us, but the other people might get bored. Your statement now before the court and Mr. Lea differs quite radically from his figures on the amount and I wish you would tell me where you get it so we may reconcile the difference.

A. Well I can't right off hand. I will work that out.

Q. Did you work that out yourself or someone for you?

A. I worked every one of them.

Q. That runs 87,000 overhead on new paving according to Mr. Lea against your 111,000 or 112,000?

A. I will work that over again tonight, but can't off hand now.

Q. Can you tell us now on what theory you did it?

A. Well I think I took the same proposition of his total overhead as his new paving was of the mains and services.

Q. Then you didn't work it out by items, but adopted some percentage theory?

A. I think so.

Q. And you are not entirely confident that that theory was correct are you?

A. He gave in his testimony a statement that he as I understood him that the same overhead was allowed on the paving as on the mains and the same rate of depreciation and I thought that justified me in taking out the overhead from the total mains and services on the same ratio that the paving was.

COURT: His calculation of taxes and interest varies.

3870 A. Yes, but I did not understand it varied as to paving on mains underneath.

COURT: The only way you could get at it is to go through each one.

A. I have found by the way that reconciliation that you asked me for a minute ago.

Q. All right what is it?

A. You asked me how I reached the $538,000 of revenue. It is the same figure used on page 43 is referred to on the previous page as taken from defendant's Exhibit 30, page 29, where it appears, that is in Mr. Hall's exhibit page 29.

A. Does that appear as gross revenue for any years or revenue of sales of gas only?

A. Total revenue I assume I asked Mr. Sangster what it meant after Mr. Hall had gone and he said it meant the total gross revenue.

Q. Turning to the balance sheet you find it does not?

A. The other exhibits seem to indicate that difference you speak about. But that is how I got at $538,000 referred to as total revenue at the top of that column.

Q. You misunderstood that part of Mr. Hall's report and so were misled?

A. Apparently.

Q. Would the fact that this $111,898 which you call overhead on new paving according to Mr. Lea is not in fact his overhead on new paving affect any of your conclusions that are suggested later under this head?

A. I don't think so. I built nothing on these figures in any tables.

Q. You get at Mr. Baehr's overhead on paving in the same way don't you?

A. I think not. I think Mr. Baehr separated his base figures from his overhead.

Q. Let me read you a sentence out of this part of your

3871 argument, it may be remarked that the overhead on paving by each of the above witnesses was found by charging off overhead of some per cent of their total allowance for paving new as they allowed for overhead in the entire distribution system. Do you think now you arrived at each of them in the same way?

A. I don't remember exactly.

Q. What do you say as to whether we would be justified in accepting what you say here on page 28?

A. That percentage undoubtedly I worked out as I state there, but whether I got at his with percentage or whether I found it from Mr. Baehr's report can be determined very quickly I suppose. He gives his base figures——

Q. You know what the question is don't you, the question was whether we might accept the sentence preceding this one that relates to the percentages as correct?

A. I am not sure whether I found it from Mr. Baehr's report or only *for* Mr. Lea's in that way?

Q. Can you give us any idea as to how you did get at the figure, $112,669 for Baehr so we may know the theory and check it?

A. I think I can in a minute. There is a page here in which he does separate base from the total I think on paving.

Q. You mean Mr. Baehr?

A. Yes. I may be wrong about that. It may be that I found that only by computation but after you asked the question I thought that he had made a separation which, however, I do not find and it may be that he did not make it.

Q. You checked his report carefully?

A. Yes. He has a page on paving which I have not been able to come to yet.

Q. Turn to page 113 of Mr. Baehr's report and follow-
3872 ing pages and see whether they help out any?

A. There is where the paving occurred, I have not a marker in there and I kept passing it. I thought I had marked all the pages I had used, but I had no marker in there. You want me to compute the paving that is there?

Q. Page 113, yes.

A. You can compute the base figure for paving over services and the base figure for paving over mains and then you can turn to another part of the report and find the base figure for both paving and mains and full value or reproduction new value as he calls it for mains and paving, find what percentage one is to the other, and then bring that percentage back and apply it to this paving. That is what I did.

Q. The way to get overhead on paving would be simply to subtract the base on the paving from the total paving wouldn't it. Then we would not have the inaccuracies that arise from the percentage method?

A. Yes.

Q. And on paving over mains that makes a difference of a trifle less than $78,000 doesn't it, $272 from $350?

A. $77,986 is his base figure—difference between the base figure and full value of pavi/g over mains. And over services—I don't know as you were asking about that.

Q. Yes, we will get services too.

A. Paving over services $9,405.

Q. So that the aggregate would be a little under $90,000?

A. $87,391.

Q. Instead of your $112,669?

A. Yes.

Q. That of course would change the overhead on the re-
3873 maining property the overhead on the rest of the property new according to Baehr.

A. I should think so.

Q. And would add to it?

A. Yes.

Q. Now then what are these last two items here overhead thus depreciated according to Lea, is that the overhead on paving?

A. I took off that depreciation.

Q. That is not the overhead on paving is it?

A. Oh no.

Q. Now is it all his overhead, this report here is not clear?

A. No. I think it is only overhead on the rest of the property.

Q. Are you sure?

A. I can tell in a moment here. It must be the overhead on all the property. No, I figure it $388,739 by taking off the 14.73 per cent from the $455,892 and that is so near the $387,739 that there may be some slight mistake in the computation, difference of less than a thousand dollars, in fact just one thousand. Perhaps in copying or perhaps in adding.

Q. You give Lea's total depreciation, page 19 of your argument as $380,000 don't you?

A. The only question in my mind is whether that was entire depreciation or depreciation outside of paving.

Q. Well what do you call it here?

A. I refer to it as if it were all the depreciation.

Q. Your reference here as to Lea's exhibit introduction isn't it? If we turn there we can find out what you mean I suppose.

A. Yes that was the total, I remember it was a case of exact subtraction.

Q. As you compute it on page 28 you find that Lea's depreciation l-aving paving out is about $8,000 more than this don't you?

3874 A. No that figure of $387,739 is not depreciation. It is overhead or intended to be, so stated overhead that is with this depreciation taken out.

Q. And does that $387,739 include the overhead on paving or not?

A. It was intended to.

Q. Can you tell us whether it does or does not?

A. I can I think in just a moment. I think yes.

Q. Are you certain about it?

A. The $455,892 is overhead as stated here. Then 14.73 is taken out of it giving the $387,739 in the same way the 14.75 per cent of Mr. Baeh-'s was taken out of $502,000 to get $443,839.

Q. Is your final conclusion these items $387,739 and $443,839 include overhead on paving or that they do not?

A. I think they do not. They were intended not to.

Q. Mr. Lea just showed me a memorandum which I think he prepared at the suggestion of the Master which does not seem to agree with the figure you have here $567,780. Do you know how you obtained that figure?

A. I will give you the result in the minutes.

Q. I don't care to have you make the computation over again if you can tell us how it was done so as we can reconcile the two things.

A. The reproduction cost is given new by Mr. Lea on the first page of his report for depreciated property as $2,580,140 and net construction cost is given on page 13 of Mr. Lea's report as $2,272,-015, subtract that from his total gives $308,125 as I make it now. That is on reproduction cost new. That would have to be produced by the ratio which his present value -f these items bears to the totals of the same items.

Q. But aren't you—I don't want to interrupt you, but you
3875 take from the introduction here all of the items?

A. Excuse me, I made a mistake in not adding legal expense which I take as a form of overhead.

Q. But you exclude real estate page 1, and include it in the total page 13 so that would be the way — get it can it?

A. I consider the organization and legal expense a species of overhead.

Q. I am not talking about that. You, as I understood you, said you took the depreciation items from the introductory letter?

A. That is right.

Q. That would not include real estate?

A. No.

Q. Real estate is included in the figure you take from page 13 isn't it?

A. That is true.

Q. So you could not on that basis reach a correct conclusion could you.

A. No.

Q. That is what I want to call your attention to.

A. I had not realized that before.

Q. It struck me you could not get a correct result that way? Can you tell us how you did figure that $567,780 or did you figure it yourself?

A. Yes, I did it all, sorry I threw my work away.

Q. That is rather unusual?

A. Well I was working late at night the other night, I suppose I threw it away, I might be able to find it. I could figure it over again.

Q. Tell us what theory you did it on, tell us how you arrived at that result if you know.

3876 A. You are referring to overhead?

Q. $567,780?

A. I should have to begin back to the same two tables, page 13 and page 1, and I can't see how again looking at it why it was not right to do as I believe I did do subtract the total on page 13 from the total on page 1 and then add -68,000 to it because on page——

Q. You don't mean that do you? The total on page 13 is about two and one fourth million and it is over three million and a half on the other.

A. I mean of the same items covered on page 13, real estate because he charges for overhead on real estate, buildings, works in Des Moines and distribution system. I think the way to do that is to take the reproduction new of these four items on page 1 from which deduct the net construction cost on the next four items on page 13 and add in organization and legal expense of $68,025.

Q. Is that the way you got this $557,780?

A. That is the way I should have got it, I rather think I did get it that way.

Q. Don't you really know?

A. No, I don't remember to say positive.

Q. Don't want to say so without saying what the result would be?

A. No, I don't want to say so because I don't remember. I tried several times to work out overhead and paving on each witness and I don't remember how I got them, but I think that is the way it should be done.

COURT: My recollection is that Mr. Lea used the organization and legal expense as separate items and that 15 per cent taxes and interest were added and it is not added in by way of percentage
3877 overh-ad charges. Mr. Baehr did add in by way of percentage. I mean the organization expense and that Mr. Randolph just used 20 per cent of the whole thing. I may be wrong but I think that is the way.

Q. Do you remember how you got Baehr total from here?

A. I got the $567,780.

Q. Oh you have it, tell us how you get it?

A. I added the real estate buildings, works, equipment and distribution system on page 1, and then subtract the net co*b*struction costs of the same items on page 13, and it gives $567,780, but that is not large enough, I should have added $68,023 for organization and legal, making $635,801.

Q. That would throw out all your other figures on Mr. Lea right straight through?

A. Yes. That organization and legal should have been included straight through and was not.

Q. Do you remember how you got Mr. Baehr, $615,603, do you remember how you got that?

A. I don't, but I think on lookins at his report for a moment I can tell you. That figure is given as the total by Mr. Baehr himself on page 19 of his exhibit.

Q. And that is where you obtained that?

A. Yes.

Q, Now you say this was 26.6 per cent. What do you mean by this clear down at the bottom of page 28?

A. The overhead for the entire distribution system which includes both mains and services was that per cent as I figured it at the time any way of the entire reproduction cost new?

Q. Then that refers to the distribution system solely?

A. Yes, it says so the entire distribution system.

3878 Q. The entire distribution system is in the preceding sentence.

A. Yes. But the next sentence is intended to refer to it.

Q. This means overhead for the entire distribution system?

A. Yes.

Q. Now you say that Mr. Lea's estimate and Mr. Baehr's on this overhead ignores the Chicago traction ordinance. What do you mean by that, that they should have been governed by the Chicago traction ordinance and not by their own judgment and experience?

A. It should perhaps read that this is not in harmony with the Chicago traction ordinance as reported by Mr. Hall.

Q. This is an argument against them based on Mr. Hall's statement.

A. And I assume it to be a correct statement for he is auditor.

Q. This is simply an argument against them based on this statement of Mr. Hall as to the Chicago traction ordinance.

A. That sentence is.

Q. As a matter of fact what they ought to have done was to have predicated their testimony on their own experience wasn't it?

A. Yes, but I was not obliged to accept their experience.

Q. Well do you understand you are accepting or rejecting any of the testimony?

A. I was using my judgment with regard to this matter here.

Q. Didn't occur to you perhaps the court was going to pass on the testimony, either accept or reject it?

A. Yes, I suppose that was implied in my statement. It was my version of it. I didn't intend to imply anything else.

Q. Then you bring in the Wisconsin Commission here. That is simply another argument against these people?

A. It is a fact which does act as an argument certainly.

3879 Q. In your mind?

A. In my mind certainly.

Q. That is why you put it in here isn't it.

A. I put it in because I considered it had a bearing directly upon what was being allowed.

Q. And that it was an argument against this allowance that Mr. Baehr and Mr. Lea made?

A. Why certainly.

Q. After that you follow up with some more general argument don't you?

A. Yes.

Q. So that on this matter of overhead charges there is not a single statement of your own aside from deductions or arguments with reference to testimony of other witnesses, is that true?

A. Well you can hardly say perhaps that all of my statements were in the evidence previously, I don't remember the statement about the Wisconsin commission for example was in the evidence before.

Q. I say there is nothing in what you take up here, on overhead

charges as you yourself understand it aside from the argument of the testimony of the other witnesses on that question, isn't that true?

A. You may call it an argument on page 30 as to the logical result of including overhead. It is my reason for not including it if you call reason for not including it an argument of course it is an argument in that sense.

Q. So it is fair for me to infer from your position as you stated here that you have excluded these items so far as you could.

A. Yes, except as far as they are given in the investment cost in the books.

3880 Q. You say down here if they, referring to overhead charges, have been included in operating expenses as witnesses of the company have testified, then the operating expenses for the last five years must be rewritten on the books of the company so as to charge out if the overhead charges applicable to construction. Now in the first place what witness do you refer to?

A. May I ask what page you are reading from?

Q. This is page 29.

A. I stated that in the report this way——

Q. I want to know what witness you refer to.

A. My recollection is that Mr. Hagenah and possibly one or two others, but I more distinctly remember about Mr. Hagenah stating that overhead charges were not included in the construction cost, I so understood him to say at least.

Q. That is not what you say here. You understood Mr. Hagenah to say this didn't you that the costs charged on the books were merely cost of labor and material, that is what he said wasn't it?

A. And didn't include overhead, yes.

Q. That is what he said. Now then you say here if they had been included in operating expenses as witnesses for the company have testified. Now what witnesses for the company testified that they were included in operating expenses?

A. It may be the only logical deduction from the statement you just quoted and of course it has got to be put somewhere and if not in construction it must be in operating expenses.

Q. I know, but there was no witness for the company that testified to the statement you make here was there?

A. I can't recall at the present whether in connection with
3881 the point you have just quoted the other statement which is the same thing turned around was made or not. But it is a logical consequence.

Q. But you put it in here, you mean not that the witness testified to it, but what you think is the logical deduction from their testimony. There is some difference between saying a man has sworn to a thing and saying something is a logical deduction from what he has sworn to, a very decided difference.

A. Yes.

Q. Then you say this the operating expenses for the last five years must be rewritten. Mr. Hall did require those operating expenses didn't he?

A. Yes.

Q. And he didn't find any overhead in there did he? Not a single item that he took out as capital expense was there?

A. He didn't take out any overhead, no.

Q. He testified that he worked over these carefully, that he examined every voucher that he analyzed them and that he made such corrections as were necessary to make it right, that is correct isn't it?

A. He had no means in the books of taking them out.

Q. (Question read.)

A. He so testified.

Q. You -new that when you stated here it would be necessary to reqrite these operating expenses?

A. Certainly. My statement remains true.

Q. How would you expect anybody to reqrite them more fully than Mr. Hall says he did.

A. He could not have a basis for knowing any portion of the salaries charged to operating expense if a man was working
3882 on construction. That would not appear on the books they were salaried officers and they did both kinds of work for the same salary presumably and he could not find that on the books, but it is evident if it cost this large amount of overhead to construct and you have the total to carry on the work and it is not in one, it must be in the other, or else the overhead is exaggerated.

Q. That is what you mean when you say the witnesses testified to it, that is that is the conclusion you deduce from their testimony.

A. Certainly.

Q. Now in this same connection I think you told us that the price of paving here was higher tha- it was when these mains were laid or when the paving was laid didn't you?

A. I don't remember now any statement of that kind, I don't remember making that statement.

Q. You don't remember any argument that you based on that proposition of the increased cost of paving?

A. Yes. I see now, I thought you referred to the fact that it cost more to lay mains now than it did years ago. What I now understand you refer to is the testimony I gave that more and more expensive paving is being laid, taking the place of cheaper paving as the city grows older.

Q. Is that based on any examination into the facts here in Des Moines?

A. No it is my observation of all cities.

Q. As a matter of fact if I am not very much mistaken the prices of paving in Des Moines have been going down?

A. Well I meant the quality of paving increased in character, people that at first in the neighborhood as it built up were
3883 content with macadam would later want either brick or asphalt and while the price per yard may be declining of a given kind of paving more improved and expensive pavings are being desired with the growth of the city.

Q. I don't want to take up time with the legal proposition as to whether or not paving should be allowed, but I want to ask you

one question, suppose that the gas company has a main here in Court Avenue, make it a ten inch main, I should guess that was rather big, running from opposite this building to the river, and I laid one there today exactly like it, would you say that my main was worth what it cost to lay it assuming that the work had been done intelligently and economically?

A. Yes.

Q. Would you assume that the other main along side of it exactly like it was worth as much as mine?

A. Not for fixing rates.

Q. Leave out fixing rates. Suppose we were ordinary human beings, not experts nor anything like that and answer my question, would you say my main was worth as much as the other one?

A. The word worth, is very hard to define in this case, if you were to sell to another company it would be, if to sell to the city or for fixing rates I should say no.

Q. Put it in another way, assume that I had a main in Court Avenue as I have indicated and you wanted one exactly like it there would you think it would be fair for me to ask you if you wanted to buy mine a price equal to the cost you, what it would cost you to put another one in just like that?

A. If you mean by men individually I would say it would be fair if by me you mean the city of Des Moines, I should say the opposite. If I sold it and put the paving there then it would
3884 not be. As an individual, your position I would agree with.

Q. The next thing you take up is the rise in the value of the land. Do you in your discussion of that matter anywhere say anything as to the actual value of this land at any time?

A. I used the figure that appears in the books as the value.

Q. Do you express any opinion as an expert or otherwise in this matter that covers page 32 as to the value of the land that is in question?

A. I intend to express, if I have not done so it has been an oversight, that it is whatever the books show it has cost the company.

Q. Will you answer the question whether you say in this report or argument as we have been calling it anything on this page as to the value of that land.

A. I refer in the first paragraph to a statement which at the time I wrote it I understood to be an exhibit put in by Mr. Hagenah which I had before me. Afterwards I read the last words on the exhibit and it seemed to indicate there had been some land bought afterwards which was not in that exhibit but which would appear on the books according to Mr. Hall.

Q. I know, but that is not what I asked you about.

A. Otherwise I made no reference to the subject that I know of.

Q. So that this is simply an argument on the question of rise in connection with the value of land?

A. Yes.

Q. That is all there is to it isn't it?

A. I don't attempt to introduce any opinion of my own as to the value of this land

Q. All there is to what you say on that question in this defendant's Exhibit 43 is an argument on that proposition isn't it?
3885 A. It is an opinion or argument as you may choose to call it, it is a statement of my position and my reasons for it.

Q. Suppose that instead of owning this land the company rented it. would the increase in the value of the land affect what it would cost the company to furnish gas?

A. That rental in that case would have to be included in operating expenses.

Q. And that would increase as the value of the land increased wouldn't it?

A. Yes.

Q. You penalize the company then for owning the land?

A. No, I feel whenever it is sold as it is likely to be some day the surplus can be divided.

Q. Then you recognize the fact that there is a surplus there?

A. Yes.

Q. But for the years that this plan is in existence, you say you argue here that there should be no return on that surplus that is right isn't it?

A. Yes, that is right.

Q. And your discussion here does not go to the amount of that surplus, but it simply goes to the question as to whether or not it ought to have a return?

A. Goes further and says that if it shall be decided that it should have a return then as in the recent New York City decision there should be a corresponding revenue set up against the company.

Q. Will you give us a reference to that decision or have you it here?

A. I intended to get it here. There are two decisions this summer both by the same commission. I only give references to the
3886 first of the two, the other came a month or two later I think in a case I believe is called the Kings County gas and electric light company for the thirty fourth ward of Brooklyn or some such name.

Q. You were asked and testified about going down to look over that plant and property and something about the value of this real estate. You were asked this question, what change if any is noticeable down there in the character of that real property now, from what it was evidently twenty five or thirty years ago. In the first place were you there twenty five or thirty years ago?

A. No, it was nineteen.

Q. So that while you answered the question you in fact did not have the knowledge upon which to base an answer. That is a fact isn't it?

A. Well I had not been there twenty five or thirty years ago, but I suppose my judgment was asked for in pa-t y-a-s well as from personal visit.

Q. You were asked this question, I don't mean that, is there anything about this land itself that in any way has changed the value of its use, I don't mean the value of the property itself but has any-

thing about the land itself in the way of a change of its surface or conditions of the surface that has changed the value of its use for manufacturing gas and you answer no. Now what did you mean by that?

A. I meant that its location with reference to its being lower than most of the city and with reference to its being near railroads and water and in a part of the city where the nuisance would be very great from orders would not be very different from what it was some years ago. Its relation to the heart of the distribution system
3887 would not be very different from what it was then. In one sense it is a disadvantage though as compared with a few years ago. The time is coming when that is not going to be large enough for the purposes of increased manufacture, the growth of the city requiring continual increasing of the manufacturing capacity and it is quite possible that another location where a *a* coke oven plant or something of that kind can be used would be thought wise.

Q. You think that will be required in the immediate future?

A. Probably not in the next three or four years.

Q. Of course that would require a very large additional investment.

A. Yes.

Q. Have you examined Exhibit 18.

A. I don't remember it by that num-er.

Q. It is the exhibit that was lost here for awhile that contains the correspondence about the estimate for additional expenditures.

A. Yes.

Q. And there the acquisition of additional land was recommended?

A. Yes, it was also stated there that they might want a coke oven plant in time.

Q. And it was advised there that some land be acquired?

A. That is true, but it was also suggested that all of the land available would not be large enough after awhile.

Q. Now then you say this, so that whatever increase if any there is in the value of the land itself is an increase in the market value of the property for general purposes, real estate for general purposes, is that so. And your answer is yes. That is correct is it?

A. I think I said that.

3888 Q. You think that a man who wanted that for a gas plant could not afford to pay more for it today than he could thirty years ago?

A. He could locate somewhere else readily.

Q. Please answer the question.

A. I don't understand exactly your question, but I don't see that it is possible to make gas any cheaper there than it was years ago.

Q. If a man had wanted that for a gas plant twenty or thirty years ago he could not have afforded to pay a hundred or $200,000 for it could he?

A. No.

Q. He could afford to pay it today couldn't he?

A. I doubt if he would pay it if he were coming into town.

Q. You could afford to pay it today couldn't you?

A. With prices now charged he could.

Q. It is worth more today for manufacturing gas than it was thirty years ago isn't it on account of the difference in conditions here, greater demand for gas and a thousand other things.

A. Oh the gas company is more profitable now than then, but that particular location I don't know as any more valuable relatively to other locations than it was then.

Q. You know of course that was not the question. I didn't ask you as to relative value, you knew that?

A. Yes.

Q. Now wil- you answer the question?

A. It is more valuable for purposes of sale, whether more valuable for making gas, I could not say.

Q. Than it was 30 years ago?

A. Yes, but if it is more valuable I must say it amounts to
3889 simply increased revenue to the company to be taken account of in another way.

Q. That is the legal proposition I said I preferred not to argue with you, not because I would not like to, but because I think perhaps I had better not take the time. It is your theory is it not and the theory that you have adopted in making this argument that all depreciation of a gas property should be charged against the investment and that the company should be given the benefit of no appreciation.

A. That is not right without you supplement it with the further statement that their earnings—the prices allowed to be charged should be sufficient to carry a sinking fund to keep up the investment.

Q. Of course that goes without saying.

A. With that statement added I would agree with your question, say yes to it.

Q. Now let's take up the next thing which is paving. Is there anything in that except an argument against the allowance of paving?

A. It gives my reasons for not allowing it and if you call that an argument then I would say yes. I give a computation on page 35.

Q. I will come to that presently. In some connection here, you were asked whether the witnesses sep-rarted some of those items whether Mr. Baehr did and I think you answer no, that you had to dig them out and so on in the report.

A. I think I said there was more difficulty with Mr. Lea's, but that was not intended to be any criticism of Mr. Lea's report, he was not making it up for my benefit.

Q. He was not making it up on the investment theory was he?

3890 A. No.

Q. And as a matter of fact in each one of these reports if you wanted to take them and analyse them you can find all of this information can you not?

—. I think so.

Q. Now you have gone so far in the paving proposition as to disallow the additional cost involved in laying the mains where the streets were paved before the mains were laid have you not.

A. No. That is in the book cost of the mains.

Q. Do you refer to that at all in your discussion of paving?

A. Possibly not, but I took for granted that that was understood. I want to make it emphatic now that the book cost of the mains and the services includes as I understand Mr. Hall's report the cost where they had to cut through paving.

Q. You say this don't you, the city's witnesses assumed that the mains and services in almost every case were laid before paving?

A. Yes, I said that.

Q. They did didn't they?

A. I believe that was the only way of reconciling the great similarity between their figures of reproduction cost new without paving and what the books show to have been the total cost, but I don't know that they said it in their testimony directly.

Q. Then this again is a deduction of yours and not to be taken as a statement of that the witnesses said?

A. I don't recall any statement directly by them to this effect. I rememger they stated that they ignored in their valuation the question of whether there was any paving or not at the time they made their estimate, at the time the mains were laid.

3891 Q. Now you state this on page 34, the question at issue is whether that which cost the company nothing and is not owned by it should be included in the capital account?

A. Yes.

Q. Now that is the question as you understand it which you were discussing.

A. Yes. That is not intended to include any paving that they had cut through in originally laying their mains.

Q. You know don't you that nobody claims any paving, neither the company nor anybody else?

A. It amounts to that but it is not that in so many words.

Q. You know that the company does not claim to own paving don't you?

A. Yes.

Q. And you know that the company does not claim that the cost of paving as paving is to be charged to its capital account don't you?

A. It is the cost of cutting through it to suplicate the mains.

Q. It is the cost of laying the mains.

A. To do that paving, to lay mains, yes. It is the same figure that they would get in the other way.

Q. The question then is this isn't it, to state it fairly, the question is whether the company in ascertaining the value of the mains today is entitled to take into account what it would cost to reproduce them under existing conditions.

A. Yes.

Q. That is the real question?

A. Yes.

Q. It is not a question of the company's claiming to own something that it never paid for is it?

A. That is right.

3892 Q. And your statement of the question here is intended to be a statement of it from your point of view, an argumentative statement?

A. It is intended to show the ridiculousness of that theory.

Q. It is intended to mis-state the theory in order to overthrow it isn't it?

Q. You go and say there is no such recognition of private ownership of pavement over street mains. You knew when you wrote that the company didn't claim any pavement.

A. Certainly they didn't claim to own it.

Q. You knew that when you wrote it?

A. Yes.

Q. You knew then you were setting up an unsound proposition in order to knock it down?

A. It is practically involved in the duplication theory, however.

Q. You knew then you wrote that you were setting up an unsound proposition in order to knock it down didn't you?

A. That statement may not be wholly true.

Q. You knew when you wrote that you were setting up an unsound prop-sition in order to knock it down?

A. I would not put it quite that way, but I think I set up something that fairly illustrated the fact. It was not exactly the position.

Q. You go on and say the company does not claim to own it?

A. Yes, that indicates I was not misleading.

Q. Oh of course you didn't intend to mislead. Now then the claim of the company amounts to this, you say if its mains are laid in a city like Des Moines before paving and the city in a year or two should lay 300,000 of pavings over its mains, the company

3893 would at once assert its right to increase the price of gas by six per cent or more on this account or say $18,000 a year. Did the company make any such claim?

A. It would have to do so logically.

Q. I didn't ask you that.

Q. Your theory would force you to do it.

Q. You state here the claim of the company. Do you know of any such claim made by this company?

A. I might say that is what the company logically would have to claim to be logical.

Q. You did say the company's claim amounted to a certain thing.

A. Yes, it would under the theory of rate regulation.

Q. As a matter of fact has the company done such a thing?

A. It has done practically that when it says it cannot reduce as much a- otherwise because of this paving.

Q. Has the company done what you say here?

A. Not in so many words, but it means the same thing. It can't reduce by at least $18,000 a year because of the paving.

Q. To be accurate you would have had to say that the company

claims that the enhanced value of its mains on account of paving over them has to be taken into account in rate making.

A. Yes.

Q. And that would be an accurate statement of the company's position wouldn't it?

A. It would have to take identically this position, it would have to take the position of six or eight per cent on the value of that.

(Question read.)

A. It would have to be done on the question of any rate making.

3894 Q. Was not my statement a correct statement of the company's position?

A. It did not go to the full length of the company's position. The company's position is, it must have the same rate of return on that paving that it has on its mains.

Q. Not on the paving?

A. On the cost of cutting through.

Q. No, the company's position is this, to be accurate about it, that in ascertaining the cost or the value of its mains for the purposes of this suit or anything else for that matter, you shall take into account what it would cost to reproduce them under these existing conditions which includes the existence of pavement.

A. That means the same thing as I put it.

Q. Is there anything in this paving subject that is not argument?

A. On page 25 I show a few figures on revenue that the company will get in the future if ruled they are entitled to all unearned increment claimed on paving.

Q. That is merely argument to show this is an unreasonable claim?

A. To show how to work it out.

Q. Nothing there except argument.

A. My reasons for my position, call them argument if you wish.

Q. I want to take up the question that we all like for a little while, that is going value. In the first place at the top of page 37 I notice you omit Prof. Marks' statement of the going value.

A. His going value was not the going value in the sense that the company used it, it was capitalization of monopoly earnings as I understood it.

3895 Q. And it is omitted by you here?

A. Yes, I have no hesitation in approaching the subject of his method but it was absolutely so different from anything the company had used that I did not see the necessity of mentioning it here.

Q. Do you deny that a plant with an established business is worth more than the same physical property without the established business?

A. It is worth more for sale to another company, worth no more for sale to the city or for rate making. There is an absolute difference between the two theories that should govern those cases in my opinion.

Q. Let's stick to the question please. I want to avoid discussing your theory on the legal end of it if I can. A plant or any property

that has attached to it as an attribute an established business will sell for more in the market than the mere physical property without an established business?

A. Just the same as if it had a franchise*m* the franchise will sell.

Q. Will you please answer the question without argument.

A. Yes, like a franchise.

Q. You can't refiran from argument.

A. It has to be stated in that way to show the difference between that and the other kinds of property.

Q. Does it have to be stated in the way you answer the question?

A. I would not state my position if I did not have that qualification.

Q. You forget I am trying to draw out your position, I am trying to limit myself and avoid a discussion of your position. Now let's get back again and see if you can answer the question.

3896 Do you believe that a plant without any business will sell for as much in the market as the same physical property with a fully developed business?

A. No.

Q. Now the difference between the value of the one plant and the other is what we call going value isn't it?

A. You call it that.

Q. Well it is what I call going value?

A. I call it monopoly profits or monopoly value.

Q. Well all right, I don't care what word you use. I am using the expression in the same sense in which the supreme court of the United States uses it in the actual cases am I not.

A. Yes, I think so.

Q. So I have a fairly good precedent?

A. They ignore it in a rate case.

Q. Now then you said there were several theories of going value, three of them on your direct examination?

A. Yes, and if you call Prof. Marks or his theory there should be added would be four.

Q. These are not theories of going value as a matter of fact are they.

A. If you classify the situation correctly, they are combination of what is mostly theories, they differ as to the amount of going value and how to reach it. They are different ways of consideration of what is going value and how to reach it.

Q. The three methods you stated are three methods for measuring going value aren't they?

A. They are different conceptions, Mr. Hagenah's basis or the Wisconsin theory is absolutely an opposite conception of what going value is from that of Mr. Randolph and Mr. Lea and Mr. Baehr.

3897 Q. The difficulty with going value has been in defining what it was not to admit that a going concern is worth more than one that is not, but has been in the measurement of it hasn't it?

A. Not altogether, has been great dispute as to whether a company was entitled to it at all.

Q. That is your legal proposition that I have not referred to at all. I do not say it ought to be included or ought not to be included in a rate case, I don't refer to that. Now drop that for a minute. The difficulty has been not in finding out what it is, but in measuring hasn't it?

A. By limiting it to what you assume that it is legitimate then of course that is the only other difficulty.

Q. But I have not assumed that at all.

A. When you asked me if that is nit the only difficulty there is namely as to whether it should be given going value I can't answer it except the way I did, there are two difficulties.

Q. Can't you disabuse yourself of the position of advocate here for just a few moments and let me explain this to you so you won't think you are giving up anything on your legal proposition which I don't want to argue with you, I would prefer to argue to the court. If a man were passing on this question take overhead or going value or paving he would ascertain what the amount was and then as independent proposition he would determine whether he would allow it or not. I have not anything to do with the second question whether it ought to be allowed or not in asking you about it, but I want to take up this other phase of it which does not involve any admission on your part of the legal proposition and which would not bind you because if you testified that the law was just the re-

3898 verse it would not bind the city nor the court nor anybody else. Now then to get back the existence of going value, that is the existence of the difference between the value of what the supreme court calls the mere bare bones of the plant, and that same plant with a fully developed business is conceded isn't it by every practical man?

A. That there is such a difference?

Q. Yes.

A. Yes.

Q. And the trouble has been to accurately measure it so far as determining the amount of going value.

A. So far as relates to the question the question is how to determine it, I will agree on that of course.

Q. And the two theories that were adopted by Mr. Baehr and Mr. Lea on one part and Mr. Randolph on the other were for the purpose of measuring that going value or trying to were they not?

A. Yes, sir.

Q. That is what they related to?

A. Yes, I should say they approached the subject with opposite interpretations of what is going value.

Q. You should?

A. I believe so.

Q. Now then do you think it is a fair proposition to start out with in measuring this going value to assume that a thing is worth what it will cost, for instance if I want to build a house will it be fair for me to assume or in determining whether I will build it or not, that is assuming I wanted a house, it would be worth what it cost?

A. In competitive business that is the usual rule of the market.

3899 Q. Well suppose I wanted an oil painting that was not competition. Suppose we were discussing it and we didn't have any law suit and didn't have to argue either side of it, just talking to see fairly what would be a fair price to get at what it was worth it would be fair to consider what it would cost?

A. In cases that cannot be duplicated the cost item does not enter into it, there it is a question of course of what people will pay for it. It is the demand there and not the cost of supply.

Q. I did not assume something that cannot be duplicated in the question relating to cost. Suppose I wanted a portrait of yourself for instance and I wanted to get at what it was worth that would be the cost wouldn't it?

A. Yes.

Q. Now that is what Mr. Lea and Me. Baehr have done or have attempted to do in estimating this going value isn't it?

A. Yes.

Q. They have attempted to set down and work out what it would cost to reproduce that condition?

A. Yes.

Q. Now the correctness of their conclusions must deepnd upon the soundness of their judgment in the gas business based on their experience and on their integrity and freedom and lack of freedom from prejudice?

A. Yes.

Q. If *there* judgment is sound and they can disabuse themselves of prejudice they ought to get a substantially accurate result in their computations ought they not?

A. Where so largely a question of judgment and so little of precedent I would not be surprised to find large disagree-

3900 ments between estimates.

Q. Well of course we find disagreements between estimates based on judgment just as we do values of real estate.

A. There would be likely to be far greater distance in estimating going value than estimating real estate or building or mains.

Q. That is your notion about it.

A. But it has been the result in most of the cases of appraisal where going value has been presented on such method as they use which has been mostly in water works.

Q. Mr. Randolph gets at this in another way and he gets from his experience aided by the examination of the special conditions here a conclusion which he thinks is what it would cost to reproduce that condition.

A. Yes.

Q. That is the difference in those methods or theory?

A. Yes.

Q. Mr. Hagenah if his is a measure of going value bases it on capitalization of losses?

A. Yes.

Q. So that in each case we have these people simply endeavoring

to measure with accuracy these differences between the going plant and the mere bare bones of the plant.

A. Yes, but with the Hagenah Wisconsin theory if the plant had been very profitable there would not have been any going value.

Q. Certainly I think that is the inevitable result of that theory, I would not disagree with you at all about that. Now then you say the more profitable the business is, that is the greater profit the larger going value? That is the view of Mr. Lea and Mr. Baehr?

A. That is a common view.

3901 Q. That is a practical view isn't it?

A. Yes.

Q. Now then do you know of any other or better method that has been adopted in actual practice for the measurement of going value than the methods that have been used here?

A. Those are the only theories I am aware of that have been made to measure it. In most cases there has been no attempt, no serious attempt at least, to claim it, and there has been no verdict in favor of it?

Q. I will pass without any comment or without any cross examination your reference to the legal end of it and get back to the question. Do you know of any better of more accurate method to measure going value than methods adopted by these gentlemen?

A. Well if I were to accept their theory I should use another method.

Q. I didn't ask you that. Do you know of any better or more accurate method for the measure of going value than the methods adopted by these gentlemen?

A. I should say yes, but I don't know of its being used anywhere if that is what you mean to ask if I knew of its being used?

Q. Is it a method that you have evolved?

A. I am not agreeing with the theory, I have not evolved it, but I have clearly in mind how I should do it if I attempted it.

Q. Is it a method that has ever been tried by yourself or anyone else?

A. No.

Q. Now then to get back do you know of any more correct method that has ever been used by anybody for the measurement of going value than the methods that have been adopted by these witnesses?

A. I know of no method that has attempted to work it out in that detail except this method. Of course it has been used in

3902 a few But that is the same method as Mr. Lea and Mr. Baehr have used.

Q. What I am getting at is this whether you know of any more accurate or better method for measuring going value than has actually been used and been subjected to the test of cross examination and controversy?

A. I do not. In fact I know of no other method that has been tried at all. This was never tried until very recently.

Q. What do you mean by very recently?

A. Never been tried outside of water cases until this hearing so far as I am aware. Never been tried at any water case until within

the last three or four years, the Dubuque water case following a little the Kansas City and a few other cases, the Des Moines water case I think has tried it. I am not aware even in any of these cases where the full theory has been accepted by the court.

Q. Can you forget the legal end of it for a minute, because I don't want to argue the legal end of it.

A. When I say recently I mean to say in any case outside of water in no case have I ever known of its being tried.

Q. This same method has been applied in water cases for the last ten years at least?

A. Not fully, but they have been working towards it. I don't remember when it was first applied in a wa-er case in just this way.

Q. It is at least ten years ago isn't it?

A. I can't say.

Q. This method has grown up out of the fact that there has been a desire to get some way of measuring this amount that people generally will recognize as a measure and they have found difficulty in measuring?

A. I can't say what their object was.

3903 Q. On this question of going value in your discussion beginning at page 37 and running to page 41, is there anything more than argument?

A. Oh there is a little information possibly.

Q. Well where is it, point it out.

A. Well I state on page 37 what the witnesses have given.

Q. That was simply the preliminary statement as a basis for your argument wasn't it?

A. Yes, I perhaps discussed the reason for reaching the seven years in the theories that are advanced.

Q. I want to call your attention to that, that is page 38 you say the magical character of the sacred number 7 of the old Hebrew Egyptian and Chaldean religions appear to influence Mr. Lea and Mr. Baehr. You expected to swear to this didn't you?

A. Yes, sir.

Q. You didn't think it was true did you?

A. I thought perhaps the joke was excusable.

Q. It was intended as a joke then?

A. Yes, a little humor.

Q. To get back what is there in these pages that is not argument pure and simple?

A. Of course I refer to Judge Taylor's position which is a statement of fact, I describe the position taken by some of the others.

Q. And all for the purpose of enforcing your talk upon this method of computing going value or did you intend to attack this method of computation or simply to argue the legal proposition that might follow that it should not be allowed, or both?

A. I held that should it be allowed at all then on page 41 I state the method that I think is altogether the best for considering it.

3904 That is, not, however, the method I had in mind a little while ago as something I should apply if I were applying Mr. Lea's and Mr. Baehr's thought, but I consider that in a broad

way the Massachusetts commission has treated the subject bettwe than other bodies.

Q. You are a little extravagant aren't you when you talk here about what the commission dreams of permitting or does not dream of permitting.

A. I have forgotten now where I used that word.

Q. The 5th line from the top of page 41.

A. Perhaps it is enough to say that it does not permit.

Q. That is your conclusion from the rulings of the commission I suppose?

A. Yes.

Q. What do you take up next profits?

A. Yes.

Q. Now you refer on page 42 to the rate litigation expense of $9,-305 in 1895?

A. Yes.

Q. You threw them out of the operating?

A. No, I think not.

Q. You included them?

s were already in the operating were they. I threw out neither of those I state at the last of the p-ragraph rate litigation expense of $9,305 in 1895 and $3,689 of accident expense paid in January 1906 will be included. What I did take was the six cents for depreciation and substituting instead a sinking fund method. I I don't think anything has been thrown out of operating expenses in these tables that follow except the present rate litigation expense the last year and two months.

Q. Turn to this table on page 43, I think it is, where did you get $64,702 or how did you get it? In the first place you
3905 didn't examine the books?

A. I got that from Mr. Hall I think from one of his exhibits.

Q. His exhibits don't show the operating back to 1895 do they?

A. Well I thought they did.

Q. On page 29 you will find—well that is not the operating expense including depreciation, it is not exactly the same figure.

A. I, however, took that and calculated from it by taking the six cents and putting it back into operating expenses.

Q. You took the six cents on what?

A. On the sales.

Q. Now you didn't check with the actual operating for these various years anywhere did you?

A. I asked Mr. Sangster in preparing that just before he left to go over the record and give me that column.

Q. He prepared it did he?

A. Mr. Sangster prepared that column.

Q. The actual operating for 1895 I think are given in Mr. Hagenah's computation are they not as shown by the books?

A. No, I think his actual operating include some interest matters.

Q. Doesn't his exhibit 23 show the actual operating as shown by the books?

A. Somewhere here I have an attempted reconcilaiation between his figures and these, whether I can find it or not I don't know for the moment, but they relate almost entirely to interest pa-ments. Otherwise it is practically the same. In 1895 Mr. Hagenah, according to this statement Mr. Sangster prepared for me had operating expenses of $63,976. Then there were worthless bills $753, bills which were charged to that, making $64,729.

Q. You have $64,702?

3906 A. Then there was interest of $27 to come out making $64,702.

Q. So that these are adjusted operating expenses and are operating expenses not adjusted by yourself?

A. No.

Q. That no is perhaps ambiguous there. They are adjusted operating expenses are they not?

A. Yes.

Q. And the adjustment was not made by you?

A. No, but the whole detail is before me.

Q. *The is* detail which is not in evidence you are assuming is correct and that cross examination would not disclose anything out of the way about it.

—. I had to rely on Mr. Sangster for this.

Q. Run right straight down the line and these operating expenses do not agree with the books do they?

A. No on account of these small changes they are not large.

Q. Take the year 1904, there is about $7,000 there isn't there?

A. Yes. $6,704 of interest which is not operating expenses at all.

Q. You have no hesitancy whatever in swearing to that without knowing anything about any of the items yourself?

A. I asked Mr. Sangster what it was.

Q. What did Mr. Sangster tell you it was interest on?

A. He told me but I have forgotten except it was a payment of interest, we both agreed that interest is not operating expense.

Q. Interest is not operating expenses?

A. I don't consider it so.

Q. Mr. Sangster agreed with you on that?

A. Yes.

Q. That it was not an op-rating expense?

3907 A. Yes, I can positively — that we went so far as to adopt a proper generalization and in this particular item he agreed that it was not a proper expense.

Q. You don't recall what the item was so we can form any conclusion of our own anout it?

A. No.

Q. And Mr. Sangster is not here?

A. No, unfortunately.

Q. And there is a difference of three or four thousand dollars in 1897?

A. In 1897 Mr. Hagenah gave $77,881 and these worthless bills——

Q. Can you just answer whether there was a difference of three or four thousand dollars that year?

A. Oh yes a difference of $4,290.

Q. And there is a difference of say $5,670, 80 or 90 dollars in 1899.

A. Yes.

Q. And of $3,500 in 1910, in round numbers?

A. Yes.

Q. And only about $1,500 in 1901?

A. Yes, 1400 odd.

Q. And something less than $2,000 the next year?

A. There Mr. Hall was higher than Mr. Hagenah.

Q. But there is a difference of something less than $2,000?

A. Yes.

Q. And was $3,800 the next year, around that?

A. Yes.

Q. In 1904 a difference a little less than $7,000?

A. Yes.

Q. In 1905 something like $2,600?

3908 A. Yes, sir.

Q. And for that two months' period something like $3,800?

A. Yes, I added there the accident damages, the damages paid.

Q. Did you testify yesterday that this was made up from the books?

A. I considered so.

Q. I asked you whether you testified yesterday this was made up from the books?

A. I don't remember.

Q. Now as a matter of fact there is not an item in your operating expenses there that agrees with the books is there?

A. These items are all taken from the books as I understand it.

Q. (Question read.)

A. Agrees with the books with certain changes taken from the books.

Q. To put it another way the total operating you give here you give as to each year. Now as to no year does that agree with the total operating as shown by the books, that is right is it?

A. Yes, I should think so, I can't say. I don't happen to have before me in this column the last five years of Mr. Hagenah's statements and I don't know there may have been an agreement there, I don't know whether there was or not, but prior to 1906 the statement you make is true.

Q. You know that?

A. Yes, sir.

Q. When you come to the last five year period it does not agree either with the books or with Mr. Hall's adjustment of the operating account does it?

A. I don't know.

3909 Q. And under those circumstances have you entire confidence in the resulting net income as you have figured it?

A. Yes, sir.

Q. Now turning over to page 45, that table is simply a copy from Mr. Pratt, as I understand it as to totals?

A. That is right.

Q. On page 47 you have first your investment with working capital what working capital did you take, actual working capital or theoretical capital?

A. Theoretical, start with what Mr. Pratt said.

Q. When you got down to the last five years you didn't take the actual working capital as shown by the evidence?

A. No.

Q. But took the theoretical working capital that was much less?

A. Yes, except the last year where I think it is larger than the evidence of Mr. Hall showed.

Q. The result of course taking this working capital this way is to decrease your ultimate amount there, $1,566,865?

A. That is not decreased, might be some of the years immediately preceding are, but if I am seeking to harmonize with Mr. Hall's testimony, that $1,566,000 would be too high by the difference between 68,000 and 80,000. He used 68,000.

Q. This $1,566,865 is taken from page 27?

A. Yes, the last column.

Q. And if we go back there we can find out how it is made up.

A. Yes.

Q. And you have taken out your depreciation?

A. Yes.

Q. That depreciation which you take out is on this theoretical basis that we discussed this morning?

3910 A. Yes. Shown on page 24.

Q. The balance of this division of your report is merely summarizing the argument based on these figures isn't it?

A. Yes, sir.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

3911 Saturday Forenoon Session.

SEPTEMBER 23, 1911—at 9:30 A. M.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JOHN MACVICAR, being first duly sworn on part of defendants, examined in chief by R. O. BRENNAN, Esq., testified:

Q. You have given the reporter your name?

A. I have.

Q. You reside in Des Moines?

A. I do.
Q. And for how many years?
A. Twenty-nine years.
Q. You were formerly mayor of the city of Des Moines?
A. I was.
Q. During what years?
A. 1896 to 1900.
Q. And since April, 1908, what official position have you held in the city of Des Moines?
A. Member of the City Council.
Q. And as a member of the City Council under the Des Moines plan of government of what department have you been superintendent?
A. Department of Streets and Public Improvements.
Q. And as councilman and superintendent of the department of streets and public improvements have you been assigned to certain duties by the council to be performed by you as such superintendent?
A. I have.
Q. And among other duties assigned to you under the ordinance of city, does it comprehend an investigation and
3912 control of the public utilities and franchises?
A. The public utilities are in my department.
Q. I wish you would tell the Master, Mr. MacVicar, say for at least fifteen or twenty years, what interest you have taken in municipal affairs, and especially regarding regulation and control of public untilities.

Objected to on part of complainant as being immaterial.

Q. And how much you have kept in touch with matters of that kind?

Complainant interposes the same objection.

A. I have in a general way for twenty years kept rather in close touch on matters pertaining to public services, corporations and municipal affairs, generally.
Q. Have you been an officer in any municipal league in the United States?

Complainant interposes the same objection last made.

A. I have been connected with the League of American Municipalities for fifteen years, first as president, and then as secretary. The past ten years I have been secretary.
—. And what are some of the general purposes of that League?

Complainant interposes the same objection last made.

A. The dissemination of information relative to matters pertaining to municipal government. As secretary I maintain a bureau of information and the members call upon the bureau from time to time for information relative to matters pertaining to the government of municipalities.

Q. Do you endeavor to keep in touch with the ordinances of the several cities of the United States and Canada, with respect to the rates and charges for water and gas and other public service of that character?

Complainant interposes the same objection last made.

3913 A. To a certain extent.

Q. How long have you continued to make observations along these lines and gathered information in regard to public utilities?

Complainant interposes the same objection last made.

A. For twenty years, nineteen or twenty.

Q. Were you familiar, Mr. MacVicar with the litigation in the city of Des Moines in the year, say from 1892 to about 1894?

Complainant interposes the same objection last made.

A. Somewhat familiar.

Q. Coming down now to the passing of the ordinance in controversy, I believe you were instructed by the city council to make some investigation for it with respect to a proposed ordinance to become effective after January 1, 1911?

A. Yes.

Q. About when were you assigned that duty by the council?

A. In October of last year.

Q. And upon being authorized and directed by the city council to make the investigation, you may tell the Master what you did in that respect?

A. I looked into the rates for gas being paid by other cities and took into consideration the comparative facilities for furnishing gas and considered from time to time the showing made by the local company as to its investment and its earnings and its income, and in a general way sought information relative to what would be considered a reasonable rate in Des Moines for gas.

Q. Now did you have in mind the former record in the proceedings to which I have called your attention, the litigation in the years 1893 and 1894?

A. Yes, we had in mind the results determined there and
3914 the showing, vaguely, the showing made by the company as to its investment, etc.

Q. The amount which it claimed as representing its investment at that time?

A. Yes.

Q. And about the number of miles of mains it had in its service at that time?

A. Yes.

Q. And the additions that were made to the plant as far as it came to your knowledge?

A. I had a general information on that subject and it was taken into consideration.

Q. And was that supplemented in any way by advice which you

received from the Des Moines Gas Company through Mr. Haines with reference to the value of the property?

A. I had some information from Mr. Haines with reference to the value of the investment.

Q. And the only changes that were suggested by you in the ordinance was the reduction in the price of gas?

A. That was all.

Q. You made no recommendations or suggestions with respect to the candle power or thermal values of the gas, or matters of that kind?

A. No.

Q. Now, I wish you would tell the Master, Mr. MacVicar, if prior to the time that you presented the ordinance in controversy to the city council as representing your report under the resolution directing you to make an investigation, if you conferred with the mayor and other members of the council from time to time, formally or informally, with respect thereto?

A. I conferred from time to time with members of the
3915 council and reported progress.

Q. And there have been introduced in this case certain letters and correspondence between yourself and Mr. Jansen Haines relative to the investigations you were making; now were there any conferences held between you and Mr. Haines with respect to the valuation of the property of the Des Moines Gas Company and the rates which should be charged from and after January 1, 1911?

Objected to on part of complainant as being incompetent and immaterial.

A. There was.

Q. Tell the Master about how many of such conferences were had and about the scope of the negotiations or suggestions that were made at these conferences?

Complainant interposes the same objection last made.

A. We had three or four, I believe, conferences, and in a general way discussed the fact that our contract for rates was coming to an end and the desirability of agreeing upon new rates. One conference, may be two, was held in connection with the city solicitor, Mr. Brennan. The matter was discussed pro and con and the 90 cent rate was discussed; I had reason to believe we were going to agree upon the 90 cent rate. The question of the tests to be required for the quality of gas was discussed also, and Mr. Haines asked what tests would be required for 90 cent gas and we asked him to frame a section which he thought would be reasonable covering the tests, and the conference adjourned with the understanding that he would frame such a section; but following that shortly his final letter declining the 90 cent rate was received.

Complainant moves to strike out the statement "I had reason to believe that the 90 cent rate would be agreed upon" as incom-
3916 petent and being a mere expression of the opinion of the witness, and in any event incompetent as not tending to prove or disprove any issue in the case, and immaterial.

Q. What do you recall Mr. MacVicar, that Mr. Haines said on the subject of the 90 cent rate when it was suggested by you?

Objected to on the part of complainant as immaterial and incompetent.

A. He said nothing directly favorable or unfavirable about it. We argued the question more or less and finally it apparently resolved itself into a question as to what tests would be required under the 90 cent rate.

Complainant moves to strike out the latter part of the answer where the witness states that it apparently resolved itself, etc., as being incompetent and a mere expression of opinion of the witness and not a statement of any fact and wholly immaterial.

Q. What tests were under discussion and what condition or circumstances suggested to your mind these tests which you were suggesting?

Objected to on part of complainant as immaterial.

A. It was suggested that the proper test would be based on the British thermal units, rather than upon the candle power. As I recall it, Mr. Haines thought that the tests should approach 600 or rather under 600 British thermal units.

Q. You spoke something of tests to be made as to pressure at which gas was to be furnished; what was said along those lines?

A. We discussed the matter of pressure quite thoroughly and that was to have been incorporated into the ordinance to be agreed upon, the requirements as to pressure.

3917 Q. Was there anything said by you or by Mr. Haines with regard to the installation of a laboratory to carry on these tests from time to time?

A. It was suggested that a laboratory should be installed at the expense of the company. That was objected to by Mr. Haines, When I told him I understood that the United Gas Improvement Company had been accustomed to furnishing certain cities with a laboratory without cost and we thought Des Moines should have it under the same terms, that was discussed and not very strenuously opposed by Mr. Haines, but not however agreed upon.

Q. As I understand it, the principal questions discussed was the tests and the heat units of the gas, and as I understand you, the 90 cent rate was not seriously objected to by Mr. Haines?

Objected to on part of complainant as immaterial, incompetent and calling for the conclusion of the witness.

A. Apparently not.

Q. Now, then, I will renew the question as to the information which you had and which you received during this investigation with respect to prices and charges which other companies were making and receiving for like services?

Objected to on part — complainant as immaterial and incompetent.

A. I had compiled from authorities on gas rates the rates paid by certain cities, some of them approximating Des Moines in size and other conditions and submitted to Mr. Haines certain of these cities as a reason why Des Moines should be entitled to a 90 cent rate.

Complainant moves to strike out the statement as to the information received as being secondary and not the best evidence.

(Answer continued.) And also from my personal knowl-
3918 edge that I had gained from direct contact with the cities or with their ordinances as to the rate they were paying.

Q. What city or cities in Iowa did you know of that was being furnished gas, that is, to the city and inhabitants for less than one dollar?

Objected to on part of complainant as immaterial and incompetent.

A. I knew Cedar Rapids had established a rate—the Supreme Court of the State, a rate of 90 cents, and that the conditions there for low price gas were not as good as in Des Moines.

Q. Did you have any knowledge at that time with respect to the situation in the city of Minneapolis?

Complainant interposes the same objection last made.

A. I knew they had a gas controversy there and that they had secured a rate much lower than 90 cents in an adjustment of rates.

Q. Had you studied the conditions in the cities of Massachusetts to any extent?

A. I had in a general way studied into the conditions in Massachusetts and found that Boston had recently voluntarily reduced its rate from 90 to 80 cents, for the reason that it desired to increase its dividend earnings, being operated under a restrictive dividend earning, which permitted it to earn increased dividends as the price of gas was reduced. I knew in Lynn, Massachusetts, a city only slightly smaller than Des Moines, a slightly larger production, and a much smaller production per mile of mains laid was selling gas then at 80 cents and the first of January it was reduced to 75, a voluntary reduction, I believe. New Bedford, Mass., a town about the size of Des Moines, and very much smaller consumption was selling gas for 90 cents.

3919 Q. I want to ask you, Mr. MacVicar, if in your investigations of the result or results of the reduction in the price of gas, whether you have observed that the business has increased by reason of and on account of the reduction in price?

Objected to on part of complainant as immaterial and incompetent, the witness not having been shown to be competent to testify or give an opinion on the subject inquired about; not appearing to have any more information on the subject than is common to anyone else.

Q. In other words, have you made a study of the effect of the reduction in the price of gas as affecting the amount of sales?

Complainant interposes the same objection last made.

A. I have simply informed myself that there is an economic proposition in the reduction of cost. I had observed directly the results in Des Moines in the decrease in the cost of gas here, and in 1906 or 1907, I believe, it may have been in 1905, when the rates were reduced from $1.55 or $1.60 to $1.30 that the annual increase was abnormally large; and in talks with the officials of the Company and the reports of the council learned that the increase was abnormally large and also that the officials with their profits were quite satisfied under the reduced rates as compared with what they were when they were charging a higher rate.

Complainant moves to strike out the statement as to talks with the officials of the Company as being incompetent and immaterial.

Q. You said 1904 and 1905—did you mean that, or did you mean 1894 and 1895?

A. I meant 1894 and 1895.

Q. Were you familiar with the amount of the output or sales of gas of the Company in about 1894 or 1895?

3920 A. From the reports of the Company to the City and its statements at that time, I learned that the output at the time the reduction was first made was in the neighborhood of fifty million feet annually.

Q. Do you recall in a general way what the output was in or about the month of December, 1910, for the year ending?

A. At that time the output was in excess of 450 million feet; about 500 million feet, I believe.

Q. So that there was an increase during these fifteen years of approximately one thousand per cent of the output of gas?

A. Yes.

Q. Do you know, Mr. MacVicar, what the increase in population was during those fifteen years, approximately?

A. Between forty and fifty per cent, I believe.

Q. You say you have had conversations with officers of the Des Moines Gas Company and they have stated to you they were making more money under the reduced rate than *of*rmerly?

Objected to on part of complainant as leading, incompetent and immaterial.

Q. State what was said in substance.

Same objection.

A. Two or three years after the reduction of the rate I had a talk with an official of the company and was told that their output had increased to such an extent that their profits had also increased in a very satisfactory way.

Q. Now, Mr. MacVicar, in arriving at 90 cents as a reasonable price for gas in the city of Des Moines as represented in your report

through this ordinance, upon what valuation did you estimate that 90 cents would earn a reasonable return?

3921 A. Estimated on the best information that I had on that subject, which was the showing of investment from time to time in the suits in court, and the showing made by Mr. Haines in his letter to me advising me as to the investment.

Q. And the letter now to which you refer, under what date is that letter?

A. It is under date November 22, 1910.

Q. And what was the valuation upon which you estimated as shown in the letter under date of November 22, 1910?

A. The amount stated there was $1,739,094.

Q. Now the letter to which you have called attention is the same letter which has been introduced in evidence in this case as Complainant's Exhibit 7?

A. I think this was introduced, and another letter of date November 26, 1910, referring again to the same figures.

Q. Now in addition to the letter, Exhibit 7, I will ask you Mr. MacVicar, if you had been informed by Mr. Schramm, a member of the council, and former City Assessor, as to the valuation placed upon the property by the Des Moines Gas Company in or about the year 1908?

A. I was advised by him that such valuation had been placed upon the plant by the authorities of the Company, amounting to less I believe, than one million and a half, or a million three hundred and fifty thousand, or thereabouts.

Complainant moves to strike the answer as incompetent and hearsay.

Q. Do you remember, Mr. MacVicar, whether you were shown the original report or a copy of the same made by the Company to the assessor for the year 1908 or any of the previous years?

A. Not at that time, I believe.

3922 Q. Did you secure this information from Mr. Schramm?

A. I did.

Q. Do you remember when he was city assessor?

A. Previous to April 1, 1908, for——

Q. Mr. Schramm has been a member of the city council for how many years?

A. Three years and a half.

Q. And was a member of the city council at the time of the passage of the ordinance in controversy?

A. He was.

Q. In arriving at 90 cents as representing a reasonable rate for gas manufactured and distributed in the city of Des Moines, what did you intend the Company should receive therefrom, that is to say, what expenses did you estimate could be paid from that?

A. I thought that rate would afford a reasonable return upon the investment and payment for the operating expenses and depreciation.

Q. And taxes?

A. And taxes.

Q. Now, Mr. MacVicar, the testimony here on the part of complainant and from which the inference might be drawn that this ordinance was passed without any previous investigation of conditions as to the reasonable cost for manufacturing and distributing gas that it was precipitated after this correspondence between you and Mr. Haines referred to in the record. I will ask you if that is true or not, or whether the ordinance was reported by you after having made a full and thorough investigation?

Objected to on part of complainant as being incompetent and calling for the mere statement and conclusion of the witness in-
3923 stead of a statement of facts as to what he did.

A. I made quite a thorough investigation, which determined in my judgment that a 90 cent rate would not be unreasonable to the company.

Q. And when the ordinance — introduced in the city council, was it discussed by the members of the council before it was put upon its final passage?

A. It was discussed to a certain extent by the council, in a general way the question of the reasonableness of the rate and the advisability of its passage, and it was unanimously passed by the council.

Q. Some of the letters which are referred to in the record from Mr. Haines to you, contained an invitation to examine the books and accounts of the company, and I will ask you to tell the Master what you did with respect to that.

A. I felt, as I stated in my letter to Mr. Haines, that any examination that we might be able to make probably would not determine the justness of the 90 cent rate or against it, and stated I believed that probably the books would not give us the information that would determine that question. However, shortly after the passage of the ordinance, Mr. Haines was writing letters commenting on the work of the council, the action of the council, and I asked Mr. Schramm and the auditor to ask permission of the company to look over the books, which they did, and were refused.

Complainant moves to strike the answer just given as immaterial and as a request for an examination claimed to have been made after the ordinance was passed.

Q. Was your attention called, Mr. MacVicar to the defendant's Exhibit 8 in this case, being an appraisal of the property of
3924 the Des Moines Gas Company, made by the Des Moines Gas Company?

A. I think not; I have no recollection of it.

Q. I want to ask you this, Mr. MacVicar, I notice in some of the correspondence between you and Mr. Haines referred to in the record, it was stated that the Company had not an inventory of its property, but that one was in process of making?

A. I was advised one was in process of making.

Q. Do you know whether or not then the defendant's Exhibit 8 which is a study of the life of the Des Moines Gas Company was in existence at that time or not?

A. I don't know that it was.

Q. Did Mr. Haines at any time show you the inventory or what purported to be the inventory of the Des Moines Gas Company, in whole or in part?

A. I think not.

Q. Now, Mr. MacVicar I want to ask you something about the paving conditions in the city of Des Moines; for instance, asphalt paving, about the range of prices during the last year, that is to say, the price which the city is securing for asphalt paving of streets?

Objected to on part of complainant as immaterial, incompetent and the witness not being shown to be competent.

A. In the past year we have paid for asphalt pavement laid on residence streets, including five inch concrete foundation, one inch binder and an inch and a half wearing surface, from $1.55 to $1.65; and on business streets, on 6 inch concrete foundation, one inch binder and two inch wearing surface, $1.90 to $1.95.

3925 Q. Now some objection was urged here to your qualification to testify on this subject. I ask you if in your position as superintendent of streets and public improvements you are not charged with the duty of looking after the streets and paving of the streets?

A. That is in my department, directing the improvement and passing upon the work and contracts.

Q. In that way you have become familiar with the prices for paving in the city of Des Moines?

A. Yes.

Q. Secured after receiving competitive bids?

A. Yes.

Q. Now, what has been the range of prices with respect to brick paving?

A. We have done comparatively little brick paving the past year. Previous to that time our brick paving has cost, in the most approved manner in the residence streets, in the neighborhood of two dollars a square yard.

Q. That includes a concrete base of five inches?

A. Five inches, and cement filler, vitrified brick.

Q. What is the character of the top dressing?

A. On brick, simply a cement filler.

Q. And has there been any creosote wood block paving put in in the last year or two?

A. Yes.

Q. At what prices has the city been able to secure paving of that character?

A. From $2.60 to $2.85 depending upon the condition of the foundation on which it was laid.

Q. The pavements in the city of Des Moines are constructed of what material?

A. Some cement pavements, some brick, some asphalt, and creosoted block.

3926 Q. Now, I believe you have told us the range of prices on the different kind of pavements except cement.

A. We have two streets and a number of alleys, and other contracts are being let for the paving with cement.

Q. What is the cost per square yard for that character of pavement?

A. We received bids during the past week at $1.24 for cement; we have paid as high as $1.50 or $1.55.

Q. Do you keep in mind Mr. MacVicar the unit prices, that is the cost rather, to the city for excavating and for removing earth from the streets?

A. I have not.

Q. I believe Mr. Dobson mentioned one experience in the city of Des Moines while upon the witness stand—on west Seventh street—where the city excavated or did some excavating to change the grade of the street, at a lower price than that of a public contract; do you recall the facts in that case?

A. The work on West Seventh Street was done by private contract; similar work was done on Ninth Street and elsewhere, and has demonstrated to the city we could do the work at a less rate than we paid by contract.

Mr. BRENNAN: I think all the letters referred to in Exhibit 44, which I am about to offer have already been introduced in evidence by Complainant. We want to have it in this form if there are no objections on the other side, we will offer the exhibit in evidence in that form. What I want to know is if you will waive the identification of Exhibit 44.

Judge CARR: Oh, yes. We will admit that the exhibit is a correct copy of the letters which it purports to be a copy of.

3927 Mr. BRENNAN: We now offer in evidence Defendant's Exhibit 44.

Objected to on part of complainant for the reason that it is immaterial and only tends to encumber the record and for the further reason that the originals or admitted copies of the letters are already in evidence.

Cross-examination by Judge GEO. H. CARR.

Q. When was it, Mr. MacVicar, that you were appointed by the council as a committee to take up the matter of a new ordinance for gas?

A. Some time in October 1910.

Q. Now was there anyone else appointed for that purpose besides yourself?

A. I think not.

Q. Wasn't the City Solicitor or the Corporation Counsel also appointed?

A. The minutes there will show.

Q. What is your recollection of it

A. My recollection is that it was the head of the department; it might have included the solicitor.

Q. If it did appoint the solicitor, or the legal department, you have forgotton about it?

A. I have forgotten.

Q. Your present recollection is you and you alone were appointed to perform this service?

A. That is my recollection.

Q. I will call your attention, Mr. MacVicar to a copy of the journal of the city council under date of October 21, of last year, and will ask you to refresh your recollection by reading that
3927½ and tell me whether you are not mistaken in supposing you were the only person who was appointed on that committee?

A. "That the superintendent of the department of streets and public improvements and the legal department be requested to recommend a new schedule of rates, etc." I was in error. However I will say I did consult with the city solicitor concerning the matter.

Q. That is the action that was taken by the city council to which you referred?

A. Yes.

Q. That resolution appointed you, who were the superintendent of the department of streets and public improvements, and the legal department to recommend to the council a new schedule of rates and regulation; that is the authorization from the council to you to which you have previously referred in your testimony?

A. Yes.

Q. Did you make any written report to the council?

A. The report made was in the form of an ordinance and possibly a report accompanied it.

Q. Then your answer is you made no written report except to present an ordinance of which you now have no recollection?

A. None.

Q. Isn't it a fact you made no written report except to present the ordinance?

A. I would not say that it was because I find my recollection is not always reliable and there may have been a written report accompanying it.

Q. Is it possible that you on so important a matter and concerning which you have taken so much investigation, could have made a written report and yet not have any recollection of it?
3928 A. I might have done so. I think the instructions were to frame a rate ordinance, is it not?

Q. You have read the instructions from the council for your authorization to act. But you will say, unless the record shows to the contrary that you made no written report; you have no recollection making or filing with the council any written report of your investigation on the subject of rates prior to the passage of this ordinance, which was passed on the 27th day of December, 1910?

A. Such a report may or may not have been filed; I cannot now recall.

Q. I want to get that right, Mr. MacVicar, if I can. Your testimony is that you have no recollection of having prepared or filed with the council such report?

A. I cannot recall filing such a report, though it may have been filed.

Q. Can you recall having prepared such a report?
A. I do not recall having prepared such a report, although it may have been prepared.
Q. That is as definite as you can be on the subject?
A. Yes.
Q. If there was a written report prepared by you and filed with the council, it is fair to assume that it is still with the records of the office of the clerk of the city council?
A. It would be on record.
Q. Will you examine the files there or records and see if you can discover any such written report and if you find it, let us know?
A. I will.
Q. Now the legal department did however file a report prior to the passage of this ordinance, did they not, Mr. MacVicar?
3929 A. I do not recall.
Q. For the purpose of refreshing your recollection I will call your attention to page 1192, of the printed copy of the journal of the city under date December 27, and will ask you having refreshed your recollection to state whether or not the legal department did not prior to the passage of the ordinance file a written report?
A. I believe roll call 2994 is the report of the department of streets and public improvements which states: I beg to report herewith an ordinance fixing rates and calling attention to the communication of the city attorney accompanying the same, etc.
Q. Now that is the report which was filed as you now recall by the legal department at the time that you presented the ordinance?
A. It is.
Q. Now, having examined the record of the proceedings under that date, can you state whether you filed any written report aside from presenting the ordinance?
A. I have no recollection of any other report than you find there.
Q. Was this communication from the legal department read to the council before they acted upon this ordinance?
A. I think it was.
Q. Do you know whether it was or not?
A. I would say it was. We always extend that courtesy to the communications from the city solicitor.
Q. Do you remember by whom it was read?
A. Naturally would be read by the clerk.
Q. Was there any discussion of this report prior to the
3930 passage of the ordinance?
A. I can't say as to that; possibly it was; most of those things are discussed.
Q. There was no discussion of the communication from the legal department that you now have in mind?
A. No particular discussion. These matters are always discussed: undoubtedly there was some discussion.
Q. But no such discussion as now leaves any impression on your mind?
A. No.

Q. This communication from the city solicitor has the following language: "It is the duty of the council to fully and fairly investigate and prescribe a rate that will be compensatory, that is, just to both the owner and the public. The right to regulate is not unlimited." Do you now recall that statement in the communication as having been under discussion at all by the city council prior to the passage of the ordinance?

A. I understood those were the facts.

Q. Just kindly confine yourself to an answer to my question.

A. I don't recall it.

Q. Now, when was your report made to the council in the way that you say you made it, that is, by presenting the ordinance with your recommendation for its passage?

A. I think you have the minutes there that would give the exact date, October some time.

Q. Was it December?

A. Yes, December.

Q. On the 27th day of December?

A. The 27th day of December.

Q. That was the day on which you presented the ordinance to the city council with your recommendation that it pass, and
3931 that was the day on which the communication from the legal department was also presented to the council, was it not?

A. It was.

Q. Do you remember what time in the day it was that this ordinance was presented together with this communication and your recommendation that the ordinance pass?

A. Our meetings are almost invariably in the forenoon; so I judge it was in the forenoon.

Q. So that it was in the forenoon?

A. Yes.

Q. What time in the forenoon did you convene?

A. Usually at nine o'clock.

Q. And was that the time you convened on that particular occasion?

A. Nominally at nine, very likely nearer ten.

Q. Is it your recollection that is about the time you convened on the 27th of December?

A. I have no recollection as to the exact minute.

Q. But your impression would be that would be about the hour?

A. Between nine and ten.

Q. Do you know at what time in the day the ordinance regulating or attempting to regulate the price of gas was passed by the council?

A. I don't remember.

Q. Can you tell the Master about how long after you presented it with your recommendation it was before it was taken up for passage?

A. It was taken up at the same meeting.

Q. About how long in minutes after it was presented?

A. I couldn't say whether it was five or ten or fifteen minutes' discussion.

3932 Q. Fifteen minutes, would that be the outside limit?

A. Not necessarily; it might have been discussed for an hour.

Q. But your recollection is about fifteen minutes?

A. I said I didn't know whether it was fifteen minutes.

Q. Now in the discharge of this important duty that rested upon you and the council, your recollection of the matter is so vague that you are not able to say, Mr. MacVicar, as I understand it, whether it might have been under discussion five minutes or ten minutes or fifteen minutes or possibly longer?

A. It was under discussion for nearly three months.

Q. This ordinance?

A. The rates were under discussion for nearly three months.

Q. By the council?

A. By the proper department of the council.

Q. What is the proper department of the council?

A. The department to which this was referred, the department of streets and public improvements and the legal department.

Q. The department of streets and public improvements is the proper department to consider and determine and recommend rates for gas or water or any matter of that kind the council have to do?

A. Under the Des Moines organization the departments are divided into five heads and they all have their specific duties and they are largely guided by the reports from that department; so that it was the proper department.

Q. That is the department that has to do with these regulatory measures as you construe the law?

A. Yes.

Q. Now as a matter of law the power to fix rates is vested in the council as a whole, is it not?

A. It is.

3933 Q. Now, from the time the ordinance was presented until it was passed, that time would be measured as you think by minutes and possibly might have been an hour?

A. That is true.

Q. And that is all the discussion that the council as a council gave to this ordinance from the time it was presented until it was passed?

A. That is all as a council.

Q. Was there any notice given to Mr. Haines or any one representing the Gas Company that this ordinance would at that time be presented to the council?

A. Notice was given Mr. Haines that an ordinance would be presented about that time to the council.

Q. What do you refer to, these communications of yours published in the newspapers?

A. I have that in mind.

Q. That is the only notice that he received, is it?

A. Why he certainly had notice from time to time that the council had this under consideration, and the contract for rates expired the

first of January, and he naturally would understand by that we might fix a rate under which he might proceed properly——

Complainant moves to strike the answer as not responsive, incompetent and a statement of a conclusion.

Q. Now, I will again ask the question, did you give Mr. Haines any notice of that meeting at which that ordinance was presented and acted upon?

A. That is a different question. I did not.

Q. Did you give him any other notice of any action on the part of the council with respect to fixing rates except the published letters that you addressed to him?

3934 A. Oh, yes; he was aware and learned from me the council had under consideration the matter of rates.

Q. Was that in the discussion or talk with Mr. Haines to which you have already referred in your testimony?

A. The numerous interviews I had with him and the letters.

Q. That is what you now have in mind?

A. Yes.

Q. Now did you as a member of the council have in mind in passing this ordinance—you say it was passed within a few moments, or a very short time after it was introduced—have in mind that it was your duty to fully and fairly investigate and prescribe a rate that would be compensatory and fair to the Company as well as to the public; did you, I say, have it in mind, at that time that was your duty under the law?

A. I certainly did.

Q. Did you in reporting this ordinance to the council call their attention to their duty as members of the council in this regard?

A. That was fully set forth in the report of the solicitor to me, which I submitted to the council as my report.

Q. Which you think was read, but you are not sure?

A. I said it was read.

Q. Now, having in mind, Mr. MacVicar, that is was your duty to fully and fairly investigate as to the rate, so that to the end it would be reasonable, just and fair to the company as well as to the public—you say that at the time the ordinance after the ordinance was introduced the only consideration that was given it was some around-the-table discussion by the council at that time?

A. No, I didn't say that.

3935 Q. At that time I mean, after the ordinance was introduced?

A. After the ordinance was introduced that was all the consideration it had. It was, however, fully considered for three months previous to that time.

Q. It was fully considered three months previous to that time?

A. Yes.

Q. Will you tell the Master what was considered fully three months previous to that time?

A. The question of whether Des Moines was entitled to a lower rate than one dollar for gas.

Q. When and where was that fully considered for three months?

A. It was considered by the department to which it was referred and by the city solicitor, after due consideration and investigation as to rates paid elsewhere; investigation as to its probable investment and income.

Q. I am not now asking you what investigation was made. I am trying to fix the time of the investigation you say was made three months prior?

A. It was by the superintendent of the department to which it was referred, by the solicitor in conference, and in conference with Mr. Haines of the Gas Company.

Q. Then you say that the council three months before this ordinance came before them for action had made a full investigation of the reasonableness of the rates and by a discussion between yourself and the city solicitor and in your conferences with Mr. Haines?

A. That is correct.

Q. That is the full and fair investigation now that you say the council gave to this question?

A. It referred it to the department whose duty it was to pass upon these matters.

3936 Q. Then the truth is that the council simply acted upon your investigation?

A. I did not say that. They undoubtedly had some information of their own on that question.

Q. Do you know what they had?

A. I know only from brief talks with them. I know Mr. Schramm had some knowledge of the value of the plant as set forth by Mr. Haines of the Gas Company. I know Mr. Schramm had an intelligent conception of matters of that kind. Mayor Hanna was a student of the matter of rates, etc.

Q. Now let us take Mr. Schramm; you say Mr. Schramm was posted on the subject of what was a fair, compensatory rate, because he had, as I take it, assessed the company and had some statement from some officer of the company as to the value of the property?

A. Yes.

Q. Now how long before this 27th day of December, 1910, was it that Mr. Schramm had received this information?

A. I imagine that was a year or so; maybe less. I don't remember now when that report was made that was referred to here.

Q. Do you know what was the last year Mr. Schramm was assessor?

A. He was assessor until the 1st day of April, 1908.

Q. Well, now, this information that he secured must have been prior to that?

A. Prior to that.

Q. Do you know how long prior to that?

A. It may have been just the year previous, about the 1st of January previous; possibly a year; I don't remember.

Q. Probably the latter part of 1907, when the statement was made in the year 1907?

A. Yes.

3937 Q. Then the information that you referred to that Mr. Schramm as a member of the council had, to enable him to pass intelligently upon what was a fair and reasonable rate was a statement in the report made to him by some officer of the company more than two years prior to the time you were taking action?

A. I don't remember the dates. He had also in addition to that Mr. Haines' letters which were published and which he read.

Q. You say he had that?

A. I talked with him concerning the letters and am quite sure he read them.

Q. So that you know he read them?

A. Yes.

Q. Now this information Mr. Schramm had, the fact that he assessed this property two years before, and the fact that he had read *the* these letters of Mr. Haines, that is the information that Mr. Schramm had?

A. Yes.

Q. Now, about Mayor Hanna, what was his information, so far as you know?

A. I know that he is a student of economic questions of this nature and would have general information; and he is quite a close student. What information he may have had, I couldn't tell you.

Q. So now the knowledge Mayor Hanna had on the subject so far as you know is his general knowledge as a student of economic questions.

A. So far as I know he may have had other knowledge.

Q. Let us see, you have some other men down there; there is Mr. Roe. What information did Mr. Roe have on the subject?

A. Mr. Roe is an attorney, and he ought to be informed on matters of this kind; also an intelligent man.

Q. You are assuming all attorneys know what would be a

3938 reasonable rate without investigation?

A. Well, I think it is the duty of an attorney to investigate those matters.

Q. So far as you know, Mr. Roe had no information on the subject and had made no investigation of the subject, isn't that true?

A. I wouldn't put it that way. I would say that so far as I have any knowledge to the contrary he may have had most full information.

Q. I say, so far as you have any personal knowled*he* Mr. Roe had made no investigation of this subject?

A. That is true.

Q. You still have other members of the council, Mr. Ash, what information so far as you have personal knowledge, did Mr. Ash have on the subject of what was a reasonable rate prior to the time he voted for the adoption of this ordinance?

A. I think that Mr. Ash probably had as much information——

Q. I am asking for your personal knowledge.

A. I could not speak for Mr. Ash.

Q. So far as you know then, Mr. Ash had no knowledge on the

subject, no special knowledge on the subject to enable him to determine what would be a fair rate?

A. Yes, I know that he did have some knowledge.

Q. What do you know he had?

A. I know he had before him the report setting forth the situation.

Q. You say he had before him the report, by that you mean the letter of Mr. Brennan?

A. Yes.

Q. What information does that contain?

A. I think it recommends the ordinance.

Q. What information does that letter contain which would
3939 enable him to determine what is or was a fair and just rate?

A. If you will let me have that I can read it and find out. (Presents paper to witness) In a general way as I pick out the paragraph here: "In the experience of Des Moines and other cities as to the results of increased consumption, the cost of furnishing gas does not increase in proportion to the amount of gas furnished. The question of how much of an increase can only be answered definitely and correctly by a practical test of the ordinance." That is one paragraph.

Q. You think that is the information which Mr. Ash acquired and upon which he acted?

A. I didn't say that.

Q. So far as you know that is the only information upon which he acted.

Objected to on part of defendants as not proper cross examination and incompetent in the form in which it is asked.

A. I am not competent to pass upon what Mr. Ash may have known.

Q. I am trying to get at what personal knowledge you have as to the information he possessed.

A. That would be very difficult for me to give you. I have no idea what the other members knew.

Q. Now, to clear the matter up, as I understand it, so far as you have any personal knowledge, the only information possessed by Mr. Ash at the time he voted on this ordinance was the information contained in this letter from Mr. Brennan in which he said he thought the 90 cent rate was all right and what you said?

A. I have no knowledge of what Mr. Ash may have known on this subject, other than what the discussion might have brought out about the table at that time.

3940 Q. So far as you know he had no other information on the subject than what you refer to?

A. Unless the discussion might have brought it out at the time.

Q. By the discussion you mean the discussion had there for a few moments or an hour at the most that this ordinance was under consideration by the council?

A. Yes.

Q. That discussion was not of a character which impressed itself

upon your mind in such a way that you can give us any idea what it was or the length of time it occupied?

A. It was not.

Q. Now, Mr. Brennan has inquired of you as to what you were aiming to do, and you told him you were trying to pass an ordinance that would be a fair ordinance, compensatory to the company and just between it and the public. Now what is your conception of what is involved in that proposition, that is, what is involved in the question of determining what is a fair rate of return?

A. The cost of production, the cost of distribution, the investment, the reasonable return upon the investment, the cost of operation and the depreciation.

Q. Do you consider and did you consider as involved in the proposition the question as to the value, the present value of the property which was used and useful in the business of manufacturing gas, owned by the company?

A. That I understood was a factor.

Q. How important a factor did you regard it?

A. A very important factor.

Q. Did you understand it to be the basis of the whole proposition?

A. It would — a basis of the whole proposition.

Q. Now upon that very important element in the problem
3941 which you had before you, I wish you would state again just exactly what information you had as to the present value of the property of the Des Moines Gas Company here in Des Moines, used and useful in the business of manufacturing gas.

A. I had the knowledge from the previous showings of the company from time to time as to the investment. I had some knowledge of the additions to the plant from time to time, and I had a fair approximate idea of the probable value of the plant.

Q. Now you say you had knowledge of the showing of the company as to previous investments; you had knowledge of the expenditures for extensions; and subsequent investments, and what else, what was the last?

A. You didn't get the second right.

Q. You said you had a fair knowledge of the probable value of the plant?

A. Yes.

Q. That is the whole proposition?

A. Not the whole proposition.

Q. I mean so far as the value of the plant is concerned?

A. Yes.

Q. Will you tell the Master how you got this knowledge of the approximate value of the plant, how you obtained it?

A. I was aware of the showing of the investment in the plant in the early toials for the regulation of rates in 1893 or 1894. I had knowledge of the showing made by the company to the assessor of the value of the plant, and I had Mr. Haines' letters.

Q. And that is the sum total of your knowledge by which you

were able to reach in your own mind and to your own satisfaction a fair approximation of the value of the property, is it?

3942 A. That was my information. Also the discussion with the attorneys relative to the showing from time to time of the investment on the additions to the plant, etc.

Q. With what attorneys?

A. Mr. Brennan.

Q. By previous investment to what do you refer?

A. I refer to the additional mains laid; the previous showing, and earlier showing. To the showing made when the city was endeavoring to establish a $1.25 rate in 1893.

Q. The showing that was made in 1893, some 18 years prior to the present time?

A. Yes.

Q. Now then you say that you had some knowledge of subsequent investments in the property?

A. Yes.

Q. Did you have in mind, did you then know and can you now state what you then knew as to the character of the property as it was in 1893, the probable number of miles of mains and the general magnitude of the property at that time?

A. I knew that at that time, I recall there was something like 40 miles of mains or less. The valuation was considerably below $500,000. I knew they had added to their stations of the mains, now amounting to 140 miles or thereabouts. They had added some property, one gas holder, I believe, in that time.

Q. What information did you have in mind at the time you was passing on this ordinance which you can now state as to the cost or value of these extensions and additions to the property since 1893 and 1894?

A. I could not state specifically the additional cost of any of those improvements, except in a general way to estimate the

3943 proportionate increase in the plant and compare it with the original showing of the investment.

Q. Did you have any information, or did you seek to obtain any information which would give you any definite idea as to what the additions and extensions of the plant since 1893 or 1894 had cost?

A. I had no means of getting any such information that could be in my judgment relied upon.

Q. Did you make any effort to obtain any such information?

A. No.

Q. Did you ask the company to furnish you any information on that subject?

A. I think not.

Q. You assumed the company would know something about it, didn't you, have some record of it?

A. I believe the Company knew.

Q. Then I inquire why, if you were trying to ascertain the value of this property you did not at least inquire from somebody who had the information what the additions and extensions to the property since 1893 had cost?

A. Because from previous observation and experience I did not believe I would get any information that would be of any value in determining a reasonable rate for gas.

Q. Because of some experience, you felt that if you went to Mr. Haines and asked anything about the matter, he wouldn't tell you, or wouldn't tell you the truth, is that it?

A. I would not call into question Mr. Haines' veracity. I would say probably I would not get the information.

Q. You do not want to leave the impression that you had previous experience with Mr. Haines that would lead you to distrust his word?

3944 A. I have had some previous experience with the Gas Company I called into question.

Q. I am talking about Mr. Haines, who was president and manager of this company?

A. Yes, I would not have thought he was acting personally; it was the company I was dealing with.

Q. Now, Mr. MacVicar, had you ever had any experience, prior to December 1910 in the operation of a gas plant or in the construction of a gas plant, or any practical knowledge of a gas plant, more than people generally?

A. As to the knowledge of the matters of fixing rates and arriving at rates with the Gas Company I had some experience.

Q. You are not an engineer, are you?

A. I am not.

Q. You never have been a builder, have you?

A. No.

Q. You do not claim to have any more knowledge on a subject of that kind than is possessed by people generally?

A. I have had some experiences which ought to be of some value in dealing with public service companies.

Q. You do not regard yourself competent to make an appraisement of the property like the Des Moines Gas Company?

A. I do not.

Q. So that when you say that you had in your own opinion a fair idea of the approximate value of this property, you mean no more than you just had a notion about it?

A. Merely an estimate based upon such information as was obtainable that was reliable.

Q. That is the information you have given?

A. Which I have referred to.

3945 Q. Now you have laid some emphasis upon the statements of the company for assessment purposes made more than two years before the time you were acting. There were later reports made by the company as to the value of the property?

A. Undoubtedly there was.

Q. You didn't take those into consideration?

A. There were none—I had none before me at that time.

Q. Well, you have now given us, I take it what basis you had from which you could form an opinion of the value of the property as it was on the 27th day of December, 1910?

A. Yes.

Q. That is the sum total of it?
A. Yes.
Q. Now, involved in this question was something further, was there not, this question of a reasonable rate?
A. Yes.
Q. Now, with regard to the value of the property, you knew on the 27th day of December that the company was having an inventory made of the property, did you not?
A. I understood it was having an inventory made.
Q. You had been so informed?
A. Yes.
Q. You knew the men were at work at it?
A. I have been so advised.
Q. You knew one of your own engineers then or shortly after took part in the work?
A. Mr. Maxwell was delegated at my suggestion to go with the engineers that were making the estimate and check certain blue prints, etc.
Q. How did that come about, Mr. MacVicar?
3946 A. Well, Mr. Haines advised us they were making an inventory and asked us to delegate somebody to accompany the engineer in the work.
Q. Do you remember when that was you delegated Mr. Maxwell to work with the company's engineers in making this inventory?
A. I think that is referred to in his letter of December 2nd, "asked Engineer Budd to delegate Mr. Maxwell," etc.
Q. Now did you prior to the action taken by you on the 27th of December obtain any report from Mr. Maxwell?
A. Talked with him incidentally about the work.
Q. That was the extent of the report you received from him?
A. It was.
Q. Mr. Maxwell from the 2nd day of December worked with the company's engineers or employés in making this inventory continuously until it was completed, did he not?
A. I believe he did.
Q. Do you know when the work was completed?
A. I do not.
Q. Do you know how near completion it was on the 27th of December?
A. I did not.
Q. Still knowing that this work had been going on for then nearly a month in which one of your own engineers was taking part, the only report you took from him as to the property was simply some incidental talk about the investigation he was making?
A. I took from him sufficient of the report to satisfy me there was no information there of any value to the city in fixing rates.
Q. It didn't take very much information to satisfy you, did it?
A. I was looking for information and glad to have received any authentic information on the subject.
3947 Q. And you say that the information you might have received in detail from Mr. Maxwell, who had been working

for nearly a month in inventorying this property, you regarded as being of no particular value to you whatever in determining what was a reasonable rate?

A. It would not serve the purpose of determining a reasonable rate for gas in Des Moines.

Q. In other words, you preferred to rely as to your conclusion as to the value of the property on this information that you have already alluded to, rather than to get from your officer a detailed inventory of the property? That is correct, is it not?

A. I believed, that giving the Company the benefit of every possible doubt, 90 cents was reasonable, and that we would not be able from the information obtainable to secure data that would give us more reliable information than we already had.

Q. Isn't it true, Mr. MacVicar, that you started this socalled inquiry with the assumption that the 90 cent rate would be compensatory and a fair rate, and that having started with that assumption, you discarded everything which you thought might possibly lead you to a different conclusion, as being something that was wholly immaterial; isn't that true; hasn't that been your attitude?

A. No, I wouldn't say that was strictly true. First Mr. Brennan and myself took up the question whether or not an 80 cent rate would not be what the City of Des Moines was entitled to. Mr. Brennan particularly believed that we were entitled to an 80 cent rate. But my previous experience led me to believe we probably could not substantiate that in the courts, and we concluded to give them the benefit of every doubt and fixed it at 90 cents.

3948 Q. Then in conference with Mr. Brennan, he said, let's try an 80 cent rate, and fight that out?

A. He did not invite a fight on an 80 cent rate, but he did suggest we were entitled to an 80 cent rate in Des Moines.

Q. You said to him, judging from some of our past experience, I do not believe we can get the Courts to sustain an 80 cent rate?

A. That is right.

Q. What did you mean, from previous experience?

A. Well, our experience in the previous contests, where it was proven by the Gas Company that gas could not be made in Des Moines for a less rate than about $1.40, I believe, but that it was disproven to be not according to the facts, because the Company within a short time did reduce the rate to $1.30 and made more money than any time previously.

Q. Then your idea was, as I understand you, if you fixed an 80 cent rate the courts would not sustain it?

A. I was afraid they wouldn't.

Q. Why, were you afraid they wouldn't?

A. Well, I believed we did not have at hand sufficient evidence to combat the evidence that was available to the other side. I remember in our early case——

Q. Wait a minute.

A. I want to answer your question.

Q. If you insist on going on, I have no way of stopping you.

Therefore you concluded not to accept Mr. Brennan's recommendation to report an 80 cent ordinance?

A. Yes.

Q. That was the only reason?

A. That was the greatest reason, yes.

Q. Well, was it the only reason?

3949 A. Well, we had in a general way believed we were entitled to an 80 cent rate, considering the quality of gas being manufactured; it was a low grade gas. We believed that quality of gas could be furnished to us at 80 cents, but we were afraid we could not sustain that rate because of a lack of available evidence.

Q. Now then, that was the reason that you feared you could not sustain it; that was the reason and only reason that kept you from passing an 80 cents ordinance?

A. I wouldn't put it just that way.

Q. Now, after consideration, such as you have now stated, with regard to an 80 cents ordinance, you concluded to adopt a 90 cents ordinance?

A. Yes.

Q. And that was your reason for adopting a 90 cent ordinance?

A. That we believed we could sustain it in the courts.

Q. And the whole inquiry then was it not, in coming up to the performance of this duty which devolved upon you, you approached it with the idea in mind, to simply fix a rate which you had made up — your mind the courts would sustain?

A. That sums it up.

Q. It was not then the broader inquiry, what will be a fair and just rate between the public and the Company, but the question was narrowed down in your mind, to the single question of what can we hope the courts will sustain; how low a rate the courts will sustain?

A. I would say in answer to that we had no reason to believe and did not believe that the court would be induced to sustain a rate that was not reasonable; we hoped to sustain this very reasonable rate at 90 cents.

Q. But the fact remains that you first determined, what

3950 in your judgment was a rate that you had hoped the court would uphold and then went on and passed your ordinance?

A. That is not correct.

Q. Isn't it true that you approached this question wholly from the standpoint of getting a rate as low as you thought could possibly be sustained, and only then considered the elements which go into the determination of what is a fair and just rate?

A. We first considered what would be a fair rate, just the contrary, and then discussed the possibility of sustaining that rate, before the court, with the evidence available to the City.

Q. Then, in approaching in that way, you recognized the first thing to determine was what was the reasonable present value of this property; you realized, that was the first inquiry?

A. Yes.

Q. And you ascertained and determined that question in the manner in which you have now stated?

A. Yes.

Q. Then there was involved the question of the amount of return the Company was receiving under the dollar rate?

A. Yes.

Q. Did you accept Mr. Haines' statement in the first letter written to you, as to what the receipts of the Company had been in the past?

A. We accepted that as approximately correct.

Q. Did you accept it as correct?

A. Personally, considering the matter, I believed this a correct showing of the income.

Q. You believed Mr. Haines had truthfully stated to you the facts?

A. Relative to the income, yes.

At this time an adjournment was taken until 9:30 A. M. September 25, 1911.

3951 Monday Forenoon Session.

SEPTEMBER 25, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JOHN MACVICAR, continuing his cross examination, examined by Judge Carr, testified:

Judge CARR: If the Court, please, I find in looking over the transcript of the short hand reporter of the proceedings on Saturday that in making objections to the admission in evidence of Exhibit 44 the word immaterial is used in a manner that might be misconstrued. We of course did not intend to object to the letters as immaterial, but only to object to the additional copies as being surplusage and unnecessary, and therefore immaterial. So I will withdraw the objection appearing to Exhibit 44 and substitute the following:

Complainant objects to the admission of Exhibit 44 in evidence as it is a mere additional copy of what is already fully in evidence and therefore is an unnecessary encumbering of the record.

Q. Mr. MacVicar, on Saturday when I inquired of you as to whether a written report to the council with respect to the ordinance in controversy, you stated that your best recollection was that you did not, except of course to file the report from the legal department, but you said you would verify your recollection on that subject by examining the files in the clerk's office to see if there was any such report; have you done so?

A. I have looked further over the minutes that you have there and find that my report was the submission of the communi-
3952 cation of the legal department to me and the ordinance prepared by them—that in my judgment was the report I made.

The MASTER: If I understand you correctly, you simply adopted the report of Mr. Brennan as your own?

A. The report of Mr. Brennan was addressed to me as the head of the department and I incorporated it into my report to the council.

The MASTER: That was made orally.

A. No.

Q. Mr. Brennan's report to you was in writing?

A. And my report to the council was in writing.

Q. The Journal shows this: "Report of Superintendent of the Department of Streets and Public Improvements, stating that, I beg to report herewith an ordinance fixing gas rates, and call your attention to communication of City Attorney accompanying same, presented, to which was attached the following communication from City Solicitor."

A. That was my written report.

Q. That was the sum total of the written report as set forth in the Journal which I have just read?

A. Yes.

Q. You stated on Saturday, Mr. MacVicar, if I understood you, that session of the council on the 27th day of December was a forenoon session?

A. I say so because nearly all our sessions are in the forenoon; I don't remember definitely.

Q. It is your recollection you did not have a session on that date in the afternoon?

A. That would be my judgment; I have no recollection of it.

Q. Let me ask you this; when you have an afternoon ses-
3953 sion the Journal shows that you have an afternoon session?

A. I would judge so; I think it states the hour of convening.

Q. I call your attention to the printed journal of the city council published February 4, 1911, which covers the meetings beginning, I think, with December 19, and which also covers the meeting on the 27th, and call your attention to page 1171 of the Journal, which you will note shows an afternoon session on that day?

A. Yes; was this the same day?

Q. Apparently it was, but all I wish to do is to call your attention to the fact that the clerk in making up the journal generally shows when there is an afternoon session?

A. Yes.

Q. The adjournment having been until two o'clock?

A. Yes.

Q. Now, the journal of the meeting of December 27th shows that at the close of the meeting the council adjourned to meet Friday, December 30th, 1910, at nine o'clock, and there is no record of any afternoon session and which would tend to confirm your recollection that there was no afternoon session?

A. I would judge there was no afternoon session.

Q. Then, as you stated on Saturday, it would be your recollection that while the council ostensibly meets at nine o'clock, in reality it it is generally nearer ten than nine when they get together and get down to business?

A. Yes.

Q. So that this session of the council on the 27th day of December,

it is safe to say, did not last more than two hours and some fraction of an hour?

A. Probably.

Q. Now, in order that I may if possible aid you in refreshing your recollection as to just what occurred at that meeting, I call your attention to the record of that meeting and will ask you to state, having refreshed your recollection on examination of the record, Mr. MacVicar, what was the first order of business taken up that session.

3954

A. It would naturally be the roll call.

Q. Then having the roll call, what item of business was first taken up?

A. On December 27?

Q. Yes.

A. As stated by this record, roll call 2978 was the election of the city clerk.

Q. Now as to that matter, Mr. Susong was at that meeting elected city clerk, was he not?

A. I could tell from the records—we had several city clerks and I would have to look it up. (Witness examined Journal.) Yes, Horace Susong was elected city clerk.

Q. When that matter came up for action, it being a matter of some importance, I assume, Mr. MacVicar, there was some discussion among the members of the council with regard to it, was there not?

A. Little or no discussion.

Q. Had Mr. Susong been in the clerk's office prior to that time?

A. No.

Q. Was there any talk about his fitness for the place?

A. The matter was not formally discussed, as I recall, by the council.

Q. Well, I wouldn't say formal, but there was some talk, wasn't there?

A. Little or none. No other name was presented; it was known to *to* all the members of the council this name would be presented; as I recall it, there was no discussion.

3955

Q. It was a matter you think may have been canvassed before the meeting?

A. It was.

Q. Now passing to the next order of business, it appears to be roll call 2979, and which was a resolution for renewal of consent for the sale of intoxicating liquors by J. R. Schuster as successor to Schuster Brothers, No. 217 West Locust Street, for one year from the first day of January, 1911; treasurer's receipt for $150.00 attached, presented. Moved by MacVicar that renewal of consent be granted and resolution adopted. Was there some discussion among the members of the council on that matter?

A. Very likely not. These matters are all canvassed in the office of the city treasurer and license collector, and when the city treasurer's receipt accompanies it the city council are made aware everything is regular.

Q. Do you know whether the matter was not discussed to some extent by the members of the city council?

A. I have no particular recollection.

Q. Now, the next order of business which was taken up as shown by this journal was No. 2980. "Report of Superintendent of Department of Streets and Public Improvements on resolution No. 2958 stating that we believe the actual value of Lots 15, 16 and 17 Curtis-Bluff Park, to be $500.00, and recommend that the paving assessments against said lots be reduced to $125.00 for each lot, presented. Moved by MacVicar that report be received and filed. Motion carried." What do you recall in regard to that item of business?

3956 A. It is the custom of referring matters pertaining to the various departments to the head of the department, and except in rare occasions, no further investigation is made and the council act upon the report of the head of the department.

Q. Well, was the report in this case in writing or oral?

A. That report you read was in writing.

Q. In making that report which was by you as superintendent of streets and public improvements, it contemplated a decrease in the assessed valuation of certain lots, apparently on the theory, I have assumed, that as assessed they were assessed too high. You gave to the council either orally or in writing some reasons for the conclusions you had arrived at and for your recommendation, did you not?

A. As stated there.

Q. You gave the council some information as to the investigation that you had made and the ground for your information, didn't you?

A. I did not; simply what is written there; simply the result.

Q. You think you simply made that statement either in writing or orally?

A. It was in writing.

Q. You think it was in writing?

A. I know it was.

Q. That of course was read?

A. That was read.

Q. Now do you now remember whether or not that report proviked some discussion or called for some explanation or talk back and forth among the members of the council?

A. It would be a rare thing to have a discussion of that matter from the council.

3957 Q. You realize that don't quite answer the question?

A. I don't remember that there was any discussion.

Q. Now the next item of business which seems to have been transacted that morning was the following: "Roll Call 2981. Be it Resolved by the City Council of the City of Des Moines: That the assessment against the following Lots for paving on Twenty-Fourth Street between Forest Avenue and College Avenue be and the same are hereby reduced as follows: Curtis-Bluff Park Addition. Lot 15 from $195.04 to $125.00. Lot 16, from $162.54 to $125.00. Lot 17, from $162.54 to $125.00.

And that the City Auditor be and is hereby instructed to draw warrants in the sum reduced in accordance with the terms and con-

ditions of the contract for the construction and payment of said paving." Do you recall that item of business; do you have any present recollection of it?

A. Only as it is recalled by me by your reading it.

Q. Having been recalled to you by the reading of it, do you remember to what extent that matter was considered by the council, and to what extent it was discussed by the members of the council?

A. Such matters are rarely discussed by the council, and that was probably not discussed.

Q. Have you any recollection on the subject as to whether it was or was not discussed?

A. I have no recollection that it was discussed.

Q. Have you any recollection that it was not discussed?

A. Only the fact that those matters are rarely discussed when reported on as that was, unless the interested parties appear and file proper objection.

Q. Then you want to rest your answer that you know it to be the usual custom of the council, rather than on your particular
3958 recollection of that particular instance?

A. Yes.

Q. Well, now, of course, on each one of those items of business, after it was presented and after the motion was made, in this case made by you, to adopt, then the roll was called by the clerk?

A. In the disposition of any question the roll is called by the clerk.

Q. Now the next item of business is roll call 2982. "Be it Resolved by the City Council of the City of Des Moines: That after full consideration of all objections filed, that the schedule of assessments and accompanying plat, showing proposed assessments for the cost of paving West Twenty fourth Street from Forest Avenue to College Avenue, filed by the Department of Streets and Public Improvements on the 28th day of November, 1910, be and the same are hereby approved after correction as recommended by Superintendent of Streets and Public Improvements, and that there be and is hereby assessed against and upon each of the lots, parts of lots and parcels of land described in said schedule, and the owner or owners thereof liable to assessment for the cost of the same, the respective sums expressed in figures set opposite to each of the same, on account of the cost of the construction of paving West Twenty-fourth Street from Forest Avenue to College Avenue; that said assessments are made and approved in said respective amounts upon so much of said lots, parts of lots and parcels of land as lie within 150 feet of the abutting line thereof; and said assessments against said lots, parts of lots and parcels of land, are hereby declared to be in proportion to the special benefits conferred upon said property by such improvement, and not in excess thereof, and not
3959 in excess of twenty five per cent of the actual value thereof.

Be it Further Resolved by the City Council of the City of Des Moines: That there be issued by the city of Des Moines street improvement certificates to the total amount of $8,191.17; one certificate shall be issued for each and every separate piece of prop-

erty assessed, as shown on said schedule, which certificate shall be for the amount of the special taxes assessed against such property. Such certificates shall transfer to the bearer all the right and interests of the said city in such assessments under the provisions of Chapter 8 of Title V, of the Code of Iowa and acts amendatory thereto.

Be it Further Resolved: That the Mayor and City Clerk be, and they are hereby instructed to execute said certificates, and when so executed that they be placed on file in the office of the city clerk for a period of thirty days from and after the date of the making of the said assessment, to-wit, the 27th day of December, 1910, to the end that the owner of any lot or parcel of land, (or railway or street railway against which an assessment has been made, may, within said time, promise and agree in writing endorsed on said bond or certificate, or in a separate agreement, that in consideration of having the right to pay his assessment in installments, he will not make any objection of illegality or irregularity as to the assessment or levy of said tax upon and against his property, and will pay said assessment with interest thereon.

Be it Further Resolved, that at the expiration of said period of thirty days, the City Clerk be, and he is hereby instructed to deliver said certificates to The Bryant-McLaughlin Paving Company, the contractor for the said improvement, and to take his receipt
3960 therefor, said certificates to be delivered to the contractor in payment of so much of the cost of the construction of paving on Twenty-fourth Street, from Forest Avenue to College Avenue, as is represented by said certificate. Moved by MacVicar to adopt. Motion carried." Do you have any recollection of the transaction of that item of business?

A. Simply the custom of adopting that formal resolution on motion to adopt the resolution. The resolution was not read, but it is the form of resolution that is adopted in every assessment of that nature that is made. The motion would be merely to adopt the assessment resolution.

Q. Do you mean to say your city council down there adopted a resolution of that character without it being read at all?

A. Yes.

Q. You mean to say that was not read by the clerk?

A. That was not formally read.

Q. Then it was read by the members of the council before they voted to adopt it?

A. Not in that instance.

Q. Did they know what it was?

A. Yes.

Q. Without reading it?

A. Yes.

Q. Without reading it?

A. Yes.

Q. Then they were told what it was?

A. They undoubtedly learned from the fact that they passed

hundreds of them previously that it is a staple form of assessment resolution.

Q. But they had to ascertain in some way what this thing
3961 was that they were voting to adopt?

A. I couldn't say.

Q. Wouldn't it be your impression now, some time was taken by the members of the council to at least find out what they were voting about, either having the resolution read or by being told by you as the mover of the resolution what that resolution was?

A. They knew what it was.

Q. How?

A. They knew it was a resolution to assess the amount stated in the schedule.

Q. How did they learn that fact?

A. From the reports before them; from the report and schedule.

Q. Then they must have read what was before them to have learned that fact?

A. I am quite sure they read what was before them.

Q. You think the members of the council knew what that was without being told and having read it?

A. They knew it was an assessment against the property.

Q. Then they must have read the reports?

A. They were read as stated, except the resolution.

Q. The next item of business that appears to have been taken up that morning was roll call 2983. "Moved by MacVicar that ordinance presented under Roll Call No. 2966 on December 22, 1910, do now pass. Motion carried." Then follows the roll call. Now do you recall what the ordinance of December 22nd, 1910, was?

A. I do not recall.

Q. It was some ordinance which at that meeting went to its third reading?

A. As stated there in the minutes; I don't remember.

Q. Do you read ordinances three times?

3962 A. Unless the rules are suspended.

Q. Unless the rules are suspended every ordinance after being admitted must be read on three separate meetings?

A. Yes.

Q. Then the ordinance was read?

A. If it so states there.

Q. You would expect it to be read?

A. Unless the rules are suspended.

Q. It reads: "Moved by MacVicar that ordinance presented under Roll Call 2966 on December 22nd, 1910, do now pass."

A. It may have been read three times before that; I wouldn't know. I would judge it had been read three times previous to it.

Q. You would judge this ordinance had been read three times previously and had not yet been put upon its passage?

A. Yes.

Q. Is that your custom of doing business?

A. It might be under certain conditions; it might be read three

times and laid over. The fact that it does not state here that it was read three times indicates it was read three times previously.

Q. In such a case, however, it would be laid over for further consideration?

A. Yes.

Q. And the further consideration came up at this meeting when the motion was made that the ordinance pass?

A. Yes.

Q. Do you remember what discussion was had between the members of the council in regard to that ordinance?

A. I could not recall that there was any discussion.

Q. Can you recall that there was not some discussion?

3963 A. I don't remember.

Q. Do you remember what the ordinance was?

A. I do not.

Q. You don't know what subject it was on?

A. I do not.

Q. Well, now the next order of business taken up that morning was Roll Call No. 2984. "Resolution for renewal of consent for the sale of intoxicating liquors, by John J. Wagner, at No. 409 East Locust Street, for one year from the 1st day of January 1911; treasurer's receipt for $150.00 attached, presented. Moved by Schramm that renewal of consent be granted and resolution adopted. Motion carried." Do you remember what discussion there was with respect to that item of business before the council took action?

A. Very likely no discussion, as according to custom when the matter is reported with the treasurer's receipt attached it is ready for passage.

Q. Do you remember that there was no discussion with regard to that?

A. I have no particular recollection.

Q. Now in renewing these liquor consents, it is not the purpose of the council, of course, to renew those consents unless the applicant is deemed a proper person to conduct a saloon, is it? The council always have in mind, not only in granting consents but in renewing consents, whether the applicant is a fit person to be allowed to run a saloon?

A. That matter is left to the department in charge, and under the law, at least here the custom, I think, the Chief of Police reports on all conditions; these reports with the treasurer's reports when they reach the council are accepted.

Q. Then at least the reports from the Chief of Police and from the treasurer are read by the council or to the council?

3964 A. No, they are not, because the treasurer issues no receipt unless the reports have been made according to the ordinance, and therefore they are passed without further consideration when they know the treasurer has accepted and receipted.

Q. Under your method of doing business, is it true, as I understand you, that the treasurer is the man who passes on the question as to whether a man making an application for a permit to run a saloon is a proper person to whom a license should be granted?

A. The Chief of Police passes upon the condition of the saloon, whether it is in compliance with the law, and the treasurer upon receipt of such showing accepts and attaches the receipt, and if there is no complaint the council passes it without further consideration.

Q. Without further investigation?

A. Yes.

Q. But the council, at least, before taking action must know that has been done?

A. They know it is done when the reports come to them; they know in no other way.

Q. They at least take time to ascertain whether the report by the chief of police has been made to the treasurer?

A. They do not; that is entirely left to the head of the department.

Q. Then the action of the council in the matter is purely perfunctory?

A. So far as that matter is concerned, it is routine. The department supplies most of these inquiries and determines everything connected with and the council act upon it, unless there is something specially brought to their attention.

Q. I notice on that roll call the vote was not unanimous. Mr. Roe seems not to have voted, would that indicate there might
3965 have been some difference of opinion on the part of the council?

A. No, Mr. Roe evidently was absent from the council.

The MASTER: Don't you think you are getting a good ways from home?

Judge CARR: I do not. I think I am getting right at the proposition that is material in this case.

The MASTER: What they are doing in a whiskey case has not much to do with the gas case.

Mr. BRENNAN: It seems to me there is a lot of record being repeated on this record.

The MASTER: I take it they are not very formal in their work.

A. The volume of work is very large. We had a fifteen minute session this morning to dispose of all the business.

Q. You like to do business on record time?

A. We spend a good deal of time; we have made no serious errors I can think of.

Q. I am not trying to say that the council act with great deliberation. Now the next order of business was "No. 2985. Communication from Chairman of the Panama-Pacific-International Exposition, asking the city council to write to our congressmen to vote for San Francisco, the exposition city, presented." I assume this would be filed and not discussed by the council?

A. I think not.

Q. The only time given to that was sufficient to take the formal action which the record shows was taken?

A. Yes.

Q. Now the next order of business was "Communication from Superintendent of the Department of Schools and Public Improvements, stating that, in making out resolutions of necessity for paving Vine Street and Locust Street with creosote wood blocks, he
3966 has changed the guarantee period from the customary five years to one year, and recommending that we call for one year guarantee in place of a five year guarantee on creosote wood block, presented. Moved by MacVicar to receive and file." That appears to have contained a recommendation by you to change the matter of guaranty for paving from five years to one year. Now that matter was taken up with your fellow council-men, was it not, and the reason for the recommendation that you was making was gone into?

A. I think there was no formal discussion of that. It was a matter long in my department and I was presumed to be competent to pass upon it and report upon it and they accepted my view.

Q. Do you mean to be understood as saying a matter of that importance to the property owners and to the men who had paid for the improvement that an important change of the guaranty of the contractor from five years to one year, that that matter was taken up and acted upon on your mere statement to the council that you reported in favor of doing that without any discussion or consideration by the members of the council?

A. I would not say it was without consideration. These matters had been before the council before. Sometime before that they had cut off the guaranty on brick. Shortly before that we found we had to reduce the guaranty on asphalt from two to five years and it was known to the head of the department that it was a grave question among those who had given the matter study whether any guaranty should be exacted. It was an important matter the losses to the community, and the council believed, with the head of the department, that they had sufficient information, and adopted his views.

3967 Mr. BRENNAN: You mean the guarantee on asphalt was reduced from seven years to five years?

A. From seven years to five years; the bond houses refused to continue the seven year guaranty.

Q. This is the first time that the wood block paving matter was taken up by the council in that form?

A. The first time I brought it up.

Q. And you still think that you did not even take time to give such explanation of the matter as you have given now to the Master before they were called upon to accept your recommendation on this important matter?

A. If they desired information, it was given them. I cannot recall that they asked for it.

Q. You do not recall that they did not ask for it and you do not recall that it was discussed?

A. I do not remember that it was discussed.

Q. Do you remember it was not discussed?

A. I don't remember that it was not discussed.

Q. Now the next order of business was a proposed resolution of necessity which is set out rather lengthy, relating to creosote blocks or southern long leaf pine upon certain streets. That matter was presented to the council by you and the adoption of the resolution moved by you. Do you remember whether there was or was not some discussion over that matter?

A. Very likely not; I don't remember.

Q. Do you remember there was not any discussion?

A. I don't remember there wasn't.

Q. The resolution was of course read?

A. Not in full.

Q. You say that in passing resolutions of necessity that the
3968 council did not read or have read those resolutions?

Mr. BRENNAN: That is not a final resolution; that is simply a proposed resolution.

A. This proposed resolution of necessity was simply introduced as a proposed resolution of necessity for the paving of a certain described street with a certain prescribed material; it was not read in full.

Q. Do you remember what part was read?

A. I stated that it was introduced as a resolution of necessity for paving a certain specified street with certain specified material and invariably the date is set for the hearing of the resolution of necessity.

Q. Do you recall whether that was or was not on that occasion discussed by the council or whether it was or was not read in full. Have you a present recollection on the subject?

A. I have not.

Q. The next order of business was a proposed resolution of necessity relating to another matter of some length. Do you remember whether that resolution was or was not read?

A. What number is that?

Q. Roll Call 2988.

A. According to custom it would simply be read as a proposed resolution of necessity covering the streets to be paved, the material to be used and the date set for a final hearing.

Q. Of course that don't quite answer the question.

A. I thought it did.

Q. I asked you whether you have any recollection.

A. My recollection is that was all that was done.

Q. Now following the disposal of that order of business comes No. 2989, which was a proposed resolution of necessity relat-
3969 ing to some other matters, and of some length. Do you say of that as you did of the preceding resolution, you think all that was done was to read it in part so as to advise the members of the council of what it was, that is the street it was one and the manner in which it was proposed to pave the street?

A. And the date set for its final hearing.

Q. Was there any discussion as you now remember it with respect to that resolution before it was acted upon?

A. I don't remember that there was any discussion.

Q. And you don't remember there wasn't any discussion?

A. I don't remember that there wasn't.

Q. Then comes the next order of business, No. 2990, another proposed resolution of necessity; would you say of that as you did of the preceding, substantially all that you stated of the preceding resolution?

A. The same.

Q. Then comes the next order of business, Roll Call 2991, another proposed resolution of necessity, and is your answer as to that the same as to the prior resolution?

A. I would say further that all these resolutions show, it was moved by MacVicar to adopt resolution fixing date for consideration of same; that was the customary action after describing the street and the work.

Q. Now comes the next order of business which is a report of the Solicitor upon the bills of the Register & Leader, the Des Moines Daily News and other newspapers, together with the expenses incurred in carrying provisions of the code in furnishing convenient and suitable places for the Board of Registrars at the last general election held on November 1910, presented. Moved by MacVicar that communication be received and filed. Do you recall
3970 what discussion if any was had with regard to that report of the Solicitor?

A. I don't recall any discussion.

Q. Do you know whether it was examined by the members of the council?

A. It had been reported to the Solicitor for examination and is now returned with the report of the Solicitor.

Q. Before taking such action as was taken, do you know whether the members of the council looked it over?

A. They read the report of the Solicitor.

Q. That was read by the clerk?

A. By the clerk.

Q. Then after the reading of the report by the clerk do you recall whether there was any discussion with regard to it?

A. I don't recall there was any discussion.

Q. And you don't recall there wasn't any discussion?

A. I don't recall there wasn't any discussion.

Q. Then follows Roll Call 2993: "Be it Resolved by the City Council of the City of Des Moines: That the City Auditor be directed to issue warrants in favor of the City Treasurer for the following amount on the following funds for the purpose of paying semi annual interest due January 1st, 1911." Then follows the amount set forth. That naturally was not a matter that elicited any discussion.

A. It being reported upon by Mr. Schramm, of the Department of Accounts and Finance, it would naturally not get any discussion.

Q. You do not know whether any members of the council inquired for information in regard to it, more than shown on the face of the report?

A. Very likely not.

Q. Well, then comes the matter of the ordinance under consideration, Roll Call 2994; and then follows Roll Call 2997, "That
3971 it is the sense of this council that the city should acquire the ownership of the Street Railway, whether it be to operate the property itself, lease it to an operating Company, or even to sell it to some other company. And further that we ask the Polk County Representatives in the Senate and House to use every honorable means of securing to cities the right to acquire, construct, own, maintain, operate and lease street railways." Now that action does not appear to have been taken upon any report, but is simply an expression of the sense of the council, as I take it, Mr. MacVicar?

A. It was a resolution proposed by the Mayor and expressed the sense of the council.

Q. I beg your pardon, it is in the form of a resolution. That was introduced by Mayor Hanna?

A. Yes.

Q. And there was some discussion of it before action was taken on so important a matter, I assume?

A. I doubt whether there was any discussion at that meeting. The matter had been before the council for months and it was entirely familiar to the council.

Q. You say it had been before the council, in what manner had it been before the council?

A. The general proposition of the settlement of the street railway difficulty.

Q. How was it brought before the council, in what formal way?

A. In numerous communications from the Street Railway, communications from the Greater Des Moines Committee, petitions, and through the press and by the public.

Q. You perhaps did not quote understand me. I mean to
3972 inquire whether anything in the way of formal action had been attempted by the council, that is, whether any resolution had been introduced, or any motion made or anything to bring the matter in any formal way before the council until this resolution was introduced?

A. As to what, Judge?

Q. The question of acquiring the ownership of the Street Railway.

A. I do not recall any formal resolutions before the council on the manner or method of acquiring city ownership of the street railway.

Q. Then this was the first time that the matter of taking any formal action by the council was up?

A. I wouldn't say that was true; there may have been many other resolutions.

Q. Have you any recollection of any other formal action taken by the council?

A. I have no recollection.

Q. Of course this was a matter of very grave importance and you recognized that and so did the council.

A. It was ultimately of some importance, but no great importance.

Q. Was the matter not regarded by you or any other members of the council as a matter of more than some importance?

A. This was simply a request to our Polk Representatives to use every honorable means to secure to the city the right to acquire, own, operate, etc.

Q. Doesn't the resolution go much further than that and put the council on record as being in favor of acquiring the ownership of the street railway?

A. Yes.

Q. That certainly was a matter of some importance?

3973 A. Not immediate importance.

Q. Would you say from recollection that so important a matter as that was not at that time, when it was first formally before the council given some consideration and elicited some discussion?

A. It had received a great deal of consideration from all the members of the council, but as I recall, at this meeting it did not elicit any discussion.

Q. You wish to stand by that answer that it is your recollection now that matter did not elicit a good deal of discussion at the time that resolution was presented.

A. I am quite sure it did not at that time.

Q. Are you also sure it did not elicit any discussion at that time?

A. My recollection is it did not at that time elicit any discussion.

Q. The next order of business taken up on that day was Roll Call 2998. "Be it Resolved by the City Council of the City of Des Moines: That Mr. Howard J. Clark be requested to file his bill for legal services rendered the city in its suit against the Des Moines City Railway Company at Adel." That was a matter introduced by Mr. Schramm and elicited some discussion?

A. I would think not.

Q. Do you remember that it did not?

A. My recollection is it did not.

Q. Would you say now that you are clear in your recollection that that item of business was not discussed at all by the City Council before adopting that resolution?

A. I am more clear on that than most any other question of that kind.

Q. As to that you are quite clear it at that time did not elicit any discussion?

A. I am quite sure it didn't.

Q. The final order of business on that occasion was No.

3974 2999: "Report of City Solicitor relative to taking tax deed on the North sixty feet of the South 245 feet of the West 303 feet of the Southwest 1/4 of Section 1, Township 78, Range 25, all situated in Polk County, Iowa, presented, to which was attached

the following resolution," then follows the resolution. That report was read of course?

A. It was read.

Q. And was given some consideration?

A. It elicited no discussion.

Q. Is your recollection clear on that subject?

A. Well, I couldn't say that from indistinct recollection, but in its nature it would not be discussed.

Q. In any event the report of the City Solicitor was read and considered by the council, audibly or otherwise, and the resolution was read and action taken upon it as shown by the journal?

A. Undoubtedly so.

Q. Now we find then, do we not, that at this session of the council, on the 27th of December, aside from the matter of the consideration of the ordinance in controversy, there were some 17 or 18 items of public concern, all more or less important, that were disposed of at that session, lasting a little over two hours?

A. Evidently.

Mr. BRENNAN: May the record show at this point that you have leisurely reviewed these proceedings in about one hour?

Judge CARR: You don't mean to say that to be witty, do you?

Mr. BRENNAN: Just a good-natured way of calling time.

Q. Now, Mr. MacVicar, when this ordinance in question was introduced, it being the first time that it was before the council, it was read, was it not?

A. You are speaking of the ordinance in controversy?

3975 Q. The gas regulation ordinance?

A. It was read.

Q. Was it read in part or full?

A. Read in full.

Q. Then the report from the legal department was also read and read in full, was it not?

A. It was.

Q. Then you made an oral report of some length to the council, as we learned from your testimony on Saturday?

A. I don't recall whether I made a lengthy oral report. My recollection is there was this report that was here in writing and the discussion.

Q. Then after that the council took the matter up for consideration and it was discussed at some length, wasn't it?

A. I believe that it was discussed to some extent.

Q. Now as we have seen, the ordinance involved, the subject involved the ascertainment of the value, the present value of the property, the gross receipts which the company would receive at 90 cents, the expenditures of the company in the way of operating expenses, and tax, and the making of a proper allowance for future depreciation, and the ascertainment of what was a fair return, and that was all involved in the subject under consideration, wasn't it?

A. That was involved.

Q. Now, then, if I understand you, in this session, lasting a little

over two hours, at which some 17 or 18 other matters of more or less public importance were also acted upon, the council as a council having before it for the first time this question, disposed of this all at that session and passed the ordinance?

A. I think that is not strictly correct.

3976 Q. What part is not correct?

A. It was not before it for the first time.

Q. This was the first time the ordinance was before the council?

A. The first time the ordinance was before the council.

Q. What had before been before the council was a resolution appointing you and the Legal Department to investigate and make a report?

A. That is right.

Q. Of course the report had not been made until this meeting at the time this ordinance was presented so it is strictly speaking true that the matter of this ordinance had never been before the council until this meeting?

A. The ordinance had not been before the council.

Q. And that was the conception of the members of the council as to their duty under the admonition of the City Solicitor in his report that they should fully and fairly consider the subject?

A. They assumed that that had been done according to their direction by the head of the department where it properly belonged and the City Solicitor.

Q. The other members of the council assumed that you had done that?

A. Yes.

Q. And that is their conception of their instructions, that is, their interpretation of their instruction from the City Solicitor, speaking not to you, but to the council, that it is the duty of the council to fully and fairly investigate and prescribe a rate that will be compensatory and just to both the owner and the public; is that so?

A. That was the suggestion of the attorneys and the council undoubtedly believed that had been done.

Q. Now is it not true, Mr. MacVicar, that some member or

3977 members of the council were opposed to take this hasty action and protested against taking action at that time?

A. I do not remember that there was a protest. I remember that the Mayor asked about the reasonableness of the rate, whether that had been gone into and he was assured that it had, and I am quite sure there was no protest, because there was a unanimous vote upon the ordinance.

Q. Mayor Hanna addressed, I assume, to you the inquiry as to the reasonableness of the rate having been fully gone into?

A. A question along that line.

Q. You answered that it had?

A. Yes.

Q. All of which indicated that Mayor Hanna had not himself gone into the question of the reasonableness of the rate, but wanted to know whether you had or not?

A. I would not say that.

Q. Now is it not true that Mayor Hanna said in substance, I am not satisfied that that is a fair rate, I think we ought to take time to consider this; I am opposed to this hasty action; isn't it true that in substance he said that at that meeting and rather urged, or did urge that action be not taken in this hast- manner upon so important a subject?

A. I do not recall that any such protest was presented by the Mayor.

Q. Now in your testimony, Mr. MacVicar, as shown by the transcript, the thought occurs to me, in view of Mr. Brennan's apparent desire for a joke—I will ask you this further question: At that particular meeting of the council was there any time spent by the members of the council exchanging personalities and compliments concerning which we read so much in the newspapers?

A. The council was giving an intelligent investigation to
3978 the matters before it, and sometimes there is a difference of opinion, and sometimes newspapers call it a scrap.

Q. The point is, do you remember whether there was any time taken up at that meeting?

A. There was time taken up with what I would call intelligent discussion of the matter before the council.

Q. You were asked by Mr. Brennan this question, coming down now to the passing of the ordinance in controversy: I believe you were instructed by the council to make some investigation for it with respect to a proposed ordinance to become effective after January 1st, 1911, and you answered, yes. Then the next question was: About when were you assigned that duty by the council, and you answered: In October of last year. I call your attention to roll call 2449 as appears in the printed journal of the city council on page 958, and will ask you if that is the authorization to which you refer in the answer which you gave Mr. Brennan?

A. Yes, I think that is what I referred to.

Q. Now that was a resolution as appears from the record which you introduced and the adoption of which you moved?

A. Yes.

Q. And that was on October 21?

A. That is the date.

Q. Mr. Brennan asked you this question on page 3920: "Now, Mr. MacVicar, in arriving at 90 cents as a reasonable price for gas in the city of Des Moines as represented in your report through this ordinance, upon what valuation did you estimate that 90 cents would earn a reasonable return?" To which you answered: "Estimated on the best information that I had on that subject, which was the showing of investment from time to time in the suits in court, and
the showing made by Mr. Haines in his letter to me advising
3979 me as to the investment. Q. And the letter to which you refer now, under what date is that letter? A. It is under date November 22, 1910. Q. And what was the valuation upon which you estimated as shown in the letter under date of November 22, 1910." Your answer was: "The amount stated there was $1,739,094." Then the question was: "Now the letter to which you

have called attention is the same letter which has been introduced in evidence in this case as Complainant's Exhibit 7," to which you answered: "I think this was introduced, and another letter of date November 26, 1910, referring again to the same figures." Now you have stated apparently, that when inquired of you by Mr. Brennan as to what valuation was stated in the letter, that the amount stated was $1,739,094. Now will you please refer to that letter and give us the statement which you say was a statement of the value of the plant as being $1,739,094.

A. The paragraph reads as follows: "This leaves $139,191.52 as the average annual amount received by the Gas Company for interest and profits, which amount to 8% on $1,739,094."

Mr. BRENNAN: Are you reading from the letter of November 26th?

A. That was November 22nd.

Q. The part you read does not seem to be quite in accord with my copy?

A. It is of November 22nd.

Q. The first letter which you received.

A. Yes.

Q. The part that you have read is the part in italics near the center of the page: "This leaves $139,191.52 as the average annual net amount received by the Gas Company for interest and

3980 profits, which amount to 8% on $1,739,094"?

A. Yes.

Q. That is the statement which you say was a statement in Mr. Haines' letter of his judgment as to the value of the property?

A. I so understood it.

Q. And at the time you acted and passed upon this ordinance you so understood Mr. Haines' statement and acted upon it accordingly, is that correct?

A. This amount coincided with the other information which we compiled closely and which was about that amount that we had in mind as the investment of the plant.

Q. That of course does not answer my question, Mr. MacVicar.

(Last question repeated.)

A. That was not the only basis of action.

Q. But at the time you passed upon this ordinance, introduced this ordinance and voted for its adoption, you say to the court that you then understood Mr. Haines' statement as you have now interpreted it and that you understood Mr. Haines as saying in that letter that the value of this property was $1,739,094.

A. That is true.

Q. Now I assumed you read this entire letter?

A. I read it all.

Q. Then you were perfectly aware that Mr. Haines made that statement simply as showing the amount of money, the net income which he said the Company had been receiving after deducting an allowance for depreciation, would pay a return of 8%

A. I didn't so understand it.

Q. And yet the very clause, the clause of the paragraph which precedes this says: "Deducting from the average annual gross revenue, for the three year period, the average annual expenditure
3981 for operating expenses and taxes, there remains an average annual net earning for the period of $188,369.65. From this sum there must be deducted for depreciation, the sum of $49,-178.13, which sum is ascertained by taking ten per cent of the average annual gross revenue from the sale of gas. That this is no more than a reasonable allowance for depreciation will hereafter appear." Then follows the statement you read. You understood from that, Mr. Haines was simply showing what valuation or upon what sum the net income the Company was receiving after deducting for depreciation, would pay eight per cent?

A. I didn't so understand it.

Q. You say again you understood it as being an expression from Mr. Haines, his judgment as to the value of his plant?

A. I understood it so.

Q. Right following this statement is this statement: "However, I am clearly of the opinion that the present value of the Company's property and assets is largely in excess of $1,739,894." That statement is there?

A. I see it is there.

Q. You saw it there at the time?

A. I was not so impressed with that paragraph as with the other paragraph.

Q. But you read it and you knew from that paragraph that Mr. Haines was not stating that the value of this property was one million seven hundred odd thousand?

A. I did not so understand it.

Q. You did not understand when he said, however, I am clearly of the opinion that the present value of the Company's property and assets is largely in excess of that amount, that he did not then
3982 say that that was not his judgment of the value of the property at all, but that it was largely in excess of that?

A. I did not so understand it. I accepted that as an incidental remark in regard to the valuation placed on the plant.

Q. You say there was another letter in which Mr. Haines stated the value of the plant was $1,739,894, and that you found it in the letter of November 26th which you say was a statement of Mr. Haines that the value of the property was $1,739,894?

A. I find a statement referring again to that amount in connection with the value of the property.

Q. Will you read into the record what you find in that letter which led you to believe as you say that Mr. Haines was asserting that the value of the property was $1,739,000 in round numbers.

A. I simply say this again refers to that same amount in connection with the value of the property.

Q. I am asking you if you will kindly read into the record the portion of the letter which you understand to be a statement from

Mr. Haines that the $1,700,000 in round numbers was the value of the property?

A. I make no such statement in connection with this letter.

Q. Then you do not want to be understood as saying that this letter of November 26 contains any statement from Mr. Haines to the effect that in his judgment the value of the property was $1,739,000?

A. It again refers to that same amount in connection with the valuation placed on the property.

Q. Does it refer to the valuation placed upon the property?

A. I will read it: "In reply to your published letter of yesterday, copy of which I have not yet received, I beg to call your attention to my letter of the 22nd inst. to you in which I submitted figures showing the gross revenue derived by this Company from the sale of gas together with figures showing the net revenue after deducting operating expenses, taxes and depreciation, and also computations showing that this amount of net revenue would yield but eight per cent upon $1,739,894. I expressed the opinion that the present value of the plant and assets of the Company was largely in excess of this sum."

3983

Q. Now what you have read now is what you find in that letter which caused you to say in answer to the inquiry put to you by Mr. Brennan in effect that Mr. Haines had stated in those two letters that the value of the property was in his judgment $1,700,000 in round numbers?

A. I was impressed by that as being the valuation placed upon the plant by Mr. Haines.

Q. Well, I suppose further comment on that is unnecessary, so we will leave that and go to another matter. You stated on yesterday Mr. MacVicar, as follows: Though shortly after the pas-age of the ordinance Mr. Haines was writing letters commenting on the work of the council and action of the council, and I asked Mr. Schramm and the auditor to ask permission to look over the books of the Company, which they did and were refused. Now you say you asked Mr. Schramm and the auditor, meaning the City Auditor, I assume?

A. Yes.

Q. To ask permission to look over the books—who was the auditor at that time?

A. John Hawk.

Q. And Mr. Schramm is of course a member of the council?

A. Yes.

Q. Now, you say Mr. Schramm and Mr. Hawk, each of them asked permission to look over the books after the ordinance was passed?

3984

A. My recollection is they were together when we discussed it.

Q. That is, they were together when you discussed the matter?

A. When I suggested they do this. Mr. Schramm is the head of the department and Mr. Hawk under him.

Q. That is the department of accounts and finance?

A. Yes, it was either one or both I talked with concerning it.

Q. Did they go together and ask permission to see the books?

A. Yes.

Q. How long was that after the passage of the ordinance?

A. I cannot tell you now; shortly after, is my recollection.

Q. That was after the matter had passed out of your hands as a committee and the council had taken action?

A. Not necessarily passed out of my hands.

Q. What do you mean by that?

A. The matter has never passed out of my hands.

Q. I said as a committee?

A. As a committee it never passed out of my hands.

Q. After you had reported and after you were appointed by the council to report an ordinance and after you had made that report and the council had adopted your report and adopted the ordinance, you say the matter was still in your hands as a committee?

A. The matter was assigned by ordinance to my department, yes.

Q. Now following the passage of the ordinance Mr. Haines wrote a letter, not to you, but to the council, did he not?

A. I notice a letter here.

Q. You made some reference to it Saturday, didn't you?

A. I don't remember whether I did or not.

Q. Now, is it not true that in the letter which I assumed
3985 Mr. Haines assumed after the council had taken action should be addressed to the council and not to you, as he probably conceived your duty as a committee had been fully discharged. In this letter addressed to the council after the ordinance was passed, he was still appealing to the council to come and examine the books, wasn't he?

A. I don't remember.

Q. Well, let us see. The letter written to the council, that is To the Honorable Mayor and City Council of the City of Des Moines, is dated on the 28th of December, is it not, and is the last or next to the last letter found in these copies contained in Exhibit 44. Now will you go to the latter part of that letter and see if you do not find this language: "I again appeal to you to complete the investigation as to the value of the property and to verify the statement of earnings submitted before taking such final action as appears to suggest no recourse but a resort to the courts."

A. That is in the letter as published here.

Q. Now then it seems that after the passage of the ordinance Mr. Haines was still appealing to the council to make an investigation of the books?

A. Two days after.

Q. One day in reality?

A. One day after.

Q. Now you have stated when at your suggestion Mr. Schramm or Mr. Hawk was to ask for an opportunity to see the books, that they were refused?

A. Yes.

Q. You of course have no personal knowledge of that except as it might have been reported back to you?

3986 A. That is true.

Q. You were of course not present when they or either of them called on Mr. Haines with regard to the matter, if they did so call?

A. I was not present.

Q. You have no personal knowledge of what took place except what was reported to you?

A. Only what they reported to me.

Q. Who was it made the report to you?

A. Mr. Hawk, as I recall, and Mr. Schramm with him.

Q. At the time the report was made——

A. They told me they had been refused permission to look at the books.

Q. Did Mr. Schramm and Mr. Hawk come together and tell you they had been refused permission to see the books?

A. One or both.

Q. I would like to have you be definite?

A. I could not be definite. I have numerous conversations on the subject and remember their reporting either one or both that they had applied and had been refused permission.

Q. Then as I understand it your recollection is not accurate as to whether they reported to you they had both gone to Mr. Haines or only one of them had gone to Mr. Haines?

A. That is true.

Q. Now, to refresh your recollection, isn't it true that it was Mr. Hawk who went to Mr. Haines and had an interview with him and that he or Schramm reported to you that Mr. Hawk had seen Mr. Haines?

A. I can't say whether it was Mr. Schramm or Mr. Hawk or both. My recollection is they were together when the report was made to me.

3987 Q. Let me inquire, you say they reported to you they had been refused an opportunity to see the books, although Mr. Haines after the passage of the ordinance in the letter which was addressed to you had again appealed to the council to examine his books, it was reported to you he had refused—let me ask you now if it wasn't this: that Mr. Hawk went to Mr. Haines and told him he would like to look over the books, and Mr. Haines asked him if he came with any authorization from the council, and that he told Mr. Haines he did not, and that Mr. Haines then said, if you will bring me any authorization from the council authorizing you or requesting that you be allowed to examine these books, you shall have an opportunity to do so; isn't that true?

A. I am quite sure that is not true; it is not what he reported, because he could have had the authority of the council had he desired it. I am quite sure that he did not so report.

Q. All right. It struck you as being a little peculiar when Mr. Haines was appealing to the council after the ordinance was passed, even, to come and examine the books and reconsider the situation,

that when a man went from the council with authority from the council to examine the books that Mr. Haines would refuse it?

A. It didn't strike me peculiar. It was a common custom of the public service corporations to do that very thing; this was the second occurrence of that kind within a few months.

Q. That was what you were looking for; you sent them to call his bluff; you go up there and ask for permission to examine the books and he will turn you down?

A. That was not true.

Q. That was what you was expecting?

3988 A. It is a common occurrence for public service corporations of this town to proffer the examination of the books and then refuse. This same thing occurred within a very few months with another corporation whose rates were in question.

Q. You do not include in that statement the Des Moines Gas Company?

A. This was the first instance we attempted to investigate.

Q. You don't mean to include in that statement the Des Moines Gas Company; if not, I will not pursue the inquiry further?

A. That is the first time.

Q. Whatever your experience may have been with other public service corporations, I assume the Master is not interested in; but you are not to be understood as saying that at any prior time Mr. Haines had proffered or offered an examination of the books and then had refused it?

A. That is correct. You simply asked if I was surprised and you thought it peculiar and I told you why I was not surprised.

Q. You did not send Mr. Hawk or Mr. Schramm up there expecting Mr. Haines would refuse them?

A. I hoped Mr. Haines would not refuse; we wished to get such information as we could relative to what the books would show.

Q. Had you any reason to think that he would refuse?

A. That had not occurred to me at the time.

Q. You was desirous after the ordinance had passed to get this information and to comply with Mr. Haines' request to come and examine the books?

A. We desired such information as we could get.

Q. Now this was after this present suit was begun that you sent Mr. Hawk or Mr. Schramm up there?

A. It was immediately following the advisement we had of your beginning the suit and that you would not accept the ordi-

3989 nance as presented; we had thought and hoped you would accept it; learning you didn't, we desired to get such information as we could.

Q. The fact is, that you did this after the suit had begun?

A. After you enjoined us.

Q. After this case was begun?

A. I suppose this is the same case.

Q. Do you remember how long after?

A. Shortly after; I can't say.

Q. Didn't you do that on the suggestion and advice of the City Solicitor, that very thing?

A. No I think not.

Q. Are you sure you did not?

A. I am quite sure that was not the suggestion of the City Solicitor.

Q. In your testimony on Saturday you said: "I had in a general way studied into the conditions in Massachusetts and found that Boston had recently voluntarily reduced its rate from 90 to 80 cents, for the reason that it desired to increase its dividend earnings, being operated under a restrictive dividend earning which permitted it to earn increased dividends as the price of gas was reduced." From what source, Mr. MacVicar, may I inquire, did you get the information which you then had?

A. From the report of the Gas and Electric Commission of Massachusetts, as I recall.

Q. And for what year was the report?

A. I couldn't say as to that: the report that I refer to now contained the statute, or regulation showing under what conditions they might increase their dividend earnings and fixing the rate at 90 cents, my information as to the reduction may have been from that source or from some other source. I am sure it was

3990 authentic.

Q. Have you the report to which you referred at hand, that is, is it available?

A. I think we have quite complete reports in our City Library of the Gas and Electric Commission. The reduction of the rate from 90 to 80 may not have been secured from that report.

Q. You would say then from the report of the Massachusetts Commission, I take it?

A. I was referring to the report of the Massachusetts Gas and Electric Commission.

Q. Now, from that report as found in the City Library, you now remember that you got the information as to the law, at least under which action was taken, but whether you got your information with reference to the action taken in the reduction from 90 to 80, you are not sure from what source you got it?

A. Yes, I am sure as to that.

Q. To get a better understanding of that situation, I wish you would tell the Master what that regulatory provision was as you have it in mind?

A. As I recall, the legislature of Massachusetts enacted a law fixing a rate for gas in Boston at 90 cents with the further provisions that dividend earnings should be restricted to 7% and that upon the reduction of the rate for gas their dividend earnings might increase at a certain pro rata.

Q. Then if I understand you correctly, your information was, the legislature of Massachusetts had passed an enactment which had been accepted by the Gas Company of Boston, fixing the price at which gas could be sold at 90 cents and then having a provi-

sion restricting the amount of dividends that could be distributed while operating under that rate?

3991 A. That is my recollection.

Q. What was the amount of the dividend that could be distributed to stockholders under the 90 cent rate?

A. As I recall, it was 7%.

Q. Under the 90 cent rate?

A. Yes.

Q. And then it had additional features as I understand you, by which if the company increased above 90 cents, increased the price, it was to have the same effect upon the dividend which the company would distribute to its stockholders?

A. I do not no- recall it.

Q. Your understanding is there was no ascending scale of prices, provided for in the law?

A. There may have been; I cannot recall.

Q. But you have a recollection there was a descending scale provided for?

A. That is my recollection.

Q. Just what was that, do you remember?

A. I cannot remember just the percentage of increase, but as I recall when the rate was reduced from 90 to 80, the dividend earning advanced from 7% to 9%.

Q. Now, to refresh your recollection, didn't you learn that law provided whenever the company saw fit to reduce the price of gas five cents per thousand cubic feet, that they then could distribute to their stockholders an additional cent on each dollar of the value of the stock held by the stockholder; that is to say, when the price was reduced from 90 to 85 cents, they could distribute an 8% dividend, and if they saw fit to reduce the price of gas five cents more per thousand cubic feet they could distribute another cent on

3992 the dollar to the stockholder, so that when the price was reduced from 90 to 80, the company under the law were at liberty to distribute to their stockholders 90 per cent dividend instead of 7%?

A. The latter part of your question coincides with my recollection.

Q. Did you not learn in your investigation of the Boston situation that what the Gas Company did was to reduce the price of gas from 90 to 80 cents in order that they might distribute from a surplus which had accumulated during the past years, that they might distribute a surplus or part of a surplus which had accumulated during the years prior to that period to the stockholders, instead of keeping it as an undistributed surplus?

A. I recall there was a provision for such distribution of accumulation over and above a per cent allowance; I was not informed as to what the accumulations were at that time.

Q. Then so far as you know or learned that may be the fact as I have stated it?

A. I would think hardly that, for the reason that the rate of 80 cents still continues.

Q. I was not asking you now what you thought about it, but what you learned about it?

A. I didn't learn that.

Q. You didn't learn to the contrary, did you?

A. No. I did not learn specifically on that.

Q. In your testimony on Saturday, Mr. MacVicar, you referred to talks with officials of the company with respect to increased earnings under the ordinance which was adopted in 1896. Now that talk that you had was with some officer or officers of the Capital City Gas Light Company, was it not?

A. Was that the name of the company at that time?

Q. Yes.

3993 A. Yes.

Q. It was not with any officer of the Des Moines Gas Company, the complainant in this case?

A. Why I believe he is still an officer of the company.

Q. The talk was not had with an officer of the Des Moines Gas Company after the Des Moines Gas Company was organized in 1906?

A. It could not well have been when the conversation occurred in 1896 or '97.

Q. It was long prior to the organization of the Des Moines Gas Company, which was organized in 1906?

A. Yes.

Complainant moves to strike out the statement of the witness as to the talks referred to for the reason that it now appears such talks were long prior to the organization of the complainant company and therefore it was not with any officer of the complainant company and hence is in no wise binding upon the complainant company.

Q. I had gone into this, Mr. MacVicar, from the fact that the transcript of your evidence shows that you say I had observed directly the results in Des Moines in the decrease of the cost of gas here in 1906.

A. I think that was corrected afterwards to be in 1896 or 1897.

Q. Now, Mr. MacVicar, you stated in answer to a question put to you by Brother Brennan fully and in various forms your large acquaintance with and activity in municipal affairs for a good many years, and I would like to inquire when it was that you first became interested in and active in municipal affairs?

A. In 1888, I think.

Q. At that time did you hold any official position in any municipality.

A. Yes; I held the office of town clerk of the incorporated

3994 town of North Des Moines.

Q. That was a suburb at that time of Des Moines, which has since been incorporated into a part of the City of Des Moines?

A. It has.

Q. How long did you continue to hold the office of town clerk of the incorporated town of North Des Moines?

A. A little less than a year.

Q. When was the municipality of North Des Moines incorporated into the municipality of the city of Des Moines?

A. In 1890 or 1891, I believe.

Q. So you had retired from office before the town ceased to exist?

A. I retired from that office under fortunate circumstances, but was afterwards elected to another office of the same town.

Q. To what office was you elected and when?

A. To the office of Mayor the following year.

Q. The office of Mayor of North Des Moines?

A. Yes.

Q. How long did you hold that office?

A. I held that to the end of the term, one year.

Q. That was about the time the town ceased to exist?

A. No, the year following.

Q. During the time you were town clerk of North Des Moines, I gather from your statement, you were interested in and somewhat active in municipal affairs?

A. Began to be interested in municipal affairs.

Q. And active?

A. We had an active session for a portion of the year.

Q. It is true when you are interested in matters, you are usually active—built that way?

A. Yes, by reputation.

3995 Q. During the interim in which you were not in office in North Des Moines, did you continue your interest and activities in municipal affairs?

A. Yes, to some extent.

Q. And after you became Mayor of North Des Moines, you of course fully revived your interest in municipal affairs and was active in municipal affairs?

A. I continued an interest in municipal affairs.

Q. Also active?

A. More or less active.

Q. After you had ceased to be Mayor of North Des Moines, from that time on how long did you remain out of municipal office?

A. I was elected to the office of Mayor of Des Moines in 1896.

Q. Prior to being elected to the office of Mayor, had not you been on the council?

A. No, I never was until the present time.

Q. Then prior to the time you ceased to be Mayor of North Des Moines until you was elected Mayor of Des Moines you had not held any municipal office, I take it?

A. No.

Q. During that period you were out of office, Mr. MacVicar, and I inquire whether you still kept up your interest in municipal affairs?

A. More or less?

Q. I inquire whether you also kept up your activities in municipal affairs, well politics and municipal affairs generally?

A. I was very little in politics, that is directly in politics, but was interested in certain phases of the conduct of our municipality.

Q. You were living in Des Moines during that period?
3996 A. I was living in Des Moines after annexation.
Q. When was the annexation?
A. In 1891.
Q. You were living in Des Moines five years prior to the time you were elected Mayor?
A. Yes.
Q. Did I understand you to say you did not take much interest in city politics during that time?
A. A portion of the time I was somewhat interested, not very deeply involved.
Q. No, but the fact remains you have always, haven't you, Mr. MacVicar, taken an interest and have been active in city politics ever since you became a resident of the city of Des Moines?
A. Pretty much all the time.
Q. Now in the interim between the time you was Mayor of North Des Moines and the time you became Mayor of Des Moines, was you a member of any league or organization which had to do with municipal affairs in any way?
A. I was.
Q. What league?
A. I was appointed at a mass meeting called in the old court house for the purpose of regulating water rates and bringing about city ownership of the Water Works plant. I was made chairman of the movement with authority to appoint a committee to conduct in behalf of the citizens this movement.
Q. When was that, Mr. MacVicar?
A. That was in 1893, as I recall it.
Q. Do you recall by whom that meeting was called?

Objected to as irrelevent, immaterial and not proper cross examination.

3997 The MASTER: It seems to me you are getting away out.

A. I think John A. Cleary, John J. Hamilton and Judge Cole were three prominent people connected with it.
Q. You were instrumental in calling the meeting?
A. I do not recall that I was.

The MASTER: Pretty nearly everybody in the state knows that John MacVicar is interested in municipal affairs.

Judge CARR: It is not my object to thresh out dead or living issues in Des Moines.

Mr. BRENNAN: We admit that he has been active in municipal affairs.

Q. Now, following that meeting, Mr. MacVicar, you were quite active were you not, in promoting the object of the meeting?
A. Together with the committee appointed, I was.
Q. You started a campaign of public ownership of public utilities, or at least water works?
A. First regulation and then ownership.
Q. Did the campaign as you worked it forward embrace ownership in other public utilities, or regulation of them?

A. It did not.

Q. After you became Mayor in 1896, how long did you continue in office as Mayor?

A. Four years.

Q. That meant an elected and a reelection?

A. Yes.

Q. Now, of course, during the time you were Mayor you were active in municipal affairs and took an interest in municipal affairs.

A. Naturally.

Q. And your office terminated what year?

3998 A. In 1900.

Q. How long were you then out of office?

A. Seven or eight years; eight years.

Q. Until elected to your present position at the first election held under the present plan of government in Des Moines?

A. Yes.

Q. That embraced a period of about eight years?

A. Eight years.

Q. During that period did you continue your interest in and activities concerning municipal affairs?

A. To a certain extent.

Q. Well, can you tell us to what extent?

A. Well, as a citizen while I was in Des Moines; I was absent from Des Moines the greater portion or one half of that period, but took considerable interest in municipal affairs and politics during that period.

Q. You was in politics part of the time?

A. Around the outer edges with yourself, Judge.

Q. You was a candidate from time to time?

Objected to on part of defendants as irrelevant and immaterial.

Q. Just in what way—I don't mean politics now, Mr. MacVicar, but in what way did you during that period study into municipal affairs; you stated in answer to a question put to you by counsel that you had become very familiar with municipal affairs, been a student of the subject for many years; I am simply trying to get if I can just what your course of study was and what your experience was during that period; and I inquire again what organization or leagues were you a member of if any, that had to do with municipal affairs?

3999 A. I was a member of or connected with the Des Moines Civic League for several years during that period and I was Secretary, and am Secretary of the League of American Municipalities.

Q. That is not a local organization?

A. That is a national organization.

Q. But the Des Moines Civic League is a local organization?

A. It was.

Q. You say it was—does it now exist?

A. I think it does not now exist.

Q. Now when was that League organized?

A. Oh, I would say about 1904, just to take a long shot at it; along about there.

Q. It was at least that long ago?

A. It might have been a year longer or shorter, along about that time.

Q. Now, did that League have to do with the study into municipal affairs, or what was its business and purpose?

A. Its purpose was to inquire into and keep tab on local affairs generally, and municipal, school and county.

Q. You was Secretary of the League, as I understand it?

A. No, I was Assistant Secretary.

Q. Who was the Secretary?

A. As I recall it, John J. Hamilton.

Q. Who was president?

A. Robert Fullerton—I. E. Tone was President, and Robert Fullerton was chairman of the executive committee.

Q. Did that League make any study into municipal affairs generally, or was it dealing simply in some local situation?

A. Just the conduct of local affairs.

Q. Well, was you during that time that you were out of office a member of any other league or organization having to do with
4000 municipal affairs other than what you have already spoken of in connection with the national association.

A. I do not recall any other.

Q. Now, during that period, how much of your time was you devoting to municipal affairs?

A. You are speaking of the interim between my terms of office?

Q. Yes.

A. I was out of the city largely for three years at least, and so was not in local affairs during that time; perhaps the balance of the five years I was quite actively engaged in local affairs.

Q. Back in 1892-3-4 and '5 there was a controversy which we have learned here coming on between the city and the Capital City Gas Light Company with respect to rates and regulation, was there not?

A. I believe there was.

Q. To what extent were you active in that matter?

Objected to as irrelevant and immaterial to any issue in this case and not proper cross examination.

A. I was not deeply interested in the movement at its inception nor was I deeply interested during the trial of the cases in court; just casually as any other citation would be.

Q. Well you say not deeply, how active was you in the matter, if you was active?

A. I was not.

Q. The League to which you have referred as the Des Moines Civic League was active in instituting litigation against the Des Moines Street Railway Company for the purpose of determining the validity or invalidity of its franchise, was it not?

The MASTER: Judge, it does seem to me you are wandering
4001 away out; I think we will have to draw the line pretty soon;

he has stated he has taken an active part in a general way and that is enough, I think; you need not go into details.

A. That League I believe was instrumental in bringing that suit.

Q. Wasn't it actually brought in the name of Robert Fullerton as one of the officers of the League?

Objected to as not proper cross examination and immaterial.

A. I could only say from recollection that is my understanding.

Q. And that League employed counsel for the purpose of prosecuting the case, did it not?

Same objection last above made.

Q. And at their own expense?

A. I was not a member of the League, but I believe that is true.

Q. I understood you to say you was a member?

A. I stated I was connected with it, employed by it.

Q. You was assistant secretary?

A. I was not a member of the league, however.

Q. That was the litigation which was instituted and which has not yet terminated and which is now unappealed by the city, who afterwards came into it, from Judge Applegate's decision to the Supreme Court?

A. I think that is the case referred to.

Q. Now, later a controversy arose between the city of Des Moines and the Des Moines Water Company and you were quite active, were you not, in precipitating that controversy and quite active in the conduct of looking after the case during its progress?

A. Which one are you speaking of?

Q. I am speaking of the case which was instituted and
4002 which has recently been decided by Judge McPherson?

A. That is the second case.

The defendants object to this testimony for all the reasons urged and for the further reason that counsel for defendants have repeatedly stated that it may be admitted upon the record that Mr. MacVicar has been more or less active for a number of years and been a member of leagues which have for their purpose the advancement of municipal government.

Judge CARR: I do not like your qualification more or less.

Mr. BRENNAN: Strike out less and make it more.

Q. There had been a prior suit, had there not, involving somewhat a similar controversy?

A. Fifteen or sixteen years before there had.

Q. In that case you was quite prominent?

A. I was.

At this time an adjournment was taken until 1:30 P. M.

4003 1:30 P. M., MONDAY, *September* 25, 1911.

JOHN MACVICAR being continued on cross examination by Hon. George H. Carr, testified as follows:

Q. Just one or two more questions about your activities in municipal affairs and then I will be through with that subject. The matter of lighting streets and making contracts for that service is within your jurisdiction or comes in your department?

A. It is assigned to my department by ordinance.

Q. A contract has been entered into between the city and the Welsbach street Lighting Co., has there not with respect to lighting the streets?

A. There is such a contract in existence.

Q. I will ask you whether you were not active in precipitation and in conducting litigation that grew out of the attempt on the part of the city to repudiate that contract or to deny liability under the contract?

Objected to as incompetent, irrelevant, immaterial and not the best evidence of what the city claims in that suit there being no question of repudiation involved so far as the city is concerned, and not cross examination.

A. Had something to do with raising the question of the validity of the contract, but nothing to do with conducting the legal procedure.

Q. I did not assume of course that you acted as attorney in the matter. That is the case that was tried in this court and determined adversely to the city by Judge McPherson and recently affirmed by the Court of Appeals, is it not?

Same objection.

4004 A. I believe it was adversly determined.

Q. On Saturday Mr. MacVicar, you stated as follows in answer to a question put to you by Mr. Brennan, I knew in Lynn, Massachusetts, a city only slightly smaller than Des Moines, a slightly larger production and a much smaller production per mile or mains made, was selling gas at 80 cents and the 1st of January it was reduced to 75. A voluntary reduction I believe. I inquire what is the basis for the statement or the source of your information upon which the statement is based that in Lynn a much smaller production per miles of mains laid than in Des Moines.

A. I would like to call attention to the fact that as you read it is not as I gave it, it states there a city slightly smaller, I said or intended to say the city was slightly larger than the city of Des Moines.

Q. As a matter of fact there is no great difference in the population?

A. Slightly larger I believe.

Q. I was not calling attention to that but to the statement that much smaller production per mile of main laid in Lynn than in Des Moines. I was asking you for the source of your information on that subject.

A. As I recall by reference to Brown's Gas Directory, that the Lynn plant serves four or five communities, four or five cities, and as I recall a materially larger mileage of mains with only a slightly larger consumption.

Q. The answer then is that whatever information you had upon the subject you got from this publication that you have spoken of, Brown's Gas Directory?

A. Brown's Gas Directory which I secured from the library of Mr. Haines.

4005 Q. You are now giving your recollection on that?

A. Yes.

Q. As to what you found in that book?

A. Yes.

Q. Which you secured from the library or Mr. Haines?

A. Yes.

Q. For what year was the statement which you say you got out of that book made?

A. The book referred to was the 1910 directory.

Q. Was it the statistics for 1910 or statistics for 1909?

A. Well I rather recall the title on the back of the book being 1910 whether it referred to the statistics during 1909 or 1910, I could not tell.

Q. You were making this inquiry as I gather from your evidence during the latter part of the year 1910 were you not?

A. Yes.

Q. And it is not likely you would have found their statistics for the year 1910 is it, that is prior to the close of 1910?

A. Not if it included the calander year, likely not, that is a portion of the year, I am not sure.

Q. Do you remember how many miles of main you ascertained that Lynn of the company in Lynn had?

A. I don't remember the number specifically, but remember it as simply in my mind a comparison, simply a comparison of the two, but my recollection was that it was about as stated in my testimony.

Q. That is that it was a much smaller production per mile of main or to give the statement, I know in Lynn Mass., a city only slightly smaller than Des Mones, a slightly larger production and much smaller production per mile of mains laid.

A. That is my recollection.

Q. That was the impression that was left on your mind?

4006 A. Yes.

Q. But you do not now recall how many miles of main the Lynn Company had in use?

A. I do not.

Q. You do know of course how many miles of main the Des Moines Company had in use at least approximately?

A. I had in mind about 140.

Q. 140 in the year 1910 and your calculations are based upon that understanding, is it?

A. My recollection is based upon that.

Q. Now have you any recollection as to the sales made by the Lynn company in 1909?

A. Not specifically, only comparatively.

Q. Now Mr. MacVicar would you be surprised to learn that the sales per mile of main in the city of Lynn, Mass., as shown by the 25th annual report of the board of gas and electric light commissioners of the Commonwealth of Massachusetts, was 4020 thousands as compared to 270 thousands in Des Moines or that the sales in the city of Lynn, Mass., for the year 1909, as shown by this report was nearly twice what they were in Des Moines instead of much smaller?

A. I did not say much smaller. I said slightly larger, and I would be surprised, yes. It was not according to my recollection of the showing of the directory which I got my information from.

Q. What did you say, Mr. MacVicar, as reported in the record, I know in Lynn, Mass., a city only slightly smaller than Des Moines and slightly larger production and a much smaller production per mile of mains laid. That accurately reports what you said?

A. Excepting I stated that Lynn was larger, otherwise it is as I stated it.

4007 Q. The truth is, Mr. MacVicar, that statement was rather a loose statement, you were only relying on a very vague and general statement.

Mr. BRENNAN: Let me inquire, do the figures which you have quoted from the report include all these outside towns or the business transacted in the city of Lynn, without regard to the other towns?

Judge CARR: The figures I have quoted show the amount of sales per mile for the entire system as I understand it.

Mr. BRENNAN: That would include, then of course the outside towns if there are any in connection with the system.

(Question read.)

A. I was relying on what I recollected was contained in the Brown's Gas Directory referred to.

Q. But you are not now prepared to say are you, Mr. MacVicar, from any information that is available to you or that was available to you at that time, that it is not true that the sales per mile of main in 1909, as shown by this report, was 4,020,000 as compared with the 2,750,000 in Des Moines.

A. As shown by that report covering all the communities named that is probably correct, I would not want to deny that.

Q. Shown by this report covering all communities named?

A. The communities involved.

Q. Did you have any statistics showing the number of miles of mains within the city of Lynn?

A. The book referred to stated the number of miles of main referring to the Lynn Gas Company, possibly including the entire plant, may or may not have included the entire plant in the amount of consumption. It was, however, given as my recollection.

4008 Redirect examination by R. G. BRENNAN, Esq.:

Q. Now Mr. MacVicar, going back to the year 1893, to which your attention was called on cross examination, I want you to tell the court or the Master just what the controversy was before the people with respect to this water litigation that Judge Carr has asked about?

A. There was before the people a controversy as to the reasonableness of the rates charged by the Des Moines Water Company, and the advisability of the city acquiring the plant.

Q. There was involved in that controversy was there not, the question of the right of the city to regulate the price of water in the city of Des Moines?

A. That was also involved.

Q. And the controversy ultimately reached the courts did it not?

A. It did.

Q. And was tried in the state courts?

A. In the state lower court and the supreme court.

Q. And do you remember what the final outcome was of that case that was tried in 1893 and then went to the supreme court of the state of Iowa?

A. I remember that the lower courts decided it adversely to the city and the supreme court reversed them and established the city's right to regulate rates and approved the ordinance which reduced the rates 33⅓ to 40 per cent.

Q. Prior to the decision of the supreme court in that case how much was the city of Des Moines paying for its fire protection?

A. Paying from five to seven hundred dollars per mile of mains laid.

Q. And you say that was after this decision, was consider-
4009 ably reduced?

A. Reduced to $350.

Q. I understood you to say in answer to counsel's questions that this matter was brought to the attention of the people and finally came to the attention of the courts through the instrumentality of a civic league or citizens committee?

A. A citizens committee.

Q. I wish you would tell the Master just what individuals you now recall were associated with you in connection with that work?

A. J. J. Williams, James C. Berryhill, John J. Hamilton, Judge William Reed, Charles E. Campbell, John E. Cleary, B. A. Lockwood, and for a portion of the time Mr. Will Read, attorney, Judge Cole.

Judge CARR: You have spoken of Judge William Read and attorney William Read.

A. I did not intend to say Judge William Read, I intended to say attorney Read.

Judge CARR: You refer to the same Read all the time?

A. The same Read. And some other prominent citizens.

Q. Your attention was called to this controversy which arose between the city and the Welsbach Street Lighting Company concerning a contract. I will ask you Mr. MacVicar what the fact was with

respect to that contract as you understood it which resulted in that suit being instituted in the courts.

A. In the first place, I learned and believed that the rates paid were too high, higher than those paid in some other cities and I believed as a general proposition that the city council could not allow a contract for a term of years for street lighting that could not be reviewed by other councils. I believed also that such a con-
4010 tract could not be let under the law except it — advertised for and let according to it.

Q. And these were some of the questions that were involved in that case to which counsel has referred?

A. I think these were some of the questions involved.

COURT: To my mind all this evidence is wholly immaterial. I would like to know on what ground it is put. In the first place I want to say this, and I am expressing myself now because I expressed a good deal of impatience with the Judge in his fross examination, I don't think that the question of the council or councilmen's ignorance or knowledge has anything to do with it and cannot be used to impeach or invalidate an ordinance or legislative act, or that it depends on whether they knew anything about the business or not. If there had been an investigation before the council and evidence heard and valuation made and a rate based on that valuation and it was claimed ot was confiscatory, after that I think the courts would hesitate very greatly to interfere at all, they would have to be convinced beyond any question, beyond reasonable doubt and to my mind that is a material question, was there an investigation. The fact there was no investigation would not invalidate the ordinance in my judgment, it might affect the strength of the presumption in its favor, that is all. Why all this is gone into I cannot see any reason for at all. I am calling attention to it now because if there is any reason for it I want to know it.

Judge CARR: You have said I understand you that you would like to have us state our position, if you want me to do that I will gladly do that.

COURT: Of course anything that shows interest or prejudice, anything of that kind, that is another matter.

Judge CARR: Of course as we have claimed from the start
4011 in this case and as your Honor remembers I claimed in the opening statement and in the introduction of evidence was that we were introducing evidence along that line for the purpose of overcoming the presumption which your hojer has spoken of which attaches to the action of a rate making body.

COURT: That question Judge McPherson in his recent water works case passes on and says whether or not there has been an investigation, whether a hearing affects the strength of that.

Judge CARR: There are several authorities where that subject is treated. Mr. MacVicar was placed upon the witness stand for the purpose of showing that an investigation was made and that the council did go about the discharge of their duty in a way to ascertain what was a fair rate. The cross examination until we came to the final subject was devoted to that feature of the case. On this

final proposition Mr. MacVicar is put upon the witness stand and he is shown to have had much experience in municipal affairs, has been a student of municipal affairs and has been active in municipal affairs and the cross examination was for the purpose of trying to discover the character and extent of these activities. That was the purpose of it, if the court please in part.

COURT: I suppose that was the purpose.

Judge CARR: And to show Mr. MacVicar from his experience in life has become somewhat prejudiced.

COURT: But to come down to the material matter was there an investigation and that investigation as I understand it, would be such an investigation where there was a hearing, where evidence was introduced. That kind of an investigation would be almost an adjudication.

Judge CARR: The result would affect the presumption
4012 which the law gives to such conclusions thus reached.

Q. I will ask you in connection with the Welsbach case and then I will depart from it, whether or not the defense there as you recall on the part of the company with respect to the suggestions you have made was in the nature of an estoppal against the city, that is to say, the city having participated in the contract for several years was thereby estopped to deny its validity?

Objected to as incompetent, calling for a mere opinion and conclusion of the witness and the witness not qualified to give an opinion on the subject.

A. That I understand was the fact.

Q. Now referring to the correspondence between yourself and Mr. Haines prior to the adoption of the ordinance in controversy, what is the fact as to whether or not the correspondence was brought to the attention of the Mayor and the other members of the council either formally or informally, whether it was discussed among you?

A. The letters as stated in this pamphlet were all published in each of the three or four local papers in full and I know from conversation with some of the council that they read them.

Q. These letters you say were published in the press in the city?

A. They were.

Q. Many of the resolutions to which your attention was called this morning by Judge Carr which had for their purpose street improvements, I understand you they are usually on printed forms and the particular street or improvement described upon blanks upon these written forms and in that way there is more or less of a stereotyped form of ordering the work in the first instance.

Objected to as leading.

4013 A. That is true.

Q. So that for instance in all of these resolutions of necessity to which your attention was called for the paving of a street now the only thing that would be necessary to have the attention of the council called to as a body would be the description of the street and character of the paving?

A. At the time set for the hearing.

Q. The time set on the resolution of necessity?

A. That is considered sufficient and to be the custom.

Q. And the reports that are made by you to the council when a street has been improved and a schedule of the assessments has been made up and presented to the council, are those schedules and reports made up in advance of the meeting of the council at which they are presented?

A. They are.

Q. I wish you would tell the Master what you endeavor to have for the council in respect to these matters in the way of your reports and schedules. In other words what system you have for expediting the business, which is to be transacted before the council?

A. The system is influenced by the necessity of expediting these matters and the department in whose charge these matters are is primarily responsible for the record and for the preparation of the proper schedules or assessments and they are presented complete in detail and it would be naturally impossible to read the entire record, it would not be possible to read the entire record would not, be hours enough in the day to transact business if we had nothing else to do if we would read the entire record in detail and it is not considered necessary and never has been done since the city grew to be any size and the volume of business grew to be con-
4014 siderable, therefore, the responsibility of things are in the department, the department head which presents them for expeditious action by the council. That is true in all departments.

COURT: I understand you don't make any question except where there is objection filed by some property owner to the assessment?

A. These objections are filed with the clerk and the matter comes up for final approval and if there are objections then the matter is again referred to the department of streets, these objections, and if a legal question is involved, to the legal department, and then setting a date for the final hearing and then these things are reported back to the council, to the body of the council by the head of the department or the legal department and very rarely is there any question about the action of the council which coincides with the report of the department.

Q. And with respect to resolutions of consent for the sale of intoxicating liquors or renewals of such consents, that is the system through the department of accounts and finances is it not?

A. It is.

Q. The ordinances of the city require certain investigations to be made by certain of the officers?

A. It does.

Q. What significance do you attach to the treasurer's receipt and recommendation?

A. It is understood that when the treasurer presents these matters to the council through the clerk with his receipt attached, that all the necessary requirements have been followed by the applicant the way is clear to grant consent.

4015 Q. Referring again to the letter of November 22, 1910, where the reference is made to the amount of return upon a valuation of $1,739,094, which I understand to be a clerical error it should be 894 instead of 094, did you consider the information stated by that letter in connection with your other investigation?

Objected to as a mere repetition under the testimony of this witness?

A. I did.

Q. Also you may state if you considered and investigated the charge for depreciation which is referred to in this letter?

A. It was considered.

Q. And how many conferences were had by you with Mr. Haines or with any of the other officers of the Des Moines Gas Company prior to the introduction of the ordinance in controversy before the city council?

A. One or two or more conferences with Mr. Keffer, secretary, and I believe three or more with Mr. Haines.

Q. And were those conferences prior or subsequent to the date of the letters referred to?

A. Prior.

Recross-examination by Hon. GEORGE H. CARR:

—. In speaking of conferences with Mr. Haines and Mr. Keffer, you mean conferences held by you personall- do you not, Mr. MacVicar?

A. Personally and with the city solicitor.

Q. Was the city solicitor present at all of the conferences that you have spoken of?

4016 A. He was not.

Q. You say that the letters written by Mr. Haines to you were published. It is also true isn't it that all of the letters written by you to him were also published in the local press at or about the time they were written?

A. Not all, no.

Q. Not all the letters written by you?

A. These referred to here.

Q. Isn't it true that all of the letters that you wrote Mr. Haines during this controversy were published in the local press?

A. They were not.

Q. What letter was not so published?

A. I think there were one or two before the finish that I wrote that were not published and are not contained here.

Q. Can you name one of the letters, that is give us the date of one of the letters that you say was not published in the local press?

A. It was immediately following Mr. Haines' letter of December 2.

Q. You are now referring to some letter which you say is not copied in Exhibit 44, are you?

A. It is not there.

Q. What do you say as to all the letters from you addressed to Mr. Haines which are in Exhibit 44 having been published?

A. They were all published.

Q. You furnished copies of them to the press yourself?

A. I did. That is I did of those I wrote, not those Mr. Haines wrote, he furnished those.

Q. So the letters you wrote Mr. Haines were published in the local press, that is the letters contained in Exhibit 44, were published in the local press at or about the time they were written?

4017 A. They were.

Q. I will call your attention to Exhibit No. 13, complainant's Exhibit No. 13, of the evidence in this case and will ask you if that is the letter to which you refer as written by you and not included in Exhibit 44?

A. That is one that I had in mind that was not published.

Redirect examination by R. O. BRENNAN, Esq.

Q. There was one further question I wanted to ask you, either in the direct examination or early part of the cross examination when you were stating the extent of your investigations and the numbers of miles of mains in use by the Capital City Gas Light Company in 1893 or '94, I think you testified there was approximately forty miles and in 1910 about 180 miles?

A. Yes.

Q. This afternoon in answer to a question put to you by Judge Carr I think you used the number 140?

A. 180.

Q. I wanted to call your attention to that, and have you explain whether you mea-t 140 at this time or 180 as you used in your former testimony.

Objected to because it mis-tates the evidence of the witness and assumes that he testified to that which the record shows he did not testify to.

A. The satement as made of 180 miles is I believe correct. I think the water company reached nearly 140.

Witness excused.

4018 EDWARD W. BEMIS being continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Mr. BEMIS: Before the questions begin there are a few typographical and other changes I would like to make, I have had time to look over since the last meeting. I don't think any of them change any conclusions or enter into any conclusions but relate to matters introduced by way of illustration. On page 28 where I refer to overhead charges on paving and on the rest of the property by Mr. Lea and Mr. Baehr, I think that the exhibits of those two men indicate the following figures for those matters on page 28. The second paragraph starts, Mr. Lea thus charged into overhead $567,780 and Mr. Baehr $615,603. I think that is correct as to Mr. Baehr,

but as to Mr. Lea it omits a charge for organization and legal expenses of $68,023. If this is added as it should be, for that is included in overhead charges by Mr. Baehr, and is a usual charge included that would make that figure of Mr. Lea $635,803. In the table of overhead on new paving according to Mr. Lea which I had given as $111,888 I think should be $88,126, the overhead on new paving and Mr. Baehr which I had given as $112,669 I think should be $77,391. The overhead on the rest of the property now will have to be correspondingly changes and where I had $455,892 for Mr. Lea it should *not* be $547,677 and for Mr. Baehr instead of being $502,934 I make it now $528,222. The depreciation of all property according to Mr. Lea I think is correct at 14.73 per cent. According to Mr. Baehr I took 11.75 per cent. I think it should be 11.71 per cent. The overhead thus depreciated according to Lea which I had at $387,779 I now make $467,004. The overhead according to Mr. Baehr which I had made $443,839 I now make $66,358.

4019 all of these changes on that page are not used by me in any calculations or computations that follow but are introduced there by way of illustration. On page 30 I may have changed it in my testimony before, and I may not, the second line, the 8 per cent should be 8 cents per thousand after the first word of the second line on page 30 of the Exhibit. I was only correcting my copy, it may be it has been changed in the others. Turning next to page 33, the table I make a slight change there, very slight, in that with regard to the paving new. Mr. Lea near the top of page 33, where I have $419,685 new, I now make it $418,672 a change of only a thousand dollars and the present value which I had at $370,598 is now made $369,604 again a change of about $1000. With regard to Mr. Baehr on new I do not change, but the present value which I had at $344,890, I now make $362,873. These changes also do not affect any calculations or any tables that follow. Next I note on page 55, perhaps it was referred to in the testimony, in the long paragraph a little below the middle of the page the sentence beginning, the unit cost of meters, employed are those not given. It should be the unit cost of meters employed are given. The word "not" is a typographical error perhaps it is crossed out in the copies the rest have.

COURT: On page 33 I want to call your attention to mains and services new, depreciation is included in that?

A. No, only these parts where paving was involved.

COURT: You are way above my recollection of the figures here.

A. You mean new paving?

COURT: No my recollection is the whole figures of base value is not much over a million, mains, services, building and equipment

I am talking about base value, not reproduction or present

4020 value.

A. This $1,993,243, the mains and services new including the overhead and present value after taking out the depreciation.

COURT: I think you are mistaken there in these figures, that is my recollection now, I may be mistaken.

A. I call your attention to page 17 of Mr. Baehr's exhibit where these figures appear.

COURT: That is the present value with the overhead charges?

A. Yes, that is the way I mentioned it here. I had spoken of page 55. Page 62 I may have there again changed or added the two words that should be added, "and 1905." Page 64 I am sure I have not spoken of. In the second paragraph of page 54 the 4th line after the figures 2,292,035 there should have been a capital "M" indicating there thousands of feet. A capital "M" or three ciphers, whichever you prefer, indicating that is two billion, not million feet. Likewise in the next line where I have the words "Applying those sales" 531,991 there should be M indicating thousands of feet. To make the sentence read properly it would be well to have in there of 1910 the item is 851.19, the word the item would make better sense, although it does not change the meaning. Page 68, I may have made that change in the testimony in the second paragraph the 4th line 9.67 should have the word after it, indicating cents, of course that is perfectly obvious, but noticing it I thought I would make the change. On the next page 69 at the end of the second paragraph we have the expression "and is over 7 per cent higher than the highest year." It should be over seven cents higher than the highest of those years. It is evident from the table that was meant and it was merely a typographical error in putting it percentage instead of cents. On page 83 it may be those changes were made in the testimony, I rather think they were, the third paragraph, it
4021 should be the question is not the reasonableness of 90 cent gas for the past, but 1911, and in the last paragraph beginning Consolidated Gas Company in New York in 1908, instead of 1808. The last change I have noted here is page 88 where in the paragraph below the table the word Chiefly in the second line should come after the word "gas" instead of before the word to make good sense, sold their gas chiefly in Springfield, that is Springfield was the chief company had any such sales. It was a mere mistake in dictation putting the word in there instead of the other place. None of these changes enter in any more than typographical errors or illustrations which were used. It was prepared in great haste many of these pages, and I am surprised there are not others I have not discovered.

Q. You refer to these matters as changes. They are corrections are they not?

A. Yes, sir.

Q. Errors that you have discovered?

A. Yes, sir.

Q. Referring again to this page 33 for a moment in this second tabulation, what does this $1,993,243 represent?

A. It represents the value of the mains and service as given by Mr. Baehr now with the overhead and the paving, represents every thing that went into that valuation as given on page 17 of his exhibit.

Q. Page 17 does not show the mains and services does it?

A. Nom it is mains, services, and meters, the whole thing united

in the distribution system, I use the word mains and services, should have added meters in there, entire distribution system.

Q. Going to make a difference isn't it?

A. Yes.

Q. Amounts to how much?

4022 A. He puts the whole total together there, that table on the distribution system, in the next table, page 19 he separates the items and the meters are about $264,000, $264,307.

Q. And in the same way here your statement as to Mr. Lea is not a statement of the reproduction cost of the mains and services but is a reproduction cost of the entire distribution.

A. Distribution system, yes.

Q. And the deduction which you make from these figures has the same depreciation properly chargeable against paving?

A. It may be that would be a slight——

Q. Wait a minute, answer the question.

A. Yes, I think so.

Q. On your own theory this deduction would not be sound without changing these figures would it and getting out the mains and services instead of the entire distribution system?

A. Yes, the meters should be taken out.

Q. Well some things ought to be taken out ought not they?

A. Properly speaking the mains, services and meters include the distribution system.

Q. There is a small item of tools and things like that?

A. Yes.

Q. So that these figures shown on page 33 are not the proper basis for the computation which you assume to make there?

A. There should be a further allowance for those matters. How it would affect the table I am not sure.

Q. You do know that upon your theory as stated here they -re not the proper basis for this computation.

A. I see at once that the meters should have been taken out.

Q. Well can't you answer me directly, these figures as there given are not the proper basis for the computation which you attempt to predicate upon them?

4023 A. Yes, sir. For taking out depreciation you should separate these three items.

Q. Can you answer it without depreciation?

A. Yes, sir.

Q. That is a fact that these figures that appear there are not the proper figures.

A. Certainly. I am very glad to say that should not be done.

Q. Turning over to page 50 if you will, you have headed this cost reconstruction and this covers some pages I think. Now what is the purpose of that part of your argument?

A. My report. I had in mind in that to lead up to the table on page 54 which presents the figures from the books, from Prof. Marks and Mr. Baehr's appraisals and from certain estimates of duplication based on the unit cost as given by Mr. Hall in the last five years.

Q. Stating it a little more concisely is it not true that the pages which I have referred to call attention to certain testimony of other witnesses for the purpose of drawing some deductions from this testimony?

A. Yes.

Q. Now do those pages that I refer to contain any original statement of any fact by yourself or are they merely an argument or discussion of the testimony of the other witnesses?

A. There are some computations that have not appeared in this form but there are not basis figures unless it be in connection with meters where there may have been a little additional data about freight and meter connections which I got from Mr. Sangster and which I refer to in connection with——

Q. On what page?

A. In making up pages 55——

4024 Q. On which one of these pages do you refer to?

A. Page 55.

Q. I am referring to pages 50 to 53 inclusive?

A. Those pages are merely introductory to 54.

Q. No statement of any new fact in it is there?

A. Yes.

Q. Simply a discussion and arrangement of facts which you took from the testimony of other witnesses?

A. Yes.

Q. How did you get that $525,274 as the cost of buildings, machinery holders and office furniture?

A. Which page please?

Q. 50.

A. That as I recall is taken from Mr. Hall's report.

Q. Whereabouts.

A. I am under the impression I also had it earlier than this. If you will turn to page 16 of my report you will find in the last column the total of the works and office furniture given in two separate lines and that is based as I stated in the previous page from certain computations in Mr. Hall's exhibit, defendant's Exhibit 30, which I can turn to if you wish.

Q. I wish you would tell me where you got the $513,421.84 on page 16. Identify that item in Mr. Hall's report. As I understand you this $525,274 is the sum of $513.421.84 and the succeeding item, those two items?

A. That is right.

Q. Where did you get $513,421.84?

A. That is the sum of the three previous columns in that line. Now I will have to turn to Mr. Hall's report.

Q. Not the sum of the three previous columns but the sum

4025 of the corresponding items, in the three previous columns.

A. It was a simply computation based on figures given in Mr. Hall's report page 21, and there you will find on page 21 of Mr. Hall's report the figure, $75,220.84 in the middle column. You

will find the others by addition, they were not put in just that way in his report.

Q. What other items did you take?

A. Tanks and holders No. 1, 2 and 3, old gas works, real estate, gas buildings and machinery and water gas plant.

Q. That won't bring you out right will it?

A. I will have to compute again to be sure.

Q. Isn't the $75,254 part of the $252,104.73?

A. The columns balance at the bottom.

Q. Is $75,220.84 on page 21 of Mr. Hall's report part of this item $252,104.73, the latter item appears to be the total doesn't it?

A. I shall have to recompute a moment on page 21 to answer your question. That is not quite as I have it, add in $120,000 for the holder and I get instead of 513 549, but I am not sure the land should have been there, the land is in the previous column I thought it was in that column. I have got it exact, $513,421.84.

Q. How did you get it, what items did you take into account on page 21?

A. On page 21 I took into account tank and holder No. 1, $15,000 Tank and holder No. 2, $33,356.64, tank and holder No. 3, $40,-057.41 old gas works $25,000 gas buildings, machinery, $252,104.73, water gas plant, $27,903.06, estimated cost of holder, $120,000.

Q. Those items give you what?

A. The item used in the last line on page 16 in that column 4026 opposite works $513,421.84.

Q. And then you add to that your office furniture and in that way you get $525,274 on page 50, is that right?

A. Yes.

Q. Now then you compare that with Mr. Baehr's estimate of the cost new without any overhead on the same items?

A. I endeavor to put the same items in, I think I did, made $504,891.

Q. Of course it is not a comparison of the same items as a matter of fact is it?

A. I endeavored to make it so, if I did not there may have been some oversight.

Q. Well in the first place where is tank and holder No. 1 in Mr. Baehr's estimate?

A. They are no longer there, they have been scrapped. I think I so stated somewhere in my testimony that Mr. Baehr's appraisal was of that which is not there, while the books contained all that ever had been there.

Q. It is not a comparison of two appraisements or of the appraisement and of the cost of the same things?

A. No. It don't purport to be exactly that.

Q. Now Mr. Baehr includes also something on account of stable equipment doesn't he?

A. Yes.

Q. About how much is that?

A. I don't remember, I remember the item but I don't remember just how much it was, it is one of those items I have forgotten now whether I put it in works or distributing system, but I think I put it in works, the stable being located at the works. It is my impression it is in the item of the works.

4027 Q. The item is shown on page 72 of Mr. Baehr's report as $35,374 and you added that to $469,517 in order to get your $504,891 didn't you?

A. Yes.

Q. What is the $469,517, what does that represent, the amount to which you say you added this $35,375?

A. It represents the plant aside from the land and by plant I understand and mean everything at the works, the manufacturing plant, buildings, holders and everything down there on that land.

Q. It does not include this stable equipment and that sort of thing?

A. That is in the $35,374 which we just mentioned.

Q. So if you took actually the plant from Mr. Baehr's report you would take $369,517?

A. In that case I should also have to take from the books of the company a different amount.

Q. Pardon me, just answer the question. I will reconcile those things. You take $469,517 that is what Mr. Baehr puts down in the plant?

A. Yes.

Q. We have to add office furniture to make our comparison accurate do we not?

A. I should think we would have to add the whole $35,000.

Q. You have buildings, machinery, holders and office furniture, that is what you have taken into account to make your book cost haven't you?

A. I have taken everything that was not in meters, services and mains.

Q. What is there in your $525,274 on account of general office and stable equipment?

4028 A. Everything that is not in meters, services and maind I think.

Q. You don't know whether there is anything in there or not aside from office furniture do you?

A. Only as the books may show it.

Q. You have not examined the books have you?

A. No, took Mr. Hall's rep-rt, page 21.

Q. Is there anything in Mr. Hall's report at page 21 that indicates you have in there anything except what you have here, if so read it to us.

A. Mr. Hall's report shows office furniture, it shows tanks and holders, old gas works, these are all in here.

Q. I asked you to read the items that were not in your statement from his report of buildings machiner-, holders and office furniture?

A. He has a general term of gas buildings, machinery which I

have understood to mean everything at the works except the working capital.

Q. Now just oeave out your understanding and tell us where you find that in this report.

A. The report is silent as to whether the items given on page 21 include the capital account or not, but I think Mr. Hall's testimony is that all the capital shown on the books is covered on page 21, all the construction cost.

Q. I wish you would take this $469,517 of Mr. Baehr's, that is the amount he has for plant isn't it?

A. Yes, sir.

Q. Now then you added to that general office and stable equipment $35,374.

A. Yes.

Q. Now do you know what that item includes?

4029 A. I heard Mr. Baehr's testimony about it and I have read some analysis of in in the exhibit.

Q. Turn to page 124 of his report.

A. I can see now, I know what is included in a general way, the office record and the stables.

Q. You will find furniture and fixtures here $14,015?

A. Yes.

Q. Now will you add it to $469,517?

A. $483,532.

Q. That instead of what you state here, $504,891 is what Mr. Baehr's reports shows ans is the base figures, the building, machinery, holders and office furniture isn't it?

A. No.

Q. Will you point some item that is shown by Mr Baehr's report of building, machinery, holders and office furniture?

A. When I said works and office——

Q. That is not my question I asked you to point some other item in Mr. Baeher's report which is shown by that report to be put in there on account of building, -achinery, holders and office furniture, some item other than the two to which I have called your attention?

A. That item defined in that way appears to include only $483,532.

Q. The difference between that $525,274 is what?

A. Computing and not agreeing to the validity of it.

Q. I don't ask you to agree to anything, simply ask you to tell some things here where we can't dispute about them.

A. $41,742.

Q. You state in your argument on page 50 that the difference between cost of the buildings, machinery, holders and office

4030 furniture as shown by the books and as estimated by Mr. Baehr is less than $20,000 don't you?

A. You are referring to the third paragraph os page 50 I suppose?

A. Yes.

Q. I state there that the cost referring to what was in the previous paragraph is $504,891, I see now and I frankly agree that I do not use as braod language in the previous paragraph as I did in the table

or as probably should have been done. I intended to include all works and all office.

Q. When you do do that then you haven't any warrant in Mr. Hall's report for the statement for the $525,274 have you?

A. I believe so.

Q. Will you please point it out?

A. That I learned that his testimony included—of course I always state these things subject to correction, but I understood his report to include all the capital charges.

Q. I asked you to point out this in here which you understood, these particular items, not his report, but the particular items you assumed it here to cover?

A. I see his report on page 21 showed works and office $521,274 and they are all relating to works and office.

Q. Where are the words "works and office" there?

A. You mean page 21 of his report?

Q. Yes, I don't see any item works and office.

Q. They are not in so many words, but it means the same thing.

Q. Isn't any item marked works and office there?

A. No. But I am convinced that that is the meaning of his term, he has no other term to cover capital charges at the works.

Q. I have not asked you that. I asked you to point out the item here if you can point it out, will you do so?

4031 A. I can't see it and I have not the statement that he included there stable and office records, but if it was in the capital account it must be there.

Q. Now pass to the next paragraph, you say the books show the cost for meters of $187,755.93. By that you mean Mr. Hall's report shows that?

A. When I refer to books I refer to his report.

Q. While as Baehr estimates their cost without overhead charges $206,272 or about 21 per cent more.

A. I so state there.

Q. Will you subtract the $187,755.93 from the $206,472?

A. I see, about 20,000 more instead of 20 per cent. The difference is closer than 20 per cent.

Q. What is the difference in dollars?

A. $18,716.07 and that is only about 10 per cent.

Q. That is a little less than 10 per cent instead of 21 per cent.

A. Yes, it should be corrected. It shows a percentage even less than I state.

Q. Did you make these figures yourself?

A. Yes, but some of them I made in my head as I went along. I prepared this with great haste these particular portions.

Q. Now I want to go to another item here, you say on the two items of works and meters combined the books show $713,030—that is coming right along here—of course there you mean Mr. Hall shows that.

A. I refer to Mr. Hall when I speak of the books.

Q. Where did you get $713,030?

A. From the addition on page 54 of the item of $187,756 for meters and works and office of $525,274.

Q. So that this [illegible] either includes or don't include—

4032 leaves that item of stable equipment up in the air.

A. Stable equipment and office records.

Q. Where do you get the figures making up $711,363. Take $206,472 you had back there for meters, start with that, where do you get the balance?

A. You mean out of Mr. Baehr's figures?

Q. Yes, to make up your $711,363 as Mr. Baehr gives without overhead on these items.

A. I think the correct figures come in the table as——

Q. I don't care for the table. The table you said you made up from this, not this from the table.

A. No, I made up the table independently I think. $504,891 on page 54 and the $206,472 for meters on the same page is $711,363 exactly the figure I get on page 50.

Q. If you take your 200 and instead of taking it from your subsequent table, if you take meters, $206,472 and the plant as given by Mr. Baehr himself on page 72 at $469,517, what will your total be?

A. It will be that much less because you omit stable equipment and office records of course, the same omission we have been talking about.

Q. If we take the corresponding items of Mr. Baehr's report we will have a difference of some $23,000 instead of $1,700 won't you?

A. No, I deny that I have not taken from the books the items corresponding to his full figures. I say I have.

Q. You mean from Lea's report?

A. Yes.

Q. Do you know whether the books show anything at all with reference to office record?

4033 A. No, but I know they showed everything of construction and what I am trying to show by the books of the company is what they charge in the construction, I am not saying whether charged correctly in the construction.

Q. You are trying to make some comparison between what the books show and what Mr. Baehr's report shows?

A. I am not saying whether the books are right or wrong.

Q. What I want to get at is this, do you know whether or not the books have any items for instance of these office records the $10,000 in Mr. Baehr's report?

A. I do not. But I know if they are anywhere they are in this item on the books. The books have no other place for it except right there. You don't know whether there is any entry of that item on the books at all?

A. No, but if there was any it would be in there and my statement that the books showed this because of the fact it is works and office and that is on the books as in that item.

Q. Now then you take meters for instance, you are not comparing the same things on meters either are you?

A. I am comparing what the books show of meters with Mr. Baehr's appraisal of the present meters new.

Q. You are comparing what the books show as to all meters?

A. As to all meters.

Q. Whether they have been scrapped or not, is that right?

A. No as to how they have treated scrap meters I am not sure. They may have charged those and I understood they did into their renewal account, but in that case their capital would not remain reduced when an old meter was scrapped.

Q. Then you ought not to have charged depreciation against the meter account ought you?

4034 A. Only because I see the whole thing is shown by Mr. Baehr and Mr. Lea as being depreciated.

Q. Isn't there anything in this document based on your own judgment?

A. It is a mere comparison between what the books have still on their accounts as construction with these appraisals.

Q. Do you know whether this $187,755.93 is the actual investment in meters or not?

A. It is the maximum investment. It may be depreciated as you say it may have failed to show the renewals of the meters that were scrap- and other- substituted. This is all they have ever charged into construction.

Q. Let me ask you this, what I want to know is whether the $187,755.93 represents all the money that has been spent in the purchase of meters or not?

A. Yes, for new meters all money that has been charged as properly applicable to new construction.

Q. That don't answer my question. Do you know whether that amount represents all of the money that has been spent for the purchase of new meters that has been shown by the books. I am simply asking you whether you know.

A. I don't positively know, I know this much it can be in but one——

Q. Wait a minute, you have answered my question. You don't know whether it represents the entire expenditures shown by the books for new meters or not?

A. It is all the accounts put on these books as being spent for new meters.

Q. You have not examined the books?

A. No, according to Mr. Hall's report.

Q. The fact is you haven't any knowledge about it at all?

4035 A. I have repeatedly said I took his exhibit as a correct representation of what the books show.

Q. Still you have not hesitated to assert very promptly that it is either one thing or the other here in answer to my questions instead of stating you don't know.

A. I was not intending to deceive you at all.

Q. Your comparison is between what Mr. Hall's report shows as the aggregate amount put on the books here for new meters and what Mr. Baehr estimates as the base cost of the present meters?

A. Yes.

Q. These are not the same things are they?

A. Not necessarily because some of the meters may have been scrapped and new meters substituted.

Q. When I buy a meter and scrap it would that affect the amount which the company originally paid for it.

A. It may treat it in two ways——

Q. No, no, you can't treat the amount they originally pay for it in two ways. I am not asking about subsequent entries, I am talking about the amount originally put into the meters, is that affected by the subsesuent disposition of the meter in your judgment?

A. Yes, I will illustrate it if you will allow me.

Q. I don't care to have it.

A. I think I should make my meaning clear otherwise it might seem ludicrous.

Mr. BYERS: You have a right to make whatever explanation you want.

A. I will do it right here then, suppose I buy a meter for $7.00 and many years afterwards scrap it and put in a better type of meter for which I pay $10, now I might charge that $10 meter as
4036 extra capital account making $17, but I think it would be more proper to take the difference and put only $3.00 into capital account at that time so that although there were two meters bought a $7.00 meter and $10.00 meter yet after the $7.00 meter had been scapped the books show only a $10 investment and would not show the old meter at all, that is what I mean by saying I believe the books only show the cost of the meters now in use, but I don't know that positively, they may have kept their books in the other way which I would not think was good, but I assume the company kept the books here the other way.

COURT: The books show depreciation by reason of obsolescence?

A. The books show and I understand that is what they show in regard to street mains if they charge that into renewal account and the mains are scrapped or displaced on account of being too small, something of that kind so that practically the operating expenses have already covered some scrap material and depreciation while the construction cost is supposed to be in the construction cost of only that which you can now find. But I don't think that is true in fact I am positive from reading the testimony and evidence generally and exhibits that that is not true where something has been scrapped and another substituted, as for example holder No. 1. There was something that disappeared entirely and to take its place was not any enlargement or improvement such as substituting a six inch for a four inch main in the same location. There I understand it remains on the books.

Complainant moves to strike out all of the witness' understanding

as to the way the books are kept because not based on personal knowledge, therefore secondary and not competent.

Q. Now to get back to my question, do you think that is a
4037 man, taking your illustration bought a meter for $7.00 and then bought another meter for $10 the amount which he had paid for meters would be affected by the way in which he treated the old meter?

A. No, but the construction on the books might be. The capital cost of meters on the books, construction cost.

Q. And that is something I didn't ask you about at all. What you did was to give all your entries you would make to your capital account. Now what I want to get at is this, do you think taking your own illustration that if a man had bought one meter and paid $10 for it and another meter and paid $7.00 for it, he would have paid $17 for meters?

A. He would have paid $17 for meters.

Q. Do you think he would.

A. I don't think proper to charge it on the books as capital.

Q. I didn't ask you that at all. I am talking about costs.

A. I say he would have paid $17 for meters of course.

Q. Do you think the amount which he had paid for meters would be affected at all by subsequent charges that he made to his capital account?

A. The seventeen is a fact, always so remains.

Q. Of course if the books had been kept the way you say they have, the way you say you think they have without any knowledge on the subject, of course this table of Mr. Hall's don't show the total investment does it, but shows less than that. Now can you answer that without argument?

A. Only shows my conception of the investment.

Q. To put it another way if the books had been kept the way you say you think they have then Mr. Hall's table here purporting to show the total cost to the company does not in fact show the
4038 actual cost but shows less than that amount, that is true isn't it?

A. Yes, operating expense showing the balance.

Q. Now you say this conforms to the Wisconsin commission that 12 per cent is ample for overhead charges. You are entirely familiar with what the Wisconsin Commission is doing on these things aren't you?

A. I have read several of their decisions, I am in a measure familiar with it.

Q. You knew didn't you that the Wisconsin Commission had tried 12 per cent and recently abandoned it because they found it was too low.

A. No. I have a letter to the opposite from them within two weeks.

Q. And your testimony is based on this letter?

A. And report I read. I read a report within six months of theirs.

Q. You don't know except in the case of the smaller towns where

these things are relatively smaller they have decided to abandon 12 per cent and adopt 18 per cent?

A. No.

Q. On the next page you give an item $259,102.59 as base cost of services as estimated by Mr. Baehr. You remember you testified with reference to that item it was only by indirect computation it could be obtained from Mr. Baehr's report?

A. I don't remember now what I testified.

Q. I will call your attention to direct examination at page 3734 of the report. Now right at that point is it possible to find these figures, the figures you have given here, $259,102.57 without a careful working out of Mr. Baehr's tables and schedules. A. I think one has to go through some such process as I have done here.

4039 Q. The separation is not made in the report so it can be ascertained without careful examination. A. I don't see any way of getting at it except this way. Did you so testify?

A. I may have done so. It is given on page 113 by the addition.

Q. Turn to page 119, you studied this report carefully didn't you?

A. As much as I had time to. Given on page 119 with the additions made.

Q. It is given on page 119 the base figures total $259,103 isn't it?

A. Yes.

Q. And that is true of every other base figure Mr. Baehr uses isn't it?

A. Probably.

Q. And you were incorrect when you said you had to compute them?

A. Yes, I think that should have related more to that other testimony on overhead, that refers partly to him, more to Mr. Lea referred to in another place.

Q. Simply because you were not familiar with the report to know where to find it?

A. Probably.

Q. Are the costs of services as shown on the books and as computed by these various witnesses based on the same services or not?

A. I can't say. The first column $285,130 is based on what Mr. Hall reports the books to show as construction or capital account of services. The other is Mr. Baehr's appraisal of the services now used or abandoned and still in the ground I suppose.

Q. You take this up as to Mr. Lea's report do you not at the bottom of page 51?

A. Yes, sir.

Q. And you start out with an incorrect statement don't you

4040 in the first sentence?

A. I am not sure that it is incorrect. I may not have understood what he meant by his investment cost.

Q. Well as a matter of fact Mr. Lea testified affirmatively didn't he that those figures there were not his figures, that he didn't know what they did mean and that as far as he was concerned they did not represent the investment?

A. I don't recall he said that. I remember now you speak of it

he said something along that line, I understood from looking this thing over that this was the basis for his treatment of the meter question.

Q. Didn't you, before you attempted to state here, the effect of Mr. Lea's testimony or what he said verified that by looking at the transcript?

A. No, didn't have time.

Q. So you just put it down and swore to it?

A. I looked to this table in his exhibit page 11.

Q. You didn't have time to verify the statement you just let it go.

A. I understood later it was some data that had been given him by the company that he didn't work it out himself, but had taken it from I think what has gone into the record as Exhibit 8 of the complainant. I should therefore, although he didn't work it out it would be something that was correct.

Q. What I am getting at is whether you want us to understand that the statements made here where you didn't have time to look them up you just made them and let them go at that?

A. This is a correct statement as I understand it.

Q. It is a correct statement of Mr. Lea's testimony is it?

A. Of the exhibit as I found it page 11. I think that
4041 sentence as I understood that subject was his or he made it his.

Q. You think this is a correct statement of Mr. Lea's testimony?

A. I don't remember, was not aware when I wrote this and am not now aware that he abandoned this figure.

Q. Answer the question won't you, are you willing to say now this is a correct statement of Lea's testimony?

A. I don't know. I am willing to say it is a correct statement of his exhibit.

Q. Didn't know when you wrote it whether it was correct or not, didn't take the trouble to verify it?

A. I took the trouble to verify that my sentence was correct. I think it is correct.

Q. Then you say it is correct.

A. I believe it is.

Q. You then took that and taking this statement which is not Mr. Lea's statement you apply a percentage to it and get what you call Mr. Lea's cost of the services without the overhead don't you $262,758.15.

A. I get it by applying percentage as stated here.

Q. You get your estimate there of Mr. Lea's original base figure on these services by using these figures you have referred to and applying a percentage to them.

A. Yes.

Q. And you do that without taking the trouble to see whether Mr. Lea said those were his figures or not?

A. No, I simply turn to his exhibit, I did not recall he had repudiated them and I don't have any recollection of not being sure of them.

Q. Why do you use the word repudiate?

A. I think you used the suggestion he had and I have not known it.

4042 Q. I was assuming you had stated the purpose for which you used these figures, not he had repudiated them at all, but he had stated I recall that he did state that those were figures that he did not take as representing the actual cost and that the actual cost for the purposes of that table was wholly immaterial. Now you didn't take the trouble to verify your recollection as to what he had testified before you deduced this conclusion as to his original cost of these services.

A. No, I did not realize he had said anything that required my modification of that page 11 and so I took it.

Q. Now you next comment on Mr. Mark's entirely independent investigation do you not?

A. Yes, on page 52.

Q. Where do you get that $482,639?

A. From his exhibit, I think I give the page here, 75.

Q. What items do you take if there is more than one. See if I can't aid you, did you add the total buildings contents, fence and pacing $217,780 and yard structures, fixtures, etc., $264,859.

A. That makes the figure.

Q. Well is that the way you got it?

A. I think so.

Q. Do you remember?

A. No, I do not.

Q. You compare here Marks' cost with his overhead added to the other costs without overhead don't you?

A. Yes.

Q. So in order to get the same basis so as to make a fair comparison we would have to take overhead out of his wouldn't you?

A. Not for the comparison I was trying to make, I stated

4043 just what I was trying to make.

Q. A comparison is not worth much unless the circumstances are the same is it?

A. The comparison has just the force that it claims to have and no more.

Q. You find a difference there of 12 per cent. Will you subtract $482,639 from $525,474?

A. That is $42,635.

Q. That is the difference, that is 12 per cent of what. It is only 8.8 of the $482,639.

A. It is only 8.8.

Q. That is another error isn't it?

A. Yes. The result of the table is not affected in the slightest. The table on page 54 remains unchanged.

Q. You add there the tools and stable equipment, $15,192, are those added in these other amounts that Marks is compared with or not?

A. I thought so.

Q. Do you know whether they are or not?

A. I looked through his report at the time I wrote that table and put in the stable equipment where I thought it belonged.

Q. That don't answer the question I asked whether they were included in these other figures with which you compared this total of Prof. Marks.

A. You are referring now to his grand total of $1,664,000?

Q. Oh no. You say page 52 if however, the tools and stable equipment of $15,192 shall be added as probably they should be to Prof. Marks' computation, the difference is only about $28,000 or about 5½ per cent. Now are they in the figures with which you compare Prof. Marks' figures?

4044 A. I never found those, I did not as I recall it find exactly where he did place tools and stable equipment, had not thought to look through it carefully so I make the statement in the same table here in my sentence.

Q. (Question read.) Are they in other words in the books of the company?

A. Are they in other words in the books of the company is your question as I understand it now.

Q. My question is, was the tools and stable equipment in the figures with which you compared Prof. Marks' figures?

A. In other words——

Q. Don't you know what you compared with to get that five and a half per cent?

A. Yes, the works and office I think were available. We were over that a little while ago.

Q. And you could not tell from Marks' report whether it is in the $482,639 or not?

A. As I recall I could not.

Q. Now will you turn to the second item on page 75 after the two you added together to get the $482,639?

A. Oh yes, it is there. I had it there when I dictated the page, but I had forgotten.

Q. Now do you know whether they are in the $482,639 or not?

A. That $15,192 is no- in the $482,639, in other words the statement on page 52 is correct.

Q. Now here in the last sentence on the top of Division 1, to reconcile the Marks differences with some of the property originally on the books, with his new cost as shown by Mr. Hall don't you?

A. Yes. Where it has been entirely scrapped like a holder.

Q. So you adopt this theory as to the holders and the

4045 other theory as to meters.

A. I can see a reason for a difference and suppose it was made.

Q. You adopt when it suits your convenience without verifying the other theory from the books?

A. I have not had a chance to go to the books.

Q. I didn't ask you that. You have adopted it when it suited your convenience and have not verified the other one from the books.

A. No, I did not adopt either one, made the observation there without comparison. I did not state positively.

Q. So that in order to really get the full force of this we ought to insert here somewhere that these observations are based upon unverified suppositions.

A. Not so far as the table goes, but where I make some suggestions as to how the books could be that of course is only a supposition of my own. I think the text makes that clear, I intended it should.

Q. Now your next items here are some services and meters that Prof. Marks uses. Now when you take services and meters from the reports of Messrs. Lea and Baehr you take the base figures?

A. Yes.

Q. Now when you take from Prof. Marks' report do you do the same thing?

A. No. I take his with all overhead he put in. I think I make that clear here somewhere.

Q. Well just point it out, where?

A. Well I say the appraisal of Prof. Marks new and in the other case I say the appraisal knew omitting land, paving and overhead, the fact I make that omission in the heading of that column, page 54 makes the contrast.

Q. I am talking about page 52, I have not got to this
4046 table. I am talking about page 52. The discussion of these matters that are the basis of this table as I understand it.

A. Well on page 52 in the third paragraph I state there is ample agreement between Prof. Marks on structural cost and Mr. Baehr without his overhead allowance and the book records shown by Mr. Hall. I think that implies that Marks included overhead because I take pains to say there is ample agreement between Prof. Marks of structural cost and Mr. Baehr's with overhead allowance and the book records shown by Mr. Hall.

Q. Then this is a comparison, if I understand it, between the Marks figures, including overhead, the book figures which are based not on the same things but on the total cost during a long period and Baehr's figures without overhead.

A. Yes.

Q. And what intelligent conclusion do you expect to draw from such a comparison as that where no two of the things compared are on the same basis?

A. The conclusion that the overhead was nowhere near as great as Mr. Baehr claims and what little there was had been paid for in operating expenses.

Q. That is the point that you are trying to argue here.

A. Those two points.

Q. Where did you get the Marks figures here, take the $513,672?

A. Turn to page 75 of Mr. Marks' report, I think it is further back possibly but I got the figures from one of these pages here.

Q. Can you tell us where?

A. I said there Marks estimated meters new at $220,000, that

figure is obtained by adding the last two on the first table of Marks on page 25.

Q. Opposite the figures 227 and 228?

4047 A. Yes, sir. It was intended to be a round figure. I will give you the exact figure. It is $220,298. The sentence goes on in reference to house and street lamp service estimated at about $293,000. Again you take out $274,720 on page 75, the first table and the $18,654 and you get $293,374, but I omitted the odd dollars leaving round figures in thousands. And the difference of those with the entire odd dollars included give $513,672 which you ask about.

Q. Do you remember what basis Prof. Marks took for his overhead on these items?

A. No.

Q. These items include his overhead charges do they not?

A. Yes, so far as he put them in, I did not try very carefully to follow.

COURT: He has not got any overhead charges at all on distribution system unless it was meters?

Q. I think the meters he finally took back the overhead. You go on with a comparison of the street mains without stopping to refer to these figures and you deduce the table that appears on page 54 from the figures that you have worked out on the preceding four pages do you not?

A. Yes.

Q. And carry into that table on page 54 such errors as appear in the preceding four pages.

A. I don't know as I recognized any errors. Where you have pointed out one or two cases, they were not matters that were fundamental or entered into the table, they were simply illustrations of what Mr. Lea used which I did not use in the table or something of that kind.

Q. You compare in this table Mr. Baehr's figures without

4048 any overhead with Prof. Marks' figures including such overhead as he allowed?

A. Yes.

Q. And you got a difference between the books and Marks of how much in the aggregate?

A. About $18,000.

Q. A little less than $18,000?

A. Yes, about $17,500, in that neighborhood.

Q. Something like 1 per cent?

A. Yes.

Q. And you say somewhere in your report that this was made up by Prof. Marks, without any knowledge as to what the books showed as an entirely independent proposition don't you?

A. Yes, I said that in so far as some special points were testified to.

Q. Now you interlined in that statement as to Marks, these words didn't you, page 55 "Save those that appear in his report"?

A. Yes.

Q. You interlined those after Mr. Sangster had been cross examined here as to his conferences with Prof. Marks?

A. I had no reference to that.

Q. I didn't ask you that, you interlined those after Mr. Sangster had been cross examined as to conferences with Marks?

A. The whole page was written after that.

Q. How long after that was it you went on the stand?

A. Well I don't remember, I think the night before I did this I stayed up practically all night the night before that and I didn't hear Mr. Sangster's 1st day's testimony at all, in fact I was not in the room all the time of Mr. Sangster's testimony, I was in my hotel working.

4049 Q. That is not answering the question.

A. I have not read his testimony either.

Q. As a matter of fact, that was interlined after Mr. Sangster testified as to conferences with Prof. Marks with reference to the books was it?

A. I don't know. I didn't even know he had testified about it, didn't know until this minute.

Q. You were a little previous when you said a few moments ago the whole thing was written after Mr. Sangster gave that testimony?

A. In my testimony as a whole I have several times said portions were written in Chicago.

Q. Answer the question please.

A. I never did say all this was written after Mr. Sangster testified.

Q. What I want to get at is this how came you to say a few moments ago very quickly this entire page was written after Mr. Sangster went on the stand to testify when you had no knowledge about it.

A. Because I started to answer the question before I realized what you asked about his testifying in regard to this matter. It was written after he went on the stand. I should have waited until your question was through. I answered too quickly.

Q. It is true is it not that these words several times that appear in the report, page 55 were interlined after Mr. Sangster testified as to his information furnished Dr. Marks?

A. I don't know what he testified and it had no reference to Mr. Sangster but I heard Mr. Marks testify. I didn't hear Mr. Sangster and I recall Prof. Marks had said something about some things he had furnished and I do know now too I was present when

4050 this table page 75 was first introduced.

Q. You have volunteered a statement here you were present when Prof. Marks produced his totals?

A. Yes.

Q. Given on page 75 of his exhibit?

A. Yes, that last table.

Q. What do you mean by produced his totals?

A. He said I have just gotten some totals, I want to show you some thing that will surprise you, come up to my room after dinner I want to show you something.

Q. He had then the totals appearing on page 75?
A. In the last table, he had 1,700,000 and 1,401,000.
Q. Now what he gave that he first learned from Mr. Sangster, have you any personal knowledge about that matter?
A. Mr. Sangster came in at the same time as these figures were read off, and Mr. Sangster——
Q. I didn't ask for a conversation. I want to know whether you were there with Prof. Marks at these various times Mr. Sangster gave him this information so that you can say of your own personal knowledge when Marks first learned what the books show.
A. No.
Q. You just volunteered this and you say Marks for the first time learned from Mr. Sangster?
A. Yes, I volunteered it to corroborate what I thought was the position that had been in doubt that this table was the result of Mr. Sangster giving him figures and I happened to be present when I believe that each side learned for the first time the others' figures.
Q. You just put that in there to take care of Marks' estimate?
A. I thought it corroborated him because a remark was
4051 made at the time the figures——

Mr. GUERNSEY: I object to your putting in these remarks where you have stated yourself you do not know and have not personal knowledge and the record shows you could not have.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

4052 Tuesday Forenoon Session.

SEPTEMBER 26, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, continuing his cross examination, examined by N. T. Guernsey, Esq., testified:

The WITNESS: On page 85, where the population was given of Massachusetts cities and suburbs applied by the several companies, in the second column a mistake of no consequence of 40 appears in the population of Lowell; where I gave 107,135 it appears to be 107,095 as the population of Lowell and suburbs in 1905. And Springfield, in the same column, where I have 85,000, it should be 85,400. The total in that column which appears as 713,482 should be 740,742. That changes the average on that table from 101,926 to 105,820. In the last column of the same page Lawrence population given 100,170, make it 110,170, and Lowell which appears here 118,575 should be 118,515. The total which appears here as 855,404 becomes 865,344, which changes the average from 122,201 to 123,621. The total effect is insignificant, but I want to make it as correct as I can. On the next page in the per capita for the last column for Lawrence where it appears 4172, change to 3793; and Lowell where it appears as 4830, change to 4841. The last line per

capita in the middle column for 1905 which appears 3624 becomes 3489, and for 1910, where it appears 4639 it becomes 4586. None of these figures effect any tendencies at all; they are almost insignificant, but as I said, I wish to have them as near correct as I could. On page 89, the operating expenses for Cambridge in 1905 should have been 284,956 instead of 290,956—substracting
4053 residuals I copied wrong. Fall River which is here 223,232 should have been 284,956 instead of 290,956—subtracting total from $1,709,314 to $1,702,314, and the average is changed thereby from 66.1 cents to 65.8. In 1910, the last column the figure for Lynn, which is given as 286,907 should be 287,242; and Worcester which is 339,442 should be 339,378, and the total remains unchanged. It does not change the total except the last figure 159 should be 158. I had used the wrong figures in dictation, I think. Those changes do not amount to more than one per cent in the result and do not effect the fundamental tables at all, or the teaching of these tables, but are merely minor inaccuracies, and I wanted to correct them.

Q. Have you now corrected all the errors of your report?

A. As far as I have been able to verify. I have not found any changes in the fundamental tables that were not made on direct examination.

Q. Now, Professor, did you give to the Register & Leader the report of your examination yesterday that appears in this morning's paper?

A. No, he asked me one or two questions about some figures, which I gave him.

Q. You did give out an interview then?

A. I was asked some questions about some figures; I didn't give an interview——

Q. You did give out an interview for the paper about your testimony yesterday?

Mr. BYERS: I submit that the witness has just told you what he did.

Q. Did you send for the reporter?

A. No, sir; I did not.

4054 Q. Have you made it a practice to give out interviews to the papers here during the progress of the trial as to what was going on?

A. I think that is the first time I have talked to a reporter and that was only to answer the question regarding some figures; that is the first time I have talked to a reporter about the evidence. I won't say that the reporter has not asked me a question or passed a word.

Q. On page 59 and 60 you take up some Massachusetts figures?

A. Yes.

Q. The purpose there is to argue from the Massachusetts figures that the results which you claim here are reasonable, isn't it?

A. Yes, they tend to confirm it. I do not use them as an absolute

guide to anything; the real test of course is conditions in Des Moines; but I use these in comparison, so I would say yes.

Q. That is the purpose, it is to confirm or corroborate the reasonableness of your conclusions by comparison with Massachusetts?

A. Yes.

Q. That is the general scope of the argument on these two pages?

A. Yes.

Q. Now, let us see about some of the details. In the first place I want to call your attention to a little thing here which perhaps is not very material. You say about the middle of the page, it would hardly be fair, however, to compare that with the assets of the Des Moines Company, which I have found to be 1,666,215 December 31, 1910——

A. That should have been average for the year instead of close of the year.

Q. I *ahev* not finished my question; that wasn't what I
4055 proposed to ask you—if you will just wait until I finish the question. In the first place you have not attempted to find the assets of the Des Moines Company anywhere; you have been dealing with the testimony of other people as to investment and things of that kind?

A. Yes, cost as shown by the books.

Q. So that assets is an inaccuracy there, is it not?

A. Should be the cost as shown by the books in the two companies.

Q. And assets is an inaccuracy?

A. It probably is as regards Des Moines. It is the term used in Massachusetts.

Q. You are talking about the assets of the Des Moines Company; that is an inaccuracy, isn't it?

A. I think it is.

Q. You say you found them to be 1,667,215 December 31, 1910—that is another inaccuracy?

A. That should be taken in connection with what I just said, as the book cost.

Q. That is not then the amount on that date as you find it, taking the book cost with the various modifications that are made to it by Mr. Hall, is it; that should be 1,727,675.68.

A. That is what I said; that should be at the end of the year; it should be one million, seven hundred *ateenty*-seven thousand.

Q. So that this statement here is an inaccuracy?

A. Yes.

Q. Now these Massachusetts plants are coal gas plants, are they not?

A. They are all mixed coal and water gas, with the exception of Fall River; it is possible that one or two have no water gas; but most of them, and I think all are mixed coal and water gas, with the exception of Fall River; that is all water gas.

4056 Q. Have you the report of 1910 of the Massachusetts Commission?

A. I left it in my room; I have it there.

Q. Now on the page you referred to, the page marked CXCIV of

this report of the Massachusetts Commission for 1910, I find table two headed as follows: "The following table shows the amount of gas made and the amount bought in the years ending June 30, 1910, and June 30, 1909, the amount sold by meters and public lamps in both these years; the amount used at works and offices, with the amount of gas unaccounted for during the year ending June 30, 1910, and the percentage of unaccounted for gas in both years." Then the heading coal gas and under that head each one of these companies that you refer to is included, is it not.

A. I don't recall now.

Q. Well, will you look and see? (Report is handed to witness.)

A. Yes.

Q. So that by the Massachusetts Commission these plants that you have used for the purpose of comparison are classified as coal gas plants?

A. That does not mean that Fall River is not exclusively water gas. They use the term coal gas as distinct from oil gas. I can show you on another page there——

Q. All right; I haven't asked you to give a demonstration. Now, then, is there anything in this report that shows the proportion of coal gas, for instance, manufactured at Cambridge as compared with water gas?

A. Not in my report; it is in the Massachusetts report.

Q. Have you gone over these figures so that you are able to tell us to what extent these companies are engaged in manufacturing the same kind of gas that is manufactured here?

4057 A. No, because it was immaterial; I did once, but I don't remember now what it was.

Q. So that we have nothing here to enable us to tell whether Cambridge, for instance, made 90 per cent coal gas and ten per cent water gas, or ten per cent coal gas and 90 per cent water gas?

A. No.

Q. You have, however, compared, not only assets, but what you call operating expenses?

A. Yes.

Q. Based on the manufacture of different kinds of gas?

A. Yes.

Q. And without any attempt to distinguish or give the court any idea as to how much water gas was manufactured by any plant?

A. That is right.

Q. Now turning to your table on page 60, you head your second column, "Amount of Assets", that is not true is it; that is misleading, isn't it?

A. I believe it is so reported in the Massachusetts report. It is correct if the Massachusetts report is correct.

Q. Is it true as a matter of fact, or is this simply capitalization?

A. No, it is not capitalization. It is what is called assets. Their capitalization is a different matter, also referred to in my text.

Q. Now, then, I wish you would turn to Cambridge.

A. I am sorry I did not bring my report with me.

Q. I wish you would get it; we cannot get along without it.

(Report is sent for by witness.)

Q. Take this duplicate copy; I didn't know we had that. Now take Cambridge, for instance, and give me the page in the report, the 26th annual report, these figures on page 60 are based on.

4058 A. Yes.

Q. Give me the report and the page in this annual report of the Board of Gas and Electric Light Commissioners of Massachusetts from which you got your statement of assets there?

A. It is the appendix, that is the page with Roman numeral 28.

Q. Now, then, what items do you take to get the assets?

A. Everything in that head of assets in that report.

Q. That is, you begin with real estate?

A. Yes.

Q. Now the sales of the Cambridge plant are 670 million, roughly?

A. Yes.

Q. That is quite a little more than the sales of the Des Moines plant?

A. Yes.

Q. What do you find the real estate to be in the Cambridge plant?

A. $374,379.05.

Q. What do you allow the Des Moines plant for real estate?

A. $1,727,000, which is as in Cambridge, what it paid for it——

Q. I asked you what you allowed the Des Moines plant for real estate?

A. What the books show. Then I testified I had not been able to separate Mr. Hall's report in the land entirely distinct from some other things and so I did not know how much was land in his total.

Q. Will you turn to page 21 of Mr. Hall's report and see if you can get information about that there?

A. On page 21 of Mr. Hall's report there is a figure of real estate $35,765.26.

Q. Now that is in his total column and that is the only real estate item in the total of $1,727,675.67, isn't it?

A. I don't know.

Q. You don't know. Can you find any other real estate item there?

4059 A. Not under that heading.

Q. Can you find any other heading that in your judgment could properly include real estate; would you think it would be under office furniture?

A. There might be some under Valley Junction property.

Q. But we are talking about Des Moines?

A. Well, it was all included in the $1,727,000.

Q. Can you find any other item there that would properly in your judgment include real estate?

A. No, I would not think any properly included. He took the books as he found them; I don't know what is on the books.

Q. Well, Mr. Hall testified as to what he testified to and you are testifying from his report?

A. Exactly.

Q. Was that the basis in this report, the amount of real estate in Des Moines $35,765.26?

A. Yes.

Q. Now, if we adopt the Massachusetts companies as a basis for comparison, would you say that was very low, taking Cambridge for instance?

A. Based solely on that it would be low; $35,900 would be low, as far as that particular point is concerned.

Q. Well, now then what is the next item?

A. Cambridge?

Q. Yes.

A. Machinery and manufacturing appliances.

Q. That runs what?

A. $1,300,670.99.

Q. Now, then, how much do you allow us in Des Moines for the plant which has a smaller output for machinery and manufacturing appliances?

4060 A. This item at Cambridge appears to include holders; therefore they must be included here.

Q. Where do you get that information?

A. In looking over Cambridge, assets, page 28 of the appendix, the holders are not separately mentioned, therefore they must be included in the machinery and manufacturing appliances, I believe.

Q. That is an inference of yours, isn't it?

A. The same inference as you were making a minute ago.

Q. What do you allow us for machinery and manufacturing appliances—then we will argue it later on, if you want to.

A. The items of Mr. Hall's report on page 21, aside from holders, the old gas works, $25,000; gas buildings and machinery $252,104.73; water gas plant $27,903.06; that appears to be all under that direct table.

Q. This roughly is $305,000 isn't it?

A. Yes.

Q. Now will you add the holders to that?

A. There are three holders at the top of the page aggregating $88,000 and one at the bottom of the page $120,000—$208,000.

Q. That would make $513,000 altogether?

A. Yes.

Q. That is a figure you made up for me yesterday somewhere?

A. Yes.

Q. So that we have, assuming your construction of the Massachusetts report here for Cambridge machinery and manufacturing appliances, $1,300,670.99, against $513,000 for Des Moines?

A. Yes.

Q. Now, then, take your sales in Cambridge and call them 670 million, that would be; how much a thousand have you in

4061 Cambridge for machinery and manufacturing appliances?

A. It is a division.

Q. Just about two dollars?

A. About two dollars.

Q. And you have in Des Moines for machinery and manufacturing appliances about one dollar?

A. Yes.

Q. So that you use the Massachusetts report here as a basis for comparison and you find that the estimate that you put on the Des Moines machinery and appliances is only about one half of what is shown by the Massachusetts report?

A. Yes. There is an explanation for that.

Q. Well, I am taking your comparisons; you did not put in any explanation here, did you, in this argument of yours; you just fired these totals at us?

A. I spoke somewhere here that I took account of the fact that most of these were coal gas plants which cost more at the works than water gas.

Q. Does that mean on account of the dissimilarity of the process they are not available for the purpose of comparison?

A. The comparison is all the more unfavorable to Des Moines in consequence when you take the aggregate.

Q. Does that mean that on account of the difference in conditions these Massachusetts plants are not available for comparison with Des Moines?

A. In some respects they are; in some they are not.

Q. You simply took the aggregate. Now take street mains and services; how much do they amount to in Cambridge?

A. $615,847.95.

Q. How many miles of main have they there?

4062 A. That is given in another page of the Massachusetts report.

Q. And also how many services?

A. The meters are given; I am not sure that the services are given. As to mains, the figures are given on page 210 of the Massachusetts report 153 miles.

Q. 153 miles?

A. Yes.

Q. Will you give us the number of services, if you can?

A. I have not noticed the number of services, but the number of meters I think is given on page 213, as 26,560.

Q. 26,590?

A. This copy says 26,560.

Q. Now, then, passing the mains for a moment, how much is the average cost or value per meter which you allow us here in Des Moines, taking it roughly—we can turn to page 21?

A. I think I can tell it right here in a second.

Q. All right. I don't care where you get it as long as you get it approximately right.

A. The sales per mile of main were you asking?

Q. No, the cost per meter. You find on page 21 meters are 187 and some odd dollars for about 20,000 meters?

A. Yes.

Q. That would make $9 and a fraction per meter?

A. Yes.

Q. Now, how many meters are in Cambridge— you gave $26,560?

A. Yes.

Q. What would that amount to at $9 per meter?

A. $239,040.

Q. How much did you put in for meters in getting at the assets at Cambridge?

4063 A. Whatever the report gives.

Q. Well, tell us what it is in dollars?

A. $91,273.

Q. That is about $150,000 less than the meters would cost without any overhead at present prices, isn't it?

A. Of course, one doesn't know the average size of meters in Cambridge. I think there is data here for getting it.

Q. That don't answer my question. That is about $150,000 less than the meters would cost without any overhead, isn't it—not exactly $150,000—$149,000?

A. If you assume that the meters in Cambridge cost $9 on the average.

Q. If you are to use this for the purpose of comparison, must you not assume there is some similarity?

A. Yes, in some respects.

Q. Didn't you assume here, indirectly, when you compared this with the Des Moines plant, that there was a similarity in conditions that would make that comparison worth something?

A. Not for a single point; the whole seven companies.

Q. Well, do you think if the details are not at all similar, any similarity in the aggregate would be more than an accident as I call it, or a coincident?

A. I think there are many lessons from these figures that can be drawn. I did not make any very close connection with the capitalization except in the aggregate. Now Cambridge has more allowance for meters and far more for lamps than even you claim to be the value here.

Q. Now I want to go back to the street mains and services; the services as they are estimated by Professor Marks run how much?

A. He gives the meters in use.

Q. No, services we are talking about?

4064 A. House services?

Q. Take all of them, house and street lamps.

A. About $231,000. The figure I was using is on page 75.

Q. House services are $274,720, aren't they?

A. I took the next two lines. $274,720.

Q. And the street lamp service is $18,634.

A. Yes.

Q. That by the way runs what?

A. $293,374.

Q. Now what does he make the cost of mains?

A. $652,947.

Q. So that the services run a little over 40% of the mains?

A. Yes.

Q. Now assume that the same proportion is true in Cambridge and we have there for mains and services $615,847 in the aggregate, have we not?

A. Yes.

Q. Now if the services are 40% of the mains, taking them roughly,

as the basis of Professor Marks, will you divide $615,847 in that proportion, into mains and services?

A. It would be about $432,000 for mains and the balance or $183,000 for services.

Q. Now, then, how much would that $432,000 for mains give us as the average per mile of main in Cambridge; they have 153 miles?

A. About $2,800.

Q. Would that pay for the pipe, let alone the work of putting it in the ground and all that on the average price per ton here for the last five years?

A. No, it would not.

4065 Q. It would not, would it?

A. No.

Q. Do you think then that this figure here fairly represents the value of those mains there, so that you can legitimately use it as a basis for comparison with the valuation you are giving here in order to sustain these valuations here?

A. Not for mains alone, no.

Q. Do you think that the meters represent a fair basis for comparison as given here in this report in meters?

A. I do not claim any one item alone does.

Q. Can you find any item that does?

A. I have not tried to.

Q. Now, then, can you?

A. I don't know.

Q. Will you try please and let me know whether in Cambridge here in the physical property you can find any item that in your judgment is a fair basis for comparison with a corresponding item in Des Moines?

A. I have not sufficient data probably to be able to make a definite and close comparison.

Q. I did not ask you that. I asked you whether you would look at the items of the physical property in Cambridge and tell us whether you can find any item there which in your judgment afford a fair basis for comparison with a corresponding item in the Des Moines plant?

A. I will say in advance, I probably could not; some would be higher and some would be lower.

Q. Will you look without saying in advance and tell us whether you can find any item in the physical property in the Cambridge plant as shown by this report, which in your judgment affords

4066 a fair basis for comparison with a like item in the plant under discussion here?

A. No, we covered it all here. Some are too high and some too low.

Q. So that there isn't any item in your judgment as shown by your report as to the physical plant, which would afford a fair basis with a like item in the Des Moines plant?

A. No, I wouldn't attempt to make it.

Q. Will you please add up the physical items and tell us what the working capital amounts to?

A. I couldn't tell that.

Q. Will you add up the physical items and tell us what it is; I want to find out how much of their total assets are in assets other than the physical property?

A. Will you tell me how far down you wish me to add?

Q. Don't you know what are the physical items?

A. Certainly.

Q. You know what items here represent the physical property?

A. Of course, technically, coal is physical property as much as meters; but I think you mean the plant.

Q. I accept the correction. Take the items that show the investment in the plant and mains and services and meters and real estate which make up what we have been calling here for the last two or three months the physical plant?

A. The first five items appear to be all covered by that head, and amount to $2,386,948.33.

Q. Now, then, will you deduct that from the total assets and give me the balance?

A. Just a minute—$280,087.74.

Q. That is the amount that this company had actually invested in current assets?

4067 A. No, probably not; their investment is put down here as $30,631.54. I think their investments probably in outside undertakings, their real estate perhaps——

Q. Then that would leave us about $250,000 in current assests of that Company at that time?

A. I think that is probably right.

Q. Now let us turn to the next one here and see whether that affords a better basis for comparison—Fall River. On what page shall I find that?

A. Pages 52 and 53 of the appendix of the Massachusetts report.

Q. Now then, what do you find there for real estate?

A. $259,676.21.

Q. Of course that is not comparable with Des Moines?

A. No, that is larger.

Q. Now then, your machinery and manufacturing appliances are what?

A. $383,870.34.

Q. Now that company has an output of about five hundred million against an output of 670 million for Cambridge?

A. Yes.

Q. And has between a third and a fourth as much investment in machinery and manufacturing appliances?

A. Yes.

Q. And shows that you cannot compare these things?

A. That item alone does not, because Fall River is all water gas and the Cambridge plant is coal gas.

Q. That would make a difference, would that, of about one million dollars?

A. It is a difference of 20 or 30 per cent in the output.

Q. That would make a difference of a million dollars?

A. Not necessarily; there may have been some difference
4068 in the holders; a coal gas plant may have and often does have a larger reserve.

Q. You think these factors would account for a difference of about a million dollars?

A. It would account for at least a part of it.

Q. What I want to get at, whether you are willing to say that it is your judgment, the matters you mention would account for a difference of about a million dollars?

A. I can't say precisely.

Q. Will you say it would account for half of it?

A. Oh, yes.

Q. You can't say positively without taking some basis for it and give us the items?

A. No.

Q. Well, then, give us the items and let us have the basis; do you know what the Cambridge plant has in the way of manufacturing apparatus?

A. There is some data here——

Q. I want to get at what information you had for your very prompt and positive "Oh, yes" there?

A. I know it is, considerable over half is coal gas and Fall River is water gas.

Q. Do you know what the Cambridge plant has in the way of manufacturing appliances?

A. I don't know now.

Q. Do you know what its manufacturing apparatus cost?

A. I am not now familiar with it. I have looked it over in the records of the commission.

Q. Do you know what it has in the way of holder capacity?

A. I don't know.

4069 Q. Do you know what the Fall River plant has in the way of manufacturing apparatus?

A. I don't remember now, except mostly water gas.

Q. You don't know what it cost?

A. I haven't it in mind.

Q. You don't know whether you ever knew what it cost, do you?

A. I have looked over all these returns of cost, but I don't remember now what the figures are.

Q. How recently have you looked that over?

A. Some months ago. The last time I was in Boston I got some data, but I did not look at that fully; I had copied for me the complete return of last year; but it was the year before that I went through the cost data.

Q. Of course that wouldn't run down to 1910, the date of this report?

A. No.

Q. Do you know what their holder capacity is?

A. I don't remember.

Q. Do you know what additions they have made to it in the last year or two?

A. No.

Q. Without any of this information can you say that the fact that the Fall River plant is a water gas plant, while the Cambridge plant uses coal gas as well as water gas, would account for this difference of a million dollars or about one million we have been referring to?

A. I say, it would account for a large portion of it.

Q. Would you say it would account for half of it without having definite figures?

A. I believe it would.

(Last question repeated.)

4070 A. I believe it would.

Q. That don't answer my question. Can you say it would account for half of it without having definite figures?

A. I have enough figures in my mind of such plants to give a preliminary estimate; I should not want it to be final without knowing more about it.

Q. How do the figures do you any good if you don't know what the apparatus is to which you must apply them?

A. In this particular case I should have to fall back on my general knowledge of the difference of cost in coal and water gas plants until I had made more definite studies.

Q. What is the difference in costs of coal and water gas plants?

A. At the works it varies. Of course coal gas works generally cost from 50% more per thousand feet capacity than water gas.

Q. That is the manufacturing plant?

A. Yes; that would include holders——

Q. Fall River cost $383,870. for machinery and manufacturing appliances; then for a coal gas plant it would cost about 190 thousand more?

A. Usually the figures are nearly twice as much; from 50% to 100%.

Q. Your two answers vary 100%; you said first about 50% and said just now 100%; where did you get these figures?

A. My recollection on that particular point was, thinking at the moment, of the many appraisals made by the man who had been with Bartlett-Haywood & Company for a great while and valued all the plants of the Consolidated Gas Company; both coal and water gas in the Consolidated Gas case. That is one of the things I had in mind, and then I have had many other appraisals in cases in which I have discovered a very great difference of cost between coal gas and water gas plants.

4071 Q. So that if we bring you in the record in the Consolidated case, you can show us the figures that verify this statement, can you?

A. I think so. Myers is the man I am trying to think of.

Q. It was another man?

A. No, the same man; I said he had been connected with Bartlett, Heywood & Company and connected with the Consolidated Gas to make their appraisals.

Q. Now, I wish you would give us the figure here on Fall River for mains?

A. Mains $403,382.69.

Q. Now what is the figure for services?

A. $47,262.86.

Q. Now that of course is absurdly out of line, that cannot represent the value of the services, can it, if the other is anywhere near that value, of the mains?

A. I am looking for the number of meters.

Q. I will give you the number of services, 20,540; so that would be an average of only 2.36 roughly for services?

A. The services would be very short in Fall River. As I remember the city is in a closely built factory town with narrow streets and these great tenement blocks abutting on the sidewalk. It is possible also that the company does not charge for the services inside of the lot line.

Q. You also know, do you not, that there is a great deal of rock encountered in Fall River and makes this work expensive?

A. I am not familiar with the rock in Fall River.

Q. One would necessarily have to be in order to make an intelligent comparison here?

A. Yes, one should.

Q. And they have 117 miles of main there at $403,882.69;
4072 that would give us between $3,400 and $3,500 a mile?

A. I should think so; I will take your exact computation.

Q. I haven't taken the exact computation; I make mistakes. That of course is less than the main cost, especially if they have difficult excavation.

A. Yes.

Q. So that we could not accept this figure as a fair basis for comparison, could we?

A. They may have written out from those assets for depreciation. It is quite likely in all those companies, in some of them at least, that they will write off from the first cost of assets when they charge off depreciation.

Q. But that don't answer my question.

(Question repeated.)

A. It might be; it is not certain that you could not, but you should have to look into the matter further.

Q. We would have to look into it a good deal further before we could base any conclusions on it and have any confidence that they were based upon correct premises?

A. We would have to know the average size of the mains there as compared with here; we would have to know several things before we could get anything precise. Let us see for a moment if these amounts are an average six inch, which we do not know, but suppose they were, and suppose we took 75 cents as the average cost per foot—5,280 feet per mile, it would be $3,960. per mile. Your figure was about $3,450. It would be about 12% higher.

Q. And this 75 cents is also based on conditions which include no difficult excavation, is it not?

A. It includes such conditions as exist out here; I don't know what they are in Fall River.

4073 Q. So that we do know this; we know that the cost of mains here is apparently too low, don't we; not absolutely, but apparently, basing it on what we do know about conditions?

A. No, because I say, this depreciation I believe had been written off in Fall River; in old cities the mains have been in a good while.

Q. Not over a hundred years or so?

A. Oh, no; the city is older than that, but the mains are not.

Q. This don't represent then the cost anyway, it represents some thing depreciated?

A. Yes, I understand that is true of all of these assets.

Q. Then you are comparing what? Are you comparing depreciated assets or undepreciated assets?

A. I am comparing your undepreciated assets with other depreciated assets. If I depreciated yours in the $240,000 from $1,727,000 down, it would make your figure nearer theirs.

Q. In other words, you take our undepreciated assets as you find them, or our undepreciated book cost as you find it, and you compare that with their depreciated assets and you find that ours undepreciated runs radically under theirs depreciated, don't you?

A. I do, except in the case of Fall River, which is the only water gas plant.

Q. So that if we were drawing any conclusion from this what would be the natural conclusion from the fact that undepreciated assets run lower than depreciated assets?

A. Your $3 would be compared with their $3.50 and then you would have to take into account the fact that this was a water gas plant.

4074 Q. I am assuming these things are comparable, as you do in your report; assuming they are comparable, you found our undepreciated figures as found by you were less than their depreciated figures; would that tend to show you it had been too high or too low?

A. I think my depreciated figures were about $3. Their depreciated figures were about $3.50.

(Last question repeated.)

A. No, it wouldn't show anything without that further fact was taken into account.

Q. Then do you mean to say the figures you give on page 60 do not show anything?

A. They are only taken in connection with the text and have some bearing on the question, as showing the reasonableness of my $3 figure.

Q. Let me put this in the concrete. Suppose your figures show that an undepreciated plant in Iowa cost one million dollars, say twelve hundred thousand dollars, I'll make it, and then your figures show that a like depreciated plant in Massachusetts, like plant, but

the depreciation charged off, cost fourteen hundred thousand dollars —I have added a six there—that would rather indicate that your Iowa figures were low if they indicated anything?

A. Taken by itself they would.

Q. Let us go to one other factor in Fall River. Will you add the first five items there?

A. $1,199,995.29.

Q. Now will you deduct that from the total there and give us the current assets of this plant?

A. $235,590.89.

Q. Now there is one item here that should be deducted, I think, to make a comparison fair with the Des Moines plant; the
4075 first five items do not include office furniture, apparently, which amount to $2,446.18; will you deduct that from your balance so as to make the exact comparison?

A. $232,942.71.

Q. So that is the amount which that plant had invested in current assets at that time?

A. Yes.

Q. Now let us turn to the next one, Lawrence. What page will I find that?

A. Pages 76 and 77.

Q. Before we leave that, these current assets of the Fall River plant amount to about forty-one cents a thousand instead of thirteen, don't they; the sales are 495 million, roughly?

A. I make it forty-seven cents.

Q. Forty-seven cents?

A. But instead of thirteen, I don't know the relevancy of that.

Q. We pass to the next town now, Lawrence. That you said was on page 76?

A. Yes.

Q. That company is engaged in what business?

A. Gas and electric.

Q. Well, now, how did you get your assets there, as you call it, $2,032,593.

A. I added everything that appeared by its title.

Q. Give us the items, will you please?

A. It is everything in the column of assets down to and including gas fixtures, tools, etc., on hand. Then I in a similar way added up for the electric the remainder of the column, and on the next page through the second line. Then I found what relation one
4076 total of ascertainable assets bore to the other and applied that to the horses, wagons, sundry accounts, office furniture, cash on hand, notes receivable, insurance, office building and investments and assumed that these could be apportioned between the two properties in the proportion in which the bulk of the property was apportioned between gas and electricity.

Q. Now you added the first fifteen items ending with gas fixtures, tools etc. on hand, and that gave you $1,893,945.44?

A. I haven't that figure with me, but if you find it so I will accept it.

Q. And then you added the following items down to and including——

A. Motors on hand.

Q. On the next page?

A. Yes.

Q. Didn't think that ought to have been divided between the two plants?

A. I thought the motors were electric motors entirely; I did not assume they were automobiles.

Q. Which were they as a matter of fact?

A. Well, I believe they must have been power motors, for we have horses, wagons, etc., and automobiles would naturally be included in that.

Q. And if they were motors on hand they were probably in the working capital of the electric company or current assets?

A. They may have been; but my point there was merely to divide the total investment.

Q. This $11,280.38 ought to have been included in the figures that were apportioned?

A. No, because it was all together.

Q. All together electric?

4077 A. Yes, just as in gas I put gas fixtures on hand and gas stoves on hand.

Q. Do you know what the total of these items is?

A. I haven't that figure with me.

Q. We will call it $1,424,871.14. Now you apportioned, did you, the balance $242,815.94 between gas and electricity in the ratio which $1,893,945.44 bears to $1,424,871.14?

A. Yes.

Q. And that is the way you got at your assets, you added there $138,647.56 as the result of that apportionment to the $1,893,945.44 and obtained $2,032,593.

A. I will say yes as to result; not having the figures before me I don't remember just what I had it.

Q. Now take Lawrence, for instance, they have for real estate what?

A. For gas real estate $209,209.71.

Q. They have for machinery and manufacturing appliances what?

A. $308,467.86.

Q. Now this is what kind of a plant?

A. Mixed coal and water gas.

Q. Now turn back to Fall River, it has pretty close about the same output, don't it?

A. The figures are given here.

Q. One is about 420 million, the other about 500 million?

A. Yes, that is the way I gave them on page 60 of my report.

Q. Fall River has for machinery and manufacturing appliances $383,870. hasn't it?

A. Yes.

Q. That is all water gas?

A. Yes.

Q. Now, then, on your 100% basis Lawrence ought to have
4078 about double that in machinery and manufacturing appliances as a coal gas plant?

A. 177 million feet made last year was water gas.

Q. In referring to Cambridge which you said made about half and half?

A. This is about half and half.

Q. You said the cost of coal gas apparatus ought to be about fifty per cent more than water gas and then you got up to one hundred per cent?

A. I intended and I think I did say coal gas cost over fifty per cent more as compared with water gas.

Q. We are not talking about the cost of coal gas; you mean the cost of the machinery and apparatus?

A. And holder, yes.

Q. Not the cost of gas?

A. No.

Q. Now the Fall River plant seems to have here in the machinery and apparatus about twenty per cent more than the Lawrence plant, although the Lawrence plant is a coal gas plant, and the Fall River plant is exclusively water gas; don't it look to you as if there was something wrong in those figures, if they are to be taken as representing costs or value?

A. The Lawrence plant is not exclusively a coal gas plant.

Q. You told us a few moments ago it was about half and half?

A. 177 million is water gas.

Q. Out of 417 million?

A. Probably 430, perhaps made; I haven't figured it. There is no comparison can be made, but that explains some of the difference.

Q. But the difference is the wrong way, isn't it; that is a water gas plant is here put in at 20% more than the coal gas plant?

A. Now the Lawrence *has* put in at eighty cents per thous-
4079 and feet sales—Fall River at eighty cents per thousand and Lawrence at seventy.

Q. Lawrence won't run seventy?

A. Nearly, sixty-nine and a fraction, almost seventy.

Q. Yes, that is correct.

A. Now there is somewhat a larger capitalization or assets in Fall River, ten cents per thousand feet sales for the manufacturing plant more than in Lawrence. I have not looked into the data sufficiently to know where the difference lies.

Q. I didn't ask you that. What I want to get at is this: in view of the fact, as you have stated it, that where there is one of those mixed plants the cost of machinery and manufacturing appliance would run up to double what it would in the water gas plant, it is not safe to take for a basis of comparison statements which show a cost of the mixed plant for the machinery and manufacturing appliances running less than the cost for water gas machinery and appliances, is it?

A. No, it is only in the general aggregate of plants that you find

this difference brought out. There are all sorts of exceptions in individual plants.

Q. So that we could not take this $308,487.86 in the Lawrence figures as a fair basis for comparison as to the cost of the machinery and manufacturing appliances in Des Moines?

A. No, I did not attempt to do that.

Q. We could not take the real estate as a fair criterion on real estate here though it happened to run pretty close to the complainant's base figures?

A. I have not attempted to do that.

Q. Now take your street mains and services, they run $621,416.10 in Lawrence?

4080 A. Yes.

Q. That is less than these mains and services cost on the face of it?

A. I don't know. I wouldn't feel at all sure that was less than the cost, but it may have been.

Q. So that we could not say this item was comparable with a like item in Des Moines?

A. No.

Q. And couldn't base any comparison which we could rely upon as affording trustworthy conclusions on this item without going further?

A. No.

Q. Now take meters, the number of meters in Lawrence is what?

A. The number of meters in Lawrence *is* shown on page 214 of the Massachusetts report is 18,763.

Q. Now what do they put down for meters.

A. $144,087.96.

Q. Now that is lower on the face of it than the cost of meters could be in Des Moines, isn't it?

A. It is somewhat lower than I think meters cost new here, taking into account the sizes and grades used—the number A meters and prepayment meters.

Q. So that we could not base a comparison on that item?

A. No, not knowing more about the meters at Lawrence.

Q. Now will you take the items here that represent the physical property, that is in the manufacturing plant and distribution system and give me the total of them so that we may get our current assets?

A. You gave them to me a little while ago as $1,893,945.44 exclusive of what might be called fluid assets?

Q. That covers gas, materials and supplies on hand?

4081 A. No, that figure you gave me was to the first items on page 76; you had added it up.

Q. Add these five items and you will find I am wrong?

A. Oh, yes; I thought you was asking for all those eleven items; you want the first five items?

Q. I want the first five items that cover the manufacturing plant

and distribution system and do not include any working capital and I gave you that figure also as $1,741,166.65?

A. I will take it.

Q. Now will you deduct that from your total assets here so as to give us the amount of the current liquid assets in that plant?

A. The total is given on page 60 of my report as $2,032,593. which is $291,426.35.

Q. That includes some office furniture, doesn't it?

A. Probably.

Q. About half of that $5,580?

A. Yes.

Q. Suppose we deduct $3,000 for that?

A. Then it would be $288,426.35.

Q. That is how much per thousand feet of sales, roughly?

A. About seventy cents.

Q. Now where will I find your figures on Lowell?

A. On page 85 of the Massachusetts report.

Q. Now how much does Lowell have for real estate?

A. $1,253,091.65.

Q. Now do you think that is comparable with $35,000 and some odd dollars in Des Moines?

A. No.

Q. Now, what is the output of the Lowell plant?

A. 573,672,700.

4082 Q. What does it have for machinery and manufacturing appliances?

A. $139,612.39.

Q. That is a combined coal and water gas plant, isn't it?

A. Yes.

Q. Do you think comparing that with what we have for machinery and appliances here in Des Moines, we can aid ourselves any?

A. That is as much lower in yours as the land is higher.

Q. Of course, this $139,612.39 does not represent cost or value?

A. That probably represents cost less what they have written off.

Q. It would be absurd to suggest it represented their cost or value?

A. Yes.

Q. And therefore absurd to make any comparison as to cost or value predicated upon it?

A. Yes; it is based for rate making use in Massachusetts.

Q. That is the basis you have been advocating?

A. No, I have not applied that basis to this city at all.

Q. Is it true this is the basis for rate making in Massachusetts?

A. The basis can hardly be said to be any factor.

Q. They take into account values not assets?

A. They primarily take into account investment less what has been written off.

Q. Now then take the street mains, services and meters, what do they amount to?

A. In Lowell $239,990.92.
Q. That is another joke?
A. They have written off a great deal evidently.
Q. As far as that has any bearing on value it is simply a joke?
A. It is much smaller than the present cost of the plant of course.
Q. They have how many meters in Lowell?
A. On page 214 of the Massachusetts report the Lowell meters are given as 20,577.

4083 Q. That is about the number of meters in Des Moines?
A. Yes.

Q. Now then, Professor Marks, on page 75 of his report, if I have made the addition correctly, estimates our meters, $220,298. Now that would leave how much for mains and services in Lowell if you took it from the $239,990.92?
A. 19 or 20 thousand.
Q. Lowell has 167 miles of main?
A. Yes.
Q. It would be absurd to base any comparison of figures on that, would it?
A. Yes, just as it would be on the land; the land is enormously over that.
Q. You told us a while ago the Massachusetts reports represented the actual cost of the land to the companies?
A. I believe so. I do not believe they ever write them up for rise of value any more than they do paving or going value.
Q. You couldn't resist the temptation, could you?
A. No.
Q. Now, will you in this case take the total of these first three items and deduct it from the total assets so as to give us the amount of current assets?
A. Those three items are $1,632,694.96; that deducted from the total of $1,895,746.56 leaves $263,051.60.
Q. Now let me ask you this before I forget it: These current assets in these reports wouldn't be subject to the criticism that we have directed against the reports as to the fixed assets, would they, for instance, take the due for gas you would expect that to be accurate?

4084 A. Yes.
Q. All gas and coal on hand you would expect to be accurate?
A. Yes.
Q. You would expect all this amount to go into the current assets to be the actual facts?
A. Yes, there are by the way investments $85,738.95 which deducted $2,263,051.60 leaves $177,313.35.
Q. Now then that would amount to how much per thousand feet of sales?
A. About thirty cents.
Q. Let us see what Lynn has to show; that is on what page?
A. The next page, 86 of the Massachusetts report.

Q. That is a mixed coal and water gas plant, is it not?
A. Yes.
Q. Now the real estate is what?
A. For gas $393,462.85; on the machinery and manufacturing appliances $525,986.32.
Q. Now neither of those could be properly taken as a basis for comparison with the corresponding item here in Des Moines?
A. No. It has not been done and I wouldn't do it.
Q. Now, then, where are the meters and services in this Lynn statement?
A. The meters are given here $87,359.29.
Q. Where are the services?
A. I don't see them by that name; I assume they must be with the mains but I cannot prove it.
Q. Well, let us take the mains, they are given as what?
A. $410,373.87.
Q. There are in Lynn 141 miles of mains?
A. If you say so, I may accept it without trying to verify it.
Q. That is my memorandum here; if there is any question
4085 about it, I want you to verify it?
A. I assume of course it is correct.
Q. I hope it is.
A. I will verify it. Lynn, 141 miles, on page 211, I find it given.
Q. So that taking it roughly and computing it in our heads the report here on Lynn for mains and services, they are included there, runs less than $3,000 a mile on an average?
A. Yes.
Q. Which would be hardly enough to pay for the cast iron pipe?
A. I would say so off-hand without stopping to compute it.
Q. So that we cannot accept this figure as indicating either cost or value if we are making comparisons with Des Moines that is, the street mains?
A. No, I will say that off-hand with reference to every one of these companies, if you desire.
Q. Then the meters in Lynn are 22,792 are they not?
A. The meters for Lynn are 22,792.
Q. And the amount put in for meters here is $87,359.29.
A. Yes.
Q. Which amounts to about $3.83 per meter?
A. Substantially that I would say off-hand.
Q. Now, Mr. Marks' figures here amount to something like $11. per meter, approximately, do they not?
A. I haven't computed it.
Q. I can give the total as I make it is $220,298, and there are roughly 20,000 meters, so that would be just about $11. per meter?
A. It would.
Q. So that here if we attempted to make any comparison, it would be predicated upon something obviously not in accord with either cost or value?
4086 A. Yes.
Q. Now then what items did you take to get the assets in Lynn—Lynn covers gas and electricity?

A. Yes; the same method as in the case of Lawrence.

Q. Well, now, will you take the total of the first five items there in Lynn which I make $1,419,473.16?

A. I will accept your figures.

Q. Which represents the physical property as distinguished from the current assets and deduct them from your total assets?

A. There remains $233,756; that includes office building.

Q. Yes, that is $87,000?

A. Yes.

Q. Suppose you deduct that and then what will we have?

A. $146,537.

Q. And with sales at 605 millions that would be between twenty-four and twenty-five cents per thousand cubic feet?

A. Yes, I should say so.

Q. Now, then, on what page can we find Springfield?

A. Page 131.

Q. Now that plant has the closest sales to Des Moines of any plant you have taken there, has it not?

A. It is about as much larger as Fall River is smaller.

Q. What is the real estate that you included in your Springfield assets?

A. It is given here as $453,719.95.

Q. Well, that you include in the Springfield assets?

A. Yes.

Q. Of course that is not comparable with your $35,000 here in Des Moines?

A. No.

4087 Q. What are your machinery and manufacturing appliances?

A. $740,722.12.

Q. Now Lynn is pretty close to Springfield in the sales here, isn't it?

A. Lynn is 605 million and Springfield 568 million.

Q. A difference of only 37 million.

A. That is right.

Q. Something over five per cent?

A. That is right.

Q. Each one has the same sort of a plant, hasn't it?

A. They both have mixed coal and water gas; whether the proportions are the same, I couldn't say.

Q. And Lynn has for machinery and manufacturing appliances 526 thousand in round numbers, against 740,722.12 for Springfield?

A. Yes.

Q. And Lowell which makes 573 million against 568 million for Springfield has $139,612. in machinery and manufacturing appliances as against $740,722. for Springfield, doesn't it?

A. Yes.

Q. Now does that to any degree distroy your faith in the value of these figures for the purpose of determining by comparison the accuracy of the estimates of assets or investment in Des Moines?

A. It shows that even in the aggregate they only have a moderate value; that is all I claim for them; they are not conclusive at all.

Q. (Last question repeated.)

A. No; for I never had any more faith than I have expressed in them.

Q. You said a moment ago you didn't know how much Springfield was water gas and how much coal gas; if you will turn to
4088 page 208 you will find they are about equal, don't you?

A. Yes.

Q. Now, I notice that Springfield on street mains has $583,694.49 and on services, if I read it correctly, $19,735.74; there is something out of line in one of these figures?

A. Yes.

Q. The mere statement of the two figures shows that either one or the other does not represent cost or value?

A. I would think so.

Q. Now in Springfield there are 21,771 meters, are there not?

A. I will verify it and see—yes.

Q. So that the amount in the aggregate which Springfield puts down here for meters $206,385.29 runs approximately $9.50 per meter?

A. Yes.

Q. Can you imagine any possible hypothesis that could make the average value or average cost of meters in Springfield $9.50 approximately and in Lynn $3.82 approximately?

A. There are some different methods evidently of writing off depreciation in the past.

Q. That don't answer my question directly. Can you imagine any circumstances that would make the actual difference that I indicated in their cost or value in these two places at the same time?

A. No; other factors must account for it.

Q. It means that some of those figures do not represent either cost or value?

A. Yes.

Q. It means possibly that none represent either cost or value?

A. It is possible; that I would not at all know about.

4089 Q. That is why I put it possibly. Now, then in Springfield, will you deduct the sum of the first five items which I have as $2,004,253.59 from the assets as you have it there?

A. $2,247,296.31.

Q. Gives what the current liquid assets are in Springfield what?

A. $243,042.72.

Q. Their sales very closely approximate ours?

A. Yes, about five per cent larger than last year here.

Q. To be fair, we ought to deduct from that amount the amount you gave as office furniture, $3,551.50?

A. Yes.

Q. And that will leave you what balance?

A. $239,491.22.

Q. That is just a little under 40 cents per thousand cubic feet sales, isn't it?

A. Yes, about that.

Q. Now the last place you have is Worcester.
A. Yes.
Q. On what page shall I find that?
A. It is on page 157-8.
Q. Now Worcester has for real estate what?
A. $895,136.34.
Q. That is not comparable with Des Moines?
A. No.
Q. Now it has for machinery and manufacturing appliances what?
A. $789,336.89.
Q. And that is for a mixed water gas and coal gas plant.
A. Yes.
Q. And that is not comparable with Des Moines, is it?
A. No, because this is all water gas.
4090 Q. Now then, what has Worcester for street mains and services?
A. $133,603.13.
Q. And how many miles of mains has Worcester?
A. 161 and a large fraction; practically 162 miles.
Q. How many meters?
A. The number of meters is 21,626.
Q. Of course that amount for street mains and services does not represent anything so far as value or cost is concerned?
A. The same remark; yes, that is right. It is like all those others I believe.
Q. And do you think, getting to your theory here for a minute, that these figures represent not cost but depreciated cost in these reports?
A. I believe so.
Q. Have you any knowledge with reference to it as distinguished from inferences.
A. Yes. While I have not had the subject under consideration for a long time, so far as I can recall it, from having been in several rate cases in Massachusetts where these matters came up, it is my understanding of it; while they write off depreciation in most of these every year, they write down these assets.
Q. Take these street mains and services, they have in Worcester 162 miles; this $133,000 cannot represent much more than fifteen per cent of the cost of those things?
A. It would represent a small percentage.
Q. We will assume it represents fifteen per cent, what was their original cost then of the machinery and manufacturing appliances on the same basis?
A. They wouldn't necessarily write off.
Q. Would they depreciate the mains and services more
4091 rapidly than machinery and manufacturing appliances?
A. I wouldn't do it.
Q. What intelligent man who knew anything about depreciation would do it?
A. What they have done I won't undertake to say.

Q. I didn't ask you what they had done. Do you mean to say in Massachusetts they only depreciate things that do not depreciate?

A. I can't say just how they write off their depreciation; I haven't tried to in this report.

Q. Do you mean to say in Massachusetts that acting under this all-wise commission they only wrote depreciation off of mains and things of that kind that practically do not depreciate at all?

A. No; we have seen evidences in other places, that probably some of these companies wrote off from the manufacturing plant.

Q. Do they apply one rule to one company and another to another?

A. I do not know that the Commission designates how they shall write it off. I think the Commission's action is confined to the issue of securities and rates of charge. In all their reports I haven't found anything else.

Q. Have you any knowledge about it?

A. I have read every report they ever issued and have talked to them a great deal, being in at least three rate cases in Massachusetts.

Q. Do you want us to understand, aside from the Commission, it is customary for Massachusetts companies to depreciate highly that which don't depreciate and not depreciate things that do depreciate with relative rapidity?

A. No.

Q. Then, if you ascribe those things to depreciation you would have to apply the same rule to manufacturing appliances?

A. I say this particular company has written off more for

4092 manufacturing appliances. I don't say that is the rule.

Q. You take meters here, and you gave us 21,626 meters; they are put at what in your report?

A. They are put in as $40,473.92.

Q. That is about $1.87 per meter?

A. I would think it would work out about that.

Q. Of course that don't represent the cost or anything that corresponds to cost?

A. No.

Q. Nor value?

A. No.

Q. And no comparisons which have for their purpose anything with reference to cost or value could be predicated upon these figures?

A. No.

Q. Now let us have the current assets in this plant, the first five items which represent fixed assets there, which amount to $1,858,550.28 do they not?

A. I will accept your addition without verifying it.

Q. And that deducted from the total assets as you give them leaves $164,563.16 as current liquid assets?

A. I assume that is a correct subtraction.

Q. That amount- to between twenty-five and thirty cents per thousand feet of sales, does it not?

A. I will tell you in a minute. Yes, between twenty-five and twenty-six cents; nearly twenty-six cents.

Q. Now you have stated when we took this thing up, that is this part of your argument, that the purpose was, by the comparison with these Massachusetts companies to confirm the correctness of the conclusion as to the book cost of the property of the Des
4093 Moines Company; do you think that any comparison that is worth anything can be predicated upon these Massachusetts figures with reference to that matter?

A. Only to a very moderate degree, I should say, not very largely.

Q. Would you say that it was practically valueless?

A. No, not so strong as that, but not of much value. I didn't make any important use of it either.

Q. Now, I have here, Professor Bemis, two sheets which attempt to compare the Massachusetts companies with Des Moines, adjusting these items that you concede are not based upon cost or value, by taking Professor Marks' units for those items, in order to see where that would land us. For instance, taking Cambridge as an illustration, the Massachusetts figures which you took are given under the head of the word report; then under the word Marks is the Massachusetts real estate, the Massachusetts machinery and manufacturing appliances; and then the mains, services and meters are worked out upon the unit prices taken by Professor Marks for Des Moines, and the sales and assets per thousand, and miles of mains, numbers of meters and cost per meter, which means the average cost of each meter, are also given. On the second sheet are given some of the details for assistan*tance* in checking. Now will you take at your convenience these two exhibits and point out to us such errors if any, as you find in them? I don't mean errors of theory but errors of computation?

A. It is something of a job for me to go over them; I am perfectly willing to take your word that they are correct.

Mr. Byers: We would rather have you check them over.

A. I will try to.

Q. You will do that then and let us know so that we may know there are no errors?

A. I will.

At this time and adjournment was taken until 1:30 p. m.

4094 1:30 P. M. TUESDAY, *September* 26, 1911.

EDWARD W. BEMIS, being continued on cross examination by N. T. Guernsey, Esq., testified as follows:

Q. I wish you would turn to page 71. At the bottom of that page you estimate a profit of 28.65 cents per thousand cubic feet for 90 cent gas.

A. Yes.

Q. That deducted from the 90 cents which is the price leaves what?

A. I think I used the price of 90.7 in that.
Q. Deduct it from 90 cents the actual price and that leaves what?
A. 62.05.
Q. Try it again will you, 28.65 from 90.
A. Oh I took it from 90.7 which I had before me. 61.35.
Q. Now will you deduct six cents from that for depreciation?
A. 55.35.
Q. Now then that proposition of yours on page 71 involves the assumption does it not if we take depreciation at six cents that you can pay all of the other operating expenses for 55.35 cents per thousand.
A. Yes. I do not allow the six cents myself.
Q. Now the actual operating expenses with some deductions are shown at page 5 of Mr. Hall's report as they not?
A. I think that is true.
Q. And the operating expenses for an average of five years preceding December 31, 1910, were 63.34 without any depreciation?
A. Yes.
Q. So that you have taken a basis if we take six cents depreciation that is 8 cents per thousand under the average for the last
4095 four years have you not?
A. You read for five years didn't you?
Q. For the last five years, yes I beg your pardon that was an error.
A. Yes.
Q. And that is about ten cents per thousand under the operating for 1910 on the same theory?
A. Yes, sir.
Q. And is about 7.4 cents less than the average for the four years ending December 31, 1909?
A. Yes.
Q. And it is also less is it not than the operating expenses of this plant have ever been.
A. Yes.
Q. Now did you ever operate a gas plant?
A. No.
Q. If I took your depreciation at four cents you would have 57.35 to cover your total operating expenses would you not?
A. Yes.
Q. That would be six cents lower than the average for the last five years.
A. Six cents lower, yes.
Q. And it would be about 7.8 cents lower than the operating for 1910?
A. Yes, not far from that. The operating was 65.19 and 57.35 from it would be 7.84 cents.
Q. And it would be about 50½ cents less than the operating for four years ending December 31, 1909, the average?
A. That was 62.79 and subtract 57.35 from it would be 7.84 cents.

4096 Q. And it would be about —½ cents less than the operating for the four years ending December 31, 1909, and it would be lower than operating cost that the company has ever experienced.

A. Yes.

Q. In the first place these figures with which I have been making comparison are with the exception of the year 1910, adjusted figures and somewhat lower than the books are they not?

A. Slightly lower, yes.

Q. Now then as you said a few moments ago you never have operated a gas plant.

A. No.

Q. Do you mean to say this plant can be operated for either 55.35 or 57.35 cents per thousand?

A. Yes.

Q. You think you know?

A. Yes.

Q. And you predicate that upon your studies of Massachusetts statistics don't you?

A. No, chiefly upon Mr. Hall's report.

Q. But you are willing to swear that that can be done in spite of the fact that you are without experience and that what you have designated here as a very competent management has never reached results?

A. Yes, to be short in my answer, I will say yes.

Q. Now of course you can't predicate your result on any actual results in the operation of the plant here?

A. I do base it upon that.

Q. No, you base it on the actual results with various deductions do you not?

A. Very legitimate deductions.

Q. I didn't ask you whether legitimate or illegitimate, I asked you if you did not base on the actual results with various

4097 deductions?

A. Yes.

Q. And those deductions which you make are not predicated upon any actual experience of your own in the transaction of business of this kind?

A. No.

Q. And they involve the conclusion that this plant can be operated for a very much less than the actual cost of operation as disclosed by the books?

A. It is too broad a question to be answered without an explanation.

Q. All right then don't answer it. And you recognize the present a management as more than usually efficient and competent?

A. Yes.

Q. Now then what is the first deduction that you make from the present operating expenses to give this result?

A. In the first place I take as shown on the bottom of page 71

the net revenue that Mr. Hall had reported on page 19 of his report.

Q. I am not asking about that. I am asking the deductions.

A. I took the net revenue as adjusted by Mr. Hall on page 19 of his report as I stated on page 21 of mine, my figures there are exact copy of his.

Q. Do you know what the question is?

COURT: He wants to know what deductions were that you make from the operating expenses?

A. In getting net revenue I used Mr. Hall's net revenue, therefore used his deductions. He took out certain interest charges that Mr. Hagenah had and certain rate adjustment expenses, that
4098 means practically rate litigation expenses. He did not take out subscriptions to charities and other objects nor did he take out the increased salaries paid to the officers here and to Philadelphia. The four year basis of course these increased salaries do not very largely appear. In the five year basis the last column they do.

Q. I don't know whether you have answered my question or not. Those deductions were made by Mr. Hall?

A. Those deductions were made by Mr. Hall and appear in the figures that I have copied I have just referred to on page 5 of his report. That is the table at the bottom of page 5 of his report shows an average for the five years of 63.34.

Q. An average for the four years of 62.79 contains these deductions doesn't it?

A. Except that those out of the four year basis used on page 71 of my report and page 19 of his and therefore is not exactly the same as he shows page 5, where each year is treated independently.

Q. He says the average for four years, page 5 of his report is 62.79 doesn't he?

A. Yes.

Q. Did you mean by your answer to my previous question that you took that figure and charged these deductions he had made in that way?

A. No, I used the deductions from that figure which he also had on page 19 and elsewhere in his report, namely, substituting the manufacturing and leakage expense of 1910.

Q. Let's go to page 19. Page 19, the lowest combination that Mr. Hall was able to get was 57.62.

A. That is the four year basis.

4099 Q. Now your combination here deducting four cents only for depreciation is 57.35 isn't it?

A. Yes.

Q. So you have gone him a few better. Now where did you get them?

A. In my table on page 71 and in the text I explained that in reaching the four year average I add the amount covered by the accidents, accident claims paid in the beginning of 1906 and also the taxes for 1910. In other words, I put into the four and five year basis not only the manufacturing cost of 1910, and the leakage ex-

pense of 1910 which is in a way you might say against the company, but also the taxes of 1910 which are in favor of the company because they were a little higher than the previous average.

—. Mr. Hall put in that leakage and manufacturing cost didn't he?

A. Yes.

Q. If you put in something that favored the company how did it happen you came out less than Mr. Hall on that account instead of more. You having some of the items that are against the company?

A. He cuts out that 145,000——

Q. No, I am talking about this cost per thousand in cents, on page 19 the lowest that Mr. Hall has is 57.62 which is combination of the low manufacturing cost of 1910 with the low other expenses of the four year average except that in lieu of the four years' leakage they have taken the low leakage for 1910. Now then you get here 57.35 which is .27 of a cent less if I have subtracted correctly, but you do not get that less by making an addition do you?

A. I think if you will stick close to my own figures on page 71——

Q. You have given no figures about this matter on page
4100 71 except 57.62.

A. I have the net revenue $145,173.05 which is the same as Mr. Hall gives at the bottom of page 19. Then I adjust by allowing the four cents, or about four cents on account of that depreciation being practically four cents instead of sic, by making some addition for the taxes of 1910 and the accident claim that makes $7,237.01, as applied to the sales of 1910 and that gives me the $152,410.01 as applied to Mr. Hall's figure for the four year basis and $143,100.23 as applied to his total for the five year basis. How I got these figures I will explain more at length if that is what is wanted.

Q. That was not what I was asking for. What I was asking for was the cost per thousand. Let's begin over again. You say at the bottom of this page there is a profit of $26.65 per thousand on 90 cent rate. Deduct that from 90 cents and you have left 61.35 haven't you?

A. Excuse me, when I said in this text that that profit 28.65 was on the basis of a 90 cent rate I thought I said or was using the figures in which the revenue given by Mr. Hall was used which was on the basis of not 90 cents, but 90.7 cents including Valley Junction at the higher prices.

Q. Then it is not based on the 90 cent rate in the first place?

A. Ninety cent rate in the city and existing rate at Valley Junction.

Q. It is not based on the 90 cent rate.

A. No, .7 of a cent advance if you have it 90 cents for Valley Junction.

Q. So that in that respect I can't take the statements here as exactly correct.

A. I stated the cost then stands—just before the table at
4101 the bottom of page 71, the case then stands with 90 cent gas in Des Moines as follows: That sentence together with the

thought I use Mr. Hall's figures which I make clear there, in his testimony that it was 90.7 on the average I thought relieved the report from any charge of being misleading.

Q. In other words, if we take out the inaccuracy, take out that given figure we take the real inaccuracy out. If we figure it out we could figure out where the inaccuracy was.

A. I don't consider any inaccuracy when I say with 90 cent gas in Des Moines.

Q. Before I forget it, have you discovered any error in your report which was not against the company or any inaccuracy in your report which was not against the company?

A. I have not stopped to consider most of these minor changes that I refer to whether they were for or against. They were slight errors.

Q. So that as far as you now recall you have not discovered any error in your report which was not against the company?

A. Yes, I remember some that I discovered that were in favor of the company. I had one or two in mind I know yesterday that had been that way.

Q. Now then let's begin over again with 90.70. Subtract 28.65 from that, that gives you what?

A. 62.05.

Q. Now take your four cents depreciation off of that?

A. 58.05.

Q. Now that is .43 of a cent more than the lowest combined operating that Mr. Hall figured out on page 19.

A. Yes, that may be due to the application to the four year period of what was precisely accurate for the five years period,
4102 but to avoid trouble of a new calculation I applied it to the four.

Q. We will get to that in a minute.

A. I made the same adjustments for the four year that I have for the five.

Q. I don't understand that, but we will come to it in a minute. The additions you made there to Mr. Hall's minimum are something over half of the arbitrary additions to the 90 cents. That is you have added .43 of a cent to Mr. Hall's minimum and have taken the rate 90.7 instead of 90 cents.

A. Yes, as applied to the four year period.

Q. Now let's go back to these taxes. I assume they will be found on page 5 of Mr. Hall's report?

A. The taxes for the year ending December 31, 1910, were 7.22.

Q. With an average of the four years of what or did you take the five years when it came to this addition?

A. I made my adjustment on page 71 with reference to the five year period.

Q. That was wrong wasn't it where you were using, together your figures you were using the low four year average weren't you?

A. I recognized that fact when I made the four year table, but I considered it was of very minor importance and affects taxes to have that less than half a cent.

Q. You don't seem to see what I am getting at or if you do you are not answering it. What I am getting at is this if you want to adjust your table for taxes you should take the difference between what you had for taxes, 6.65 in the four year period and 1910, instead of the difference between the five year average and 1910 because you don't use the five year average?

A. I use the five year average in my last column don't I?

Q. We are talking about the first column anyway where
4103 you use the four year average.

A. I used in the five year average which I make up first, the exact figures there 6.78 are the taxes for the five years while the taxes for 1910 were 7.22, the difference was .44 of a cent., which is what I refer to on page 71. Then having in that way got my figure adjustment, $7,237 I used the same thing on the four year basis recognizing fully there would be a slight inaccuracy there, but I thought it was not worth noticing since in the five year basis which was much more conservative there was still an ample margin.

Q. In the column I am talking about where you had 28.65 you have used the four year basis don't you?

A. Yes.

Q. You use there the four year basis on taces 6.65 don't you? That rather is the tax item in the four year basis, 6.65 look at page 5 of Mr. Hall's report and tell me whether that is not right?

A. The average in the four years is 6.65.

Q. To adjust that four year period to the 1910 taxes, you would have to take the difference between 7.22 and 6.65?

A. Yes. That is what I said I recognized when I did it.

Q. That is .57 of a cent?

A. Instead of .44 that is right.

Q. And your gross additions are only .43 of a cent.

A. On taxes it was .44 which was right for the five years. I am talking about taxes now.

Q. I am willing to talk about anything on that proposition.

A. When I said .44 I meant I was talking about taxes.

Q. Mr. Hall had for that period 57.62 didn't he?

A. He did.

4104 Q. You had for that same period taking out depreciation so as to make comparable 58.05?

A. Yes.

Q. The difference is .43 of a cent isn't it?

A. Yes.

Q. You didn't add even the amount of the difference between the taxes in the five year period and the taxes in 1910 did you?

A. There were just the two items in the transaction, 7,237 back to the four year period that meant the same average of expense also.

Q. The 7,237 is the balance that comes out of the depreciation and ep*x*-nse isn't it?

A. Well taxes too.

Q. And taxes also is it?

A. Yes.

Q. Let me have the figures will you?
A. They are given in the paragraph above.
Q. Well just let me have them.
A. Accident claims $851.19 taxes $2,340.76, total of those two items $3,191.95.
Q. Now exclude depreciation because we deduct four cents and neither your figures nor Mr. Hall's figures take that depreciation into account at all, the figures we are discussing, no depreciation in Mr. Hall's 58.67.
A. No, but in getting back I did have an allowance of depreciation to harmonize them. I admit that slight inaccuracy. I consider that all correct enough for the proper practice.
Q. Now then that figure of Mr. Hall's 57.62 includes no depreciation?
A. That is right.
Q. Your figure that I get by deducting 4 cents depreciation
4105 from the 62.05, 58.05 includes no depreciation?
A. That is right.
Q. Now if you eliminate the items of depreciation then that difference between your figures and Mr. Hall's shows the total amount that you added to his figures doesn't it?
A. It amounts to that.
Q. So that when you come to compare figures that is less than the taxes and does not include anything on account of accident claims does it?
A. That is right.
Q. And your report here don't check out with the figures?
A. It does for the five year basis, you see what I did for the four years.
Q. We are talking about four years. That don't check out with the figures.
A. Only in the way I said.
Q. Now I want to go back to what I started with. How do you get a lower operating there, where are we going to save the money than the company ever had before?
A. The manufacturing, leakage and taxes of the present or of the last few years or rather of 1910 added to all the other expenses of the average give the figure that I take here and it should be corrected as to about .43 of a cent apparently, the small amount I have not worked that out to see what it should be, I think less than half a cent to be technically correct in the four year period.
Q. In other words then your estimate of the operating is simply based on picking out the low items here and making a- adjustment for taxes which is omitted.
A. It is not omitted in the five year period. The four year period I should not be able to say until I made the calculation
4106 whether the slight adjustment necessary wipes out all tax adjustment or not.
Q. What I want to get at is this your basis for your willingness to testify here as to what this company can op-rate for is your selection of these low items from these actual operating costs.

A. The selection of certain items which are legitimate, select the low cost, my testimony is not based on that less than the readjustment you speak of in the four year basis.

Q. Let me ask you another thing before leaving this page. Your estimate of return here is predicated upon the lowest operating consequently the basis most unfavorable to the company on page 71, is that right?

A. No, if I had taken your 1909 expenses other than manufacturing and applied that to your 1910 figures of manufacturing and leakage I would have had a lower figure.

Q. You might make lower combination?

A. Oh certainly.

Q. But not much lower?

A. Two or three cents lower I think.

Q. If you took the high figure it would run 15 cents higher?

A. Ididn't see any fifteen cents higher.

Q. You paid no attention to the high figures?

A. I selected the manufacturing as I did from a thorough belief which I still have that is was the right method.

Q. Now I want to take up with you your figures on the bottom of page 61 for a moment. You have first there an item you call repairs works 1906-09?

A. Yes.

Q. It that an average of something or what is that, a four year average?

4107 A. That was the four year average. I explained how I got it earlier in the page, second paragraph. No, that don't that explain/s the manufacturing costs in the aggregate, that explains it for 1910.

Q. How did you get that 1.71?

A. As I stated it was from Exhibit "E" and there you will find the figure 1.71 given in Mr. Hall's report next to the last column.

Q. Now the average of the repairs works for the five years as shown by this Exhibit "E" was 1.90 wasn't it?

A. That is for the five years, 1.90.

Q. Now I wish you would point out how many of the periods shown in that five years showed a higher repairs works than that. Take the first two months period, what was it?

A. Of course tha' is no way to get at it.

Q. Pardon me, but let me get at it in my own way.

A. This was a weighted average I gave. Mr. Hall's average was a weighted average 1.71.

Q. I didn't ask you that, I asked you what the item repairs works for the two months' period ending February 28, 1906 was?

A. 2.06.

Q. The year ending 1907?

A. 2.32.

Q. The ten months ending December 31, 1909?

A. 1.91.

Q. Now the year ending December 31, 1910, 2.55.

—. ——.

Q. The 1.90 then is the weighted average of that period?
A. Of the five years, yes.
Q. During three years out of the five, the rate exceeded 1.90?
A. Yes, one year of those it was .01 of a cent.
4108 Q. What year was that?
A. Ten months ending December 31, 1909.
Q. That is 1.91 for that period isn't it?
A. Yes, exceeding 1.90 by .01 of a cent.
Q. Now your argument here is what, not that repairs works average of 1.90 is too high to be a fair criterion?
A. No, I didn't intend to so state.
Q. I don't know that you state that in so many words, but I am giving the effect of it.
A. I would like to turn to what I stated, I know I intended to state that 1910 was too high to be a fair average, 1910 was 2.55.
Q. Where do you use that in getting any return or proper cost.
A. In getting total operating cost of 29.76 or I think a strict division makes it 29.75, but that figure 29.76 is used in both Mr. Hall's four year and five year basis and I adopt it for the manufacturing cost. That is per thousand feet of gas made.
Q. Your other expenses here are put down at 16.55. That is not correct is it under 1906-09. To be correct that should be 17.29 shouldn't it?
A. I believe not.
Q. Where do you get it?
A. I take Mr. Hall's 34.02 in Exhibit "E" as the total net manufacturing after deducting residuals and then deduct the items of repairs at works, 1.71 which you will find in that column and oil 15.75 that leaves the other expenses 16.56 *ot* total of 34.02.
Q. If you took the actual other expenses they will amount to 17.29 instead of 15.56?
A. And then deduct residuals from the oil you get the same results.
4109 Q. (Question read.)
A. Yes.
Q. And it is necessary for us to take these actual expenses instead of these differences if we want to find out just what caused the difference in 1910 to find out whether we may fairly take it is it not?
A. It is helpful in that respect to put the residuals with the oil.
Q. Now let's do that for a minute. Your total manufacturing cost for your four year period before you deduct residuals is 34.75 isn't it?
A. That is right.
Q. And your total manufacturing cost for 1910 before you deduct residuals is 31.60?
A. Yes.
Q. Now what was the income from the sale of residuals in the four year period?
A. The average .73 of a cent.
Q. And what was it in 1910?
A. 1.84.

Q. There is a difference of over a cent, 1.11 is it not.
A. Yes.
Q. And you have absorbed that as a low cost of manufacturing here in your report, where as it is in fact an increased return from residuals that they happened to get that year?
A. That does not explain the difference between the total.
Q. I have not asked you that, just answer the question.
A. If I understand your question I should say yes, meaning by it that the increased result from residuals I deduct from the
4110 other expense instead from the oil. The total result of course is unchanged.
Q. But you have taken into account that increased result from residuals 1.11 in order to get this low manufacruring there 29.76 that you thereafter adopt and run through everything?
A. That was part of the low cost of 1910.
Q. Now then you knew didn't you that that result in residuals that you took there and claimed the benefit of was pust about double the average for the five year period and more than double the average for the four year period.
A. But not *souboe* what it was in 1909.
Q. Please answer the question if you can.
A. It is double the four year period.
Q. More than double the average for the four year period.
A. Yes, that is right.
Q. And it almost double- the average for the five year period.
A. About 85 per cent additional.
Q. It is 1.84 against 98?
A. Yes.
Q. So that you have taken a return from residuals there that is an abnormal year as shown by the records of the last five years?
A. Higher than any previous year, yes.
Q. An abnormal year.
A. Well abnormal year as interpreted by you.
Q. I said as shown by the records of the last five years.
A. I think it is higher than any of the last five years.
Q. You know it is don't you?
A. Yes.
Q. And at least 50 per cent higher?
4111 A. Yes.
Q. It is 50 per cent higher than the next highest return from residuals isn't it for that period?
A. Yes.
Q. And is over six times the lowest return for residuals for that period?
A. Yes.
Q. Now then we have got a factor here of 1.11 to explain this difference. Now what is the difference in oil?
A. I state that here in the table as between 11.49 for 1910 and 15.75 for the four previous years.
Q. And that is how much?

A. That is 4.26 cents.

Q. And that to the 1.11 that gives us 5.37 doesn't it?

A. Yes.

Q. Those two items more than explain the difference between the 29.76 and the 34.02 do they not?

A. They are larger than that difference.

Q. The big item is the oil?

A. Yes.

Q. And whether or not we could take that 1910 figure and rely upon it would depend very largely upon what we knew about the oil situation wouldn't it?

A. After your contract runs out it would, yes.

Q. Now then can you tell us of any other gas company in the United States, what it is paying for oil today?

A. No, I don't know the current prices.

Q. Do you know of any gas company in the United States of the size of Des Moines buying oil as cheap as Des Moines?

A. I am not informed as to what any of them are buying it at.

Q. Do you know any gas company in the United States
4112 comparable with this company that is getting oil within 25 per cent of as cheap as this company is.

A. I say I don't know what any other companies are paying today for oil.

Q. Do you know anything about it?

A. I say I don't know, these prices are changing from year to year.

Q. Under thes4 circumstances you adopt the lowest price for oil instead of the average price.

A. Well as in the rest I adopt the existing price in Des Moines.

Q. Did you adopt the existing items here at any time except when they would bring you out a low result, you didn't adopt the 1910 operating all the way through?

A. I took higher taxes. I didn't adopt all items because they were lowest.

Q. You didn't adopt 1910 operating all the way through did you?

A. No.

Q. Now then the only thing you had to sustain you on the oil proposition was a reference to Mr. Hall's report wasn't it where you said that in estimating the future operating expenses of the plant he put the oil at about what it is now?

A. That was one of the arguments that was used by Mr. Lea, one of the points that he made.

Q. I didn't ask you that, I asked you whether that was not the only thing that you had to sustain yourself in taking this exceedingly low cost for oil as compared with the average and use that as a basis for your figures.

A. That was the most definite but I didn't bind myself down to the oil alone, it was the total manufacturing cost that I took, not the oil alone.

Q. You knew that Mr. Baehr's report showed a higher
4113 price for oil as soon as the present contracts run out didn't you?

A. Yes.

Q. You didn't mention that anywhere in your report here in connection with this did you?

A. No.

Q. Simply mentioned the low one.

A. Yes.

Q. That was because you didn't think Baehr's report would be a support for your contention?

A. I think this supports my views.

Q. You did that simply because you didn't think Baehr's report would be a good argument in support of your contention, isn't that true?

A. It didn't change the same view I was taking for various things.

Q. Isn't it true you omitted all mention of Mr. Baehr's report on that question of oil simply because you thought it would not be a good argument in support of your position?

A. I didn't think it was a good argument, no.

Q. That is why you omitted it?

A. I thought the other was more correct anyway.

Q. The reason you omitted all reference to Mr. Baehr's report on this matter of oil was because you thought it would not be a good argument in support of your position, that is true isn't it?

A. That was not true, no.

Q. I want to get you in this same connection in view of that you say about repairs, to tell the Master whether the repairs works average for the five years 1.90 were not 1.94 in 1904?

A. They were 1.94 in 1904.

Q. In 1905 they were 2.33 were they not?

4114 A. Yes.

Q. Nearly as high as they were in 1910.

A. Yes.

Q. In 1907 they were 2.32 cents; the year ending February 23, 1908?

A. 2.32.

Q. And for the two months' period in 1906 they were 2.06?

A. Yes.

Q. So that they have run over the five year average as far back as we have a record?

A. Yes. I see that all the costs were larger as further back you go for manufacturing.

Q. Where do you show that the repairs were larger?

A. No, but the total manufacturing which I use in my deduction. I don't say that oil will always remain stationary.

Q. In view of all this, do you say that the average repairs for 1910 or for the five year period rather, that is 1.90?

A. It is hard to decide between the 1.90 and the 1.71 on that but I took the 1910 figures and neither one of those.

Q. That don't answer my question. I want to know whether in

view of the history of this plant, you can say that 1.90 is high for this item?

A. It is very hard to say.

Q. Now go back to the first item of the manufacturing, the average for the five year period os 60 cents isn't it?

A. .60 of a cent.

Q. That is not high is it?

A. No.

Q. Now the average for boiler fuel the next item is 2.36? You can't say that is high can you?

A. You expected it to be about a cent lower soon.

4115 Q. What does that item cover?

A. It covers the fuel under the boilers in generating steam for all parts of the plant.

Q. Now then calling your attention again to my question that has varied during the five year period here from the minimum of 2.04 to the maximum of 2.88 hasn't it?

A. The 2.88 may be in the previous years, I will look.

Q. You can see it right in Exhibit "E" the year ending December 31, 1910.

A. Boiler fuel 2.88.

Q. That has varied from a minimum of 2.04 to a maximum of 2.88?

A. It was 2.88 I see.

Q. Can you answer that question?

A. It has varied.

Q. You knew — you used for the last year?

A. That is right.

Q. So you would not say 2.36 was unreasonable on that proposition would you?

A. I judge it to be so from what I studied Mr. Haines' exhibits put in the other day.

Q. You judge it to be unreasonably high?

A. Yes.

Q. And that was from something Mr. Haines put in the other day you said?

A. Yes that exhibit that was lost for so long.

Q. You know that has not been offered in -vidence don't you?

A. I thought it had been offered in evidence by Gen. Byers.

Q. Leaving out of the question what you learned from what Mr. Haines' letter said, and taking the history of this plant for

4116 the last five years and taking into account that the last year showed the highest amount on account of boiler fuel and that the ten months ending December 31, 1909, showed the next highest amount, what would you say as to whether 2.36 was unreasonably high?

A. Why it is on the average and you might assume that the average was not unreasonably high except I would not want to be positive on that subject. It might be an average and yet be too high.

Q. So you are not in a position to state whether that would be reasonable or not?

A. I won't undertake to say to my knowledge. It is evidently too high according to Mr. Haines' letter.

Complainant moves to strike out these references to Mr. Haines' letter that is not in evidence as clearly matters that are wholly incompetent and the witness must know are incompetent and are not responsive to the question.

Q. Putting that in another way you don't know of anything that is in evidence here that would tend to support the conclusion that this 2.36 was too high do you?

A. I have not looked over the evidence of Mr. Lea and Mr. Baehr relative to the seven year future development to know how they did testify and therefore not well acquainted with the evidence on the subject.

Q. This coal is local coal isn't it?

A. I understand so.

Q. Are you familiar with local conditions here?

A. No. I asked one or two questions and yet I am not sufficiently posted to be very familiar with it.

Q. Do you know that for the last ten or fifteen years the price of local coal has gradually been going up?

4117 A. No, I am not acquainted with that subject.

Q. The next thing is expense works, what does that include.

A. I am not quite sure what they throw into that.

Q. Will you condemn these things as wrong without first ascertaining what they are and knowin- what goes into the various items?

A. I took the total and not the individual items. I group the manufacturing cost together in one lumped sum.

Q. But that don't answer my question, can you fairly determine whether this five year average is a proper average to use without taking into account the items that go to make it up unless you take the individual items, can anybody determine that question intelligently without doing that?

A. I think it is done sufficiently by dividing into three or four groups.

Q. You don't think then, in order to determine whether or not the average manufacturing cost is a proper cost to take into account in estimating furture operating expenses, it is necessary to analyze this average cost and to apply to the different items what facts there are which bear upon the probable price in the future?

A. Of course the more analysis you get the better.

Q. In order to form an intelligent opinion isn't it necessary to analyze these costs and do just what I said?

A. I don't think it is necessary to analyze further than I did for the use I make of the total.

Q. Going back to 1.33, expense works, inasmuch as you don't know what that includes, you of course can't say whether that would be reasonable or unreasonable to take into account for the future?

4118 A. These classifications of accounts which I have glances through in the past give what is meant by that, but I have not tried to remember it.

Q. (Question road.)

A. I have not tried to take into account that one item except as grouped with all the items outside of repairs and oil.

Q. (Question read.)

A. I would not attempt judgment on that item alone and have not done so.

Q. Now then let's go to the next item, what is that?

A. Generator fuel.

Q. What does that cover?

A. That covers the coke or anthracite coal, whichever they may care to use.

Q. Which do they use?

A. Coke.

Q. Covers coke?

A. Yes.

Q. What is coke worth here?

A. The Exhibit I read of Mr. Lea's gives it, but I——

Q. I want to know what you know about it?

A. My recollection is, it was about $4.50 a ton, but I am not quite sure.

Q. Do you know anything about it except what Mr. Hall's exhibit shows?

A. I didn't try to remember the figure.

Q. Do you know anything about — except what Mr. Hall's exhibit shows?

A. No, not aw to the local market.

Q. How is the price of coke today as compared to what it was a year ago?

4119 A. I have seen these figures I believe for I asked Mr. Sansgter something about various contracts running back four or five years but I glanced them through, but I don't remember now what they showed.

Q. Then you are not in a position to say this item is an improper item?

A. No, nothing, the 1910 item you remember I took in all these cases.

Q. I am talking about the average for the five years?

A. I am not criticising any one item.

Q. Bearing in ming I am taking not 1910, but the average for the five years you have not the information that would enable you to determine whether 1087 for generator fuel would be a proper amount to use as a basis for an estimate as to the future have you?

A. Not except in a general way I think present prices are better on those things than the past.

Q. The next thing is manufacturing labor. What does that cover?

A. That covers the labor of running those generators and super heaters and carburetors, the general work in the retort house.

Q. Has the price of labor been going up or down?

A. There has been some tendency upward, but not necessarily per thousand feet, that does not always follow.

Q. I didn't ask you that, I asked you whether the price of labor was going up or down?

A. Well I would say all over the United States and the world of course it is upward.

Q. You referred to this as labor in the retort house, we don't have any retort house do we?

4120 A. Well I mean around the generator, water gas plant then.

Q. This 1.88 here is the same thing, what it was for 1910 and what it was for 1909?

A. Yes.

Q. So that you would not think that 1.88 was out of the way would you?

A. I am not expressing an opinion on it.

Q. Well have you the information so that you can express a competent opinion?

A. Only in the same way that existing prices of labor I think I am more justified in saying on the manufacturing plant than the five years and I did take the present year, the 1910 year.

Q. Now then the next thing is oil, we have gone over that. Now that oil there is appreciably higher on the average than it is for the year 1910?

A. Yes.

Q. And that is really what most of the difference is isn't it?

A. That and the repairs.

Q. The purification supplies is the next item, .21 of a cent? You would not say that was wrong would you?

A. No.

Q. The next item, purification labor, .08, you would not say that was wrong?

A. No.

Q. The next item, water tax .21 of a cent, you would not say that was wrong?

A. The same remark I made about the others will apply to all these.

Q. That is, that you have not the information by which to determine the question.

A. Yes and that I did not try to determine it, but took

4121 an aggregate and took the latest prices.

Q. Now you didn't take the latest prices did you after you got out of manufacturing?

A. Manufacturing, unaccounted for gas and taxes are the latest.

Q. You took the average for four years after you got out of the manufacturing except taxes and unaccounted for gas didn't you?

A. I have two columns, a four year and a five years average side by side.

Q. In another column do you have your proposition you have just stated taking the last costs?

A. Under the distribution in general outside of taxes. Take distribution in general as a general term outside of holder costs.

Q. And there is not any item in this average for five years as to which you have sufficient information to enable you to say that it would be improper to adopt it as a basis for a computation as to the future. That is right isn't it taking not manufacturing?

A. I don't at-empt to do it, I don't know what items——

Q. (Question read.)

A. I should say the repair item might be considered high for the future.

Q. Notwithstanding the fact we have just gone over repairs back of 1904 and found that it is lower than the average for that period?

A. No, we didn't find that, we didn't find that the 1910 was lower.

Q. I was not asking about 1910, I was asking about the average for five years.

A. But I dissent entirely from the average being a fair way to approach it.

Q. I didn't ask you that, I asked you whether there was any item that goes into the total of the manufacturing costs based on
4122 the average for five years as to which you have sufficient informa*g*ion to say whether it would be proper or improper to adopt that item as a basis for an estimate as to the future and if there is such an item please tell what it is?

A. I have sufficient information in your own experience and what the evidence has shown to lead me to take the ground I do.

Q. (Question read.)

A. All of the items I have sufficient information.

Q. These are the very items as to which I have just been examining you and as to which you have said with reference to each item you had not sufficient information to determine this question have you not?

A. But I have in the aggregate from your own data.

Q. I know, but that is not what you answered me, I asked you whether there was any item going to make up the total of the manufacturing costs as shown here in the average for the five years as to which you have sufficient information to say whether it would be proper to accept it as a basis for the estimate in the future and if there is such an item going to make up that aggregate I would like to have you point it out?

A. I can't answer better than I have.

Q. You can't designate any item there as to which you have that information can you?

A. I can say in the aggregate to all of them.

Q. I didn't ask you that. Can you designate any item for which you have that information?

A. I would say repairs at the works.

Q. And this item of repairs is shown by the average here, this is the average of this item repairs works then which was in 1904, in 1905 in the two months ending February 28, 1906, in the
4123 year ending February 1907, the ten months ending December 31, 1909 and in the year ending December 31, 1910, is it not?

A. Whatever the figures show of that year I accept as shown in Mr. Hall's statement, Exhibit "E."

Q. What experience have you had in either making or overseeing the repairs of gas manufacturing plants where water gas is manufactured?

A. I never had charge.

Q. What statistics have you had available showing the details of this kind of work?

A. I have in previous gas cases had a good many statistics of that kind.

Q. You named ten or a dozen cases in your entire experience didn't you?

A. Yes.

Q. Now then go to the next thing here the distribution costs average for these five years. Have you any information as to any item that goes to make up these distribution costs?

A. I have had in the past, I have not in mind any at the present time.

Q. And would you be able to take up this item by item and say whether they were right or not?

A. I could see how they compared with a good many other companies and with your own experience.

Q. Of course we have our own experience right here in this Exhibit "E" and that is what you do as to our experience I presume?

A. Yes.

Q. What I want to know is whether you have any practical experience along this line?

A. I have often had occasion to tabulate the entire distribution and general expenses running over a series of years of other
4124 companies. I have always found a tendency to decline with these costs with increase of business.

Q. (Qestion read.)

A. I thought I said before I had no experience in the gas business although I have had experience of a statistical nature.

Q. You assumed I didn't mean what I said.

A. I didn't think you were asking over again for the hundre-th time what you had asked?

Q. Now we can go right through the whole list here and get the same result can we?

A. The same general result would follow as in the examination of the manufacturing costs I think.

Q. In other words it would appear that as to not a single one of these items have you any practical experience or any practical information which would enable you to determine as a gas man what ought to be applied in the future here?

A. Not as a man connected with the gas business if that is what your question means.

Q. Or man familiar with the actual results of the gas business.

A. Yes, I am familiar with it as tabulated under oath.

Q. Where, in Massachusetts?

A. That is one case and also in other cases.

Q. Those are coal gas plants are they not?

A. That has nothing to do with distribution and general expense and that is what we are talking about now I think.

Q. Then your information as to this is confined to your Massachusetts experience practically?

A. I didn't say that because in all the other cases I have had it.

Q. And in all of the other cases you have been endeavoring
4125 to established a proposition and have been looking at it from a partisan part of view?

A. On the contrary I have had the statements of the companies themselves going back over a series of years as in the case of most every gas case I have ever been connected with. They have shown the same tendency you have shown here up to the year of the beginning of a rate case.

Q. On page 63 you attempt to justify this leakage proposition don't you?

A. Yes.

Q. That is what that page is devoted to?

A. Yes.

Q. Now you don't confine yourself to the same seven Massachusetts companies there do you?

A. I take a larger number.

Q. Did any of this larger number have as high a percentage of leakage as the seven companies that you first selected as comparable to Des Moines?

A. I made no average of the seven on unaccounted for to see how they compare with the eleven.

Q. Can you look at page 63 and answer the question. The companies you added were Boston, percentage 2.94, Malden, percentage 1.49 New Bedford, percentage 2.73 and Newton, 3.54 were they not?

A. Yes.

Q. Now will you take this average here, it is a mere numerical average of them?

A. That is all I made th-re.

Q. Now will you take the seven companies that you use in your first Massachusetts comparison as comparable to Des Moines and give us the numerical average of them?

4126 A. Practically 5.2.

Q. Now then the Boston company buys how much of its gas from other companies or did in the year for which you took these figures?

A. I think about half.

Q. Where is that gas measured?

A. I have forgotten, I used to know, but I have forgotten now whether measured at Everett or at the city limits, but I think it is measured at Everett, but I can't swear to it.

Q. We would have to know that in order to draw any conclusions from this 2.94 wouldn't we?

A. No, because merely passing a large volume of gas two or three

miles through a big main would not result in an appreciable leakage. It is leakage in the services and small mains that piles up mostly.

Q. Where is the gas of the Des Moines company measured for the purpose of this comparison, before or after it goes into the holder?

A. Before it goes into the holder.

Q. Is that right.

A. It is past through the relief holder, but before it goes into the general holder.

Q. Are you sure about that?

A. I think it is.

Q. Are you sure?

A. Yes, pretty sure of that, but it don't make any difference.

Q. Now are you sure or not?

A. Yes.

Q. You are sure now?

A. Well that is my recollection of it.

Q. So it is measured before it goes into the big holder?

4127 A. Yes.

Q. Where does it go from to the meter?

A. From the purifying apparatus.

Q. Now then you could not make a comparison with Boston unless the gas that it puschases which is about half of its gas was measured at the same place could you?

A. There would be slight difference from that point. I don't think a large one.

Q. Well the way to tell would be to make like measurements, that is the only way you could tell isn't it?

A. Yes.

Q. I wish you would turn to the Massachusetts reports from which you got these leakages. Now what page do you refer to, it is page CXCIV if I read it right?

A. Yes.

Q. That gives on that page two years' leakages doesn't it?

A. Yes.

Q. You took one.

A. I took the latest.

Q. Boston for 1909 gave 2.69 instead of 2.94?

A. It did.

Q. Do you remember what it was in 1908.

A. No.

Q. Over 5 per cent wasn't it?

A. I don't know what it was.

Q. So you are not familiar enough with the Boston history to know whether this 2.69 or 2.94 is abnormally low?

A. No.

Q. Now take Cambridge, that gave you 4.15 for 1910 and 4.32 for —.

4128 A. Yes.

Q. And that in 1908 was 8.59 wasn't it?

A. I don't know.

Q. Then you don't know whether these are abnormally low figures for Cambridge?

A. No.

Q. Fall River, you have 6.91. For the year before what was it?

A. 9.83.

Q. Do you know whether the 6.91 is abnormally low for Fall River?

A. No.

Q. Now then take Lawrence, you have 7.03?

A. Yes.

Q. That was 5.67 for 1909?

A. Yes.

Q. Are these figures abnormally low for Lawrence?

A. I don't know. I know that for several years the figures have been considerably below 8 per cent for most of these companies, other than that I don't remember exactly.

Q. Then the average for Massachusetts companies is considerably below 8 per cent.

A. Yes. That is for all the dozen or so larger companies.

Q. Now then Lowell, you took 1.97?

A. Yes.

Q. For the year before it was 3.08?

A. Yes.

Q. Did Lowell ever have as low a percentage as 1.97 before 1910?

A. I don't know. I know I have seen figures as low as these on some previous years, but I have not been through the 1908 or 1907 to see.

Q. You didn't see anything as low as 1.97 for Lowell

4129 within ten years did you?

A. I don't know. These were higher about two or three years ago. I might have compared each year's average in Massachusetts with your average last year, but I was in a hurry and only took the last.

Q. I want to get at whether this furnishes a condition that you can take as adoptable. In 1910 Lynn was 6.35 you have it?

A. Yes.

Q. It was lower than that in 1909, 4.59?

A. Yes, this is the same year I think that Mr. Baehr used.

Q. Now Malden you have 1.49. What was it in 1909?

A. 2.05.

Q. And in 1905 it was 18.96 wasn't it? More than ten times what it was in 1910?

A. I don't know.

Q. And New Bedford, 2.73, that was a little lower the year before?

A. That was 2.53 the year before.

Q. And Newton, 3.54, that was higher the year before?

A. That was 4.58 the year before.

Q. Springfield, 2.66, that was higher the year before wasn't it?

A. It was 3.56 the year before.

Q. And Worcester, 7.32, that increased a little over the year before?

A. Yes, the year before it was 6.44.

Q. So that this is true isn't it, that you can't draw any definite conclusions from one year's leakage?

A. No, you can only see a tendency downward in both Massachusetts and here and this is about on the average.

Q. These figures were put in here by you for the purpose of sustaining your conclusion that it was right to adopt the lowest leakage there was instead of the average?

4130 A. Yes.

Q. Whereas, if you go through a series of years in Massachusetts, it will show radical variations will it not?

A. A tendency downward, but not upward.

Q. For instance, in 1902, Boston was .39 of one per cent and 1910 it was 2.94 per cent.

A. Well I could not judge by one company, I would have to take this whole group for each year, I think it would show a downward tendency?

Q. You say the entire Massachusetts situation, it shows about 8 per cent?

A. No, I didn't say that.

Q. You said under 8 per cent.

A. I said in the past it had averaged under 8 per cent, how much under I don't know, I don't remember at the moment.

Q. That you think justifies you in taking 4.31 per cent for Des Moines?

A. I didn't say that there was any connection between those two events, I don't make any in my report.

Q. Wouldn't it be fairer if you were going to Massachusetts for a basis to take the average of the business shown than it would be to pick out one year of these companies?

A. Why I have seen companies which continuously maintain low rates as low as these on the average for a period of three or four years that I should think Des Moines might continue to do that.

Q. What has been the history of this plant, been any variations?

A. Yes.

Q. Sometimes been down and sometimes up.

A. So far as my figures go it has been averaging downward.

Q. And is low leakage sometimes accounted for by a slow meter?

4131 A. Certainly.

Q. You think it would be as fair to take a single year if we wanted to get accurate results as to take an average?

A. I think I answered your last question right opposite to the fact, a slow meter would tend to register less gas than passed through it and therefore an increase of apparent leakage.

Q. Think of that again and see if you don't want to change it over.

A. A slow meter we will say would register 90,000 when a hundred passed through it and if 110 feet left the works and the meter

registered only 90 when it should register 100 then the unaccounted for instead of being 10 would be 20.

Q. Which meter are you talking about?

A. Oh I see, I got that right turned around.

Q. You come back to your original proposition don't you?

A. Yes.

Q. You don't want to change your statement do you?

A. No let it stand.

Q. You didn't work out on this leakage table here your actual average, but simply took the numerical average?

A. That is all I took in that case.

Q. Would the actual average be higher or lower?

A. Well I think it might be a little lower because Boston is so large.

Q. Boston would bring it down?

A. I think so. Lowell also being low I should say yes, that a weighted average would bring that down. So there is a case where perhaps there is the interest of the company in my average.

Q. The next proposition you take up on page 64 is intended to be an argument to show that Mr. Hall's statement that it would
4132 be fair to put into these operating expenses on account of accident and damage the amount that would be required to purchase liability insurance was inaccurate isn't it?

A. Yes.

Q. And you try to get a result less favorable to the company don't you?

A. I get a result as I stated here which is less favorable to the company.

Q. And that is the purpose of these next two pages isn't it?

A. It was an attempt to show from other companies and I used every one available at the moment that I had data with me what the facts were. I took every company in Massachusetts in that.

Q. Do they make these reports in the same way that they make up their reports of assets?

A. I don't think so because they are more inquired into. The commission takes reports of assets without saying a word but the rate litigation cases or issue of securities frequently requires the commission to go into their accounts very carefully.

Q. Now how many years did you take in Massachusetts as your basis?

A. The two years covered by the last report.

Q. Then is that the amounts paid during these two years or does it cover the accidents that occurred in those years and were to be settled for afterwards?

A. As I understand it it is cash, statement of the amount paid out.

Q. Did you get your figures from page 83?

A. Yes.

Q. Well now you took what items there?

A. Claims.

Q. And you took the average for the two years?

4133 A. I took each year by itself. I mention each year in the two pages somewhere.

Q. Item 24 immediately preceding claims amounts to more than the item of claims doesn't it, that is law expenses?

A. Slightly more.

Q. How much of that was on account of personal injuries?

A. I don't know how that was.

Q. Did you include any of it?

A. No.

Q. Well then are you entirely confident that your Massachusetts figures here are based on correct premises?

A. In comparing them with your expenses I thought you had litigation also in as a separate item.

Q. But that don't make any difference does it, you state here in your report don't you what the Massachusetts expenses were *om* account of loss and damage matters?

A. Yes.

Q. Or you put it for claims?

A. That is probably what I said.

Q. Now then where in your report do you refer to 1909 which is the high year? You said a moment ago you referred to both years?

A. On page 65, the last line of the paragraph.

Q. Will you read it, the reference to 1909 expenses?

A. In the previous year it was only .3 of a cent.

Q. That is the only reference to that 1909?

A. Yes.

Q. Now to go back are you confident that what you say here about Massachusetts covers the entire expense of these companies on account of loss and damage?

4134 A. No, but if I should add all loss and expense for claims it would not make more than I have included for you, although I thought at the time——

Q. We will get to that perhaps later, what I wanted to know was whether we could rely on this as a correct statement as to what the actual expenses of the Massachusetts companies were of this kind?

A. I am not sure whether under claims they *pur* part of the legal expense or not.

Q. I see in the item that precedes that we have insurance $61,000 equal to almost double law expense and claims. How much of that was insurance on account of damages for personal injury?

A. I don't know.

Q. Well you would have to know all these things to make a statement from Massachusetts that you could be confident was based upon a correct premise wouldn't you?

A. I think I should but my figure is twice as large as this one in Massachusetts was and I would still feel safe.

Q. So far we have gotten about four times that haven't you?

A. Oh no.

Q. Let's see. Take 1910, you have there for your claims $23,436.68.

A. Excuse me, you are taking now 1910.

Q. Yes. Now then law expense, $39,175, and the insurance $65,585.48, will you add those?

A. All of them make $128,122.91.

Q. Now quite six times $23,436 that you took?

A. I thought you meant twice as much as I allowed for your company.

Q. You took the 58 Massachusetts companies you say.

A. Yes.

4135 Q. Now page 194 of this report of 1910, shows 60 companies don't it?

A. What page.

Q. It is CXCIV I called it 194.

A. What is known as Table 2?

Q. Yes. That shows 60 companies instead of 58 don't it?

A. Yes. I think I was counting another table where sales were given. I will count this also if you wish to verify your question. This was not the table I had before me when I counted.

Q. You referred to table on page CCI. Table 5?

A. That is the table I used.

Q. That is the one we counted too, and it contains 60 instead of 58 don't it?

A. Well I will see again. I count 60.

Q. Now then in order to get at your sales, which give at 11,611,845 you took sales by meter on page CXCIV and sales by public lamps didn't you?

A. I deducted the sames given at the bottom of the page you just refer to. CCI.

Q. That is you took 12,467,863,270?

A. And from that I deducted the sum of the sales given in the foot note on the previous page.

Q. That is sales to other companies 852,942,732?

A. The sales to other companies in the foot note consist of many notes at the bottom of the page. CCI.

Q. They aggregate the amount I stated do they not?

A. That I don't remember because I have not the figures in mind. What do you find it to be.

Q. We find it to be 852,942,732.

I have the slip here on which the addition was made if you

4136 want to verify it?

1/2. There is another place where sales to other companies was given and I really don't remember whether I had this page or that other page.

Q. Both pages check, that is we have worked it from both pages and we find they check. That makes 11,594,920 instead of 11,687,000?

A. A difference of perhaps 92,000,000 or less than one per cent, about 9/10 of 1 per cent I should think.

Q. Now then the figure you took 11,687,845,000 divided by 58, the other figure that you took gives instead of 205,000,000 as you have it, 201,514,569, doesn't it?

A. I don't know, maybe, I will take your word for it if it does.

Q. There again it happens that the mistake is such that it is against the company?

A. Well if that be the case it is an illustration of a mistake, that is all.

Q. Passing donations, you next take up bad debts do you not?

A. Yes.

Q. And your purpose there is to refute the contention that the expenses of the company will be to some extent increased by reason of the fact that the ordinance does not provide for a maximum and a net rate?

A. It would be increased if there can't be some method devised like the requirement of deposits to prevent it.

Q. Well you didn't answer the question.

(Question read.)

A. Yes.

Q. And the argument that you deduce in support of that proposition is that by the adoption of something in the way of the requirement of a deposit, some rule of that kind, the company could minimize these losses?

4137 A. Yes.

Q. Have you been advised by counsel for the city that when the water company attempted to do that here in Des Moines some years ago it was enjoined from doing it.

A. No, all I know was what I read of the supreme court of Iowa in the Cedar Rapids Gas case.

Q. You gave us the benefit of the law of that case as you understand it?

A. I refer to it here. I have not talked with counsel on the matter you just mention.

Q. Without talking with them about it, you hesitate to testify about it?

A. About anything here in Des Moines of the water case yes, I am not acquainted with the facts, haven't talked with anybody on it, the first I have heard about it.

Q. You say in Philadelphia they get along very well without any penalty. Is that a fact?

A. I confess I am uncertain. I know positively about New York and Boston.

Q. Yes, but Philadelphia you have got in there?

A. I thought from what I read that was true and I int-nded to state in my testimony I was not positive on Philadelphia.

Q. But you omitted to didn't you?

A. I did.

Q. As a matter of fact there is a penalty in Philadelphia?

A. If you say so I will accept it, I thought there was not.

Q. I am asking you?

A. I thought I had read there was not, but I don't know.

Q. You don't know whether there is or is not?

A. No.

4138 Q. Is there a penalty in Boston?
A. No.
Q. Sure about that.
A. Yes.
Q. Where did you get your information?
A. I can't say now.
Q. You are sure about New York because you testified in the New York case?
A. There is no penalty in New York in any of the companies, New York or Brooklyn. There are several companies there.
Q. Now you say referring to that at that time the losses from bad debts were only 1.62 of a cent per thousand cubic feet of sales while Mr. Hall and I left in the Des Moines expenses as a basis for estimating the future, .64 of a cent. That was a slip of the tongue wasn't it?
A. When you say .64 I shall have to look again.
Q. When you say Mr. Hall left in the Des Moines expense. Did you and Mr. Hall colloborate in getting this up?
A. No, but I stated that I adopted his figure and my impression is that that was his figure. I can verify that of course.
Q. Let's see where we get that, is that in Exhibit "E"? Under what head?
A. For the moment I don't know, but I had the figure I am sure before me.
Q. Try uncollectible bills?
A. If I follow that line correctly with my eye I find the figure .64 in the last two columns of Exhibit "E." That was undoubtedly the figure I had before me when I wrote that sentence.
Q. That was the average for the four years and average for the five years.
4139 A. Yes. A little higher than the average for 1910.
Q. Now then that was the loss for bad debts with this net rate in there and a penalty if the bills were not paid within fifteen days?
A. Yes.
Q. And you allowed that on a basis of New York with no additions as the expense on this account where there was no such penalty provided for in the ordinance.
A. I believed that by deposit it could accomplish the same thing and I did leave the same figure, yes.
Q. And you did that without inquiring as to whether they had a right to require a deposit?
A. All inquirying I did was to read that decision that I mention.
Q. And you didn't take into account the increased costs of collection that would be involved to minimize this amount on bad debts?
A. I assumed that so far as there were losses they might be covered by interest on the deposits.
Q. That don't answer my question. It would involve more cost to collect the money where the c-nsumer was not induced to come in and pay promptly by this penalty provision than it would without it wouldn't it, leaving out of account the amount of losses?

A. There might be a little more and there might not after the community became used to it.

Q. You would infer that there would be no more expense in collecting if that penalty provision was removed?

A. There would be I think for a year or two but I don't know that there would be permanently.

Q. You have not taken that into account?

A. Only as is covered by the fact that I do not reduce the
4140 distribution and general expenses with growth of business. That is an important item.

Q. You refer to the gas company's credit for interest on deposits. In every case where you have testified where such deposits were made you have charged that interest against the company haven't you, and have testified that in your judgment the consumer was entitled to it?

A. I don't remember. I think the testimony—I don't remember my testimony on that, I don't think the interest on deposits has usually been paid consumers in these cases.

Q. I didn't ask you that. You have invariably, have you not, testified that it must be and ought to be except in this case wherever that has been a question?

A. I remember in one case so testifying, I don't remember any others. As a matter of fact it has not been so used, but has been absorbed by the company in most cases.

Q. Now take up the next page, rate litigation expenses. That page is intended to be an argument in support of the contention that these expenses should not be taken into account in estimating for future operating expenses, isn't it?

A. Yes.

Q. It does not set up any fact does it, that is any fact that is a fact that you give here?

A. It was thrown out by the courts in New York in the consolidated gas case.

Q. That is an argument on the legal proposition, simply the citation of a prec*en*dent?

A. Yes.

Q. Aside from that does it set up any fact?

A. I think not.

4141 *A. I think not.*

Q. Now you say this the city of Des Moines in fixing rates for 1911 and subsequently had no reason to believe that the company would spend money at the rate of several thousand dollars a month for a year or more in contesting a decision. Upon what personal knowledge of your own do you base that statement?

A. I was not here in Des Moines and have no personal knowledge. It is a belief rather than knowledge.

Q. You have no knowledge whatever as to what the city of Des Moines believed if a city could believe something have you?

A. No.

Q. This is simply an argument to support the proposition. Now let me turn this around. You have seen in the newspapers there

has just been a dedicion in the water case here and it was held that the company was justified and the city was not justified in passing the ordinance. Now do you think the city ought not to be allowed to call on the tax payers to pay the expenses of that suit?

A. Well, I can't express an opinion without knowing more of the case. The analogy would be——

Q. I just wondered wh-ther your rule would work both ways.

A. I think the rule might work that if the city can be legally asked to pay the expense it should be by charging it into the rates for water for the next three or four years as would be done in the case of gas. That would be the analogy I would have in mind as to the case. That is the way the matter has worked in previous cases where the company won, in water cases, there may be a different precedent regarding decisions.

Q. Now you state what the company should do if it loses. Suppose the company should win?

4142 A. I thought you were asking me what would happen if the company should win, as the water company had won. I thought you were speaking of the water company won. If my reply was based on the supposition of the water company being defeated, it would not be correct.

Q. Your next page takes up taxes doesn't it?

A. Yes.

Q. That is again devoted to the argument of the tax matter, what taxes ought to be taken into account in getting at the operating for the future.

A. Yes.

Q. That is all there is to it isn't it?

A. That is all it purports to be, a discussion of the tax rate.

Q. And that is all there is to it isn't it?

A. Why yes, it is a discussion of taxes. That is what it is headed.

Q. Now turn to page 69, that and the succeeding page are your argument with reference to the expense other than manufacturing, leakage and taxes which ought to be taken into account in getting at the oper-ting for the future.

A. Argument or reason or position, as you cho-se to call it.

Q. Is it a misnomer to call it your argument on that proposition?

A. It is my position backed up by my reasons.

Q. That as near as I can tell is an argument.

A. You can define it.

Q. Now you say at the bottom of the page there is therefore overwhelming reason for holding that the year 1910 being an absolute exception to the previous experience both of the Des Moines Company and all gas companies in general, except immediately preceding contests as to rates, as to fully justify the throwing out

4143 of 1910, and subs-it*u*ting for it in 1904 and 1905. What is the overwhelming reason to which you refer.

A. The history of your company for six or seven years and so far as I could get it for four years earlier, 1890 to '94 inclusive and the experience of other companies all over the country, the general experience,

Q. Now these profits at 90 cents that we took up some time ago commencing with page 71 is the application of what has preceded with reference to these operating expenses isn't it?

A. Yes.

Q. You then take your market returns on bonds, latest market quotations commencing at page 73?

A. Yes.

Q. These things are given to support your contention as to fair return.

A. Yes.

Q. And why do you omit Buffalo from that list of bonds?

A. Because so absolutely abnormal. I know of no other company situated as Buffalo with an intense competition from natural gas so that it is a question of whether it will keep up its interest payments, has been always doubtful.

Q. What were the Buffalo company's bonds stated at in the issue of the financial chronicle to which you refer.

A. I don't remember.

Q. 61 weren't they?

A. Possibly, I don't remember.

Q. And this competition is one of the hazards of the gas business.

A. If that had been added it would have reduced the percentage at the bottom of page 75 not more than 3/10 of 1 per cent.

Q. This competition with natural gas to which you refer
4144 is one of the hazards of the gas business?

A. In some sections of the country, in other sections not.

Q. How long since it was not in Buffalo?

A. Natural gas has been in Buffalo several years, I don't know how long.

Q. Is it ten years since the people in Buffalo ceased to believe they were absolutely free from this natural gas hazard?

A. I don't know when natural gas was intr-duced in Buffalo, but it had been in several years before I had my attention attracted to it four or five years ago. I should think natural gas must have been in ten years.

Q. Prior to that time they believed they were as free from that kind of competition as we believe here in Des Moines?

A. I suppose so, although natural gas had been around that section nearer I think than it is here before it reached Buffalo.

Q. Was it nearer than Kansas City is to Des Moines or St. Joseph?

A. Well I can't say the distance of those cities only I know that natural gas is rather on the wane in Kansas City and that far away.

Q. That don't answer the question whether natural gas was nearer to Buffalo than Kansas City or St. Joe to Des Moines?

A. I don't know how near, only there were gas lines within one or two hundred miles of Buffalo before it reached Buffalo. I don't know the distance between the cities and *her* you name.

Q. Where does the natural gas now used in Buffalo come from? What district?

A. I bel-eve it comes from the Pittsburgh district, some of it may

come from West Virginia, I am not posted, because I have not had occasion to look it up for some time. Where gas comes from in Cleveland, I am acquainted with that, but where it starts to Buffalo, I don't know.

4145 Q. There is other districts up near the Pittsburgh district?

A. There is a large amount of gas not very far from Pittsburgh supplies that section, used to, I have not looked into that lately.

Q. Do you know whether they are furnishing any there now?

A. No, I have not had occasion to look into that natural has this long time, that district.

Q. You were familiar with Buffalo you said four or five years ago?

A. Yes and forgotten some of it since.

Q. Was that when you and Prof. Marks were witnesses there in 1907?

A. Yes.

Q. And there you predicted largely increased profits to the company didn't you on reduced rates?

A. I don't recall but I think I predicted the tendency to some increase.

Q. And have these bonds been going up or down since then?

A. I don't know. They didn't make any reduction I think in prices.

Q. Does this list of bonds which you give here cover all of the gas bonds which were quoted in that issue of the financial chronicle?

A. It was intended to, unless I thought they were not natural gas bonds or a combination of gas and electricity or traction in a way which was very difficult to separate. Everything that appeared to be a gas bond I took. I dare say there may be a half dozen companies that I might have omitted unintentionally. I didn't intend to omit them.

Q. You limit this to five per cent bonds?

A. I do, for two reasons. The bonds here were five and secondly most of the gas bonds are five per cent.

Q. We have to read your report very carefully to find that

4146 limitation in it.

A. I don't know as to that. I state nearly all gas bonds quoted in Journal are five per cent bonds, if any such -re omitted in the following table it is an oversight.

Q. It is an indirect statement growing out of certain lists, we have to look for it in order to see that this statement is limited to five per cent bonds. Read the first sentence here preceding this paragraph?

A. Below are given the latest prices bid for all artificial gas bonds in the bank quotation section of the Commercial and Financial Chronicle Aug-st 5, 1911. That should have included it was 5 per cent, which I certainly imply in the next paragraph and I think stated it in my testimony.

Q. But it is neecssary to read this pretty carefully to get the indication isn't it?

Mr. BRENNAN: That is a matter I think the report shows for itself.

Q. You don't include there the undesirable bonds for which no bids whatever were quoted?

A. I only include bonds upon which there were prices bid.

Q. Of course the bonds upon which you would expect no bids are undesirable nonds?

A. Not necessarily, they might be small companies that were not on the market, a great many of those.

Q. Now this same Financial Chronicle quotes water bonds don't it?

A. Yes.

Q. Are they quoted higher or lower than gas bonds?

A. I didn't look to see.

Q. Now the next thing you take up here is market return on stock is it not?

A. Yes.

4147 Q. And that also is intended to support your contentions as to fair return?

A. Yes.

Q. And that is all that is intended by that is it not?

A. Well there is data given there but as you say it is intended to support my contention.

Q. Now you refer to the Massachusetts gas company?

A. What page please.

Q. 78. That is a holding company is it not?

A. Yes.

Q. And how much tangible property has it?

A. I don't know.

Q. Has it any?

A. I don't suppose it has much, in fact I should think very little but I can's say whether it has a surplus or not.

Q. And what is its capital stock?

A. I don't remember.

Q. Did you ever know?

A. I think in the indistrial section of the Commercial and Industrial Chronicle I looked it up, I have forgotten.

Q. How much water is there in this stock or what you call water?

A. I don't know.

Q. Then you don't know whether it is paying 4 per cent on the value of the property it owns or ten per cent on the value of the property it owns?

A. No. I am only talking about what a certain return will bring a stock to in the market provided there is a reasonable certainty of its continuance.

Q. Do you know of any company paying dividends that is distributing all of its earnings and div-dends?

4148 A. I think the Boston company is, the Boston gas company.

Q. You mean the company that is acting under this statute of

Massachusetts that -equires it to either distribute its earbings or forego them?

A. Oh no the statute does not require any such thing. It can accumulate them.

Q. It can accumulate them.

A. But if it pays them out then the price of gas is regulated proportionately.

Q. You are sure you are right about that?

A. Within ceryain limits it can accumulate them, within larger limits than it has ever exercised. There is a limit to it I think but they do not reach that limit anywhere near.

Q. Do you know of any other corporation than the Boston gas company that is paying out all of its earnings in dividends?

A. I could not say at the moment that I do. Most companies aim to save a little.

Q. And does the ratio between the dividends paid and the earnings actually made have anything to do with the market value of the security?

A. Yes to some extent. It does not have as much as you would think it would have, but *it* has some.

Q. You make some figures here on page 81 on the assumption that half of the property or half of the assets of a gas company in Iowa are raised by stock and half by bonds.

A. Yes.

Q. Did you know the ratio which the law fixes between the indebtedness and the amount of stock?

A. No, I don't.

Q. Well you would have to take that into account wouldn't you before you financed an Iowa company?

4149 A. Yes.

Q. If the law of Iowa prohibits an indebtedness in excess of two thirds of the amount of the stock an Iowa company could not be financed upon the basis which you state here could it?

A. A new company could not. Your company has been.

Q. Are you correct about that, at any time has our bonded debt exceeded two thirds of the amount of the stock.

COURT: That is a question a lawyer can answer just as well.

Mr. GUERNSEY: I don't care to go into it except the witness has volunteered this statement which is incorrect.

A. No, I am not sure that it has.

Here the further hearing of this case was adjourned until 9:30 A. M. tomorrow.

4150 Wednesday Forenoon Session.

SEPTEMBER 27, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, continuing his cross examination, examined by N. T. Guernsey, testified:

Q. Professor Bemis, have you any further corrections that you desire to make this morning?

A. No, I have satisfied myself as to the two or three matters you have been over, but I thought I should bring them in on redirect. If you wish me to refer to them, I can do so now.

Q. No, I have no doubt you have arranged them properly. Did you look over the exhibit identified yesterday?

A. Not carefully; I have glanced at it; I looked it over only partially.

Q. Now referring to pages 73, 74, 75, 76, 77, 78, 79, 80, 81 and 82, they are simply your argument on the fair return question, are they not?

A. I don't think the term can be applied to argument any more then it can be to most testimony, because it is full facts I present for the first time in the case.

Q. It is facts which you present to sustain your contention?

A. They bear on and confirm my belief, and my belief is partly based——

Q. Well they are facts which you brought in in order to sustain the conclusion which you sought to uphold?

A. Yes, and to show how I came to reach my conclusion. In other words, I did not select facts; I took from quotations, save where it is specially mentioned.

4151 Q. You took from quotations but you did not include anything but five per cent bonds; you excluded places like Buffalo—prominent places where the price was low, and excluded bonds upon which there were no bids.

A. Buffalo is the only place I excluded out of the whole list of 127 bonds, and it would not make a difference of three-tenths in the result; it would be over 97 with Buffalo included. I consider Buffalo very abnormal but am perfectly willing to include it; I do not know of another exception or omission.

Q. Now you next take up, do you not, what you call future growth and profits?

A. Yes.

Q. What proposition do you attempt to establish there?

A. In a general way, that the increasing sales diminish operating cost, so that a rate based on the last year, or the last five years would be too high for the next three or four years. We are fixing a rate for the future increased business and not trying to show that the past three or four or five years was conducted on an exorbitant price.

Q. You say we are fixing a rate; this is not a rate making proceeding, is it?

A. It is a little general use of language; the city was attempting to fix a rate and we are of course reviewing it.

Q. Now, you know of course that the cities in this state can not fix rates for any definite time?

A. That is a mere quibble, as I would consider it——

Q. Pardon me, but will you answer the question?

Mr. BYERS: I think that is an answer; I think that is a very proper reply to a question that involves what the law is.

4152 Mr. GUERNSEY: I asked the witness as to his knowledge on that proposition. I assume that this rate matter could be taken up every years, but as a matter of fact is not.

Q. In other words, your argument here is based upon the assumption that a rate is fixed for a definite period?

A. It is practically fixed for at least four or five years. It does not depend on that, however, because I consider the rate is reasonable on the basis of 1910, if it were only fixed for one year.

Q. Is there any fact that is referred to by you in this connection with your discussion of this subject aside from the history of the Consolidated Company and the Brooklyn Company?

A. If you mean by fact definite figures, no. I am prepared to give some——

Q. Well, what I wanted to get at was something here that is a statement of fact as distinguished from conclusions or argumentative statements?

A. Of course the only figures that I give as definite figures are New York and Brooklyn; I am prepared to give others.

Q. Now where did you get your New York figures, in your New York gas case?

A. No.

Q. Where?

A. From a letter sent me by Mr. Webber, the statistician of the commission, at the request of Milo Maltby. I wrote Dr. Maltby when I was preparing my Chicago report a few weeks ago for this information and he turned it over to his statistician, and Mr. Webber replied.

Q. So that this testimony is based upon a letter written by somebody who is not here for cross examination?

4153 A. It is a letter by the statistician of the Public Service Commission, First District, New York City.

Q. That is true also of Brooklyn?

A. Yes.

Q. So that you have not the details there—you do not know from what these figures have been made up?

A. Yes, I have been in his office since and talked with him about them. They are the official returns of the company.

Q. But you have not the details of the figures and you yourself have not made this up?

A. I took them from his letter, which was practically an official letter of the Commission.

Q. Now, you say similar results in Boston and Chicago might be cited?

A. Yes.

Q. Have you access to the records in Chicago?

A. I had in that, yes; in a large measure, not fully.

Q. When?

A. They have published their sales up to about eight or ten years ago. In the 1906 hearing, December 1905, and January 1906, the figures there were used for the two companies, the People's and the Ogden; and then recently in a letter of the Company to a formal complaint in court before Judge Gibbons, they have given further data for the last three or four years.

Q. So that this is hearsay testimony also?

A. It came from the company itself, and was in a court action; it has the same basis as your own testimony here.

Q. Do you remember the testimony of Professor Marks in the Consolidated case to the effect that the field for extension of business in New York was sui generis and could not properly be
4154 compared with any other city in this country?

A. I do not remember exactly; I think probably that is true.

Q. That is it, isn't it?

A. Yes, Manhattan is somewhat different of course from its enormous buildings, etc.

Q. Would the local conditions in Des Moines have anything to do in your judgment with the possibilities for increasing the per capita sales?

A. Always local conditions have an effect.

Q. Have you taken those conditions into account here?

A. Yes.

Q. What are they?

A. The fact that now you have meters on a large proportion of the — and buildings, so there is not room for as large an extension in the number of meters, the percentage of increase relative to the population in the future, as there has been in the past. That is the most important local limitation.

Q. Do you know of any city in the United States with 90 cent gas that has as high sales per capita as Des Moines has today?

A. I know a few cities that have a higher, but I don't remember at the moment their prices. Indianapolis has somewhat higher, with 60 cent gas.

Q. Do you know of any city in the United States with 90 cent gas that has as high per capita sales as Des Moines has today?

A. I will have to look that up; I don't remember whether I have the data on that with me, but I will see. I guess the memorandum on the subject I left in my room. I went through Brown's Directory and noticed the prices and sales of cities about the population of Des Moines. There are a half dozen of about the population, that is not varying more than 30,000 or so either way, that have as
4155 high or higher.

Q. At 90 cent gas?

A. I won't say precisely 90 cents; I have the prices noted.

Q. I asked you whether you could give me any city in the United States with 90 cent gas that had as high per capita sales as Des Moines has today?

A. I don't remember at the moment what the prices were in those cities, so I have to defer the answer.

Q. So that you cannot at this time give us any such city?

A. I don't remember what the prices were in those cities.

Q. Now you have frequently worked in a reference to lower prices of gas in some other city, and which was not responsive to the question, why did you do that?

A. I don't know what you refer to now.

Q. I refer to your answers to these last questions.

A. I thought I was answering them.

Q. Why did you work in the reference to the price of gas in Indianapolis, for instance?

A. Because I considered that an illustration of the effect of reduced price on increased consumption.

Q. In other words, you thought that would tend to maintain your position although it was not responsive to the question?

A. It may not have been absolutely responsive.

Q. You thought that would maintain your position?

A. I thought so.

Q. So you deliberately did not answer the question but attempted to bring in something else which you thought would maintain your position?

A. I did not perhaps sufficiently appreciate the import of the question. I thought your question related largely to the higher
4156 per capita; I did not fully realize you confined the question to 90 cent gas.

Q. That was after I had told you at least twice exactly what I was asking for?

Objected to on part of defendants as being improper and not cross examination.

The MASTER: I think the last time you omitted 90 cents.

Mr. GUERNSEY: I may have. If I did omit it, it was a slip of the tongue.

Q. It is true, is it not, that when you mentioned voluntarily these lower prices you failed to mention things like the difference in candle power that ought to be taken into account?

A. They should not be taken into account largely in per capita; they should be in the manufacturing cost in the holder.

Q. They should be when you come to this matter of price, which was what you brought in?

A. You were talking about per capita sales.

Q. Not in the question I ask you now. Confine yourself to the question, please, if you can, and divest yourself of your disposition to argue. Now then every time that you have brought in the low price it was in response to something which was not responsive to the question, and you failed to call attention to the other distinguishing things that ought to be taken into account in comparing that with the prices here, have you not?

A. I can answer that question only by saying that you contradict yourself in your question.

Q. In other words, you cannot divest yourself of your disposition to argue instead of answering the question?

A. Your question cannot be answered because it is contra-
4157 dictory. I will explain if you wish——

Q. Now, then, take Indianapolis, do you know what the candle power there is?

A. About six hundred. It is ordinary coal gas. It has not more than about 16 or 18 candle power.

The MASTER: When you say six hundred, what do you mean.

A. Six hundred B. T. U.

Q. I asked you for the candle power?

A. Brown's Directory gives it; I haven't it in mind at the moment.

The MASTER: You answered six hundred.

A. I thought he asked for heat units, British thermal units.

Q. Now you made some comparisons yesterday in Massachusetts and you make some further today in your report, do you take into account the candle power there?

A. Yes and no. For the purpose of comparison it was not necessary. I did not attempt to show as to manufacturing cost by any comparison in Massachusetts.

Q. You referred yesterday several times to what they were selling gas for in these Massachusetts towns?

A. Yes.

Q. And you always gave a price lower than 90 cents?

A. That is right.

Q. And you always gave us a town where the candle power was lower than Des Moines?

A. Yes.

Q. And nowhere called attention to the difference in candle power?

A. I made in my report—it was irrelevant——

Q. I didn't ask you that; did you anywhere call attention to the candle power?

A. In my report I did.

4158 Q. Will you point out in your report where you did?

A. I assume if you do not find it there, it is not there. I was very careful to make no point that depended on the candle power. Every Massachusetts city has a higher manufacturing cost than Des Moines. As long as that was the case, as long as they sold cheaper here was the point, and not the vital point. Every manufacturing city or the aggregate of the seven cities is the only thing I used.

Q. Getting back to my question, you have nowhere taken into account the difference in the product furnished where you have been comparing these prices?

A. I did not and should not, for the point I was making it would have been wrong to have done so.

Q. Now then does the cost of gas, the actual cost of manufacture and distributing gas vary either with the kind of gas made or with the locality where the work is carried on?

A. You must separate the question into manufacture as one and distributing as the other.

(Last question repeated.)

A. In the aggregate it is true that it varies.

Q. It varies both with the locality and the character of gas made?

A. Yes; but the distribution in general does not vary with the candle power and that is what I used.

Q. Now did you correct all the errors on page 85?

A. I have not been through with all those figures, but I haven't thought of any mistakes here of any importance; anyway I thought I corrected them all; I think they balance.

Q. Now taking up the Massachusetts experience, commencing on page 85, you run over to page 93, do you not, and that is all predicated upon those Massachusetts figures?

4159 A. Yes.

Q. And what is the purpose of that part of your argument?

A. To show primarily that the margin between the manufacturing cost and the price and the margin for net profit in cents per thousand feet could be compared with conditions here, and it would show that Des Moines at 90 cents would have as large a margin in cents per thousand feet in profit as the Massachusetts companies and a larger margin for the difference between the price and the holder cost and leakage; taxes I may not have included. I have a separate computation for that.

Q. So that the ultimate purpose here in these pages of your report is by comparison with Massachusetts results to demonstrate that the net return in cents per thousand feet of the Des Moines Company is higher than the net return in cents per thousand feet of these Massachusetts Companies and is therefore at least high enough?

A. Yes, at 90 cents it would be as high as the Massachusetts reports. It is confirmatory but not conclusive.

Q. That is the purpose of this part of your argument, to cover that proposition?

A. Yes.

Q. Now, only one of these companies makes water gas?

A. That is, makes exclusively water gas, you mean?

Q. Yes, Fall River is the only one that makes exclusively water gas?

A. I think nearly all of them make some water gas.

Q. You first took your population and you then took your sales and worked out the per capita sales and sales per mile of main?

A. Those pages I did not have in mind that particular purpose.

Q. Those are a sort of digression?

A. They have in mind another purpose. To show the

4160 tendency of sales to increase per capita and per mile of main, although not very much per meter, and to show the fallacy of the common argument of gas companies that you can determine by the sales per meter anything about consumption or profits, which is an absolute fallacy.

Q. I thought you wanted to argue that proposition?

A. It is true.

Q. The ordinary man don't swear to the truth of an argument. I won't discuss that with you. Now, turning to page 86, you included in your sales for Cambridge the sales which Cambridge made to other companies?

A. Yes; they were very small.

Q. So that to that extent you increased your per capita and worked it in twice?

A. Well, there is a slight change there.

Q. As we figure it it is 284,700, *hundred* feet?

A. That is right.

Q. It is that much improperly included there?

A. If you will excuse me until I find the page——

Q. We would like to have it right if we are to draw conclusions from it.

A. 755,300 feet in Cambridge out of 669 million, are sold to other companies.

Q. Well but we are talking about 1905, and you have 1910?

A. I was looking at 1910, the only report I happen to have with me; that is the one we talked about so much yesterday.

Q. Will you look that up and give us what ought to be the correct figure there?

A. I will. In 1905 it was 284,700 feet out of sales of 439,162,251 feet.

4161 Q. And that would reduce your average at the bottom from 369,336,622 to 369,295,950?

A. Oh, yes; I realize that in 1910 for Springfield, and I think I referred to it in the testimony on the top of page 85.

Q. You say they sell less than two per cent of their make to other companies?

A. That was only 1910.

Q. You don't anywhere make this correction, do you?

A. No, two per cent, I thought it was too insignificant to bother with it.

Q. It is only a small error, but it happens to be against the company?

A. I did not think that was particularly important for or against. A few feet per capita do not make any appreciable difference in the result.

Q. Let us take 1910, the column of sales for Cambridge to other companies, which were 755,300 feet?

A. Yes.

Q. That should be deducted if we want to get an accurate per capita?

A. Yes, if we want to get down to that fine point.

Q. And the sales for Lynn to other companies were 3,991,000?

A. Yes.

Q. And they should be deducted if we wish to get a correct per capita there?

A. Yes.

Q. And the sales by Springfield to other companies were about ten per cent?

A. Yes. 58,890,736 feet.

Q. So that there is a total change there of about 64 million feet?

A. Without computing it I should say about that.

4162 Q. And your average for 1910 then would be changed from 566,913,937 to 557,721,475?

A. About that, I should think.

Q. And your per capita would come down from your changed figure, 45.86 yesterday to 45.12?

A. About that; I didn't consider that worth noticing, so I didn't bother with it, but I referred to it on the top of the previous page.

Q. Read the reference from the top of the previous page which says that your sales included sales to other companies?

A. There are seven companies in Massachusetts about the size of the Des Moines Company. They do not buy any of the gas that they sell as do some other Massachusetts companies and they sell less than two per cent of their make to other companies, the other ninety-eight per cent of course being assumed to be sold to consumers.

Q. There is no statement there that in getting at your per capita you included those sales to other companies so as to increase the per capita?

A. The sales I thought would be given, having stated the ninety-eight per cent.

Q. We get again to an assumption but not a definite statement?

A. I had in mind that the title was clear, having stated two per cent of it was to other companies. That only applies to 1910. In 1905 there was less than one half of one per cent, and the — thing in 1900.

Q. On the next page you give the increase in the miles of mains and meters and in the sales, and in the sales per meter, but nowhere do you put in the increased investment that is necessary to take care of the increase of sales?

4163 A. No.

Q. That is a necessary factor, is it not, if we are to reach any conclusion as to the future net earnings?

A. When I gave it——

Q. Will you answer the question?

A. Certainly, yes; only I did not ignore it in the report.

Q. Now your miles of main, take your figures here on page 87, your sales increased from twenty-five hundred thousand to thirty-seven hundred thousand?

A. Yes.

Q. That is an increase of about fifty per cent?

A. Yes, per mile of main.

Q. Now, how are your gross sales for that period, have you got them anywhere?

A. Yes. On page 86, the previous page, the totals have increased one billion five hundred twenty-nine million to three billion nine hundred and sixty eight million; two and a half times as great in 1910 as in 1900.

Q. Now I wish you would look at this Exhibit 66 and state

whether that shows correctly the figures as they should appear on your page 86, taking out the sales to other companies which ought not to be included in making these per capita tables, and readjusting the per capita accordingly, and also readjusting the averages and the totals accordingly?

A. It probably is correct. I don't notice any change of any importance, except in the per capita of a couple of companies at the close which I understood all about when I made my table.

Q. I assumed you understood all about it.

Complainant offers and reads in evidence Exhibit 66, as follows:

"COMPLAINANT'S EXHIBIT 66.

Table Showing Sales for Seven Massachusetts Cities for 1900, 1905, *and* 1910, *also Giving the per Capita Sales for* 1910.

(See Page 86, Prof. Bemis' Report.)

Place—	Sales, 1900.	Sales, 1905.	Sales, 1910.	1910 Per capita.
Cambridge	276,284,562′	438,877,551′	669,227,636′	4,211′
Fall River	169,251,157	321,119,341	495,612,338	4,155
Lawrence	138,314,175	261,888,830	417,864,700	3,793
Lowell	345,359,900	482,088,600	573,672,700	4,840
Lynn	183,843,000	358,776,700	601,590,700	5,742
Springfield	152,272,000	311,678,930	509,222,052	4,729
Worcester	264,333,900	410,641,700	637,570,200	4,367
Totals	1,529,658,694	2,585,071,652	3,904,760,326	....
Averages	218,522,671	369,295,950	557,721,475	....
Per Capita	2,260	3,490	4,512	4,512

4165 (Answer continued:) It does not differ from my table except for 1910 and then the per capita instead of being 4,586 is 4,512.

Q. Now you remember there was introduced in connection with the cross examination of Professor Marks a paper marked Exhibit 44 which happens to cover five of these seven cities that you selected, do you not?

A. I never saw the exhibit. I was present in the room when it was first mentioned; he was asked to take it to his room and verify it and that is the last I seen, heard or thought of it.

Q. Now, then, I will show you a copy of this exhibit?

A. I left town that night for Chicago.

Q. Not on account of this exhibit?

A. I did not, no.

Q. Now the Massachusetts reports keep the population as given by the various censuses so there is only changes once in five years?

A. Yes.

Q. Now in order to make an intelligent comparison of these things it is necessary to take into account not only the rates, but the population and the total sales and the number of meters, and something that will indicate the investment, is it not?

A. It depends upon what you are comparing; you don't need all of that for some comparisons.

Q. But if you want to draw any conclusions that will be of any aid to you as to the future in estimating what the return will be, you must take into account the investment, the sales and proceeds from the investment.

A. I tried to do that.

Q. Answer the question. I asked you whether that wasn't a fact?

4166 A. The investment and rate of return on the investment are of course very important questions.

Q. Can you get at the reasonableness of the return by taking into account the earnings, by arguing without getting, by arguing increased earnings from increased sales, without also getting into the question the increased investment?

A. That should be considered.

Q. It must be considered to reach an intelligent conclusion?

A. Yes.

Q. Where do you take that factor up in your report when you take up these increased earnings?

A. I did not take it up in that connection, although I think I referred to the fact as to the profits in thousands feet of sales in Massachusetts. Of course that has been with increase of sales and with all the investment necessary to take care of it.

Q. For instance, how does the population per mile of main in Massachusetts compare with the population per mile of main in Des Moines, take these seven places?

A. I worked out your sales per mile of main here as compared with those I gave on page 87.

Q. That don't answer my question. How does the population per mile of main in those seven Massachusetts cities compare with the population per mile of main in Des Moines?

A. I think it is somewhat greater.

Q. You know, don't you, they are very much more densely settled, take Fall River for instance, or Lynn, or Springfield?

A. Yes.

Q. Any of them?

A. Yes.

Q. So that it wouldn't do to compare the Massachusetts in-
4167 vestment even with Des Moines?

A. Only tendencies, such as I have referred to. They are building into suburbs there the same as they are here. They are building into sparsely populated suburbs—Springfield is going out, I happen to know.

Q. Is there anywhere in your report where you take into account what you say is an essential factor, the investment in connection with increase of sales, in order to ascertain what the real profit would be?

A. I have shown that there has been an increase in Massachusetts. I had taken it for granted the investment had to keep pace with it and supply the demand.

Q. That don't answer the question. Have you anywhere taken the trouble to get the figures showing and increase in the investment in connection with the increase in sales; have you anywhere gotton those figures?

A. I studied your testimony on the subject, Mr. Lea's and Mr. Baehr's testimony on the subject, and Mr. Haines' report as to the needs of the next year, and the probable increase of sales shown up to date this year.

Q. Do you anywhere in making your argument on that proposition here take that increase of investment into account at all?

A. I may not refer to it; it will not increase as fast as your sales, I am sure.

Q. So that your argument upon that proposition leaves but one essential factor?

A. I think you will find a reference to it, but just what page I cannot recall. I am sure I referred to it, very sure, in this report somewhere.

Q. I found a sort of a general statement, about one line,
4168 but I did not see it taken into account in figures anywhere; was it?

A. I did not, because Mr. Hall had it in his report and I was not trying to duplicate that. The sentence that you refer to here is a sweeping one, that covered the ground. I made the distinct assertion there and that covered the ground.

Q. Let us see what it is?

A. "The increase of land, manufacture and holder capacity, meters and services will not have to exceed the increase in sales." I remember making that statement.

Q. What I want to get at is whether you carry that into your figures anywhere?

A. No.

Q. When you come to your figures, your ultimate result, you ignore it?

A. I do not ignore it, because I follow the position that I am not obliged to carry it in under those circumstances. I concede to you, in other words, that the investment might increase as fast as the sales. I do not believe it will.

Q. You stated a few moments ago there was no difference in the distribution cost of coal or water gas?

A. No appreciable difference; there is a little difference in condensation; a little difference in connection with matters that come up with napthaline, and so on.

Q. What are the other matters besides condensation?

A. I do not recall at the moment.

Q. What is the specific gravity of coal gas?

A. I have forgotton.

Q. What is the specific gravity of water gas?

A. I have forgotton that.

Q. Which is higher?

A. I have even forgotton that. I have not tried to carry
4169 those details in mind.

Q. Are there any pressure conditions and therefore a difference as to the requried sizes of mains between the two classes of gas?

A. There is not practically much differenec in the pressure the companies are using in Massachusetts and here.

(Last question repeated.)

A. Very little. Not enough to make any appreciable difference in the computation of the total cost.

Q. What difference is there?

A. I cannot undertake to say.

Q. Which is the higher pressure, and therefore requires less in the way of main expenses?

A. Both can be sent through practically the pressures up to eight or ten inches.

Q. Please answer the question.

A. I should say I do not recall how the two behave. The difference is so insignificant it is hardly ever taken into account. Of course it is a small engineering matter and does not affect the figures I was using.

Q. Now then have you made any practical comparisons of the difference between the cost of distribution in a water gas plant and coal gas plant?

A. I have found no difference of any importance.

Q. I asked you whether you made any practical comparisons?

A. No.

Q. Never made any?

A. No. I am familiar with the literature on the subject and it

is never emphasized. In all the gas cases I never heard it brought up before.

4170 Q. Now referring to page 87, the miles of main, we have checked with you a difference of one mile, which is insignificant; the number of meters we have a little larger than yours in 1910. Where did you get your number of meters in 1910?

A. I took the report of meters and dictated the figures which I then added. There may have been some mistake in hearing what I was dictating or something of the kind.

Q. We have then the sales per mile of main for 1900, 2,499,042 against your 2,503,533?

A. Was that because you took different figures on mains? It is small anyway.

Q. I don't know just where it says it is small; yours is the result of a division?

A. Yes. 611 for the divisor.

Q. Now we get the sales per mile of main for 1910 3,642,500 instead of 3,701,863?

A. Is that because you use different base figures?

Q. I don't know what figures you used.

A. I used the figures given on this page, 1072 and for the sales I used the figures given on page 86. If you took out, I suppose you did, the sales, the two per cent sales to other companies, that would account for the difference. I do not think the division made here is wrong. If you took a different base, you got that slight difference.

Complainant now offers and reads in evidence Exhibit 67 which contains the necessary corrections on page 87 and adds the number of meters per mile of main for each of the five year periods, as follows:

4171 "COMPLAINANT'S EXHIBIT 67.

Table Showing Total for Year- 1900, 1905 & 1910 of Seven Massachusetts Cities, Giving Mains, Meters and Sales.

(See page 87—Prof. Bemis' Report.)

Year.	Miles of main.	Meters.	Meters mile- of main.	Sales per mile of main.	Sales per meter.
1900	612	62,839	102.6	2,499,442	24,342
1905	825	103,222	125.1	3,133,765	25,044
1910	1,072	152,629	142.4	3,642,500	25,583"

(Answer continued.) You have the same figures of miles of main, with the exception of one mile. You have the same meters, with the exception of 1910, when you have a few more, 54 more meters, which is insignificant. On the sales your difference I think is due to your excluding the two per cent of other companies.

Q. Which ought to be excluded?

A. Yes, I think so. For the purpose of my computation I did not

have the time, too busy to take it up. The general trend of the tables was not affected by that two per cent.

Q. How did you obtain your average price on page 88, by
4172 original computation, or took it from the reports?

A. By a computation; I added the receipts and divided by the sales. May I look over Exhibit 44, I never saw it before.

Mr. GUERNSEY: I would be glad to have you check it up. We would like to have it returned, however.

Q. Now turn to page 92, we do not check with you there at all. You have the manufacturing cost of $6,369,168.43. We have it $6,083,767. Making a difference of nearly $300,000. How did you get your $6,369,168.43?

A. I ran through all the reports of the seven companies for the five years. This does not relate to the three periods but relates to 1906-07-08-09 and 10 and subtracted the receipts from the residuals.

Q. We took the same year and subtracted the residuals. You took the manufacturing costs as given in the reports, you say?

A. Yes, that is what I tried to do.

Q. Well now in the reports you took the item, say turning to 26th report for 1910, on page 28, which is the page I happen to have open, and Cambridge is the first one; you took out works there $286,476.56?

A. Yes.

Q. Now you subtracted from that the residuals given at the top of the other page $65,553.98?

A. Yes, that is the method.

Q. And then you obtained your other costs how?

A. By taking the entire operating expenses, as for example, in Cambridge it was, $461,021.66 and deducted from that the residuals; then the other would be the difference between the total and the manufacturing.

Q. But that is a mistake, isn't it?

4173 A. Now let me see. The total expenses for Cambridge would be $461,021.66 less the residuals.

Q. Certainly.

A. That is what I just said.

Q. That is not what you just said as I understood you. Go ahead and tell us how you get this. We do not care what you said some time ago.

A. Now that gives the total cost, and the total operating expenses are obtained in the way I have just spoken of.

Q. You took $461,021.66 and you deducted from that $663,553.98?

A. I deducted from that $663,553.98.

Q. What does that give you?

A. $397,467.68.

Q. How did you get at it—we want to find out the difference between our figures and yours?

A. I do not remember; I did that some weeks ago.

Q. So you have no idea what method you did adopt?

A. I don't remember which one of those two methods.

Q. How should it be done?

A. You get the same total operating cost in either event. The ten million should be obtained by the addition of these various totals.

Q. Tell us how this should be worked out; I want to find out how you do it?

A. The way would be to take the works $286,476.56 and deduct from that the residuals, and that will get the net cost at the works. Then add up the other four items, will get the other costs. The two added together should check with the total $461,021.66 less the residuals.

Q. Now that is the net that we adopted and we run just a
4174 little less than $300,000 you had on the manufacturing costs?

A. How about the total?

Q. On the total operating cost we run about $40,000 over you—$10,056,852.97.

A. The total being reached—the division between those—the mistake must be in the distribution between the manufacturing and the other. The total does not differ as you give the figures, but a little less than $40,000.

Q. I told you that at the start. I want to get this reconciled. I want to get the short way to do it. You don't know how you made your figures?

A. No, not as to the other costs. I know how I made them as to the manufacturing costs. I may have taken the total operating costs and from that deducted the manufacturing, getting the other costs that way, instead of working all three out in checking them.

Q. If you took your total manufacturing cost——

A. Deducted from the total operating, it should give the other costs.

Q. Of course by making that reduction it does give the other costs?

A. In doing the work instead of making the addition of distribution, management, incidentals and adding them all up, as I recall it, I got the manufacturing cost and total cost and subtracted the one *for* the other, to get the other cost, that is my impression of the way I did it.

Q. Let me ask you another question. Now you have something here you call price; what do you mean by price?

A. That was the same price obtained, just as it was in the previous tables where I took 1900.

Q. Where did you get that figure, $15,188,092.63?

4175 A. From the addition of the prices obtained. For example, on page 88 for 1910, the receipts from gas are given as $3,398,280.99 that year. Now the previous four years I took from the reports in the same way in which 1910 was compiled.

Q. We do not check with your figure.

A. What difference do you find in that?

Q. I cannot tell you exactly.

A. Did you find the figures on page 88 for those three years checked or nearly checked?

Q. They checked approximately. But now didn't you do this to get your prices: didn't you take your total operating expenses, your

depreciation and your profits and your manufacturing cost and add them together and call that the price as you call it?

A. That is the $10,539,328.79.

Q. No, that is simply operating expenses and depreciation if you correctly describe it here. Didn't you take your total operating expenses, your depreciation, and your profits and your manufacturing cost and add them together and call that the price, as you call it?

A. Well, I can't say positively. Did my depreciation check?

Q. No, it didn't check, only about $20,000 or a little over off.

A. How about profits from operation did they nearly check?

Q. Well, they are only off about $500,000.

A. Well, I can't understand it. Page 88 is worked out on the same principle and you find it checks.

Q. That is why I want to get at how you made up these figures, because of these trifling differences?

A. It is a long job; I went through the whole five years.

4176 Q. When did you make these figures?

A. In Chicago.

Q. Did you make them yourself?

A. Yes; that is I dictated the figures that were taken down. I dictated from each report and then we added them up. Some I did myself and some were done on the adding machine.

Q. I do not see any short way to get at this. I think we will have to check this out if you can't tell us how you made this report up, to reconcile these things.

A. You can fall back on page 88 which does check, made up on the same basis, but for three different years, 1900, 1905, and 1910. which would be safe to use.

Q. Now let me see if I can help you a little. You have here a total operating expense and depreciation of $10,539,328.79?

A. Yes.

Q. Now you have a profit from operation $4,648,763.84.

A. Yes.

Q. Will you add those two figures for me?

A. Yes, they make $15,188,092.63.

Q. That is what you call price, isn't it?

A. The word price is written opposite.

Q. Now, then, how did you get that price?

A. Well, it should have been obtained——

Q. How did you actually get it?

A. I don't remember, except I thought I took the prices and added them up.

Q. You find here, don't you, that you added your total operating expenses and depreciation to your profit from operation and you get what you call price here?

A. But you say they don't check.

4177 Q. I didn't ask you that. You find out if you add those two matters I gave you you get what you call price, checking to a cent?

A. Yes.

Q. Now isn't that the way you obtain what you call price?

A. I don't remember.

Q. Does the fact that they check to a cent there seem to you to have any suggestive force as to the manner in which you obtained those figures?

A. It rather tends to suggest that I took the price and operating expenses and depreciation and subtracted that from the price to get the profit.

Q. That is the way you think you got the profit then?

A. Yes. Now if I got it the way you think I did——

Q. I am not thinking; I am simply trying to find out?

A. What I believe is that the operating expenses and depreciation was subtracted from the price to get the profit; but I cannot state positively. I think that is why they check so completely there.

Q. There has been some, what Professor Marks called rough work there, to get some figures quickly?

A. Well, there was an immense amount of work, it was added over several times and I thought it was correctly added. I had to do it all myself. I did not suppose I had made a mistake in the manufacturing cost, which you say you find there.

Q. Let us take these companies now and run it down. I don't see any short way?

A. You can go back to page 88 which does check.

Q. It does not check these figures?

A. It covers three typical years.

4178 Q. It covers one year in this table on page 92?

A. It is really unimportant——

Q. Let me finish my question. It covers only one of the five years on page 92?

A. That is right. If you will pardon me, I think the way would be to go all over these figures again in the next day or two. I don't think it could be done in the court room; it is too big a job.

Q. I want to get a way that would be easy, of course. You haven't any recollection as to how you made up those figures, have you?

A. No. I think I made up the profit the way you speak of. I think I made up the sales by adding the sales for each year; and made up the manufacturing cost by deducting residuals; that I took the total operating costs and subtracted the manufacturing from the total to get the other; that is the way I think I did it.

Q. How did you get your depreciation?

A. I added up a series of figures given for depreciation in the report for each year.

Q. Well, now when you went to the report for Cambridge, for instance, which is the one we have before us, you found that depreciation in the profit and loss account?

A. I did; $25,000.

Q. And separated from the operating?

A. Yes I separated it.

Q. You obtained then the profits, you think, by a mere matter of subtraction; you didn't take them from the reports?

A. No, I think not.

Q. Then you don't know whether this will check with the profits from operation as shown by the reports or not?

4179 A. No.

Q. Now passing this for the present——

A. By the way did you find the sales check?

Q. They didn't check exactly.

A. I thought they did; I looked at the wrong figures; they are off only about four million. What was your figure on that?

Q. $16,929,868,446.

A. There is some difficulty on the depreciation of the two companies, where electricity and gas are united. I had to use my own judgment there.

Q. The reports apportion it definitely?

A. Where they did not I did.

Q. In what cases didn't they do it?

A. I was under the impression one of the companies didn't for one year.

Q. As a matter of fact you will find the reports apportion them if you will examine them?

A. Maybe.

Q. Passing this then for the present, to give you an opportunity to freshen up on it——

A. By the way, did you say the other costs pretty nearly check?

Q. No.

A. Oh, it was the total operating nearlt checked.

Q. I said the costs were off about 320 odd thousand dollars.

A. But the total operating nearly check?

Q. That is only off about $40,000. Now somewhere you base some claims here on the average depreciation of these Massachusetts companies for this five year period?

A. What page are you referring to?

Q. I don't remember the page.

4180 A. I don't remember referring to it in that way.

Q. Didn't you figure it out in cents, three and a fraction—here it is on page 91.

A. I stated after that allowance they had this 26.3 cents left in 1910.

Q. Or 3.37 cents for depreciation; you somewhere else in your report referred to this, didn't you?

A. I don't remember any other place.

Q. Now I want to call your attention to some of these specific figures for depreciation for this five year period; you have got the 1910 report before you?

A. Yes.

Q. Well, look at Cambridge?

A. I have it.

Q. Now, Cambridge charged off there $25,000?

A. Yes.

Q. And the sales were about 670 million?

A. Yes.

Q. That wasn't quite four cents?

A. That is right.

Q. But in 1909 they charged off the same amount, a little over four cents?

A. Yes, it varies from year to year very much with all the companies; some years nothing and some years a good deal.

Q. Your figures include companies that charged off nothing?

A. Yes, I took the aggregate.

Q. Go on with 1910—Fall River charged off a little over ten cents a thousand, didn't it?

A. Yes.

Q. And Lawrence didn't charge off anything, did it?

4181 A. I don't discover anything that year—yes, wait a minute. $7,000 charged off in Lawrence, but it doesn't appear on that page, on page 78, where I strike it now. Whether it is on gas or electricity, I don't know.

Q. Where do you find it on page 78?

A. Depreciation, $7,000 near the top.

Q. Now that is on account of the electric proposition, isn't it—turn to page 226?

A. Yes, on that page depreciation is separated as between electricity and gas, and it is all electricity.

Q. So that there was no depreciation that year for Lawrence?

A. No.

Q. Now then take Lowell; what does Lowell have for depreciation in 1910?

A. $9,886.04.

Q. What were its sales, we had the other day—they were $573,672,700?

A. Yes.

Q. That was a good deal less than two cents, wasn't it?

A. Yes.

Q. Now take Lynn for 1910?

A. I will have to turn to another part of the report. I believe that was combined gas and electricity.

Q. Turn to 226 and you will get it.

A. Lynn, gas, $1,908.91.

Q. The sales were 605 million, and that would be about .3 cent a thousand?

A. Yes.

Q. Do you think that from figures that vary as much as these we can assume there is any consistent theory adopted there which would make a basis here?

4182 A. No, except that if you take a series of years, I think most companies—I didn't draw my four cent rule from any of these Massachusetts plants.

Q. Somewhere in your argument you say you allow four cents which is more than the average in Massachusetts, trying to confirm your estimate as a liberal estimate.

A. I don't remember whether I said that or not.

Q. As a matter of fact we have no information here which will

enable us to draw any conclusion from this Massachusetts depreciation as to what would be a proper amount here?

A. No, I don't attempt to draw it.

Q. So that so far as that question is concerned we may take it as conceded that you do not claim anything for the averages in this Massachusetts depreciation?

A. No, only for the difference in cost, including in cost depreciation.

Q. It also goes without saying that this same irregularity and lack of any reasonable basis for depreciation here in Massachusetts goes into these costs when you include that item in the costs, don't it?

A. Not in the aggregate, because all the costs have got to be covered the same time in the course of four or five years.

Q. Well go back and see if there is any similarity later?

A. It is the same for any one year, will run through for any one of them.

Q. Just take this for a minute, will you: if you turn to Cambridge, there was $20,000 depreciation against sales of 468 million, wasn't there in 1906.

A. I am looking for the page to verify them; I assume it is correct.

Q. I believe it is. That would run a little over four cents there?

4183 A. Cambridge had that year $33,000 charged to depreciation and 439 million feet of sales.

Q. What year are you talking about, 1906?

A. I am using the document you handed me; it is for 1905; it is about eight cents there.

Q. Now I want to confine myself to your five years, to see what conclusion we may properly draw from the averages that you take?

A. Cambridge in 1906 had 468 million feet of sales, and $20,000 of depreciation.

Q. Cambridge was a little over four cents?

A. Yes.

Q. Now take Fall River, what did it have?

A. I haven't discovered anything in that year.

Q. Nothing whatever?

A. I don't discover anything.

Q. What were its sales, about 300 million?

A. 371 million feet.

Q. Now then take Lawrence, what did it charge off?

A. $20,000.

Q. What were its sales?

A. 290 million feet.

Q. So that it charged off just about seven cents?

A. Yes.

Q. Now take Lowell?

A. I don't discover anything charged off that year.

Q. Yes, we found something.

A. No, I think not.

Q. Well, let us settle this now, because this goes into these other figures?

A. I haven't found anything on this page. There is an-
4184 other page somewhere here it might appear, which analyzes; yes, I think there is a page that analyzes all these things.

Q. Suppose you try to find that if you can. This will come up again in reconciling this matter we have been referring to; if we made an error, I would like to know it.

A. In the appendix I don't find anything for depreciation, while on page 158 I find charged to depreciation and other reserve $27,916.62.

Q. That checks with us. Of course a person familiar with the reports knows where to look for these things?

A. I don't find it there. Usually it should be here. In almost every case it is here.

Q. That amount- to a little over five cents, fully five and a half?

A. Yes.

Q. On sales of 506 million?

A. Yes.

Q. Now take Lynn, what did they charge off?

A. I am not sure from this report which figure you can take for Lowell.

Q. You made up the depreciation for this year and you show it here in the aggregate on page 92 for these companies, now don't you know how to find those figures in the report?

A. Where there is some mistake made by the statistician of the gas commission making up his report, it is somewhat uncertain which figure to take; but from the fact, the way the profit and loss account is made up, there does not appear to be any room for the depreciation reserve addition.

Q. Turn to the statement of the Lynn company?

A. I have to change what I said that it wasn't in both places. I turned to the wrong place. They did check.

4185 Q. All right, let us get Lynn.

A. I don't find anything any other place.

Q. They had sales of 410 million?

A. Yes.

Q. Now then take Springfield?

A. $74,645.97 in one place.

Q. Isn't there a note at the bottom of the page saying that is not all from that year?

A. Yes, it says, a portion of the amount credited to depreciation is not derived from earnings for the current year, but it is charged off I should judge just the same.

Q. Look at the profit and loss account and see how much they charged off and see whether we can check on that?

A. I think one would have to study the year before and the year after to work it out.

Q. You have it in your report here $521,089.56 on page 92?

A. I think I should have taken and think I did take the whole $74,645.97 as being appropriated to the five year period.

Q. Then you took everything that was charged off all these other years, didn't you, or do you know which one you took?

A. I do not absolutely, but I think I took whatever was in depreciation under the term depreciation and added to the reserve.

Q. Our figures on that are $71,112.57?

A. That is so given on page 121 of the appendix, while on page 158 of the text it is $74,645.97.

Q. Read the foot note?

A. A portion of the amount credited to depreciation is not derived from earnings of the current year.

Q. So that wasn't a part of that year's operation of that plant?

A. That is true.

4186 Q. If you take that year's operation of the plant, the amount we have it here is $71,112.57.

A. I should judge so.

Q. And that amounts to something over twenty cents a thousand?

A. Yes.

Q. And then taking the last one, we have Worcester, they charge off how much that year?

A. $25,385.35.

Q. And the sales were 444 million?

A. Yes.

Q. So that they charge off between five and six cents?

A. Yes.

Q. So that for the year 1906 the amount charged out of the earnings of that year on account of depreciation by these seven companies varied from nothing in the case of two of them, to over twenty cents in the case of one of them?

A. Yes.

Q. Do you think that affords a basis for determining the proper amount of depreciation in Des Moines?

A. No; but I do think that it shows the experience over a series of years. You can't take one year in Massachusetts for their depreciation.

Q. These figures here are sufficient to show that the depreciation during that year was not charged off on any consistent uniform theory?

A. Certainly; as in the case of the Pennsylvania Railroad, they charge off the same as the Massachusetts companies do. Until this year almost every railroad in the United States has. They are just beginning to make that change.

4187 Q. We will stick to this, if we may. Taking this year, 1906, I could find in it a precedent for either charging off nothing or twenty cents or most anything I wanted to?

A. Yes, if you selected a single instance, which I didn't do. Before going through that I will say that I know the results will be practically similar for every single year.

Q. You know, do you not, there is not one of those years where

the results will indicate that depreciation has been charged off upon any consistent theory?

A. For any one year, for any one company they do not attempt to apply to a consistent theory of depreciation in Massachusetts; that is right.

Q. You know, do you not, that the results for these five years do not warrant the conclusion that any consistent theory in charging off depreciation has been adopted.

A. Yes, certainly.

Q. Then it being conceded that the results for these five years do not warrant the conclusion that these companies have adopted any consistent theory in charging off their depreciation, is it your contention that the results of these companies may properly be used as a test of the accuracy of your claim of four cents here?

A. No, I do not so use it.

Q. Now then is it your claim that in the same connection, in view of the same circumstances that operating expenses which include these inconsistent depreciation charges may be taken as a criterion for determining a correct basis for operating expenses elsewhere?

A. In the long run their allowance for profit is of some value.

Q. Answer the question, please.

(Last question repeated.)

4188 A. All I can say it has some bearing, yes.

Q. You think then that it may properly, in view of these circumstances, in view of the dissimilarity in conditions, in view of the difference in character of the plants be taken as a fair criterion for determining the proper operating expenses here?

A. No, I don't consider that as more than one point in ten. The great thing is the local condition, which I have emphasized all through the report up to the end.

Q. You testified in your judgment an 85 cent rate would be fair in Des Moines?

A. Yes.

Q. Upon what figures did you base that conclusion? give us the operating cost per thousand which you took?

A. On page 71——

Q. I want you to give me the operating cost per thousand you took to reach that conclusion, if you did go into it with that detail, if not, just state you didn't do so?

A. I reached it by the five year basis shown on page 71.

Complainant moves to strike the answer and asks to have the question repeated to the witness.

(Question repeated.)

A. I figured at 63.8 cents as the operating cost, with the four cents in it for depreciation.

Q. You took that as your operating cost including depreciation?

A. Yes.

Q. What did you take for your sales?

A. The sales of 1910, which I recognized as too favorable to the Company, because I should take the estimated sales of the future—
but I did take 531,931,000 feet. I have answered that on the
4189 basis of the five years' average for all expenses, save manufacturing, taxes and leakage, although I have held and do hold that the four year basis which gives a larger profit and has a smaller operating cost is more appropriate; but in this figure I took the five year basis, more favorable to the company.

Q. What I want to get at, whether you changed your 63.8 cents or not?

A. That is my maximum figure; it is too high.

Q. You gave me a few moments ago 63.8 as the cost per thousand including depreciation, which you use in reaching your conclusion that 85 cents was a reasonable price for gas in Des Moines. Now I want to know whether you adhere to that figure or change it; please answer that question.

A. That is my maximum figure which I had in mind when I made the statement as a maximum figure. I considered it too high but I used it.

Q. Now on page 3760 you were asked, what in your judgment was the reasonable value of the property of the Des Moines Gas Company used in the business of manufacturing and distributing gas in the city of Des Moines on the 31st day of December 1910. You said one million six hundred thousand dollars. In what sense did you use the word value?

A. The cost of duplication, based on the reconstruction cost as shown by the last five years' experience of the company, with an allowance for depreciation.

Q. Then you took as your basis for the value the cost of reproduction.

A. As shown by the last five years by the books of the Company for the last five years.

Q. Do you take as your basis for value what it would actually cost to reproduce the property?

4190 A. Applying the unit cost for the last five years; I reject the paving.

Q. Did you apply them because you believe they would be the actual cost of reproducing the property?

A. Aside from paving I believe they would. The unit cost I took for the last five years did include all the cutting through paving they had to do for that period.

Q. You didn't answer my question. I want to know whether you applied these costs because you believed that they represented the actual cost of reproducing the property as of December 31?

A. Yes, aside from paving and allowing for depreciation. I must explain by paving, I mean aside from paving put down since the mains were laid.

Q. You didn't make any computation at all, did you?

A. My one million six hundred thousand was reached as shown

all through my report, by two methods which seemed to harmonize at the close.

Q. Did you make a computation, taking for instance four inch main, six inch main, and so on?

A. Yes, that is in the report here.

Q. Now, then, did you go through the manufacturing plant the same way?

A. No, but I had before me there, as I stated, I took a different process to some extent there; but I did as to the distribution system.

Q. Of course you couldn't make such a valuation as you have stated you did make without going through the inventory item by item?

A. As to the manufacturing plant, I couldn't.

Q. You couldn't as to the plant as an entirety, could you?

A. In reaching my judgment——

4191 Q. No, I asked you whether you could make a valuation of this plant based upon any unit prices without going through the inventory and applying those unit prices to each item?

A. It should be done to make a complete inventory.

Q. You haven't done that?

A. No.

Q. You haven't done anything more than what appears in your report along that line, have you?

A. Some things I have not stated there I have done. I have compared the unit cost, for example, of pipe of different sizes with other unit costs which I have and with the unit costs in this case in 1895.

Q. Did you compare them with the unit costs of pipe in Cleveland in 1907 when you were there in the Water Works case and you and Professor Marks were testifying in Buffalo?

A. No, I didn't.

Q. As a matter of fact your unit prices of pipe in Cleveland ran about $37 at the time you and Professor Marks were testifying about pipe in Buffalo?

A. I don't remember.

Q. Do you remember Professor Marks' testimony here as to the prices in Buffalo?

A. I heard his testimony.

Q. You frequently seen him use this blue print—he used it in New York?

A. He used a blue print in New York, not the same one.

Q. He used it in Buffalo?

A. He used them there and here; I have not examined them to see how they compare.

Q. As a matter of fact you have not attempted to compute

4192 by going through the inventory the replacement cost of this property?

A. I have not completely; I have studied the distribution system a good deal and got the prices of pipe and freight.

Q. You haven't any overhead?

A. All the overhead that was charged on the books the last five years, I used, showing the company s estimate of their own overhead.

Q. Have you added any overhead to the unit prices?

A. Only what the Company saw proper in their own bookkeeping.

Q. You added that to the unit prices which you took?

A. That was in the unit prices.

Q. Did you add any overhead in the unit prices you took?

A. I did not add any except what Mr. Hall gave.

Q. You used no unit costs except those given by Mr. Hall?

A. Those were the only ones. I made that other comparison of book costs, but he used it too.

Q. His comparison of book cost did not give the unit costs for parts of this plant?

A. No, except for the last five years. Over a third of the plant was built in the last five years, especially the distribution system.

Q. Are you sure?

A. Yes, I think so.

Q. Now I will ask you a question and I would like to have you direct your attention to that. What did you take as your unit price for cast iron pipe on the cars in Des Moines?

A. I took whatever he had in his report; I checked it up and found what the prices had averaged for the last three or four years. I don't remember without I turn to the report.

The MASTER: Please answer the question.

4193 Q. You took the unit prices per ton f. o. b. cars Des Moines that is given in that report?

A. Yes.

Q. It don't give any?

A. It gives it per foot here.

Q. It doesn't give any unit price per ton f. o. b. cars Des Moines?

A. No, what he gave was per foot.

Q. Now then what did you get for the distribution system?

A. $1,123,906 on page 54.

Q. What did you get for the works, including holders and everything there?

—. $525,274.

Q. What page are you reading from?

A. Page 54.

Q. Of your report?

A. Yes. That is new, without depreciation.

Q. That is not new or anything of the kind, is it? That is the book figure?

—. That is the book figure Mr. Hall worked up by starting from 1895 and making various changes?

—. ——.

A. The last column.

Q. I am talking about the figure $525,274.

A. That figure I took from him. It has in it so much that should not be there, that should be taken out, such as the holder No. 1,

which has beeen scrapped, that it is too high; taking all the depreciation out in view of that I used the figure $1,600,000.

Q. You say this figure includes that holder No. 1; was that scrapped about 1895 or after?

A. After.

4194 Q. When was it scrapped?

A. The date has gone from me; in fact I am not sure. I know it was not in the present appraisal and was in 1895; so it was scrapped between.

Q. You are sure it was in 1895?

A. Yes.

Q. What did you put land in at?

A. I put the land in at the cost, plus about $35,000 making about $70,000. I think there was more land in the works that had not appeared as land on the books, so I did not feel that $70,000 included all that was there; but that was all we had in evidence as there.

Q. What do you mean by we had in evidence?

A. I found in the evidence—by reading I did not find a valuation of over $35,000; but there was some land I think charged into other items.

Q. That is the way you made up this reproduction cost of this property?

A. Yes, $1,123,906 was for the distribution system and the rest was the works and office as shown on the books, less some depreciation.

Q. Did you know why your figures on mains run within less than $2,000 of Marks' the price per ton that he put ran four or five dollars on the average under the price you took yourself?

A. I didn't look over Marks' unit cost at all.

Q. That is a part of the evidence you have not read?

A. I especially devoted myself to the witnesses of the company on that and Mr. Hall's record.

Q. So that what you have done as a matter of fact is to take these costs that Mr. Hall worked out for the last five years and

4195 multiplied them by the amounts as given i nthe inventory for the distribution system, taking in one instance the figures from Mr. Lea where Hall did not give them, and taking the next higher size of pipe in one or two instances where Hall did not give them?

A. Yes.

Q. And then you took the book costs and put those things together with what you say about real estate, and that is what you done as a matter of fact?

A. Yes, sir.

Q. You testified yesterday in substance—I haven't the transcript of it here—that Mr. Haines said, or the Company's witnesses said that the cost for boiler fuel would be less next year this coming year, didn't you?

A. Yes.

Q. That is a fair statement of what you intended to say?
A. No, it is not all that should be said in that connection.
Q. I am asking you about what you did say.
A. I think it is a fair summary.
Q. You said you predicated that on the statement contained in defendant's Exhibit 18, that was mislaid?
A. Yes.
Q. Now, then, there is no such statement in that exhibit?
A. There is a statement as to how a small investment will reduce the operating costs about $6,000.
Q. There is a recommendation in this exhibit, is there not, of a new investment?
A. Yes.
Q. And it is stated here that it is thought that would reduce these expenses if it was made?
4196 A. Yes, about 54% on the investment as I remember the figures.
Q. And that investment has not been made up to the present time?
A. I don't know.
Q. So that Mr. Haines did not state or attempt to state what the boiler fuel expense would be in this exhibit?
A. He attempted to state that that investment which was endorsed, I read in other documents there, there would be that saving.
Q. Those documents will go in so I won't stop for that. So that Mr. Haines did not say what you said he said on your cross examination yesterday?
A. I believe he did. I think I interpreted him fairly.
Q. You didn't quote him?
A. I didn't have his exact language before me.
Q. Nor the substance of it?
A. I had the substance of it in mind.
Q. All that you have for the basis of your statement was a recommendation on the part of Mr. Haines and which has not been acted upon?
A. That is all I attempted——
Q. I want to know whether it is not true that all you had for the basis of your statement was the redommendation on the part of Mr. Haines which he said he thought would result in a saving and which so far as you know has not been acted upon?
A. I thought it had been endorsed by the company.
Q. Had you any knowledge except what appears here?
A. No.
Q. This does not show whether it was acted upon?
A. No, but every endorsement was favorable, but I don't know the final action.
Q. Is this paper marked Exhibit 68 a copy of the contract
4197 for your employment in this case by the city?
A. I think it is an exact copy.

Complainant offers and reads in evidence Complainant's Exhibit 68, as follows:

Objected to on the part of defendants as improper and not cross-examination.

Exhibit 68 is as follows:

"No. 1582.

This Agreement, Entered into this day by and between Edward W. Bemis of New York City, party of the first part, and the City of Des Moines, Des Moines, Iowa, party of the second part,

Witnesseth: That the said Bemis agrees to be present in Des Moines and to assist when needed in consultation and in attendance upon the trial of the gas case now pending, due notice, however, being given by the city when such attendance is needed in time to prevent conflict with other engagements.

The City of Des Moines of the second part on its part, in consideration of the performance of the services above set forth agrees to compensate the party of the first part upon the basis of Fifty ($50.00) Dollars per day for the time engaged in the work for the City, together with the necessary traveling expenses from Chicago or New York or elsewhere to Des Moines and return depending upon the travel necessary for the party of the first part. The City shall also pay living expenses while in Des Moines. The settlement for such services to be had and payment made in full at the close of each calendar month for the work of the month, said payment to be in cash or in paper, negotiable at par for cash in Des Moines.

Dated at Des Moines, Iowa, this 21st day of July, A. D. 1911.

EDWARD W. BEMIS,
Party of the First Part.
CITY OF DES MOINES,
By JAMES R. HANNA, *Mayor.*
Party of the Second Part."

4198 Q. I want to call your attention to one feature of it. This contract says that you are employed, that you agree to be present in Des Moines and to assist when needed in consultation and in attendance upon the trial of the gas case now pending. Calling your attention to that, your understanding of your employment in this case is that you were employed to assist in the conduct and preparation of the case?

A. Yes, just as your witnesses are.

Complainant moves to strike the answer as to our witnesses as not responsive.

Q. And what you undertook to do was to review and answer the testimony that was introduced by the complainant?

A. Just as your witnesses are doing all the time.

Q. What you undertook to do was to review and to answer the testimony of the witnesses for the complainant?

A. So far as I thought they were wrong. Not that I must dispute and disagree with everything they said.

Q. And that is what you have been trying to do?

A. To show their mistakes where they made them and show my position where I believe it was sound.

Q. You are not a gas expert, are you?

A. I have testified repeatedly that I have been a student of these questions, a special investigator, though I never was in the gas business.

Q. You have been a special investigator just as you have been in this case?

A. Perhaps, in most cases along this line.

Q. To do just the same work you have been doing in this case?

A. Largely.

Q. Now then you are not a gas expert, are you, except in
4199 the sense that you are an expert in endeavoring to analyze and discredit the testimony against municipalities?

A. I would not say yes to that question. I would say special investigator of financial and statistical accounts, rather than prices of manufacture.

Q. You have endeavored to live up to your contract and earn your money?

A. I have endeavored to do what was right to help the city.

Q. Your position has been that of a sort of assistant counsel to go through these things and analyze them and to show how to meet the various claims made by the company; that has been the nature of the work you have been doing, hasn't it?

Mr. BYERS: I want to make the objection here that this is improper and improper cross examination, and it seems to me that the character of the examination has gone far enough.

Mr. GUERNSEY: I think the Supreme Court has stated emphatically that a man ought not to be a witness and an advocate.

The MASTER. That had reference to attorneys.

Mr. GUERNSEY: I think this proper and I would like to get the answer to my question.

(Last question repeated.)

A. The work of a counsel technically I cannot describe. I have given advice when asked by the attorneys, and I have prepared data so far as I could which they asked me to prepare, or which I thought should be. Whether you call that being an assistant counsel, I can't say.

Q. The general nature of the work that you have done here has been what I have described, has it not? That is, it has been
4200 along the line of taking this testimony and trying to meet it, trying to pick out things that would show it was wrong?

A. It is trying to determine from the testimony the reasonable price of the cost of gas. I have studied Mr. Hall's testimony as much as that of Mr. Lea and Mr. Baehr.

Q. Hasn't the general nature of the work you have been doing here been of the character I have described, going over the testimony with a view in the first place of helping to discredit it on cross examination, and with the view in the next place, of yourself taking it and analyzing it and discrediting it on the stand?

A. I would say yes, so far as I believe it wrong; so far as I believe it right, not.

Mr. GUERNSEY: I believe this is all. I want it understood, how-

ever that we have not finished our cross examination as to these matters we wish to verify by the witness.

Mr. BYERS: We want to serve notice on counsel now that they produce every one of the contracts of every witness of their own that is here.

At this time an adjournment was taken until 1:30 p. m.

4201 1:30 P. M., WEDNESDAY, *September* 27, 1911.

Mr. BYERS: Defendant at this time and as part of the testimony of Jansen Haines offers in evidence Exhibit 18 and reads into the record at this time the following portions:

DEC. 15TH, 1910.

Des Moines Annual Estimate, 1911.

Mr. Walton Clark, Second Vice President.

DEAR SIR: I give below a summary of the conditions at Des Moines:

		Increase in gas accounted for.		Increase in gas sent out.	
Year	1909...	7.5%		7.2%	
January	1910...	5.8%		5.8%	
February	1910...	7.3%		7.7%	
March	" ...	8.5%		5.6%	
April	" ...	7.7%		6.4%	
May	" ...	15.4%		13.3%	
June	" ...	12.9%	6 Mos. 8.9%	4.6%	6 Mos. 7.2%
July	" ...	5.8%		2.5%	
August	" ...	.5%		11.3%	
September	" ...	8.5%		4.5%	
October	" ...	8.3%		4.5%	
November	" ...	7.1%		5.2%	
December	" ...	3.0%	12 Mos. 7.6%	7.0%	12 Mos. 6.4%

Maximum daily output:

	Actual.	Local estimate.	C. W. Hare's estimate.
Dec. 1909.....	2013 M		
Dec. 1910.....	2228 M		
Dec. 1911.....	....	2451 M = 10%	2451 M = 10%

4202 Maximum output:

			Per day.
Actual	1909-10	.....	2015 M
"	1910-11	.....	2228 M
Estimated	1911-12.	10% increase.....	2451 M

Plant.	Capacity per day.	Present net cap.	Net cap. after changes.
Generators:			
Reserve .....1800 M			
Net .....1200 M			
	1200 M		
	300 M		
	300 M		
			3000 M
Purifiers:			
4 Boxes 20′ x 20′ x 8′			3360 M
Station Meters:			5000 M
Oil Storage:			
	64,000 g.		
	300,000 g.		
	300,000 g.		
	664,000 g. = 68 days		
Holders:			
Relief ..... 160 M			
Storage		300 M	
		1100 M	
			1400 M

4203 Works: An examination of the preceding page shows that we have ample manufacturing capacity to carry us safely through the winter of 1911-12, but that our purified storage is getting rather small in comparison with our sent out. It is possible that the send out for the winter of 1912-13 may require and addition-holder by that time. In order to have such a holder in time, it would be necessary to start the foundations for the holder in 1911, but it would not be necesary to start these foundations until late in 1911.

We therefore ask an appropriation of $30,000 for the foundation and connections for a new 2,000,000 cu. ft. holder, with the understanding that if this expenditure be authorized, no money will be spent until late in 1911, and then only if we shall satisfy you that the send-out at that time indicates that we may expect a considerable increase in the winter of 1912-13.

Req. #—. Holder Foundations, etc..... $30,000

Purification: Our purifiers at Des Moines are 8′ deep, with water seals, and are so arranged that the gas enters the boxes in the middle and divides, part going up and part going down through the oxide. We find that this arrangement causes yrouble from deposition of tar

on top of the oxide of the lower layer, and the gases do not flow evenly through the two halves of the boxes.

4204 We wish, therefore, to rearrange our connections so that gas will enter the bottom of each box, which will also give us the opportunity of using a tar-catcher in the bottom of each box to supplement the work of the P. & A. extractor. This, however, will result in a considerable increase in back pressure through these boxes, and therefore, in adition to altering the connections, we wish to replace the present water seals with dry lutes. The water seals of a purifying box not only acts as a seal for the box, but also as a safety valve for the escape of gas in the event of any stoppage beyond the purifiers, and the replacement of these seals with the dry lute type of construction will make it necessary to install some sort of blow-back device which will relieve the pressure in case of stoppage. We, therefore — in our summary an item covering the re-arrangement of the purifier seals the changing of the seals from water seals to dry lutes, and the installation of a safety blow-back. This work is covered by——

Req. #183. Changes to Purifiers, etc., (rep. $3,000) $5,000

Works Office: The Des Moines situation has grown to a point where our present office facilities are cramped and insufficient. The room used for the Works Office contains also two station meters, the photometer room and the governors, and we recommend the addition of a second story to this building, in which can be placed our

4205 office photometer room and additional laboratory apparatus, which we need but for which we have at present no satisfactory room. The estimated cost of this extension to our Works Office is covered by—

Req. #184. Works Office Extension $3,000

To cover the shifting of the present photometer room and the fitting up of the laboratory with apparatus for the simpler grades of work we include—

Req. #190. Photometer & Laboratory Equipment (Rep. $250) $500

Boiler Fuel Scales: Our boiler fuel at Des Moines consists principally of a local coal which is so high in sulphur that it can be stored only in small quantities and not for length of time, and consequently is used practically from the cars to the boilers. This gives us a constant check on our boiler fuel consumption, and for our daily concumptions we have been depending upon keeping track of the number of barrow loads of coal brought in. This, however, is not satisfactory, and we wish to purchase and install scales for weighing the boiler fuel, these scales to be located in the industrial railway which is now used for handling boiler fuel. This improvement is covered by—

Req. #161. Boiler Fuel Scales $500

4206 Real Estate: Mr. Haines again calls our attention to the question of the possible purchase of additional real estate ad-

joining our present gas works. The greater part of the block adjoining our holder lot could probably be purchased for in the neighborhood of $35,000 and it would undoubtedly be to the advantage of the company to own such additional property, as it would enable us to locate our proposed new holder on it. If we do not acquire this additional property, we expect to locate the holder on the present holder lot, where the available ground is so small that the holder will have to be rather smaller than we otherwise would make it, or of rather unusual domensions; That is, it would be very tall for its diameter. If we had the property suggested by Mr. Haines, it would leave this other land for normal works extensions.

Our real estate at present consists of slightly over five acres, and on this land we can get, with a fair degree of ease, a manufacturing capacity of from five million to seven million feet of gas, of which about one quarter could be coal gas. Our present output is something over two million feet per day, and I believe the amount of plant that can be put on the present land is sufficiently large to justify us in not purchasing any additional land at this time, although I recognize that if not purchased at this time, it probably cannot be purchased at all in the future, except at an increase in cost that would probably be prohibitory.

4207 In this connection it should be borne in mind that coke oven gas has been suggested for Des Moines. If the conditions should ever make it wise or necessary for us to install a large coke oven plant at Des Moines, the present site, even with the additional land suggested by Mr. Haines, would not in my opinion, be large enough, as a coke oven plant requires ample room for the handling of the large amount of coal and coke involved in this process. In view of the above facts, I mention this recommendation of Mr. Haines, and submit it to your consideration without recommendation, but I have not included in my summary any money for additional real estate.

Waste Heat Boiler: We recommend the installation of a waste heat boiler, on the 10′ 6″ set. The estimated cost of this apparatus would be $11,000 and the estimated saving in boiler fuel, etc., per year would amount to $6,016 or a gross return on the investment of 54.7%. This is covered by—

Req. #185. Waste Heat Boiler on 10′ 6″ Set $11,000

Miscellaneous Works Improvements: To cover miscellaneous works improvements, the need for which may be shown during the year, we include an item of—

No Req'n. Misc. Works Improvements $3,500

4208 Distribution:

Pressure Mains: To cover the estimated needs for trunk mains, which will be taken up in detail later, we include an item of—

No Req'n. Miscellaneous Pressure Mains..... $20,000.

Small Mains, Meters & Services: It is estimated that Des Moines will need in 1911 for—

Small Mains		$40,000	
Meters and Services		27,000	
			$67,000

4209 *Summary.*

Works:

Req. #—.	Holder Foundations, etc.	$30,000	
Req. #183.	Changes to Purifiers, etc. (Rep. $3,000)	5,000	
Req. #184.	Works Office Extension	3,000	
Req. #190.	Photometer & Laboratory Equipment (Rep. $250)	500	
Req. #161.	Boiler Fuel Scales	500	
Req. #185.	Waste Heat Boiler on 10' 6# Set.	11,000	
No. Req'n.	Misc. Works Improvements	3,500	
			$53,500

Distribution:

No Req.	Misc. Pressure Mains		20,000	
	Small Mains	$40,000		
	Meters & Services	27,000		
			67,000	
				87,000
	Improvements	137,250		
	Repairs	3,250		
	Total	140,500		$140,500

Yours truly,

ROLLIN NORRIS.

Recommended for Approval:

——— ———,

Second Vice President.

4210 Mr. BYERS: Taking the exhibit up separately the defendant reads into the record the copy of the letter bound as part of Exhibit 18 addressed to Mr. Rollin Norris for Walton Clark, Second Vice President, Philadelphia Pennsylvania, under date April 8, 1911, purporting to be a copy of a letter written by the manager of the Des Moines Gas Co., to Mr. Rollin Norris.

Also the letter which is bound with and as part of Exhibit 18 written upon the letter head of the Des Moines Gas Company under date of March 9, 1911, and addressed to Mr. Jansen Haines manager Des Moines Gas Company which is signed by J. I. Vincent, Engineer. And attached apparently to that letter, and it is offered as part of it is a lead pencil sketch of certain lots and blocks abutting on the Des Moines River from Raccoon street to Shaw street.

Also the letter written upon the letter head of the Des Moines Gas Company, office of the Second Vice President under date of January 6, 1911, with the words "annual estimate 1911" written across the left hand upper corner of the letter and which is signed by Rollin Norris for Walton Clark Second Vice President, as follows:

JAN. 6TH, 1911.

Mr. Jansen Haines, Manager, Des Moines, Iowa.

DEAR SIR: I enclose herewith for your files a copy of a proposed annual estimate letter to Mr. Clark. I shall be glad to have you go over this letter and let me know whether you with any alterations made in it.

You will note that I have included a small account for additional laboratory equipment, and I think this is all that you will
4211 need. If later we wish to make *ann*itions to our equipment, we can cover it by requisition and charge it against our items of $3,500 for miscellaneous works improvements.

Yours truly,

ROLLIN NORRIS, FOR
WALTON CLARK,
Second Vice President.

Mr. BYERS: Stamped on the bottom of the letter are the words "Received February 27, and the year is blurred, 191 is in sight.

And the annual estimate that I have already read into the record is attached to that letter.

Also what purports to be a copy of a letter found with the other papers in Exhibit 18 and as part of Exhibit 18 under date *date* of August 31st, annual estimate written across the left hand upper corner, 1911, being copy of a letter addressed to Mr. Rollin Norris for Mr. Walton Clark, Second Vice President Philadelphia, Pennsylvania, and purporting to be from the manager of the Des Moines Gas Company.

Also what purports to be a letter under date, at the right hand of the first page, copy of a letter September 1, at the left hand upper corner of the page on the same copy "August 1, 1910, annual estimate 1911" and addressed to Mr. Rollin Norris for Mr. Walton Clark, Second Vice President, Philadelphia, Pennsylvania, and purporting to be a copy of a letter containing annual estimate made by the manager of the Des Moines Gas Co.

Also copy of a letter under date September 15, 1910, also attached to and part of Exhibit 18 called annual estimate on the upper left hand corner, 1911, addressed to Mr. Rollin Norris for Walton Clark, Second Vice President, Philadelphia, Pennsylvania, and purporting to be copy of a letter written by the manager of the Des Moines Gas Company.

Also copy of a letter under date September 20, addressed to Mr. Rollin Norris, Philadelphia, Pennsylvania, and purporting to
4212 be signed by the manager of the Des Moines Gas Company with a stamp at the bottom upon which is printed the word-"Noted Sep. 21, 1910, J. H." At the upper left hand corner typewritten are words and signs and figures, see file #76, see File #278, See File #365, under 9-20-10, 7-29-10, 7-26-10.

Letter under date August 1, 1910, "Annual estimates" in the upper left hand corner purporting to be addressed to Jansen Haines, Manager, Des Moines, Iowa, and written at Philadelphia, signed by Rollin Norris, stamped at the bottom, "Received Aug. 3, 1910, the

letter indicating that it is a mimeograph production the name Mr. Jansen Haines, manager Des Moines, Iowa, being typewritten in and the letter reads as follows:

DEAR SIR: The time is approaching for the preparation for the annual estimates for 1911, and I shall be obliged if you will get in your annual estimate letter by the 1st of September or earlier.

In order to simplify the getting up of this letter by you, I enclose herewith a blank copy of the same form we used last year for this purpose.

On this form please give the present capacity of your manufacturing plant, as indicated. It also provides a place for you to fill in your estimate of the maximum daily output which will have to be provided for this coming winter and for the winter of 1911-12.

Please fill in on the first page a brief memorandum of what improvements or large repairs you anticipate for 1911, and in the letter which you will send here with the filled in blank, give such further detail as may be necessary.

In the case of the trunk mains, as covered on page 2, of the blank,
you will of course be unable to give accurate detailed figures,
4213 but please do the best you can and especially call attention
to any districts where you expect low pressure area to develop and give a lump sum estimate of how much money you expect to need for pressure mains.

Actual determination of the trunk mains needed for 1911 will have to wait until pressures have been taken during the heavy consumption next autumn.

Please estimate the capacity of your purifiers by taking the number of cubic feet of oxide in the boxes between where the foul gas enters and the point where the gas is tested, and multiplying this by 600 ft. per day. This gives the normal daily capacity of the boxes. For instance, if you have a regular 4-box system, with 3 boxes in use, you test in the outlet of the second box, and the capacity of the boxes would be the number of cubic feet of oxide in the first two boxes multiplied by 6- cu. ft. of gas per day. For mixed gas use a factor of 500 ft. instead of 600 ft., and for coal gas use 400. ft.

You have a copy of the annual estimate letter for 1910 as it went forward to Mr. Clark, and your l-tter for 1911 should follow the general plan and give detailed explanations of your recommendations.

Yours truly,

ROLLIN NORRIS.

Mr. BYERS: Attached thereto is the following and a part of Exhibit 18.

4214 *Annual Estimate for* 1911.

Des Moines, Ia. Works.

Maximum Daily Output:

Actual—Winter of 1909-10—2013 M
Est'd " " 1910-11—2214 M—10% increase
Est'd " " 1911-12—2435 M—10% "

Daily Capacity of Present Plant:

Generators. Reserve.	Net.	Station Purifiers.	Station meters.	Oil storage.	Holders. Relief.	Holders. Storage.
1800 M	1200 M	3360	5000 M	64 M g.	160 M	300 M
	1200 M	....	....	300 M g.	...	1100 M
	300 M	....	....	300 M g.	...	....
	300 M	....	....	... g.	...	....
	3000 M	....	....	...	...	1400 M

65 days

Purifiers:

Number of Boxes	4
Inside dimension of boxes	20 x 20 x 8
Depth of Oxide in each box	6
Maximum rate per hour, actual	125 M

List of new apparatus, etc., needed to take care of the above est'd.

Output:

1. ——.
2. Real Estate 35,000.00
3. Holder Foundation 40,000.00
4. Alteration to Purifiers 2,000.00
5. Works Office station 3,000.00
6. Misel. Works Impt. 3,500.00

Mr. Byers: The Miscellaneous Works Improvement is later written in blue pencil 5000.00.

4215 *Annual Estimate*, 1911.

How many tons of general or fuel can you store?	1520 Tons.
How many days will this last in winter of 1911-12	30 Days.
Do you recommend additional storage?	No.
How many tons of Boiler fuel can you store	300 Tons.
How many days will this last in winter of 1911-12	12 Days.
Do you recommend additional storage	No.
Have your exhausters sufficient capacity to take care of your make, even if the largest one should break down?	Yes.

Distribution:

Trunk Mains: What pressure mains will you probably need? Give list and approximate cost?

E Court 15th 18	1200′ 16″	3,200.00
E 18th Court to Walnut	1300′ 12″	2,500.00
E 18th Lyon to Walker	700′ 12″	1,300.00
Misel. Pressure mains		5,000.00

G ——.

Give estimated cost for 1911 of

Small Mains (in addition to trunk mains given above)	$40,000.00
Meters & Services	$15,000.00

—— ——, *Sup't.*

4216 Mr. BYERS: The matter just read is written into a blank and purports to be the blank referred to in the letter of Mr. Rollin Norris under date August 1, 1910. Attached to this last paper are three pages of lead pencil memorandum purporting to have been made by Mr. G. I. Vincent. The letter under date of April 8, 1911, reads as follows:

Mr. Rolling Norris, for Walton Clark, 2nd V. P., Philadelphia, Pa.

DEAR SIR: In your Annual Estimate letter of December 15, 1910 I note that you ask for an appropriation to cover foundations for a new holder. I have sent in L. & R. Req. No. 187, under date of March 22, 1911, for $30,000 to cover this item.

I have been studying over this situation to see if we could not eliminate the erection of this holder for another year, but I am afraid to take this chance unless our sendout should be more disappointing than I now anticipate.

For the first three months our sendout shows an increase of about 8% and if this same percentage were carried on to our maximum week it would give an average daily sendout of 2,160 M.

While our available storage is only 1,400 M of this available storage there is only 700 M available for the peak-load. This is because the upper lift of the #4 holder and the entire #3 holder are too light to give sufficient pressure, although I realize that they act as a safeguard against the gas going out on the town within their capacity of 700 M.

I am satisfied that this holder foundation should be commenced not later than September first unless we find that the conditions as to sendout have radically changed. The plans for this
4217 foundation will have to be prepared in ample time and this brings me down to the question of the location.

I have prepared and enclose a blue print of the property in Block "A," the purchase of which I recommended in my annual estimate letter. In this print I show in the upper sketch the available ground provided we were to make an arrangement with the C. B. & Q. railway to square up the property by giving and taking an equal number of square feet so that the east and west lines on the north of the property would then be parallel to the east and west lines of the south line of the property. I find, however, that if this ar-

rangement were made, which it would have the advantage of squaring the property up, it would limit the diameter of each of the two holders which could be built in it, to .150'.

In the lower part of the print I show a diagram of block "A" in which the subdivisions of the block, or lots, are shown by dotted lines. Lots. No-. 1, 2, 3, 4, 5, 7, 8, 9, 10 and 12 and the N½ of Lot. No. 11 are immediately available for purchase and the S½ of lot No. 11 can be purchased if desired for about $5,000 of $6,000, but I have not seen the owners recently as I do not wish to stir them up.

With the property available as above a new holder could be erected as shown by the solid circle within a diameter of 151' and an additional holder could be erected as shown by the broken line circle on the same size at some future time. It would not be necessary, therefore, to purchase the S½ of Lots No. 11 immediately. I would recommend, however, that an appropriation be made available for the purchase of the S½ of Lot No. 11 and that it be left open in event of the owners making a proposition to sell at some future time that would be attractive to us.

4218 The C. B. & Q. Railway have advised me that they would not object to condemning the alley on which they own the frontage of Lot No. 13.

I would recommend the purchase of lots Nos. 1, 2, 3, 4, 5, 7, 8, 9, 10, 11 and 12 for the erection of this new holder and that the foundations and holder be erected of a capacity of two and one half million feet. This block with the exception of lots Nos. 6 and 13 can be bought for $35,000 but I do not wish to approach the owners of the S½ of Lot. No. 11 with a view to purchasing unless it is decided to purchase the block, as I think that they will probably raise their price and if some of the old buildings that are on this block were torn down before they were approached, I believe that they would be more willing to sell.

In reviewing the general real estate situation at the plant the real estate now owned will not all be available because all the lots in Block "T" will have to be abandoned or sold for park purposes and we will have to provide storage room for which the lots in Block "K" are most valuable by reason of their trackage facilities.

In my judgment the N E quarter of Block "B" is much too valuable property under the circumstances on which to build a holder on account of its proximity to the rest of the plant where it should be available for other internal improvements to take care of the growth of the business. In addition to this the railroad tracks on the north line of Block "B" run very close to the fence and while it would be possible to construct the proper foundations for a holder and a masonry retaining wall, it would require pretty ex-

4219 pensive construction to hold up this railroad track while we were doing the work on account of the holder occupying all of this quarter block.

I wish you would give this matter careful consideration because in planning the foundations for the holder the additional 11' in

diameter available on Block "A" should, I believe, by all means, be taken advantage of.

Awaiting your reply, I am,

Yours very truly,

—— ——,

Manager.

4220 *Edward W. Bemis, Continued.*

Redirect examination by Hon. H. W. Byers:

Q. Now Prof. Bemis, beginning where you left off in your cross examination, I wondered if you appreciated the insinuations and reference- that *was* covered by counsel's last question or two to you about your contract and your testimosy here where the suggestion or insinuation is thrown out that your testimony is bought and paid for?

A. Yes, I appreciated that, but I think my previous testimony in all other cases is along the same line as this and my general writings for the last twenty years ought to be a refutation of the fact that my testimony in this case was paid for in the sense that it was influenced by compensation.

Q. That was not only a gross insult to you, but a gross and unnecessary reflection upon the city and counsel for the city and I want the record to show that it is resented by counsel for the city as a gross and unnecessary insult and reflection, and because it was brought in here in the way in which it was I want you to state to the Master just the manner in which you approached this case with reference to the condition of your mind, whether you approached it upon the theory that you were to find matters that could be criticised in the case made by the complainants or whether you approached it with a- open mind and for the purpose only of getting at the truth and helping everybody here as far as you could?

A. I approached the case in the latter spirit. I was not asked to frame conclusions in any way, but to investigate all the testimony and evidence, present my interpretation of it, and my reasons for my views.

—. Did you ever have the slightest idea or understanding that you were to take any part in the business of conducting the

4221 law suit as counsel?

A. No, not the slightest. That I want to repudiate absolutely, if I may have the freedom to say so. I want to say that the counsel in this case has conducted it in his own way, or their way, the two for the city.

Q. And is it not true that counsel have time and time again in view of the fact that much of this testimony involved tabulations and tables and figures, is it not true that counsel have time and time again urged that every possible care be taken in getting these things right?

A. Yes.

Q. Whether they helped or hurt the city?

A. Exactly.

Q. You were asked just before the close of your cross examination and while counsel was dealing with the case in hands, whether you proceeded to ascertain the value of this plant on the so-called reproduction theory. Now what theory, if any, other than just a desire to get at the value of the property used in the business of making gas in Des Moines, did you pusrue?

A. Of course that was my object in approaching the case or method I sought for, it was to make a special study of all the help I could get from the books and the evid-nce in the case, the books as reported principally by Mr. Hall and the evidence in the case.

Q. And if the figures that you finally arrived at and conclusion as to the value of the property as you finally made it up in your judgment happened to be ehat you now say was about the reproduction value, it was not because uou adopted any reproduc-

4222 tion theory?

A. No, I distinctly object to that theory and I think so state in my report. The theory that I followed was the theory of investment cost less depreciation.

Q. At that point I want to ask you now after this long cross examination and your quite full examination in chief, what if any change has come about in your judgment as to the value of this property, this Des Moines Gas Company's property used in the mnaufacture and sale of gas in Des Moines?

A. None.

Q. I want to ask you this general question at this point, based upon the record as you have so far reviewed it and upon such general information as you have about the business and then in addition to that I want you to assume that the Des Moines Gas Company had net earnings of in round numbers $188,000 average net earnings of $188,000 for the years 1908, 1909 and 1910, what do you have to say now with these figures in your mind in addition to the general information you have and the investigation yon have made here as to what gas can be manufactured and sold in Des Moines for during the year 1911 ?

A. Does this $188,000 net mean before or after deducting an allowance for depreciation?

Q. The average net earnings referred to in round numbers, $188,-000 being without any charge for depreciation. I just want your judgment now what gas could be manufactured and sold for in Des Moines during 1911, basing your judgment on the facts as stated.

A. It could be sold a little below ninety cents.

Q. Now I wish, Prof. Bemis, you would take the record as you find it of the Des Moines Gas Company for 1910, in connection with the estimate made by Mr. Haines and by Mr. Norris for the

4223 business of 1911, the increase, etc., taking the company's records just as they are shown here by both Mr. Hall and Mr. Hagenah as to gross receipts and the operating expenses with the two items of salary, $10,000 salary and $5,000 odd dollars litigation expense out and considering Mr. Haines estimate as to the increase

in output and what would that show that gas could be manufactured for and sold in Des Moines during the year 1911 if you had no other figures at all to aid you except those and your general experience and knowledge of these matters?

A. I should first have to make a computation to answer the question.

Q. All right.

A. I should first turn to page 5 of Mr. Hall's report to find what the actual expenses were of 1910. There it is given as 65.19 per thousand feet of gas sold with no allowance for depreciation or rate litigation and with the $10,000 in there which you said to take out.

Q. Yes, I want that out and I don't want you in this computation to pay any attention to depreciation, I want it just as they were running it.

A. I should then take the 65.19 cents and multiply it into the—excuse me, if you want 1910 or 1911?

Q. 1911. If you had just been furnished with Mr. Haines' estimate for 1911 and with Mr. Hall's and Mr. Hagenah's statements as to the books for 1910, the receipts and the expenditures, what would you say with these figures before you, gas could be manufactured and sold for in Des Moines, during 1911.

A. I should take next the sales of 1910 531,991,000 feet and to add 10 per cent if I am following Mr. Haines' estimate of in-
4224 crease, it would be to add 53,199,000 feet which would make sales of 585,190,000 feet. Then I should multiply that into the cost given by Mr. Hall on page 5 of 65.19 cents and take out the $10,000 afterwards as it is more convenient. The result of multiplying 585,190,000 feet into 65.19 cents is $381,485.36. Deducting the $10,000 as stated from that leaves $371,485.36. Now shall I assume that all gas is sold at 90 cents or only gas in the city of Des Moines?

Q. Yes, the city of Des Moines is what I am talking about. Separate Valley Junction as far as you can?

A. Valley Junction in 1910, as far as Exhibit "C" of Mr. Hall's report sold $6,889,100 feet for $10,370.

Q. I don't care about the amount of money, take out enough or more than enough?

A. If I take out sales for Valley Junction I have got to take out capital, devoted to Valley Junction and it is easier to keep them both in than to attempt to take out capital when I haven't got enough data on the subject.

Q. I only want an estimate anyway as near as you can get at it.

A. I think it is better to leave the Valley Junction in.

Q. All right, either way, work the details out later if you want to.

A. The receipts from Valley Junction being increased 10 per cent would be $11,416.92. The sales in Des Moines, less the sales in Valley Junction 7,578,000 feet would be 577,612,000 feet and this at 90 cents would be $519,850.80. Adding Valley Junction

receipts of $11,416.92, would give the total receipts of $531,267.72. The expenses with the $10,000 out would be $371,485.36, the net receipts without allowance for depreciation and as their books have given it or $159,782.36. That is 9.74 per cent on the $1,-
4225 600,000 which I take as the investment of 1910, plus $40,000 as average increase of investment of 1911. That result would prove an ample amount to take care of any depreciation and leave a good return at 90 cents.

Q. Now putting the question in another way if you had nothing before you but the fact that the Des Moines Gas plant was in excellent condition on the 1st day of January, 1911, in an 85 or 90 per cent condition on the 1st day of January 1911, and with the estimate of the increase made by Mr. Haines in Exhibit 18 to the output of gas for 1911, what do you have to say as to whether the return to the company would be larger than what you have heretofore stated it would be on the figures that you had and which were not based on Mr. Haines' estimate.

A. Yes, I would assume that not as much was necessary as 4 cents or 1.289 per cent for depreciation, that they were taking care of it in repair account. These figures show about 8½ per cent profit over and above even my allowance for depreciation for 1911 on my valuation.

Q. On a valuation of $1,600,000?

A. Yes.

Q. Now once again, I don't care very much about comparisons and about percentages, I would like to know o-ce again leaving out every question of method and theory just what you would feel safe in saying your judgment is the reasonable value of all of the property of the Des Moines Gas Company used in the business of making gas in this city.

A. $1,600,000.

Q. Now about half of the forenoon was spent with you in a discussion of certain figures from Massachusetts, among other figures on depreciation and the discussion or argument seemed to
4226 be as to whether or not the figures and the reports of the Massachusetts commission showed any constant or regular method of depreciating the property of the gas companies covered by the comparison. Now the commission in Massachusetts does not regulate the depreciation does it?

A. No.

Q. Whatever depreciation appears in any of these computations or figures is what the company itself for a particular year has reported as being charged off or charged up to depreciation?

A. That is right.

Q. Now is there any question about that?

A. Oh no, that is absolutely so.

Q. So if there is any constant or regular method or rule for charging up depreciation in Massachusetts it is because the different companies proceed upon different methods or different theories.

A. Yes. The only time the commission takes account of depreci-

ation is when a rate case is before it. When the company is also seeking to issue new securities, the commission may investigate to see whether the assets are of less value than the outstanding securities, but they are usually of more value because for many years their securities have been sold at auction or a price fixed on them much above par.

Q. On page 92 of your report is a table which, if I understand it purports to give the gross sales of seven Massachusetts companies for five years.

A. Yes.

Q. And the gross cost of producing the gas that made up that gross sale?

4227 A. Yes.

Q. With an item of $521,089.56 added to the cost of the manufacture and di-tribution of that gross sale.

A. Yes.

Q. And the purpose of it was to show the average price per thousand feet received by these seven companies for the gross sales referred to.

A. No, it was not to show the average price, but to show the difference between the average price and the expense.

Q. Of course you reach the average price too in order to do that?

A. Yes.

Q. Your purpose was to show the difference between the average price and the average cost.

A. Yes.

Q. Simply for the purpose of showing the margin that these seven Massachusetts companies have for what might be termed profits if these figures are dependable.

A. Yes.

Q. Is there anything else that can be gotten out of that?

A. Oh no. It was just intended to show the Massachusetts experience that was all. Having worked out precious tables I introduced these illustrations for Massachusetts.

Q. If it should turn out that the wrong figures were used or if your subtractions, additions or divisions do not happen to be right to a cent here, what effect if any does that have upon your general conclusions as to the value of the Des Moines Gas Co., property or the cost of making gas in Des Moines and distributing it?

A. It does not affect that. All these calculations which come before this are based on the data of Des Moines and these tables I have been over and believe them to be absolutely cor-

4228 rect.

Q. On page 91 there is another table and as I understand it covers the same Massachusetts companies?

A. Yes.

Q. And the purpose of that table was to ascertain the net profits per thousand feet received by these seven gas companies in Massa-

chusetts upon their business or in their business of manufacturing gas?

A. Yes.

Q. The figures as you used them and the computation you make shows for 1900 33.7 cents in profit per thousand feet, 1905, 27.3, 1910 26.3. Now what purpose other than simply to show the net profits by this method if the figures taken from the Massachusetts reports were correct or if you got them down correct or added or subtracted them correctly, what purpose other than to show just that fact did you have in mind in setting out this table?

A. That and the further fact that the margin is declining with *with* increase of sales.

Q. Now Mr. Guernsey asked you in that connection about New York and about Brooklyn and as to whether or not conditions were the same there and whether the population was not more dense and all that sort of thing. What difference does that make with the general efficiency and general practice of the gas business whether population is dense or otherwise?

A. It will affect to some extent per capita. It won't affect the tendency to lower price and increase consumption, to some extent it may affect the amount of that increase but it will not destroy that tendency, the general tendency is always every time there is a reduction of price to increase consumption. It comes about
4229 through trenching on the use of coal more than *than* anything else for domestic consumption in heating.

Q. So whatever may be said about the accuracy of these additions or multiplications or subtractions, the proposition that you claim for this of a general dow*an*ard tendency remains just the same.

A. Yes, there is not enough inaccuracy if any on page 91, and I doubt if any, to show any different tendency than is there shown.

Q. On page 86 and page 87 the burden of counsel's complaint seemed to be that you have not covered in these figures investment. Now what difference does it make whether you had dealt with these figures in this table with the details which would of course cover investment and that dealing with it as you did, so far as the purpose you had in view in setting out the table, what difference would it make?

A. I don't see that it would have affected the use I made of the data on pages 86, 87 or 88. I was showing the tendency of increased sales per capita and how that came about with reduction in price and development of civilization generally, and I specially on page 87 was bringing out the fact that sales per mile of main might increase as there shown with great rapidity, *sam-* 50 per cent in ten years while there was very little increase in sales per meter.

Q. Right in that connection you tried once or twice to get in a word in an answer about meters and that the meter method of determining investment and returns was not sound. I wish *wou* would get it in now while you have an opportunity.

A. The investment in meters is very small compared to the investment in mains and the way that consumption grows is often by

the addition of meters where at the start a small amount is
4230 used per meter on the new meters, the old meters will be using more and more, but the average per meter, may remain about the same. After, however, most of the city is metered, then the increasing consumption of gas will begin to show itself to some extent in the increase per meter, but there are meters put in office buildings and sometimes in subdivisions of other buildings without the increased use of gas, perhaps for light heat in fall and spring and for light cooking without much additional investment except for that particular meter using some big main for the supply.

Q. If I have profited any by this brief sojourn we have had here with the gas business, I have learned, I think I have, that the increase in the number of meters would be no indication whatever as to the increase to mains and services.

A. That is true so far as the mains and not a very complete indication as the city grows larger of services, because after a city reaches a point where apartment houses come in or large office buildings there will be several meters on the same service, the number of meters relative to the number of services will also increase.

Q. Right in this same connection you were asked to tell which had the greater specific gravity, coal gas or water gas. What difference did that make with any of these computations or with the price of gas or the value of this property whether coal gas was heavier or lighter.

A. When we are confining our studies to what the books show as to Des Moines where they have been using water gas right along, and where conditions are not to be changed the coming year or two it makes no difference. If there be any force whatever in
4231 the claim it would only be in some comparison with Massachusetts or other companies, but in that comparison the difference in cost is too slight is any to be worthy — consideration. On that point these Massachusetts companies all *using* more or less water gas, generally from one third to one half water gas as a mixture with the coal gas.

Q. To go back again to these tables because while I don't care very much about comparison, more particular about vital questions that are involved here, where you are trying to make comparisons and to work out averages and are working out the average price of gas per thousand feet, the company's investment cuts no figure does it?

A. Not on the operating expenses.

Q. On anyt*y*ing?

A. The investment counts when you come to consider how much profit.

Q. But for the purpose of simply ascertaining—suppose you took twenty companies and you want to find out—say you take twenty towns like Des Moines, twenty other towns, Des Moines made the 21st and you should take the figures of those twenty towns, not the value of their property at all, but the total sales of the companies, those twenty companies, their total expenses, total receipts and so on, and figure out from that the average price not cost, but the average amount they received for each thousand feet of sales, and those

twenty companies, no matter what their investment might be, those twenty companies showed that they were manufacturing gas in those twenty towns situated similarly to Des Moines and selling it at or receiving an average price of 85 cents per thousand cubic feet, that would be a very important factor in determining the ultimate question in this case wouldn't it without reference to their investment.

4232 A. It would have a bearing on it. We would have to study, however some if we were only to take that figure alone, we would have to go a step further to see the conditions that were different in these places.

Q. What difference does it make whether one of these companies has more property than the other or not? The question is, what can gas be manufactured and sold for per thousand feet. Now what difference does it make whether the value of the Des Moines property is much or little in determining what the reasonable price would be for gas per thousand feet if you are taking it by comparison if the twenty other companies make it at 25 cents, what difference would it make?

A. I would not quite accept that, but I would say that operating expenses could be compared very largely especially distribution and general, manufacturing expense might vary with the cost of fuel, coal oil or coke and with candle power, but the distribution and general expense could be compared and the marginal profit could be compared to a considerable extent with a large number of companies unless it could be shown that there were marked differences on the book investment in one place than another, that would have to be considered.

Q. What difference does it make about——

Mr. GUERNSEY: Is this cross-examination or redirect examination, I have been wondering.

Q. What difference does it make about the value of property now if you are just simply trying to settle the question of what a thousand feet of gas can be sold for if you are going to settle it by comparison of sales?

A. If you had started out with only data you can get by comparisons of course you would have to continue with that, but

4233 where you can possibly introduce local studies, those are very important.

Q. What you mean is in determining these other questions the return on property of that concern or any difference in investment does cut some figure.

A. Yes.

Mr. GUERNSEY: I would like to have the objection run to all this examination as not redirect examination, leading and cross-examination of his own witness.

Q. Suppose these 20 companies manufacturing gas which you used for comparison, the average value of the property of the twenty was say a million and a half dollars and the property of the Des Moines Company was three or four times that, would that make any differ-

ence in what would be a reasonable price ascertained by comparison for the manufacture of gas or would that not only show that the Des Moines Company if we went into value at all had a good deal more property than it needed.

Same objection.

A. Such a case as that we would have to look over the evidence to see whether the investment in Des Moines under such condition was needed or not, whether it was necessary or not, but is it is necessary as compared with these other cities to have twice this investment here you would have to allow more return on capital.

Q. This question assumes the same conditions in these twenty one towns, there is no more necessity for more property in any one of them than there is in any one of the others so far as that is concerned is the same and you are simply ascertaining now this one fact on which to determine it.

Same objection.

A. With comparisons and in that light I should say then
4234 of course the question must be one of comparison.

Q. Investment would make no difference?

Same objection.

A. No.

Q. And wasn't that all you were trying to do by these tables is simply to show, the tables on pages 89 and these several pages here where you set out the price per thousand feet of gas simply showing in so far as the figures were correct, a comparison as to price in a given number.

Same objection.

A. I was not going quite so far. I was not attempti*j*g to institute any comparisons between the manufacturing cost of gas in the holder under Massachusetts companies as compared with this, although it entere- into the final tabulation used to get it proportioned to the other, but what I was endeavoring to show was not manufacturing costs which would be complicated by question- of candle power, cost of coal, oil and so on but to show the other costs, the margin between holder gas and the price charged which is not affected to anything like the same degree by local conditions as is holder gas.

Q. Of course with those Massachusetts companies you don't have the same assumption that you have in my former question that conditions were all alike.

A. No.

Q. Conditions were different?

Same objection.

A. Yes, especially in these matters of manufacturing cost.

Q. You didn't attempt to go into details for the purpose of showing that the cost of any particular part of this production of gas was
4235 the same here as it was in Massachusetts, but you were simply trying to ascertain in a general way averages as applied to the Massachusetts companies?

Same objection.

A. I was attempting to show primarily that in order to get rid of all complications of how much should be assets, how much should be the rate of return on capital, that would take something, the return on investment, to show that the seven Massachusetts companies are content with a return on an investment, they don't pay it all by dividends, but they don't get as a matter of fact much over six cents per thousand feet the last year or two as return then, the net of the return [illegible] capital.

Q. In that connection and for the purpose of bringing my comparison down suppose we had here ten miles away another city just like Des Moines, soil and conditions just the same, rivers just the same, railroad crossings just the same and gas was being manufactured and sold in that town ten miles away with every condition the same as it is in Des Moines at say 85 cents a thousand feet and that was 26 cents, as one of your figures here is in round numbers, more than the cost there, now if you had nothing else than that before you and the question was as to what it could be manufactured and sold for in Des Moines, how would you use that fact.

Same objection.

A. I should try to get local conditions and after getting these and having developed whatever conditions there showed it would have an important bearing as forming the result of local studies.

Q. If the companies are just equal there don't you have that?

Same objection.

A. Yes.

Q. You are not a gas expert or anything and it is conceded
4236 that in this other town which is just like Des Moines only ten miles away, everything the same, same labor, same material, same freight and there they are making gas and selling it — consumers at 85 cents and have a margin of 26 cents, how would you use that in trying to arrive at what would be a fair price in Des Moines?

Same objection.

A. It would have quite a bearing in leading me to believe that either an 85 cent rate or a rate not far from that was practicable here. There is in my comparison here another point which I have not very fully brought out here, although I refer to it which to me is very important as well as the margin between cost and price in Massachusetts, the margin between holder cost and total cost. The margin there which is sometimes called distribution and general is smaller in Massachusetts than it is here. So that as I say here somewhere the total cost margin is a little over 50 cents there.

Q. So wherever these Massachusetts comparisons are set out is it simply as an aid to the judgment of the Master just as it would be an aid to you in fixing your judgment upon what would be the reasonable price here?

Same objection.

A. That was all.

Q. And upon which a reasonable return could be earned.

Same objection.

A. That is all. This being a secondary part of the report although it happens to have taken much more time in the discussion than the other.

Q. You a moment ago mentioned something about candle power. Is the-e any appreciable difference between the cost of gas
4237 where twenty two candle power is used and eighteen?

A. Of course that depends largely on the cost of oil. There is about four to five candles difference with a gallon of oil and the difference was here between eighteen and twenty three candles would be about a gallon of oil or 2.8 cents, call it three cents. The labor cost is practically the same, to put in a little more or little less. The other costs are slight there is little other costs, but not much. Practically therefore three fourths of a cent a candle power will cover—the price of oil estimating it as here three fourths of a cent or thereabouts will cover the difference in candle power, three fourths of a cent per candle power.

Q. Going to page 83 of your report you make some reference there and were cross examined with respect to the cities you mentions there, Milwaukee, Grand Rapids, Detroit, Indianapolis, Boston, Brooklyn, New York and other cities and counsel asked you to name any other city than New York, Buffalo I think he said first, Brooklyn and New York, where you had access to any facts or figures with respect to the tendency and with respect to the cost of making and distributing gas. Do you think of any other cities besides New York and Brooklyn now?

Same objection.

A. I was given access to the same line of work in the Syracuse gas case which by the way I think I have not mentioned as a case I was in.

Q. How about Chicago.

A. And Chicago, and in the records of the Massachusetts commission, in the records of the English Company, in the Cleveland experience from the first gas company in 1840 down to the present, I followed all that. Many other cities, I followed Wheeling
4238 West Virginia, went at one time to Richmond, Virginia, and very many of those cities.

Q. Can you now think of a town anywhere, I am asking about this general tendency shown by some of these tables, can you now think of a single town anywhere in the United States where they manufacture and sell gas where your information has come either by being a witness in the case or by examining its reports or the statistics from different sources you have been able to get them, where this general downward tendency has not appeared.

Same objection.

A. No, in a period of an average of three or four years it is invariable. You will find little up- and downs. Take a five year aver-

age you will find it was practically universal for a decline in the total operating expenses with an increase of sales and that increase of sales is partly the product of the general growth of demand in the community, partly to the question of price, partly to the special efforts of the company through canvassing, soliciting and developing.

Q. Do you know of any gas experts or gas engineers either in this proceeding or in any other proceeding that you have been connected with who have not recognized that fact and so covered the case if they were engaged in it in their report showing that very tendency.

Objected to not only for the reasons already urged but also as secondary and incompetent on that account.

A. I know none in their discussion of the subject as reported in the proceedings of gas associations and they are usually reported almost verbatim and in papers before societies where that position is not taken. There are times in testifying where a witness
4239 will hesitate about saying that, I think I heard here some witness hesitate about saying what a reduction in price would increase the demand for gas, but the position is generally taken or practically universally by engineers when discussing the subject informally that there is such a tendency. Even without a reduction of price I believe a 40 per cent increase of sales has been estimated by Mr. Lea and Mr. Baehr in the next three years here or next seven years.

Q. How does this general downward tendency of the cost of manufacturing and selling gas come about.

Same objection.

A. Partly through the canvassing of the companies, partly through a general education of the community from coming in contact with the use of gas in one way they want to use it some other way, the realization that the improvement in mantles for lighting, the improvement of stoves, improvement of furnaces, of light character, for light fall and spring use, hot water heaters, instantaneous heaters for baths and kitchens, with all these developments constantly being made there is a large development of interest in the use of gas. Reductions in price stimulate that.

Q. A striking illustration of that not referring to gas but rereferring to light would be in the electric light would it not?

Same objection.

A. The same thing is true in electric light as gas.

Q. There has been a tremendous downward tendency in the cost of that kind of lighting?

A. Yes.

Q. Would one be safe, would the Master in this case be
4240 safe in relying absolutely on what it cost last year to make gas and distribute it in Des Moines for the exact figure that it will cost to manufacture and distribute it in Des Moines for 1911?

Same objection.

A. No the tendencies will be downward.

Q. This very estimate here, you heard it read into the record, what do you have to say as to that being an illustration of what may be done.

Same objection.

A. That is a remarkable illustration. Just take those figures for a minute, not over $40,000 will be on the average in the investment during this year. Probably not half of that, but assume there are pipes being put in, mains during the warm weather. There may be at the close of the year most of the investment, it does not look as if all of it would be in by December 31—$40,000 probably the way things are going is as much as will be the average investment for the year in the plant and only $50,000 is an average investment. Eight per cent of that is only $4.000 to cover depreciation and the return at 8 per cent for that purpose. Let us assume an increase of consumption such as the first seven months indicated 6.16 per cent of sales over the corresponding period of last year. That would be about 32,000,000 feet if I remember some previous computations I made, 32 million feet of increase with only practically $4,000 increased return necessary. $4,000 means per thousand feet of increased sales only 13 cents per thousand feet.

Q. On the increased sales?

A. Yes, of this year. Take where the rate of return was
4241 9 per cent to cover interest and depreciation, if you please, on the $ $50,000, $4,500, that would be only 14 cents of return necessary.

Q. That is to say that the making and distributing of that additional amount 30 million feet only cost the company about 13 cents?

A. Plus the operating expenses. The operating expenses would not be any higher and probably have a tendency to be slightly lower than the present, but call it the same.

Q. Now that is one thing, but I had in my mind a different thing in that question. I notice that Mr. Norris has approved if I read that record right the purchase of a machine that is only to cost $11,000 to be hooked up with this ppant down here, he says it will save $6,000 a year to have it. There is a striking illustration is it not as to how this general downward tendency has come about.

A. Certainly. That could be illustrated in this way. Suppose that there was a recommendation there of $140,000. Suppose $50,000 on the average was invested this year. Suppose next year an amount equal to $150,000 goes in. That would be an investment the half year $75,000 and suppose at the end of this year there had been put in $100,000 out of the 140 recommended the rest going in early next year making part of the $150,000. Then we would have investment for all of next year the $100,000 or average investment of $175,000 which I think would be very large. Now l-t us assume a nine per cent return covering interest, depreciation and everything which I think is proper or may be too high, I don't know how I am going to come out, but I am going to take these figures. Nine

per cent of $175,000 would be $15,750. The increase in 1912 in the return necessary on capital about $6,000 and reduce operating
4242 expenses to come out of this makes $9,750 net increase of expense necessary aside from the current operating cost of producing the extra gas. Now the sales this year are about 6.16 greater than the corresponding period last year or about 32 million increase and let's assume another 32 million or 64 million more feet of gas sold next year than in 1910. Then we have this situation. We have $9,750 of return on capital after deducting savings to spread over 64 million feet of gas, which is per thousand feet only 15¼ cents which added to say 65 cents operating cost would mean 80 cents. In other words, while the gas now being produced might require a return of 85 to 90 cents or price of 85 to 90 cents to give a nine per cent return to cover depreciation and return an 80 cent price on the increased amount would do the same thing. Of course you can't separate those two items in just that way, but that estimate brings out the fact that with increased sales there is not likely to be as great a total price necessary to cover everything as with the present sales.

Q. That is to say if I understand this statement, if the future should work out as Mr. Haines has estimated it and as Mr. Norris suggests with respect to this machine that the Des Moines Gas Company with the increased sales could sell its gas for 1911 and 1912 at 80 cents and get substantially the same return that it would make at 90 cents under last year's sales and last year's operations.

Same objection.

A. It would sell the extra amount of gas at 80 cents but take it as a whole it would take 90 or 88 somewhere in there on the present, that is my point.

Q. And that is the way this general downward tendency
4243 works out, it is due to increased sales improvements in machinery economies in labor and material and all that sort of thing and use of material.

Same objection.

A. And the further fact which Mr. Baehr I think testified to, it may have been Mr. Lea that with an increase of 40 per cent of sales would only be an increase of 20 per cent in mains. In other words the increased consumption per mile of main which this company has had also will continue to develop. I do not show in my report, but I have written it on the margin comparing it here, sales per mile of main in Des Moines which were 1,961,700 feet in 1900 following I think some exhibit of Mr. Hagenah's increased to 2,792,800 feet per mile of main in 1910 an increase of about 50 per cent and the same has occurred in Massachusetts which was about 50 per cent per mile of main. The increase per meter had not been as great except there has been an increase in Des Moines per meter from 22,090 in 1900 to 26,955 feet in 1910.

Q. All of this is in a way covered by page 83. Now let me ask you this question, what is the fact as to whether or not in substance all of these cases with which you are acquainted and with which you

have the information, New York Brooklyn and Chicago and these other cities that you have mentions about this downward tendency covering a period of years.

Same objection.

A. Oh that is true absolutely.

Q. Now then have you followed out your investigation of this company far enough so that you are read- to say whether the same tendency appears here?

Same objection.

4244 A. Yes, it does appear here.

Q. How is that demonstrated here?

A. There has always been a complication here from the fact that it is difficult to entirely divorce the increased sales or separate it into the two elements or three that have been mentioned here one being the rather unusual amount of canvassing that the company has done I should judge from the reading here and the other the natural tendency to increase which Mr. Humphries spoke of and which others speak of and which occurs in cities where they do not do much canvassing, but where, nevertheless the sales are all the time either increasing per capita or in the total.

Q. In this case as it appears, carrying that just a little further, beginning say in 1906, what has been the general tendency as it appears from the records here that you have access to and books?

A. The increase has been very great in the consumption, it has not been as great per mile of main as in the previous five years because of very large extensions which seem to have been made about 1906 and 1907, but there has been a large increase in sales.

Q. The sales have been upeard have they?

A. Yes.

Q. A general tendency upward?

A. Very rapidly.

Q. How about cost?

A. The cost has been steadily downward. The total cost as given for 1904, the total operating expense in 1904 was 70.84 cents per thousand feet. In 1905, 66.18, in the next four years 62.79 average. In 1910 it jumped up to 65.19.

4245 Q. So that the general tendency that you have spoken of in New York, Brooklyn, Chicago and these other cities you have found to exist here only if anything a difference in degree?

A. Yes. Going back to the only other period I have which was a four — period 1891 to '94 brought out in a previous trial the total operating cost during that four — period were $1.09 per thousand feet just for operation. With sales on the average of only about fifty million feet a year. So there was a reduction from $1.09 in that four years to about 68 cents on the average in 1904 and '5 and a little under 63 cents in the next four years jumping up in 1910.

Q. Have you compared the values as found by Mr. Baehr or Mr. Lea as to the gas property with the book cost?

A. In some cases. I am not through with that. I am doing it now.

Q. Have you compared the cost or rather the price and valuation of the distribution system as found by any of these witnesses with the actual cost of putting in gas pipe since the 1st of January 1911?

A. Not as I know of so much since the first of January 1911, as during the average of the five preceding years.

Q. I wish you would take the estimate of Mr. Haines during the adjournment and figure out for me—I notice in there is an estimate of cost of certain mains on certain streets in Des Moines and I wish you would take that during the adjournment and figure out for me the difference if any in that estimate and the valuation placed upon the same kind of pipe as that mentioned by any of these witnesses so that I can have it in the morning?

A. I think I would have to have a copy of Exhibit 18.

Mr. BYERS: At this time before adjournment I would like
4246 to have complainant produce for us so we can have it tomorrow the stockholders' and directors' minutes showing the expenditures up to this time for 1911 and also the authorizations that have been made for improvements and extensions during the year 1911.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

4247 Thursday Forenoon Session.

SEPTEMBER 28, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, continuing his re-direct examination, examined by Hon. H. W. Byers, testified:

Q. Now, Professor, we were dealing with pages 83-4-5-6 and '7 when we adjourned yesterday afternoon. Before proceeding with thtat, I want to inquire whether the report that you referred to in your evidence, both in direct and cross examination, as to your qualifications is the volume called Municipal and Private Operation of Public Utlities, National Civic Federation Report 1907?

A. Yes.

Q. And you referred to the scope of the investigation both in this country and in Europe, and I will ask you if the scope is as set out here on page- 13-14-15-16-17-18 and 19, under sub-heads covers the scope and character of the investigation?

A. As I remember the scope was accurately stated in the opening pages. I have not read them over for several years, and I don't remember now what is stated.

Q. As stated here in brief the plan provided: (1) The particular public utilities to be investigated in this country and Europe, namely, gas, electric lighting and power, street railways, and water, whether privately or publicly owned, to be considered in their broad relations

to the municipality, the consumer, and the citizen generally. Is that about as you remember it?

A. Yes.

A. And it is further stated: (2) an investigation to pro-
4248 ceed along the following definite lines: 1. Franchises of private companies; 2. Public supervision by Governmental authorities; 3. History of municipal ownership; 4. Effect of public and private management upon (*a*) political conditions, (*b*) conditions of labor, (*c*) character of service, (*d*) price of service, (*e*) cost of service, (*f*) economy of management, (*g*) improvement in service and methods, (*h*) financial results, etc., Does that cover it?

A. Yes, sir; that covers it; those are the points we agreed on.

Q. On page 16 of the volume the members—you gave part of them and part of them you did not remember—who participated in the foreign investigation are given here as Messrs. Ingalls, Goodnow, Walton Clark, Bemis, Maltbie, Parsons, Sullivan, Healy, McNulty, Winchester, Edgar, Commons, Gray, W. J. Clark and Moffett. Is that a correct list of the names?

A. That is right.

Q. And on page 17 of the report is set out the following names of plants investigated under the head "Gas" in Europe: Public: Glasgow, Manchester, Birmingham, Leicester; Private: London: South Metropolitan Gas Co.; Newcastle, Sheffield. Is that about the field that was covered there?

A. Yes; there were some American gas companies, referred to somewhere.

Q. The American gas companies were, Wheeling, Richmond, Atlantic, Norfolk and Philadelphia, is that correct?

A. Yes.

Q. Now, going back to page 83 of your report, you were asked by counsel yesterday to name a single city selling gas at 90 cents where the per capita sales were equal to or greater than Des Moines. I wish you would name such cities if you have any now?

A. I had this memorandum but it was in my room. My
4249 authority is the last issue of Brown's Directory of American Gas Companies for 1911, but for the period of 1910, and I used it for the population supplied and the sales and the price. I have taken prices at 90, or near 90 as near as I could find them; some of them may not give exactly 90. Minneapolis, population supplied, 250,000, sales 1,808,429,000 feet, average per capita 7,232 feet; net price, that is if they pay promptly, 85 cents. Providence, population supplied, 220,000, sales 1,320,000,000, per capita 6,000; net price, 90 cents. Rochester, population supplied, 190,000, sales 1,219,816,200 feet, per capita 6,420; net price 95 cents. Washington, D. C., population supplied 331,000, sales 2,216,506,000 feet, per capita 6,696 feet; price 85 cents, net. Lansing, Michigan, population supplied 35,000, sales 230,000,000 feet, per capita 6,571 feet; net price for light $1.25, for fuel 90 cents. Racine, Wisconsin, population 35,000, sales 230,886,000,900 feet, per capita of population supplied—in all cases I use population supplied as given in Brown's Directory—6,567 feet. The price is not clearly given so

that one can understand it very well in Brown's Directory; so I turned to the Wisconsin Commission Report which gives in the Racine decision the price they had fixed for 1910, and which I therefore assume is in effect, which is $1. for the first 4,000 feet a month, 80 cents for the next 11,00- feet, 70 cents for all over 15,000 a month, and a small charge a month for meters—25 cents for 3 and 5 light meters, and larger charges for larger meters. Des Moines is given as follows: Population supplied 88,954, sales 531,991,054 feet, per capita 5,983. I did not put down the price as we all know what it is. Hartford, Connecticut, population supplied 95,000, sales 573,446,000 feet, per capita 6,036 feet; price 90 and 75
4250 cents.

Q. Where was that?

A. That was in Hartford, Connecticut. Ann Arbor, Michigan, population supplied 22,000, sales 145,000,000 feet, per capita 6,591 feet; net price at $1 and 80 cents is the way it is given; probably a sliding scale according to consumption. That is the list so far as I have observed it in hasty reading or gleaning through Brown's Directory sometime ago.

Q. So that in most of these cities the per capita sales exceed slightly the sales per capita in Des Moines?

A. I only selected cities where it did exceed the amount gives for Des Moines, and also where the price was somewhere in the neighborhood of 90 cents. There are other cities where the sales per capita very much exceed those here and where the price is very different, as for example, Grand Rapids, Detroit, Milwaukee, New York, Poston, etc. But those are very large cities and conditions are different, but the price is very much lower also.

Q. Now, counsel asked you on yesterday if you had had access to the cost or price of cast iron pipe per ton and it aroused some amusement because you referred to Hall's report where it gave the prices per foot. Now did you have access to price or cost of cast iron pipe?

A. I had in my room all the time the paper which I have in my hand which was given me by Mr. Hall and I thought it was in the report; it was a separate tabulation that he handed me in which the price is given per ton.

Q. The memorandum just marked Defendants' Exhibit 45 is the memoranda you refer to?

A. Yes.

4251 The defendants offer and read in evidence at this point Defendants' Exhibit 45.

Objected to on part of complainant, not only for the general reasons to go to each part of the testimony but also that it is secondary and incompetent, it appearing it was not made up by the witness himself, but by Mr. Hall and he not having identified and verified it and not having afforded an opportunity for cross examination in reference to it.

The said Exhibit 45 is as follows:

4252 "DEFENDANT'S EXHIBIT 45.

Des Moines Gas Company.

Price of Cast-iron Pipe.

1. American Cast Iron Pipe Co., Birmingham, Ala.

			Per ton.
1910, April	8"	C. I. Pipe.....	$28.35
1910, March & April	10"	"	27.85
	12"	"	27.85
1909, November	4"	"	29.85
1909, December	4"	"	29.15
1910, January	4"	"	29.15

Freight, $5.85 per ton deducted by Shippers.

2. U. S. Cast Iron Pipe & Foundry Co., New York.

1911, Jan. Feb. Mar.	4"	C. I. Pipe.....	26.35
	10"	"	24.85
1911, April	8"	"	24.85
1911, November	16"	"	23.90
1909, July	4"	"	26.85
1907, February	24"	"	36.00

Freight, $5.60 per ton deducted by Shippers.

3. J. K. Dimmick & Co., Philadelphia, Pa.

1910, August	8" C. I. Pipe.....	26.85
	Less Freight—35½¢ 100 lbs.= $7.10	
1910, September	4" C. I. Pipe.....	27.95
	Less Freight—$5.85	
1909, July	4" C. I. Pipe.....	28.50
	Less Freight—$5.85	
	8" C. I. Pipe.....	27.50
	Less Freight—$5.95	
October	16" C. I. Pipe.....	26.50
	Less Freight—$5.85	
1907, November	4" C. I. Pipe.....	38.60
	Less Freight—$6.27	

4. Dimmick Pipe Co., Birmingham, Ala.

1907, May	4"	C. I. Pipe.....	31.34
	10"	"	31.34
	12"	"	29.73
	16"	"	28.36
July	4"	"	30.33
	6"	"	31.88
August	4"	"	33.92

No deduction for freight.

4253 Answer continued: I have before me the monthly prices in Chicago, the first week of each month of 6" cast iron pipe, ever since 1901, and I have averaged them by years. If you care for them, I will give them. You only have to add 85 cents to *to* get the Des Moines prices.

Q. Yes, give them.

A. The average, 1902, the first week of every month, from the Iron Age and Engineering News, $32.07.

Q. What sizes?

A. I have taken as a standard the 6". The largest sizes are a little cheaper and the very small ones have been a little higher. For 1903, they are $331.44.

Q. These are the average prices per ton during the year?

A. Yes, in Chicago, the first week of each month during the year. For 1904 they are $25.56. For 1905, $28.25; for 1906 $31.46; for 1907 $36.75; for 1908 $27.25; for 1909 $26.79; for 1910 $26.92 for 1911, the first four months, $24.25. I haven't the other months, except the first week in August when it was $24.50.

Q. That is August this year?

A. Yes. This is for cast iron water pipe. One dollar must be added for gas pipe and 85 cents for the difference in freight. The average of the three years, 1908, 1909, and 1910 was $27. Adding $1.85 would make it $28.85. It is lower this year. The average this year appears to be about $24.25 the first four months; adding $1.85 would make $26.35.

Mr. GUERNSEY: What was that average for the three years?

A. $26.99 but I call it $27.

Mr. GUERNSEY: You add $1.85?

A. Yes, for the difference in gas pipe and freight.

4254 Q. Then if I have followed you in your reading the current prices if that is the proper term, for this year, beginning in January, 1911, are considerable lower than the average prices for several years back?

A. Yes.

Q. Anywhere from $2.50 to $4.?

A. Yes, there have been individual years occasionally in the past where it has been as low or lower, but the average run has been higher than this year.

Q. Now, I asked you last evening to refer to the cost or rather—yes, the cost of reproducing gas mains in Des Moines, as found by Mr. Baehr in his report, with the cost as estimated by Mr. Haines in his estimate for 1911, and if you have worked that out, I wish you would tell us what difference, if any, you find in it?

A. I have it here somewhere.

Q. I mean Mr. Baehr's figures with his overhead added as he added them.

A. I have those figures. Mr. Haines estimates 2,000 feet of 12 inch pipe on East Eighteenth of which 1,300 feet is from Court to Walnut and 700 feet from Walnut to Lyon.

Mr. GUERNSEY: Pardon the interruption. The blocks here are not 1,300 feet long; that can not be correct.

Mr. BYERS: That 1,300 must be incorrect.

A. There were two blocks of 12 inch pipe aggregating 2,000 feet. I don't know the streets well enough to determine it.

Q. While I am looking for this, let me ask you, what is anything did you find in examining the estimate made by Mr. Haines for the cast iron pipe for 1911 as compared to what it had cost the Company in the past for similar improvements, as to whether it is higher or lower?

4255 A. It is higher than the unit cost given in Mr. Hall's report for that type of pipe, even after allowing for specials.

Q. Is the difference substantial or just a slight difference?

A. As I recall it, there was a material difference; I cannot tell you at the moment. On the 12 inch pipe, 2,000 feet, Mr. Haines estimated a cost of $38.00 or $1.90 per foot. The average cost of 12 inch pipe given by Mr. Hall in schedule 5, page 2, is $1.21. Mr. Haines' is $1.90; Mr. Baehr's figures with the overhead added $2.16.

Mr. GUERNSEY: What is the page of Mr. Baehr's report?

A. Page 114. This is obtained by dividing the total in Mr. Baehr's report of that size of pipe $67,716. by the number of feet 31,349.

Q. Before we go on, you say as given by Mr. Hall; do you refer to his report wherein he shows the unit cost as shown by the books?

A. That is right. I give the page here. He shows according to the books 10,610 feet of 12 inch pipe have been laid at a total cost of $12,801.68.

Q. And that figures out $1.21 in round numbers?

A. That figures out $1.21 as he gives it. And this is for pipe laid since March 1, 1906 during the last five years.

The MASTER: What page is that on?

A. Mr. Hall's report, schedule five, page 2. Now if I may see that copy again of Mr. Haines' report, there is some statement there I want to refer to.

Q. I see that that distance is given in Mr. Haines' estimate, 1,300 feet, between Court and Walnut. Of course it would not make any difference with what I am trying to get at whether he gave the distance long or short; it is the distance and price that he fixes.

A. This states East Eighteenth, Court to Walnut, 1,300

4256 feet, 12 inch; East Eighteenth, Lyon to Walker, 700 feet, 12 inch. That pipe may be laid in a district which it may be more difficult for laying down town than the average of that kind of pipe. That may account for the difference in the unit prices. There may be a little paving to overcome, in cutting in.

Q. There is no paving as I understand it at all between Lyon and Walker Streets on Eighteenth.

A. I have not been over the ground at all. This other pipe, East Eighteenth between Walnut and some other place is down town, is it?

Q. No; East Eighteenth between Court and Walnut is about half way between here and the Fair Ground.

A. Do you wish the other pipe, the 16 inch?

Q. Yes, I want you to go on with it.

A. Then there were 1,200 feet of 16 inch pipe on East Court Street from Fifteenth to Eighteenth, estimated at a cost by Mr. Haines of $3,200. or $2.67 a foot. Mr. Baehr's figures are $3.16 cents, Mr.

Hall's figures from the books, on page 2, schedule 5, $2.13. I wish to call attention to the parenthesis that appears in the letter in this exhibit, from Mr. Haines to Mr. Morris of date September 1, 1910, in which opposite this estimate for 1,200 feet 16 inch pipe is the statement, partly laid, which would indicate that some of the expenses had already been borne and perhaps paid for, and that this was the amount necessary to finish the job. That of course—all I can say, is that the parenthesis shows, partly laid.

Q. All I want is the number of feet as Mr. Haines has given it and the prices, and we will let Mr. Haines and the Company explain if there are any explanations to be made, I want to get a comparison of these figures as well we can from their own statements.

4257 Going to another question that counsel pressed upon you during the cross examination, the question of working capital; have you given that matter any attention since your examination two or three days ago?

A. I have looked into it a little further, not a great deal. I have made a computation based on Mr. Haines' estimates or statements of a statistical character.

Q. What if anything did you find in Mr. Haines' estimate that gave you information with respect to the material that could be taken care of and carried on hand?

A. He says that the entire storage capacity of the plant is as follows: Generator fuel, 1,520 tons, or 30 days' supply. 300 tons of boiler fuel, or 13 days' supply. 664,000 gallons of oil, which he says is 65 days' supply. Applying the unit costs to that amount of supplies, given in Mr. Hall's report as from the books of the company, in schedule 6 of $5.85 per ton for coke, which is what is referred to by generator fuel, is $8,892. Boiler fuel, 300 tons, there are two prices given, $1.55 for steam coal per ton delivered, and $2.50 for mine run coal per ton delivered. Taking the $2.50 the larger figure, it is $750. 664,000 gallons for the oil, which I took at 2.8 cents a gallon, the contract price, $18,592. The addition of these three items, assuming the storage receptacles, tanks and bins to be full, is $28,234, which would be the value of the supplies in the shape of coal, coke and oil necessary.

Q. To keep the storage full all the time?

A. To keep the storage full all the time. And the statement is made in that letter that the storage facilities are ample.

Q. In addition to that there would be some necessary cash for pay roll, and so on?

A. Yes, supplies and fittings and the monthly pay roll

4258 would have to be met; one month pay roll and some supplies and figures.

Q. Now you was examined at some length until, at least, there was a suggestion from several quarters that both you and counsel had reached the limit upon the so-called sinking fund plan. I do not want to take any time with it, further than to ask you if you have prepared a table that illustrates your position?

A. Yes.

Q. Now, Professor Bemis, you may state what Exhibit 46 purports to set out in a brief way, without going into it?

A. It attempts to illustrate my method of treating depreciation in the report and shows what the result would be to the investor. I take six years as illustrative in order to avoid the long tedium of working out the whole period.

Q. You did not take what you had jokingly called the "sacred seven?"

A. No. I took for convenience an investment of $100,000 at the start in some part of a plant that will have forty-one years of life, as in the forty-one years' life, one per cent will cancel in the sinking fund in that time. So it makes a convenient computation. And forty-one years is not a life too long as usually considered for gas works, although I used a more conservative figure, 36 years, and a percentage of 1.289. Now I assume in this typical plant that there is a thousand dollars a year which can go into the sinking fund, or be divided, plus four per cent on the average investment after deducting the proceeds of the sinking fund. I start with four per cent and the thousand dollars to go into the sinking fund. If they do not have any sinking fund, then as shown by the tenth column, $5,000 a year they would divide until the end of the time when they would have divided forty-one times that or $205,000, but would have no plant left. Instead of that we assume
4259 that they wish to have the plant or the value of the plant in some form at the end of the time, and also any year during the time. So take the first line, $100,000 average investment, the net profit $4,000 and no sinking fund at the start; no interest on it, but $1,000 put into it that year. The amount to be in the sinking fund as shown by column 8, $1,000 the first year; the nominal profit, if no sinking fund is $5,000. The total profit, plus proceeds of sinking fund December 31, as shown by columns 4 plus 8 which is the result of the sinking fund scheme, $5,000.

Q. Now we come to the second year. We have there an investment of $99,000 on which as shown in my report, I estimate a return a four per cent profit on that, or $3,960. The sum of the net profits up to date would be $4,000 divided the first year; $3,960 the second, or $7,960 and $1,000 is in the sinking fund, and interest on that at four per cent is $40. The addition to the sinking fund the second year is a second thousand dollars. The amount in the sinking fund then is at the end of the second year $2,040. Now the nominal profit if there had been no sinking fund would have been $5,000 again and the total profit divided at the end of the second year would have been $5,000 the first year and $5,000 the second year; but the total profit if there had been a sinking fund would have been just the same, as shown by the additions of columns 4 and 8, as shown by $7,960. to which added the accumulated interest, $2,040 in the sinking fund, making it $10,000. They could stop at the end of that time and they would still have the $10,000. that is, they would have $2,040. If they would stop right there they would not be a cent better off or worse off. The same results follow for the whole forty-one years.

Q. In counsel's examination, and I was greatly interested
4260 in it, both your examination and Mr. Hall's because the field is new to me and somewhat of a puzzle too. Counsel

used an illustration, the mortgage, and said, now a man loans $100 in money and takes a mortgage from the borrower and a note for his $100 drawing 6% interest. Now he has his $100 at work and he gets 6% on it, which would be $6 a year. Now counsel says at the end of 20 years, if he did not spend any of the interest, he would have $120 of the interest and he would have his original $100?

A. Yes.

Q. And then he sought to apply that to the gas business, the operation of machines. Isn't the difference right here: The mortgage does not depreciate; the $100 that is represented by that mortgage works every one of the 20 years?

A. There that difference exists.

Q. And the holder of the mortgage of course gets his $6 profit, because the $100 is at work, while in the case of machinery on the theory of depreciation the machine that is earning the return, on the theory and principle of depreciation, the full value of it is not working all through its life, but only that portion of it that is supposed to represent the difference between its cost and its depreciation?

A. The machine is working, but its value is declining.

Q. But the value of the machine is disappearing?

A. Yes.

Q. And that is not true of the $100 loaned out?

A. Yes.

Q. In other words, if the same principle, if the mortgage principle is applied to a machine, and you also apply the depreciation theory to the machine, then the investor is earning, not only a return on the full value of the machine, but if the depreciation is carried into it he is earning on the value of the machine and depreciation too?

4261

A. If I understand the question right, I should say yes. Of course in a gas enterprise you must allow a price for gas sufficient to finance that depreciation that you do not have to allow in interest on the mortgage; so I had allowed that in operating expenses.

Q. Take a machine now that cost $100. On your theory you say that it will depreciate; that a fair estimate of the weakening or loss of value in that machine for one year is $4. so that the owner of the machine, if he wants to keep his capital whole, must make some provision for that $4.

A. Yes.

Q. Now he sets aside his $4?

A. Yes.

Q. He has his machine and he has his $4 and the capacity of the machine, while according to your theory it has weakened $4 yet it earns just as much as it did the year before?

A. Yes.

Q. The owner has his machine and the $4 and if the $4 is added in as counsel suggested it ought to be, then the person who is getting the benefit of the service of the machine and paying a return on it will be paying on more than the value of the property that is doing the business; that is right?

Yr.	Average investment for reckoning profit.	Net profit.	Sum of net profits.	Sinking fund, Jan. 1.	Interest on sinking fund.	Addition to sinking fund.	Amount in sinking fund.	Nominal profit if no sinking fund.	Total nominal profit if no sinking fund Dec. 31.	Total net profits plus proceeds of sinking fund Dec. 31.
1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	10=4×8.
1.	$100,000.00	$4,000.00	$4,000.00	.....	.....	$1,000.00	$1,000.00	$5,000.	$5,000.	$5,000.
2.	99,000.00	3,960.00	7,960.00	$1,000.00	$40.00	1,000.00	2,040.00	5,000.	10,000.	10,000.
3.	97,960.00	3,918.40	11,878.40	2,040.00	81.60	1,000.00	3,121.60	5,000.	15,000.	15,000.
4.	96,878.40	3,875.14	15,753.54	3,121.60	124.86	1,000.00	4,246.46	5,000.	20,000.	20,000.
5.	95,753.54	3,830.14	19,583.68	4,246.46	169.86	1,000.00	5,416.32	5,000.	25,000.	25,000.
6.	94,583.68	3,783.35	23,367.03	5,416.32	216.65	1,000.00	6,632.97	5,000.	30,000.	30,000.

A. Yes. I want to illustrate my point, the way I put it here, because I have thought it out very carefully. I think my statement should be accompanied with what is on this page and pinned together. I start with a four per cent sinking fund as an investment, as a depreciation reserve, and concede to the Company they should have a right to finance the depreciation at four per
4262 cent. Now very likely they will find it far more profitable to invest that depreciation reserve in the plant and make more than four per cent on it; and yet I would allow a price for gas sufficiently high to give them the depreciation necessary at four per cent.

Q. In other words, they could take $4 and invest it in one of those mortgages at 6%?

A. Yes. And furthermore if the plant is earning 7% or 8% and they put this depreciation into the plant at 8%, these figures would remain true just the same as if we took the plant earning 4% on a sinking fund earning 4%.

The defendants here offer and read in evidence in connection with the witnesses' re-examination Exhibit 46, as follows:

"DEFENDANTS' EXHIBIT 46.

Illustration of the Sinking Fund Method of Financing Depreciation.

The principles followed in preparing Tables 21 and 24 of Defendant's Exhibit #43, are illustrated below:

It is here assumed that a company starts with an investment of $100,000 in a plant that will wear out in 41 years. An investment fund of 1% of this, or $1,000 a year, in a 4% sinking fund will yield $100,000 at the end of 41 years. At that time the plant will be scrapped and the $100,000 will keep the capital intact. It is further assumed that the nominal profits of the business at the start are $5,000 a year.

The illustration shows that the owner has the same income every year, whether the depreciation fund is set up or not. To avoid unnecessary details the illustration is only carried through six years.

(Here follows table, marked page 4263.)

It is noticed that the income by the two methods, as shown in the last columns, is the same, not only at the end of the time, but during any year.

The Company is conceded the right to charge enough so as to be able to redeem the principal in 41 years in this illustration (36 years in my Report) even though only 4% is obtained therefrom.

If, however, the Company is making 6% or more net profit above this payment to the sinking fund, it can invest its depreciation reserve in the plant, and in the 41 years have more then the plant, or it need invest less than $1,000 a year to come out whole.

In either event the returns will exactly equal the returns from a system of financing where there is no depreciation reserve and no plant at the end of the average life.

4264 Q. Now, Professor Bemis, have you examined the estimate marked Exhibit 18 thoroughly?

A. I have looked it through two or three times.

Q. Have you read Exhibits 7, 8 and 9, being certain letters from Mr. Haines to Mr. MacVicar?

A. Yes, those are the letters in a certain pamphlet that has been printed.

Q. Now taking the statement of Mr. Haines in one of those exhibits where he states that the net earnings of the company—in the letter of date November 22nd, where Mr. Haines says: "Deducting from the average annual gross revenue for the three year period the average annual expenditure for operating expenses and taxes there remains an average annual net earning for the period of $188,369. If you had those figures before you, furnished by the Company, as representing their net profits for a period of three years with Mr. Haines' estimate of a ten per cent or more increase for the subsequent two years, or one year, what rate of return would you figure the Company would receive on a valuation, such as you say is a fair one for this plant taking into consideration now 90 cent gas and the estimated increase in sales and profits?

A. I should first deduct from that gross figure an estimate for depreciation of about $21,000; enough to reduce it to $167,000 and then assume a ten per cent increase of that $16,700. I would consider that was rather too low on dollar gas, because I consider that an increase of business would not require a corresponding increase of investment or of operating expenses; but taking the figures without any aloowance $183,700 I would take as the profit. Then there would have to be deducted an allowance for reduction in price to 90 cents. To do that it would be necessary to turn to some

4265 source of information like Brown's Directory, if that was the only source available of the sales, finding the sales in there to be 532 million for short, and add 10% for increased business and according to Mr. Haines' estimate would add that 53,200,000 to that making 585,200,000 feet. The ten cents per thousand reduction in price on that figure would be $58,520. I assume that the price would fall ten cents a thousand feet—it wouldn't in Valley Junction—but I understood your question was to assume a ten cent fall all along the line. We therefore would assume a loss on the entire 585 million

feet, which would be $58,520 on that basis. That would leave $125,-180. $58,520 subtracted from $183,700——

The MASTER: I haven't it that way.

A. Perhaps you did not get some of the figures. I have $183,700 of revenue; that was net revenue on dollar gas. You see I started with $188,369.65. Mr. Haines' estimate took off enough to reduce it to $167,000 on account of depreciation, and then added for ten — cent increase of business and profit. Now take off $58,520 for the reduction in price and you have $125,180.

Q. What return would that furnish the Company on your valuation?

A. On $1,600,000 I make that calculation nearly eight per cent.

The MASTER: What did you take for your expenses?

A. I took merely at the request of General Byers the statement given in Mr. Haines' letter to Mr. MacVicar that the average net earnings for the past three years, aside from depreciation, had been $188,369.65 a year. That was Mr. Haines' letter. The net earnings. Then I took off for depreciation the $21,400 which I allowed in my report, in round numbers, making a figure of $167,000.

4266 Q. Now what do you find the return would be on your valuation?

A. 7.81 per cent. I would consider it fair to add something for probable extensions——

Q. Not for the purposes of this question. I want this question in this way: I want to get what was before the council and not what you may have in your mind at this time. Now what return would that furnish on the valuation, the figures used in stating the valuations by Mr. Haines of $1,739,094?

Objected to on part of complainant for the reason that Mr. Haines did not state that as the valuation. There is no objection to his asking what percentage that would be on that amount in dollars.

A. 7.19 per cent.

Q. Now then I want to get at it in another way, and any explanation you care to make to this later you may make, but I want it in the record in concrete form. Take Mr. Haines' figures—first give me the amount that would be produced by 90 cent gas, assuming the increase to be ten per cent, the increase in total sales to be ten per cent over 1910.

A. You mean in dollars?

Q. In dollars at 90 cents.

Mr. GUERNSEY: Please give us at the same time the number of feet you figure on.

A. I would prefer to take the exact revenue as it was in Exhibit——

Q. I am not asking about the revenue at all for this question. I want to know how many dollars the output of gas for 1910 increased by ten per cent would produce at 90 cents a thousand feet; how many dollars would that be?

A. Assuming 90 cent gas in Valley Junction——

Q. I don't care anything about Valley Junction.

4267 A. To figure it I want to know whether you want it applied to the 532 million feet.

Q. I want it now to apply to the total output.

A. Then 532 million feet of sales.

Q. Yes, with a ten per cent increase.

A. That means an increase of ten per cent, means an increase of 53,200,000, which added to the present 532 million feet means 585,200,000 feet of sales. Now, at 90 cents instead of a dollar, call it all at 90 cents, as I understand your statement, it is $526.500.

Q. Now, then on page 2 of complainant's Exhibit No. 7 which is the letter under date of November 22, Mr. Haines gives the average annual operating expenses and taxes for the three year period ended September 30, 1910 to be $303,411.66.

A. That is the average operating expenses.

Q. That is the average operating expense. Now I want you to assume for the purpose of this question that the operating expenses for 1911 would not exceed the average operating expenses for the three years as stated by Mr. Haines, and what would be the net return to the Company on that basis; I mean the net profits, total?

A. On that basis which I would not consider exactly——

Q. I am not asking you to consider that?

A. $223,000 in round numbers.

Q. Now you said you wouldn't consider that basis, why not?

A. Because the average operating expenses would have to be divided by the average sales in feet for the three years and the figure obtained per thousand feet which might be multiplied into the estimated sales of 585 million feet in 1911, to get the estimates operating expenses. But it might be appropriate to take the average profits as we did a minute ago and increase them proportionately to the
4268 increase in output. I think that I could endorse entirely, but this other I don't think I could.

Q. Of course, I don't want you to answer this question on the theory that you have to endorse anything I am asking. How much would you say, with your experience and judgment, the operating expenses of 1911 would exceed the operating expenses of the three years that Mr. Haines took there, 1908, 1909, and 1910, in dollars, not per thousand feet or per cent; just how much in dollars?

A. How much would the expenses exceed for 1911 with that increase assumed at ten per cent.

Q. Yes; I do not mean assuming ten per cent increase in the operating expenses.

A. No, but in the sales. I should estimate an increase of operating expenses of approximately 15%.

Q. In figuring out your increase you assume that the operating expenses for the three years referred to by Mr. Haines were all legitimate operating expenses. What I am trying to get at is not what you have in your mind at all. I want to bring out from you if I can, just what the situation is here from the Company's own standpoint, taking the statement of the Company's manager. Now the operating expenses, average operating expenses, as stated in this letter, include everything that the Company claims was operating expenses

for the three years up to September 30, 1910. Now keeping in mind the character of these operating expenses and what is included in them, what I would like to know is what you say will be the increase in the operating expenses for 1911.

Mr. GUERNSEY: Over what?

Mr. BYERS: Over that average as stated by Mr. Haines.

4269 A. About $40,000. Somewhere in that neighborhood; about $45,450 if you assume that all those expenses are legitimate. I think there would be a question as to that.

Q. What is the figure?

A. Leaving everything in as it is $45,450; that is, take the $303,000 which I took for short; if you want to take it exact, you would have to take $303,411.66 and add fifteen per cent to that, which would be $45,511.75; that is to be added, that is the additional expense.

Q. That would make $348,923.41; now what was the total of the sales at 90 cents?

A. The total sales at 90 cents was $526,500. I took the round figure of 585 million feet, and at 90 cents it would be $526,500.

Q. In other words, if your estimate of 15% as additional operating expenses for 1911 is sound, at 90 cent gas, taking Mr. Haines' letter just as it was written to the council, and assuming his statement as to their operating expenses to be correct would have shown a profit to the Company of $175,989, would it not?

A. Let me see. The profits we reached a few minutes ago, if I have the figure before me was, $223,000 and from that was to be deducted $45,500 dropping the small figures, and that leaves $177,500.

Q. I am safe in my figures of $175,000 in round numbers?

A. Oh, yes.

Q. In other words, assuming now that the Des Moines Gas Company's Manager, when he wrote this letter was stating the facts as they appear on the books of the Company, and was operating this plant and managing it as it should be operated and managed, with a fair estimate for an increase of expenses for 1911, would show a return of at least 10% on the valuation of $175,989 even at 90 cent gas, wouldn't it?

4270 A. Yes.

Q. That is, assuming now of course, you know nothing else about it except what Mr. Haines put in his letter?

A. That is what I am assuming.

Q. And then adding to it your experience and judgment and the information you have given here as to what would be a fair increase in operating expenses for 1911, that is sound, isn't it?

A. There is one thing I think that should be deducted for that $175,500 that is an allowance for depreciation.

Q. I am assuming now this company—you have in your mind you want to run the company in your way—I want to hold this company now to their own method of doing business.

A. On their report of expenses then this figure is correct.

Q. Now to carry that just a little farther, for the purpose of testing

your judgment, and you cannot do it to the penny, because the figures don't cover exactly the same period, but you have somewhere there handy the sales for 1909, total sales?

A. Yes, I have them before me.

Q. Now, then you have the total revenue too, have you not?

A. That is here; I can get it.

Q. I mean for 1909.

A. I can get it in a minute.

Q. I was going to proceed for the moment to test your judgment on that 15% by getting at the cost of doing this business, when you arrived at it, by taking the thousand feet method, say for 1909?

A. I will tell you how I got my 15%.

Q. Did you get it that way?

A. The way I reached that was to take the three years, 1908, 1909 and 1910 of sales 1,490,414,000 feet, which is divided by three an average of 496,805,000 feet, and compare that with
4271 the estimated sales on the 10% increase, which were 585 million feet in 1911, an increase over that average of 88,195,000 feet, or 17.7 per cent. I believe that increase 17.7 per cent of sales could be brought about with an increase of 15% in operating expenses.

Q. Wouldn't a short way, if it can be done that way, wouldn't a short way to test the accuracy of your judgment as to the increase of expenses be to take a normal year and ascertain from the normal year just what the cost of making a thousand feet of gas was and then apply it to the estimated sales for 1911.

A. Yes.

Q. It would not be exactly accurate, but would be a fair method of testing the accuracy of your judgment?

A. Yes.

Q. Right in that connection now, and the purpose largely of this examination is to bring out here just the situation at the time the council dealt with this rate and ordinance—that $175,000 in round numbers that is ascertained by the method we have just covered, only takes into consideration the estimated average ten per cent increase that was based, not on 90 cent gas, but was based on dollar gas?

A. Yes.

Q. And does not consider the increase of sales that might follow a ten cent reduction in price?

A. That is true as I understand it. This was based on Mr. Haines' estimate on the assumption that gas would continue at a dollar.

Q. You referred to Brown's Directory of American Gas Companies to give us the statistics for 1911; what kind of a publication is that?

A. It is published by the editor, Mr. Brown, of the Pro-
4272 gressive Age, one of the leading gas journals of the United States; one of the two leading journals, and purports to represent the official statements of the companies to the editor for publication in that Directory. Mr. Brown tells me he gets that data that way by correspondence with the companies.

Q. Is it an authority as to gas statistics?

A. It is so recognized by all gas companies.

Q. How is it with municipalities and gas experts and investigators?

A. They refer to it constantly as authority.

Q. I notice on page 389 of the publication, at the top of the page, and over what seems to be the parent or operating companies, somebody has written several names of companies in there?

A. Yes.

Q. Did you write those in there?

A. Yes.

Q. Where did you get the information upon which you made this entry

A. Well, at the moment I don't remember. I think I looked over, in preparing that, three or four publications, such as the industrial section of the Commercial and Financial Chronicle, and the Manuals Poor's and Moody's.

Q. What is the Moody publication?

A. That is a Manual recognized as very valuable, for it is a yearly compilation of financing and operating statistics of all sorts of companies, gas, street railways, steam railroads, and electric railroads. It is in a way one of the two or three great Manuals.

Q. What do you have to say whether or not it is a standard publication covering the matters set out in it?

A. Yes.

4273 Q. So recognized generally?

A. Yes.

Q. Does it furnish certain statistics too with respect to gas companies?

A. Yes.

Q. You may take this book for a moment——

Mr. GUERNSEY: What book is that?

Mr. BYERS: Brown's Directory of American Gas Companies, dated 1911; it is for 1910.

Q. Both you and Mr. Hall were challenged by counsel to state if you knew any cities or any gas companies or gas plants where oil was being sold for less than what the Des Moines Company was paying for it. I wish you would turn to that book for Grinnell, for instance, in Iowa, about page 75 of the book, I think, and state what price, if any, is set forth there for oil at Grinnell.

Objected to on part of complainant as secondary and not competent on that account.

A. Grinnell is given on page 79.

Q. What is the price?

A. 2.78 cents.

Q. Now, take Knoxville, Iowa?

Complainant interposes same objection last made.

A. I find it on page 81.

Q. What is Knoxville?

Complainant interposes the same objection last made.

A. The price of oil per gallon delivered 2.75 cents.
Q. On what page is that?
A. Page 81.
Q. Turn to Shenandoah, also in Iowa?

4274 Complainant interposes same objection last made.

A. Page 85.
Q. What price is given there?

Complainant interposes the same objection last made.

A. Price, oil per gallon, delivered 2.55 cents.
Q. Now Washington, another Iowa town?

Complainant interposes same objection last made.

A. Page 86. Oil per gallon 2.75.
Q. Is that delivered?

Complainant interposes same objection last made.

A. It does not state in that case whether it is delivered or not.
Q. That was the extreme southeastern part of the state; now turn to Waverly in the northern or northeastern part of Iowa?

Complainant interposes the same objection last made.

A. On the same page, 86, 2.62 cents.
Q. Now turn to about page 50 of the book and give us the price delivered, or whatever it is, for Chicago Heights, Illinois?

Complainant interposes same objection last made.

A. Chicago Heights, page 48, price of oil per gallon, 2.5 cents.
Q. And Decatur, Illinois?

Complainant interposes same objection last made.

A. Page 49, 2.28 cents.
Q. Granite City?

Complainant interposes same objection last made.

A. Page 52, price of oil per gallon 1.93.
Q. Greenville?

Complainant interposes same objection last made.

A. Price of oil per gallon, page 52, 2.4 cents.
Q. Jacksonville?

Complainant interposes same objection last made.

4275 A. Jacksonville, Illinois, page 53, two cents.
Q. Ottawa, Illinois?

Complainant interposes the same objection last made.

A. Ottawa, Illinois, page 58, 2.65 cents.
Q. Delivered?

Complainant interposes the same objection last made.

A. Yes, most of those cases say delivered.

Q. Quincy, Illinois?

Complainant interposes same objection last above made

A. Quincy, Illinois, page 60, 2.5.
Q. Drop down to Missouri, page 141, Excelsior Springs?

Complainant interposes same objection last made.

A. Excelsior Springs, Missouri, 2 cents.
Q. Independence?

Complainant interposes same objection last made.

A. Independence, Missouri, page 142, 2 cents.
Q. Trenton?

Complainant interposes same objection last made.

A. Trenton, Missouri, page 147, 2.27.
Q. Springfield?

Complainant interposes same objection last made.

A. Springfield, Missouri, page 146, 2.4.
Q. Now, Des Moines—not given there, I think?
A. Des Moines on page 78, does not give anything about the oil.
Q. I wish, Professor Bemis, if you feel like it, you would take that book during the noon hour and see if you can find from it the price of oil at any single one of the cities in which the U. G. I. controls and operates the gas companies?
A. All right.
Q. Now the price of oil as stated here, and as you find it from Mr. Hal's report was what at Des Moines?
4276 A. 2.8 in Des Moines is the price given by Mr. Hall as in the books of the Company.
Q. Anything in addition to that, was that delivered, or is there an additional charge for delivery and storage?
A. That was the oil delivered.
Q. You were examined with respect to page 64 of your report, and especially that part of the matter that is treated on that page that refers to accidents and damages, or claims as you put it, and I note you have allowed, or figured out on that page .16 cents per thousand feet of sales?
A. Additional to the .38 Mr. Hall allowed in order to take care of such an average as would be obtained including a claim paid in the first two months of 1906, although incurred or resulting from something that happened before that.
Q. Have you taken the experience of the company, say for twenty years, a period of twenty years or ten years or any other period that would probably work out a fair average, to ascertain just what the actual expense to the company had been for accidents and damages and so on?
A. I have no data back of 1904, except the four years period, five year period, 1890 to 1894 inclusive. I don't think as I copied that

data in the clerk's office below I separated the items as to accident but I think I have as to 1904 and 1905.

Q. If you have time, I wish you would look that up for me between adjournment and reconvening. So far as the matter contained on this page is concerned which has reference altogether to the question of operating expenses and what items and how much as to some of them could properly be considered as cost of operation and has no reference whatever to your final conclusions as

4277 to the value of this property?

A. No, it has no reference to the investment or value. It only has reference as it purports to show, to the operating expenses.

Q. And you were trying to work out there what in your judgment would be a reasonable allowance to go into operating expenses for accidents and damages and leakage, and so on?

A. Yes.

Q. So that whether your estimate is sound or whether your figures are all accurate, what do you have to say as to whether in either case it would have any effect whatever upon your judgment as to the value of this property, either the first of January, 1911, or at this time.

A. They were figures upon some illustrations of Massachusetts conditions. The only ones as I recall there is any question of the accuracy of the computations, that is mostly next to the last page, and have no bearing upon the investment or operating expenses here in Des Moines.

Q. What do you have to say, Professor—I do not care to go through these figures again; in fact I couldn't do it, because I am not an expert on figures anyway—what do you have to say as to whatever may be the fact about the accuracy of some of those computa-ions here, as to whether or not in your report you have allowed and considered all that could properly be charged into operating expenses?

A. I have, and I further checked over this report and have made the changes that were very slight that I found necessary, barring the Massachusetts data. I have found no changes, even those I found and made that affected my fundamental tables.

Q. In any way?

A. No.

4278 Q. When you say your fundamental tables, you have reference to the tables that work out what you claim to be the actual investment of the property, and the tables where you worked out what you claimed to be the operating expenses of the company, and the tables and figures where you set out what you claim to be the reasonable price at which gas can be manufactured and delivered in Des Moines?

A. Yes. I have found the expense of 1904 and 1905 for accidents and damages of this company. I believe I testified about that also and perhaps put them in the report, in 1904 .15 of a cent per thousand feet sales, in 1905 .47 of a cent, or taking an average,

numerical average in those two years, .31 of a cent. I allow .54 of a cent. I took the five year average including the disputed item; I gave the company the benefit of the item Mr. Hall had thrown out and reached the average of .54. If I had put in these two years so as to have had seven years average it would have been a lower figure.

Q. The only aid or help to either counsel or the Master in these figures or estimates of operating expenses is in arriving at a fair judgment as to the operations of this Des Moines gas plant for the year 1911 and subsequent years?

A. Yes. Of course I have assumed in my figures that the operating expenses given by the books of the company and so reported by Mr. Hall are correct, and are operating expenses on which one may base conclusions as to operating costs and apply it to the future with some allowance of probably a decrease of cost with increase of business. Now if it be true that the overhead charges of about 30% allowed by Mr. Baehr and Mr. Lea the past five years were charged into operating expenses, so far as incurred, probably not incurred to anything like that per cent, but so far as incurred,
4279 then to that extent the operating expenses that I have used and Mr. Hall used are too high.

Q. In other words, if I have the operation proposition clearly in mind, if this company has charged into operating expenses items that should properly have been charged up to capital and to the plant, the difference, or rather the effect of that method would be to largely increase the cost of making and delivering gas, would it not?

A. Yes.

Q. That is to say, if it should turn out, and if it could be shown if we had the books in such shape and they were kept in such shape that we could ascertain that every time, say five miles or ten miles of additional mains and services were provided for, that all the engineering expenses and the other so-called overhead charges, instead of being added to the plant, or capital account, was charged into the operating expenses, then what would you say as to whether or not gas could be made and sold for even less than what you have figured it here in Des Moines?

A. That is true. The added interest and depreciation on the added investment would not increase the cost as much as the operating expense per thousand feet would be decreased.

Q. Why?

A. Because the capitalization at such percentage still enables those securities to be sold at par and the brokerage charges will be less. As a matter of fact, they will be less than these operating expenses would be in fact. I can show it by taking a year as an illustration probably.

Q. Suppose here is an item this year of $5,000 for improvements that should be charged to the capital account, but as a matter
4280 of fact charged up to operating expenses for this year, how would that affect the cost of gas for this year?

A. Let me take a typical illustration. Take the year 1910, Mr.

Hall in his schedule 3, page 6, gives a total construction at the works in 1910 as $26,715.13. In schedule 5 he gives the amount spent that year for construction on mains as $50,206.78; on services $18,578.95; meters $12,715.05 a total of $108,205.91. Now without turning to Mr. Baehr's report to show the exact percentage for each class of extensions, which it allows for overhead, it is a conservative estimate to use the figure of 30% and for convenience of illustration I am going to take the 30% which he allows for overhead.

The MASTER: That includes taxes and interest?

A. Yes, all of which as a matter of fact, so far as incurred had been charged in the operating expenses for that year. They cannot be paid twice, having either been paid as operating expenses or as construction cost. The construction cost as charged agrees with the base figures without any of those charges put in as estimated by both, in a general way, Mr. Baehr and Mr. Lea and Professor Marks.

Q. Which would indicate that what was called overhead all had gone into operating expenses?

A. Yes. Now if there was overhead or anything like overhead, it would be $32,464.77.

Q. Now if the construction charges show unit costs of that year so far as we can get unit costs on the distribution system, which is 75% of this, without this overhead added, then this $32,000 does not exist at all. There wasn't any such expense incurred, or if it was incurred was charged to operating expenses and should come out of operating expenses, which would mean about six cents
4281 per thousand feet last year.

Q. In other words, if I understand that, the advantage is all in favor of the company if improvements and additions to the plant are charged to operating expenses rather than capital?

A. That has not been shown as yet. Let us take the $32,464.77 and assume it was charged to capital and assume a rate of return to cover depreciation and return on capital of 8%, that would be $2,597.18. If, however, we had taken 9% to cover depreciation and interest it would be a little higher, $2,921.83. Let us take for convenience for the moment the larger figure, that divided from the sales of gas of that year for convenience, call it, 532 million feet would be about less than .6 cent, a little over .5 cent per thousand feet sales. To put a larger amount in overhead therefore would increase the fixed charges less than two thirds of a cent while it would lessen the operating expenses six cents.

Q. And that would result in this situation so far as the consumers are concerned, if these charges go into operating expenses rather than into capital or plant, then the consumer pays for the additions through the cost of gas as figured on operating expenses, and then also is the rate fixed upon the valuation that includes those additions and improvements?

A. Yes. Of course I believe this result, among other things, shows there is no such overhead as that; there may be some; I do not think it is half or a third.

Q. If there is, that would be the effect of it?
A. Yes.
Q. The consumer would pay for it and it would still be getting a fair return on the valuation?
A. Yes.
4282 The MASTER: Casualties in operation should be charged as expenses of operation?
A. Yes.
Q. But casualties in construction should be charged to the plant?
A. Yes.
The MASTER: The engineering charges in operation should be charged to expenses of operation?
A. Yes.
The MASTER: But engineering charges in construction should be charged to the plant.
A. Yes.

At this time an adjournment was taken until 1:30 P. M.

4283 1:30 P. M. THURSDAY, *September* 28, 1911.

EDWARD W. BEMIS, being continued on redirect examination by Hon. H. W. Byers, testified as follows:

Q. Did you fond any notations or statements in Brown's Directory showing the price at which any of the companies controlled by the U. G. I., pay for oil?
A. No, I didn't find any such notations. I have been through them.
Q. Now I want to run rapidly over a few pages here of your report. Your table on page 71 of your report of profits at 90 cents. In this table did you take any account of the increase, probable increase in the sales of gas for the future?
A. No, this would only apply to fixing rates for the year 1910.
Q. That table then is based wholly upon the operations of the gas plant with your estimate and figures back of 1911?
A. Yes.
Q. And does not cover or attempt to cover any probable increase of either sales or operating expenses under the 90 cent rate?
A. That is right.
Q. Now criticism was urged by counsel or rather covered in his question because you have taken the lowest operating figure or expense, a low-r figure than the company had ever gotten along with before. Was there anything wrong in taking that figure?
A. I did not believe there was anything wrong whatever.
Q. And why did you take it?
A. I explained in my report in a measure, I took the average of expense outside—for a period of several years outside of manu-
4284 ufacturing, leakage and taxes. I took last year's taxes which were the highest, I took the manufacturing and leakage of last year which were low, but I gave a reason for believing that will continue.

Q. The low manufacturing cost and the low percentage of leakage indicated did it not not only efficiency in management and operation, but indicated efficiency in apparatus and also as applied to leakage?

A. Yes.

Q. And as you say will continue if the management and the efficiency of the apparatus and machinery were kept up?

A. Yes, the tendency would be to decline in costs.

Q. Rather than increase?

A. Yes. The only thing that could make it go in the opposite direction would be a material increase in the price of coal, coke and oil and I had found no evidence that there was any such increase likely to occur.

Q. Now turning to pages 59 and 60, those pages you were examined quite—your examination was quite lengthy on these two pages. Now if I understand the table on page 60, all you were trying to do there was to take the total sales in feet and then the total assets of those seven Massachusetts companies and divide the one into the other to ascertain the price per thousand, is that what you were trying to get at? I don't mean price per thousand, but the amount of assets per thousand?

A. Reported by the company. These merely show what they report to the gas commission.

Q. That is what you were trying to do was to show in a general way the average investment in these seven companies to the sales of gas in feet?

4285 A. That is right.

Q. And what effect if any would the fact that either the assets as reported were too large or there was errors in the computation have upon any of the fundamental results covered by your report?

A. Nothing, if it were shown that that report was valueless, not correctly tabulated, it would destroy the comparisons of *of* the Massachusetts companies, it would not affect the data as to Des Moines, but it would destroy any comparison with Massachusetts. I have not found any errors in the tabulation the only question that has been raised as far as I am familiar as to whether these companies correctly reported their assets but this is their report, they are higher than Des Moines company in real estate, lower in most of the other proportions.

Q. You were *q*sked in this connection as I remember it that all you were t*yr*ing to do was to ascertain the cost of this property as shown by the books. Now that is not true is it, that that was all you were t*yr*ing to do.

A. With respect to Des Moines?

Q. Yes.

A. Oh no, I was trying to show the cost of operations as well — construction as shown by the books and also some estimates of reasonable cost based on the books and on my general knowledge of the subject, studies of depreciation, the cost of duplication of the distribution system based on what they have charged as construction

of distribution during the past five years and many other matters, what rate of return is necessary to keep securities at par.

Q. Now that was all in the nature of information for the purpose of arriving at what particular final question?

4286 A. Reasonable price of gas.

Q. And what else as to this property.

A. Well the reasonable price was a result of the reasonable investment and reasonable operating expenses and the reasonable rate of return.

Q. And what if anything in addition to that were you trying to ascertain by getting all these facts and figures in your mind to supplement your former experience and judgment, if anything as to the present reasonable value of the property of this company.

A. I don't recall anything else now.

Q. You don't catch the question. Were you trying to ascertain to satisfy yourself at all about the reasonable value of the property the plant as a whole.

A. Yes. I understood I had answered that before, probably I had not.

Q. So that if I understand you now there were two things that you wanted to satisfy your own judgment about fully informing yourself as to the situation here in Des Moines and one was the reasonable price at which gas could be sold and a fair profit returned in Des Moines, and the fair valuation of the property used in the Gas business in Des Moines.

Mr. GUERNSEY: I would suggest that this is more or less leading.

A. In my own words I would say I had one object as the goal, namely the reasonable price of gas. In order to determine that I had to consider the operating expenses, the proper capital upon which to base a return and the reasonable return or rate of return on that capital so there were these three questions that had to be settled in order to settle the final one which was the reasonable price.

4287 Q. Now the value of the plant that you have given to me two or three times as you fixed it on your judgment and experience, what do you have to say as to whether that rests on all these facts and all this information that you have gathered up here in Des Moines not only by observation and examination of records and books and papers but on the general experience and judg-ent that you have with respect to that kind of property.

A. Yes, my final result was based on that and also on prospects of growth, that was also considered that I had not mentioned the last few minutes.

Q. Of course prospective growth would not have anything to do with value of the property?

A. No, but as to the reasonable price.

Q. Page 52 of your report has been referred to by counsel or by yourself as showing some remarkable coincidences. Now just what did you have in mind when you acquiesced in that suggestion.

A. I had in mind the showing on page 54 where it is summed up in a table where there is shown to be a very close res-mb-ance between

what the books of the company show to have been the cost of the meters services, mains, works and office equipment and what Prof. Marks estikated would be the cost of new construction less depreciation—no, without depreciation, the other is without depreciation also, the books of the company cost there is given as new cost. Marks' appraisal new as stated there and the remarkable similarity further between those and Mr. Baehr's appraisal save in the matter of street mains where his is materially higher. I mean of Baehr's appraisal, base fogures as he calls them omitting land, paving and overhead and the further remarkable similarity between the books of
4288 the company and the cost of duplication today on the basis of the last five years unit cost as given by Mr. Hall.

Q. In other words all you mean to say about that is that as to the physical value of this property there is not very much variation between the several witnesses when you take out overhead charges and those things that have not been considered by yourself or by Prof. Marks like going value and paving, the figures approach close together.

A. Yes.

Q. As to the valuation of the physical property?

A. Of course all the paving that the company had to pay for is included in the book cost statement in the first column.

Q. I know, but I mean paving that they consider that you do not?

A. Yes.

Q. There was some disagreement as to whether or not stable equipment was covered in the item on page 50 I believe it was, the table on page——

A. On page 54 I think.

Q. Yes, page 54. Stable equipment was included in the figures and is included in Prof. Marks' figures is it not?

A. Yes, they are included in Prof. Marks' appraisal. They are included in Mr. Baehr's appraisal. They are included in the books of the company unless paid for out of operating expenses.

Complainant moves to strike the last part of the answer as very obviously a conclusion because the witness testified a good many times he never examined the books, and therefore incompetent.

Q. Just before dinner you gave some figures covering the cost of cast iron pipe and as I understood you the figures were taken
4289 from the Iron Age?

A. The figures were taken directly from the Iron Age by Mr. Alvord and given to me by weeks, then I summarized them by months and by years. The quotation for August of this year I took myself direct from the Engineering News.

Q. The rest of it was from Mr. Alvord's tables?

A. The weekly quotations. I make a computation just now on the ret-r- of stock.

Q. I will get that in just a minute. Now Professor have you worked out something on the value of the stock in this company based upon returns?

A. In the testimony I gave the quotations on bonds somewhat over 97, I have since put in the only company left out, the Buffalo company it still remains over 97 as the average quotations of all the five per cent bonds, 126 in number, that are quoted in the Commercial and Financial Chronicle. I have made two or three computations on different rates of discounts and brokerage charges. For example if the bonds, five per cent bonds and six per cent stock could only be floated at 85 allowing 15 per cent for discount and borkerage charges, it would only require a return of 6.79 per cent on the amount secured at that discount to pay the full interest and discount on par value and cancel or -mortize the discount. Further, if we assume a seven per cent stock, half the investment in stock at seven per cent and half in bonds at five and assume a ten per cent discount and brokerage charge on it, so that even a seven per cent stock only sold at ninety and a five per cent bond at ninety it would only require 6.87 per cent return to pay 7 per cent on stock and five per cent on bonds and -mortize the discount and brokerage charges. Again if we assume stock at 8 per cent selling at
4290 ninety and bonds at five per cent selling at ninety it would only require 7.4 per cent return to pay the 8 per cent on the stock, five per cent on the bonds and cancel the ten per cent discount on each in thirty years maturity assumed on the securities.

Q. Now right in that connection if the investment in the Des Moines gas plant was represented by an actual cash investment in stock say of the amount at which you fix the value of the property and it was earning a return of say six per cent over above operating expenses at what price would that stock go — the market?

A. I believe it would sell at par.

Q. And if it was earning seven per cent return on an actual cash capitalization equal to the value of the property as you found it, what would the stock be rated at in the market, what would be its value in the market?

A. It would be at considerable premium, probably about not far from 115 over 110.

Q. Counsel as I remember it called your attention to the fact that in this state the law prohibited a corporation from becoming indebted for more than two thirds of its capital stock. Now assuming for a moment that is a correct statement of the law, which I don't think it quite is, but assuming that it is, he then next asked you if you knew of any way this company when it was only capitalized at 300,000 or 600,000 later on in 1905, if you knew of any way that the company could get money to improve its plant and go on with its business without making the character of transfer of the property and the reorganization that it did in 1906 and I don't remember just what your answer was now, but was
4291 there anything to prevent the company from paying the money for this stock and then having plenty of money to go on with the business?

A. No, I don't see any reason.

Q. If the stockholders had put actual money into the stock there would have been plenty of money to carry on the business?

A. Yes.

Q. And if prior to 1906, instead of just doubling the capitalization without adding any actual cash if the U. G. I. had paid $300,000 for its stock, the company would have plenty of money to do its business wouldn't it?

A. Yes.

Q. Without any reorganization at that time?

A. Yes.

Q. Without any reorganization at that time? Counsel asked you if the matter on page 13 of your report was based upon anything except the testimony of witnesses here in this trial and I believe you acceded to that, on page 13 and winding up on page 14. Was that exactly fair to yourself?

A. I believe that a holder of that capacity could be constructed for somewhat less than $210,000.

Complainant moves to strike the answer as not responsive to the question, we would like to have the witness answer the questions.

A. I thought I was.

Q. What I wanted to get is whether or not the page is not also based upon your general information as well as what you learned from what witnesses testified to here?

A. Certainly.

Q. And isn't that true as to all of these matters where you undertake to use your own judgment after getting this information
4292 as to values and percentages and all that sort of thing?

—. Yes.

Q. Now Professor, just one thing more and I think I am through for the time being any way. Counsel began his cross examination with a criticism of your first statement in your report with the exception of half a million dollars the plant appear- to have been entirely built from earnings.

COURT: I think that was fully explained at the time.

Mr. BYERS: I don't know whether it was or not.

A. There were nominal $685,000 of bonds, but $172,00- of it did not represent any construction in the plant which was issued before 1895.

Q. I wish you would state briefly in the record so we will have it there is it was not fully explained just what you mean by that?

A. I mean that deducting from the bonds, the $685,000 of bonds the bonds issued for gas rights by the subordinate company to the parent company before 1895 and which did not represent in plant except as the term rights would include it, there were only issued of bonds about $513,000. I did not find in the record any evidence that the preferred stock contracts or common stock represented money that went into plant except as it had already gone in from earnings, capitalized their preferred stock contracts.

Q. So if I understand you, you got at that statement by ascertaining the difference between the present bonded indebtedness at the organization of this company.

A. Yes.

Q. Together with its assets that came over from the Capital City Gas Light Company?

4293 A. I did not make—I looked into the earnings from as far back as it would go and it indicated that fact that I speak of.

Q. Now I call your attention to a few questions that were put to Mr. Hall by counsel for complainant, perhaps it was the Master that asked the question on pages 3463 and 3464 of the record. I think it is in the cross examination of Mr. Hall, I don't have the index here so I can't turn to it quickly. The question is this, after Mr. Hall had referred to the item of $2,055,360 then this question was put to him "And the Des Moines Company has actually invested that much in the property in addition to the common stock. A. Yes, actual investment measuring by its bonds and preferred stock contracts will not carry that out. Q. But the bonds and preferred stock contracts and the cash are the actual investment of the Des Moines company? A. Yes". Did you have that testimony in mind too at the time that you made the statement that substantially all of the investment here except about a half million was represented by the indebtedness or the earnings?

A. Yes, that was the beginning, that statement of Mr. Guernsey's which led me to look into the matter.

Q. The question that he put to Mr. Hall?

A. Yes. I looked it up afterwards, looked it up after it was written out, I heard it at the time, and I looked it up afterwards. It is Mr. Guernsey's question to Mr. Hall. On page 33 I would refer to a minor matter, there was a good deal of discussion as to what Mr. Lea included in paving new and depreciated and I have reaches it by taking his whole distribution system and it was thought and I agreed it would be somewhat fairer to leave out the meters
4294 and only take up the mains and services. It does not make a difference of one per cent since I have computed it in the result on the last column of the first line on page 33. Lea I now make present value of his paving as $373,390 instead of $370,598 and $369,604 used at another time. By taking out the meters it leaves a change of one per cent or about one per cent making $373,390. I only mention that as a good deal of discussion arose over how to reach it, but I did not depend on Mr. Lea's estimates of course in any of my fundamental tables anyway.

Mr. Byers: That is all for the present.

Recross-examination by N. T. Guernsey, Esq.:

Q. Did you ever raise the money to finance a gas plant?

A. No.

Q. Never have had any experience along that line whatever?

A. Not on a gas plant.

Q. Now just a few moments ago, referring to this matter of earnings I think as shown by the books you said I didn't find certain things, that is an expression you used very frequnetly. You meant you didn't find it in Mr. Hall's testimony?

A. And in the testimony of others. The question was asked several times of Mr. Hagenah and others whether overhead charges had been——

Q. Oh but I was not asking you anything about overhead charges.

A. I thought you were.

Q. I will change the form of the question, when you say I did not find this and that and the other through your testimony, you meant you did not find it in the testimony of the other witnesses.

A. Yes, In a few cases I probably was influenced by statements made to me in response to questions to Mr. Lea and Mr.
4295 Sangsster.

Q. You have very frequently in your testimony yesterday afternoon and today referred to Mr. Haines' estimate of a ten per cent increase for 1911.

A. Questions have been asked me about it and I have answered them.

Q. And you brought it in voluntarily a great many times yesterday afternoon and this morning didn't you?

A. I don't think so.

Q. Well you have assumed or stated that Mr. Haines estimated an increase of ten per cent for 1911?

A. Questions have been asked me about taking ten per cent as a basis because he had estimated it to make some computations which I did.

Q. You have stated that he did so estimate it.

A. Yes.

Q. Your only authority for that statement you find in Exhibit 18 do you not?

A. Yes.

Q. And you know that exhibit does not contain -ny estimate for the gross output for 1911 do you not?

A. There was a ten per cent increase——

Q. Just answer the question please, you know that exhibit does not contain any estimate as to the gross output in 1911 do you not?

A. I don't remember an estimate in just that form.

Q. And there is not in that exhibit so far as you know any estimate of what the increase of gross sales for the year 1911 would be is there?

A. Not in just that form no.

Q. There is the only thing that is in there is the estimate
4296 of the maximum day?

A. Yes.

Q. And you have treated that throughout all of your testimony, yesterday afterno-n and this morning as an estimate of the yesr?

A. I answered questions on that basis. I did not colunteer in my report or in testimony anything further than I have indicated.

Q. It would be worng to take that as an estimate of the increase for the entire year wouldn't it?

A. The facts here and evidence indicate that there probably is not going to be as large an increase as ten per cent this year.

Q. That don't answer my question. It would be wrong to use that estimate on the maximum day as an estimate for the entire year wouldn't it?

A. It would not be exactly right, neither altogether wrong.

Q. Are you familiar enough with the gas business to know that there is a difference between the estimate for a maximum day and estimate for a year?

A. Oh yes.

Q. So you have known that all the time while you have been giving this testimony?

A. Certainly, and I know further that there was not a ten per cent increase being revealed this year.

Q. That is not what I asked you and what I wanted to get at.

—. ——.

Q. During all the time you have been referring to this ten per cent increase you have known that Mr. Haines' report did not state that there would be a ten per cent increase in his judgment in 1911?

A. His report fairly implied it although it did not state it.

Q. Please answer the question?

4297 A. I knew that his report said there would be a ten per cent increase in the maximum daily output.

Q. And you knew in the gas business that was not equivalent to an estimate as to the increase of the output for the entire year.

A. I knew that it was not exactly equivalent although not so far from it, there was a certain general ratio.

Q. You knew in the gas business that was not equivalent to an estimate of the output for the entire year.

A. Not precisely equivalent I knew, yes.

Q. Now then I want to take up with you some of these figures on per capita consumption that you took from Brown's Directory. Is that your only information on the subject?

A. The only information on the subject of those places, I believe it is. I may have on a few of those places some information but none in mind at the present time.

Q. Now then you said that Mr. Brown told you that he made that directory up from what somebody else told him?

A. Some time ago, some years ago. These directories have been going on twenty years, in the making of these directories they are made up he told me by correspondence with the companies.

Q. So that we have the other people telling Brown and then through the directory Brown tells you?

A. The directory is further referred to as authoritative in all gas cases by the companies.

Q. I didn't ask you that?

A. I knew it was authoritative on anything from Mr. Brown, that was not my only reason for relying on Brown's directory.

Q. I didn't ask you anything about reasons. I asked you this, we have the other telling Brown and then through the di-

4298 rectory Brown tells you?

A. Yes, as to those figures quoted this morning.

Q. Now then Minneapolis is the first place you take. I think this court takes judicial notice of the federal census of 1910, which was 301,000 instead of 250,000 as you gave it wasn't it?

A. I have not in mind the population, in fact I don't remember the figures I gave you.

Q. As I put it down you gave it 250,000. It ought to be 301,000 ought it not?

A. The statement appears here and I took it from here, I said I took this to mean population in district supplied, it shows here population in district supplied 250,000 and of the city 301,408.

Q. What do you mean by district supplied?

A. I stated this morning I merely stated what the directory gave.

Q. You didn't tell us this, this morning?

A. District supplied I said I used in all cases.

Q. What do you mean by district supplied?

A. The district I suppose reached by their mains.

Q. Did you do that same thing with reference to Des Moines?

A. Took whatever you put in here the same way.

Q. Please answer my question?

A. Yes.

Q. Don't you know that the population that we took in Des Moines was the population of the entire city and not the porpulation of the district supplied by the mains, don't you know that?

A. I saw that they were identical and I believed accounted for by your having mains in all streets. I didn't verify it.

Q. Do you think we have mains in all streets in the city of Des Moines?

4299 A. I didn't verify it at all.

Q. Did you believe we had mains in all streets in the city of Des Moines?

A. Well at the time I thought probably all streets that had any houses of any importance, any number of fouses.

Q. Do you believe and did you believe this morning we had mains in all streets of the city of Des Moines?

A. All occupied streets. Not all streets, have houses on.

Q. You have seen the map of the mains haven't you?

A. No, I think *hot*.

Q. So what you did with us this morning was to work in a comparison here between Des Moines covering the entire city as against the district supplied in the other cities?

A. Just what I said I gave it.

Q. Did you do that?

A. In some cities the district supplied and the whole city were the ssame.

Q. I didn't ask you that. You worked in here this morning a comparison between Des Moines taking the entire city and taking for a basis of the other comparison, not the entire city in these other places, but simply the district supplied by the mains, now did you do that?

A. Yes, but they were sometimes identical. I took district supplied in both cases as it gave it as district supplied.

Q. Now then do you believe that was a fair comparison?

A. Yes.

Q. That is your honest belief about that?

A. I thought at the time that it covered as it generally did in the report of water departments of ingabitants served.

Q. I want — to confine yourself to my question and just tell
4300 us frankly whether you believed that was a fair comparison or whether you thought it was a misleading comparison?

A. I thought it was fair as I made it and with the statements I made with it.

Q. Did you make the division and figure out the per capita in each instance?

A. Yes. I figured out the per capitas as given this morning the per capita of district supplied.

Q. In Minneapolis you included in your sales the sales to the city for street lighting didn't you?

A. I took whatever sales were given here. I didn't stop to see what for.

Q. Isn't it necessary to do that if you are going to get a very intelligent result?

A. I didn't find any separation here between sales for one purpose in Minneapolis and sales for another purpose. I only found total sales the figure I used.

Q. Now then if you should divide that figure you used 1808 millions by 301,000 your result would be almost exactly 6000 per capita wouldn't it?

A. Yes.

Q. And would be nearly identical with Des Moines?

A. Yes.

Q. Only a few feet difference with a net price of five cents less in Minneapolis?

A. Net price in Minneapolis 85 cents.

Q. Fifteen cents less than the present Des Moines price?

A. Fifteen cents less.

Q. Now did you fix up these others in just the same way?

A. I took whatever was given here as I stated for district
4301 supplied and sales in every city, I remember making the statement in all cases it included sistrict supplied. Figures are made up that way in water works statistics?

Q. But I have not asked you anything about that?

A. I was explaining why I considered it a fair comparison.

Q. I have not asked you anything about that. I asked you awhile ago if you considered it a fair comparison or misleading and you said yes, it was fair and I was willing to take it at that. Now turn to Providence, the population of Providence 225,000 by the census last year isn't it?

A. Providence population of city 220,000.

Q. Are the works there limited to the city?

A. I don't know, I used that figure that is all I have here. Oh it says here, I have not seen it before says Cranston and East Providence, supplies the city of Providence and towns of Cranston and East Providence.

Q. How large an additional population do they have there?

A. I don't know.

Q. Then we will have to throw out Providence as inaccurate until we get some better information.

A. We could not tell per capita without knowing how large a

Q. As I put it down you gave it 250,000. It ought to be 301,000 ought it not?

A. The statement appears here and I took it from here, I said I took this to mean population in district supplied, it shows here population in district supplied 250,000 and of the city 301,408.

Q. What do you mean by district supplied?

A. I stated this morning I merely stated what the directory gave.

Q. You didn't tell us this, this morning?

A. District supplied I said I used in all cases.

Q. What do you mean by district supplied?

A. The district I suppose reached by their mains.

Q. Did you do that same thing with reference to Des Moines?

A. Took whatever you put in here the same way.

Q. Please answer my question?

A. Yes.

Q. Don't you know that the population that we took in Des Moines was the population of the entire city and not the population of the district supplied by the mains, don't you know that?

A. I saw that they were identical and I believed accounted for by your having mains in all streets. I didn't verify it.

Q. Do you think we have mains in all streets in the city of Des Moines?

4299 A. I didn't verify it at all.

Q. Did you believe we had mains in all streets in the city of Des Moines?

A. Well at the time I thought probably all streets that had any houses of any importance, any number of houses.

Q. Do you believe and did you believe this morning we had mains in all streets of the city of Des Moines?

A. All occupied streets. Not all streets, have houses on.

Q. You have seen the map of the mains haven't you?

A. No, I think not.

Q. So what you did with us this morning was to work in a comparison here between Des Moines covering the entire city as against the district supplied in the other cities?

A. Just what I said I gave it.

Q. Did you do that?

A. In some cities the district supplied and the whole city were the same.

Q. I didn't ask you that. You worked in here this morning a comparison between Des Moines taking the entire city and taking for a basis of the other comparison, not the entire city in these other places, but simply the district supplied by the mains, now did you do that?

A. Yes, but they were sometimes identical. I took district supplied in both cases as it gave it as district supplied.

Q. Now then do you believe that was a fair comparison?

A. Yes.

Q. That is your honest belief about that?

A. I thought at the time that it covered as it generally did in the report of water departments of ingabitants served.

Q. I want — to confine yourself to my question and just tell
4300 us frankly whether you believed that was a fair comparison or whether you thought it was a misleading comparison?

A. I thought it was fair as I made it and with the statements I made with it.

Q. Did you make the division and figure out the per capita in each instance?

A. Yes. I figured out the per capitas as given this morning the per capita of district supplied.

Q. In Minneapolis you included in your sales the sales to the city for street lighting didn't you?

A. I took whatever sales were given here. I didn't stop to see what for.

Q. Isn't it necessary to do that if you are going to get a very intelligent result?

A. I didn't find any separation here between sales for one purpose in Minneapolis and sales for another purpose. I only found total sales the figure I used.

Q. Now then if you should divide that figure you used 1808 millions by 301,000 your result would be almost exactly 6000 per capita wouldn't it?

A. Yes.

Q. And would be nearly identical with Des Moines?

A. Yes.

Q. Only a few feet difference with a net price of five cents less in Minneapolis?

A. Net price in Minneapolis 85 cents.

Q. Fifteen cents less than the present Des Moines price?

A. Fifteen cents less.

Q. Now did you fix up these others in just the same way?

A. I took whatever was given here as I stated for district
4301 supplied and sales in every city, I remember making the statement in all cases it included district supplied. Figures are made up that way in water works statistics?

Q. But I have not asked you anything about that?

A. I was explaining why I considered it a fair comparison.

Q. I have not asked you anything about that. I asked you awhile ago if you considered it a fair comparison or misleading and you said yes, it was fair and I was willing to take it at that. Now turn to Providence, the population of Providence 225,000 by the census last year isn't it?

A. Providence population of city 220,000.

Q. Are the works there limited to the city?

A. I don't know, I used that figure that is all I have here. Oh it says here, I have not seen it before says Cranston and East Providence, supplies the city of Providence and towns of Cranston and East Providence.

Q. How large an additional population do they have there?

A. I don't know.

Q. Then we will have to throw out Providence as inaccurate until we get some better information.

A. We could not tell per capita without knowing how large a

district was supplying Providence and how much was supplied in Cranston and East Providence.

Q. Now let's have Rochester. What is the population of Rochester as *as* it is given there for 1910?

A. Population of city 219,000, population of district supplied 190,000.

Q. They supply to something besides the city don't they?

A. Yes.

4302 Q. Because I have population here 236,106?

A. It does not give that figure here at all. Gives number supplied 190,000 district supplied.

Q. You took that and divided the total sales by it didn't you?

A. Yes.

Q. Of course that figure is not reliable there in view of the statement there is it?

A. Well one would have to know what is meant by district supplied. That method of statistics is used in water works universally.

Q. I don't care anything about water works, let's stick to gas a little while. I have for Rochester per capita sale 5,152 while — 6,420.

A. That is per capita to district supplied and you have per capita to population as you reckon it, you have put in some suburbs included in district supplied, but whose population is not given here.

Q. So I took it on the same basis we have taken Des Moines and you have it on another basis?

A. Yes, if it is true that your statement of district supplied is prepared different from others.

Q. But I have not any statement of district supplied, I have taken population just as I took it here in Des Moines so as to get the same basis of comparison. Now let's take Hartford, what is the population of Hartford as given there?

A. Population city 99,000, population district supplied 95,000.

Q. And what outside towns was there that are supplied and have been included there?

A. I thought they were included in the population supplied to Hartford, West Hartford, East Hartford and Weathersfield.

Q. You haven't the population of that entire territory anywhere have You?

4303 A. No, I have not got it.

Q. Well I have it 110,000 and your per capita is reduced to 4,547 instead of 6000.

A. They haven't but a few more meters than you.

Q. Don't you think it would be well to revise these figures before relying on *him* much?

A. All I give them for is what Brown's Directory gives them for.

Q. I didn't ask you that?

A. You have asked me yesterday and I have no authority to go to except Brown's Directory.

Q. Where did you tell us this morning that you obtained the price per ton on cast iron pipe that you tell us this afternoon you obtained from Mr. Alvord?

A. There was one set of prices from the report Mr. Hall gave me from them, and another set of prices taken from the Iron Age and the Engineering News and which Mr. Alvord had tabulated and given me.

Q. This morning you told us you obtained these prices from the Iron Age didn't you?

A. I don't know I said I obtained them, said they were obtained from the Iron Age.

Q. You intended to have us infer you obtained them from the Iron Age?

A. That was why I corrected it.

Q. After you saw I had Mr. Alvord's blue print, after you saw me send for it?

A. I never — you had it until this second.

Q. What you got from Mr. Alvord was a blue print?

A. No, I got more than that. I didn't get the blue print, I got a sheet like a blue print, but it is not a blue print and in
4304 addition to that I got tables from which the blue print was made up.

COURT: Who is Mr. Alvord.

A. Mr. John W. Alvord is a water works engineer employed by the private water company in the Des Moines case and also *uring* large engineering work on water all over the United States, office in Chicago.

Q. Employed by the city of Omaha in the Omaha water case also wasn't he?

A. I think so.

Q. He is a water engineer of very high standing?

A. Yes, that is true.

Q. So that your testimony with reference to these things that are said to come from the Iron Age is predicated on what Mr. Alvord told you that he took from these two papers, that is right isn't it?

A. Except with regard to last August of 1911.

Q. I have a copy of this diagram here——

A. It was not the diagram from which I worked out the figures I gave. I worked them out from the tables which he sent me at the me this diagram which is probably like your blue print. He sent me these tables having on the name- Alvord and Burdick which I tabulated for each month taking as I testified six inch pipe which I have checked making a check opposite six inch.

Q. You stated that your statement was made up from weekly averages didn't you?

A. Yes.

Q. These are weekly averages, they are monthly aren't
4305 they or didn't you go into it far enough to say?

A. I took the averages for each year from these monthly— this is for the first week in each month, I stand corrected to that extent.

Q. You didn't study it carefully enough to avoid that error?

A. No I knew at the time I added it and divided by twelve there were only twelve months, but when I stated it this morning I thought

he gave it for every week in the month. He gives it for the first week in every month.

Q. I see that these are Iron Age quotations alone, that is right isn't it?

A. I think they are.

Q. So that there is another error, that is a tabulation of Mr. Alvord's tabulation of what he says here Iron Age quotations.

A. Except the last one which I took from the Engineering News. There are similar quotations in the Engineering News I discovered.

COURT: In your estimation of the value of the plant, you testified in your judgment the plant was worth $1,600,000. The question I want to ask is this, did you include in that the working capital?

A. Yes.

Q. You testified this morning with reference to working capital a little?

A. Yes.

Q. And in order to get at it you estimated the amount of material and supplies that the company could carry using its facilities up to their capacity?

A. Three material-, coal, coke and oil. I did not say they could not carry a lot of pipe and fittings.

4306 Q. Well then you didn't estimate in making up working capital all of the material and supplies that the company would naturally carry and would be required to carry.

A. A considerable portion—I mentioned this morning some material and supplies.

(Question read.)

A. Yes; all that it would be required to carry.

Q. Now will you look at Mr. Hall's report, Exhibit "F" and tell us what the material and supplies alone, the amount actually on hand as against your $28,234 was on the 31st of last December?

A. $73,929.26, but that is other material in the charge there than what I was referring to.

Q. I didn't ask you about that. That, looking at this same exhibit is the lowest amount at which that has been for any time during the five year period as far as that exhibit shows.

A. Yes.

Q. You were familiar with this when you made your figures of $28,234 this morning were you not?

A. Yes.

Q. Do you think it would be fair to use in estimating working capital $28,234 as the amount invested in material and supplies.

A. No, something should be allowed for fittings, but on the other hand——

Q. So you didn't intend us to understand by your testimony this morning when you referred to that and was speaking of one month's wages and so on, you didn't intend us to take the $28,234 as a fair amount at which to estimate the investment in materials and supplies?

A. No, it has a bearing on it, that is all I gave it for. I didn't reduce my original estimate of about $80,000.

4307 Q. Your original estimate of about $80,000 is not anywhere near as large as the average of material and supplies and so on as shown by Mr. Hall's report.

A. No.

Q. Now you said that this was the maximum capacity. You were familiar with complainant's exhibit 313 were you not?

A. I don't remember it now or what it relates to, if you will tell me what it is I will answer.

Q. You knew that that showed that the actual amount of generator fuel stock on hand at that time was $10,500 as against your $8,893 as the maximum capacity for storage didn't you?

A. No, I did not.

Q. Didn't take the trouble to check with the facts?

A. I don't remember Exhibit 31.

Q. Among the things you ignored were tar and gas stock and purification supplies, articles in stables and stable supplies.

A. Those should be addee.

Q. So that the figures you gave this morning are of no value in determining what the working capital is?

A. They are healthful but not conclusive, got to add a few other things.

Q. Got to add a good deal more than referred to in order to get a reasonable result?

A. I don't think you would have to add over $50,000.

Q. You refer to the item $28,234?

A. Yes.

Q. Now you talked about the price of oil this morning. Yesterday you said you had no familiarity with it?

A. I did not, what the prices were.

Q. So what you know now is what you have looked up in

4308 Brown's Directory since then. Now in the first place I want to ask you how much of the 2.8 which we pay a gallon here is freight.

A. That I think I seen in some of Mr. Hall's or Sangster's data, but I don't remember it.

Q. When you were comparing Des Moines with towns for instance over in Illinois that are in the Illinois oil fields that is a most important factor isn't it?

A. Yes.

Q. And with towns in Missouri that are nearer the Kansas fields?

A. Freight must be considered the difference in freight, yes.

Q. The freight is a pretty important factor isn't it?

A. It is important, but I won't undertake to say, depends on where the oil is obtained for each section.

Q. We are talking about Des Moines, will it amount to as much as ten per cent?

A. I won't undertake to say for I have not looked it up at all. I don't know at the moment what it is.

Q. Did you ever know?

A. Yes, I remember talking to either Mr. Hall or Mr. Sangster about the records and perhaps there in the report I saw it somewhere.

Q. In order to help out here you may assume that the freight is 1.55 cents per gallon to Des Moines.

A. From where?

Q. The freight we actually pay on the oil we get.

A. From where did you get it may I ask?

Q. I can't tell you, but it shows freight is a factor, that shows freight here is a factor of more than fifty per cent of the cost?

A. Yes.

4309 Q. Now take the towns you referred to this morning, who picked these towns out for you?

A. I had not heard of them until they were asked me on the examination. I am not responsible for the selection at all.

Q. You didn't select them and you don't know who did?

A. Not positively.

Q. Well I don't care as far as that goes anyway. Before I forget it I ha-e a memorandum here when you were figureing up your per capita sales in Racine did you deduct the gas that was sold in Kenosha by the Racine plant?

A. Took just what I found in the directory.

Q. Did you deduct gas sold in Kenosha?

A. I took everything as found in the directory.

Q. You would have to do that?

A. Whether you deduct or not depends on whether the district supplied included Kenosha. I don't know how the di*strc*ory is made up.

Q. Just look and see then.

A. It says population of di-trict supplies 22,000, the city the same. Says at the close supplies Kenosha.

Q. You didn't put Kenosha in?

A. No, I took that always that the district supplied included everything in the whole area whether city or suburbs that were supplied.

Q. And there where there was the population of the district supplied and the city the same, you of course knew that did not include Kenosha?

A. No, I didn't know anything about it, didn't even notice Kenosha until you called attention to it.

Q. So the Racine figures would have to be revised?

A. I don't know. On the basis on which they make it up

4310 if it is to be made up on the basis of all population of the city whether on streets where there are mains or not, then you would have to revise all these figures except where it is otherwise stated. There are some cities I believe, I think there were where they make no reference to anything outside of the city.

Q. The fact is you don't know much about that per capita basis?

A. I have no arbitrary allowance.

Q. You don't know much about the per capita matter?

A. Except what is found here.

Q. That you have not analyzed with sufficient care to be certain on what basis the results are found?

A. I know on what I have my results.

Q. Do you know whether it includes Kenosha in Racine?

A. I don't know what it includes. All I know is what the company report I include, that is all.

Q. I wish you would turn back to Brown's directory and I just want to run through all of the Iowa towns, you gave us some of them this morning. Before I do that, where is Granite, Illinois.

A. I don't know the location of it at all, never heard of it until this morning.

Q. Do you know whether it is supplied from the Illinois fields?

A. I don't know a thing about it.

Q. Do you know anything about what freight rate it pays on oil.

A. No.

Q. Where is Decatur, Illinois.

A. It is in southern Illinois, south central at least.

Q. In the Illinois fields or very close to them?

A. Yes. I have not kept up my knowledge of the present
4311 oil fields very thoroughly in Illinois and many of the states there so I can say just whether the field is active or getting exhausted.

Q. Every city that you named in Illinois and Missouri is closer to an oil field than Des Moines is?

A. I can't say positively as to Missouri, I should think that would be true of Illinois.

Q. And where are the principal oil fields from which this territory is supplied?

A. That I don't know, I asked you and you didn't know a minute ago.

Q. No, I beg your pardon, you asked me where our oil was shipped from.

A. I don't know.

Q. Do you know where the principal oil fields are from which this territory is supplied?

A. No.

Q. Do you know whether there is m*o*re than one available source of supply in this territory for companies the size of Des Moines?

A. I don't know.

Q. Do you know whether there are variations in the quality of this oil?

A. In all oil there is liable to be a variation in quality.

Q. Do you know how Des Moines oil is bought and what guaranty if any there is as to *w*uality.

A. I saw at one time a copy of the contract in the hands of either Mr. Sangster or Mr. Hall, I have forgotten just the terms contained now.

Q. You don't know the terms as to guaranty as to quality?

A. I have forgotten them.

Q. Do you know whether these other companies have any
4312 guaranty as to the *w*uality of oil and if so do you know what it is.

A. No.

Q. Will you turn to Brown's Directory for Iowa there and give me the price that the Ames plant in Iowa pays for oil?

A. It does not appear to be given.
Q. That is not a U. G. I. plant is it?
A. I don't think so.
Q. Well didn't you want us to get the inference that the U. G. I. people were the only people that didn't give this, in your testimony?
A. I was merely asked without any previous suggestion on mt part whatever to look up that fact?
Q. Then you don't want us to get the inference that it is only U. G. I. plants that do not report?
A. Want you to get the inference I am not counsel for the city in this case.
Q. I would like to have you answer the question. I didn't ask you about that today. Did you want us to infer from your testimony that it is only the U. G. I. companies which do not report the price of oil?
A. No, I didn't say that.
Q. That would not be fair would it. Now turn to Anamosa, that is the next company.
A. Yes, alphabetically.
Q. It pays for oil 2.77.
A. Yes.
Q. And the population is only 3,000 so it is a very small plant, obviously, is that right?
A. The population is given as 3,000.
Q. Now take Atlantic, that is the next town in Iowa?
4313 A. Yes.
Q. What does it pay for oil?
A. 3.25.
Q. And what is the population there?
A. Population district supplied 2,500, city 4,650.
Q. Take Bella Plaine, that is next?
A. Yes.
Q. What is the price given there?
A. It is not given.
Q. Is that a U. G. I. plant?
A. I think not.
Q. What is Belle Plaine population?
A. 3,500. You wish to know the population of the city or district supplied?
Q. I want the city?
A. 4,000 population of Belle Plaine.
Q. Boone is next isn't it?
A. Yes.
Q. What do they pay there?
A. 2.95 cents.
Q. And the population is what?
A. 10,000.
Q. Now then there is a Burlington plant isn't there with which the U. G. I. is not connected, Burlington, Iowa.
A. Yes.
Q. And what do they pay there?

A. Three cents.
Q. And the population?
A. 30,000.
Q. Now there is a Cedar Rapids plant that comes next don't it?
A. Yes.
4314 Q. What do they pay in Cedar Rapids?
A. Four cents.
Q. What is the population?
A. 32,811.
Q. Now the Centerville plant next, what do they pay there?
A. It is not given.
Q. Is that a U. G. I. plant?
A. I think not.
Q. What is the population?
A. It does not give the population of the city, says population of district supplied 7,000.
Q. Charles City comes next?
A. Yes.
Q. What do they pay?
A. 3.5 cents. Population 6,000.
Q. Cherokee, next, what do they pay?
A. Three cents.
Q. Population?
A. 5,000.
Q. Clear Lake next?
A. 3.85 cents population 2,000.
Q. And Clinton next?
A. Three cents, population 25,500.
Q. Council Bluffs next?
A. 2.45 cents population 30,000.
Q. Now Council Bluffs has a radically better freight rate from the Kansas and Oklahoma oil fields than Des Moines don't it?
A. I don't know freight rates, never looked them up at all.
Q. Have to have them to make an intelligent comparison?
A. Be very important to have the-, I think — be desirable.
4315 Q. Take Creston, that is next isn't it?
A. Not given as to the oil.
Q. Is that a U. G. I. plant?
A. No, but it is a coal gas plant and it may be that they don't use any oil. That may be true in a few of these other places that don't give it.
Q. You say that may be true, you have no basis for suggesting it that is you have not looked to see have you?
A. No. It says here process of manufacture coal so implying they do not make a*by* water gas they might use oil for enrichment although that is not certain.
Q. Take Davenport, what do they pay?
A. 3.625, population 43,000.
Q. I happen to notice that Davenport apparently has a new contract has a different rate than what it did in 1909. Look at Brown's

Directory the preceding year and tell us what Davenport was in 1909.

A. Three cents.

Q. And 3.265 in 1910?

A. Yes.

Q. Now the next cities that follow skipping Des Moines and referring to 1910 are Dubuque, Eagle Grove, Fairfield and Fort Dodge are they not?

A. Those are the next four cities.

Q. Does either one of those cities report the price of oil?

A. No.

Q. Either one of them a U. G. I. plant?

Mr. BYERS: State what process as you go along is used in these plants.

A. Dubuque is both coal and water gas. Eagle Grove is coal gas.

4316 Fort Dodge coal gas.

Q. Do they use oil for enriching?

A. It is not stated.

Q. You don't know whether they do or do not.

A. No. From the fact the candle power is given at 18 one might infer that they do not, but they might use a little.

Q. Or that they did.

A. Would not use much, might not have to use any depending on how good a quality of coal they bought?

Q. In other words might infer either way.

A. You could, but probably do not.

Q. Fort Madison is next, what are they paying?

A. Three cents, population 13,000.

Q. Then we come to Grinnell which you gave this morning, 2.78?

A. Yes, 2.78 population 5,500.

Q. On the other side of Grinnell, right below it in the list is Hampton?

A. Hampton is the next place on this list.

Q. What is it paying?

A. 3.24 cents.

Q. Population 2800 is that right?

A. Population 2800, yes.

Q. So that you took the low one there this morning, out of five it was the only one that was under three.

A. I took whatever I was asked and looked it up.

Q. And out of the five, two on each side of it, it was the only one that was under three.

A. Yes.

Q. Now what follows Hampton?

A. Independence.

4317 Q. And what are they paying there?

A. Five cents. Population 3,500.

Q. Skip Iowa City which don't seem to be a water gas plant and take the next one, Iowa Falls, they are paying what?

A. Three cents.

Q. What is Iowa Falls' population?
A. 4000.
Q. And Keokuk?
A. Three cents, population 14,808.
Q. Then coming to Knoxville another low one you gave this morning?
A. 2.75 cents.
Q. And population what?
A. 4000.
Q. And Grinnell and Knoxville are the only two that you gave this morning out of this entire list.
A. I don't remember whether there were any other or not, I did not mark them as I gave them.
Q. Next is LeMars?
A. Yes.
Q. And that is what?
A. 3.09 cents population 5000.
Q. Next Mapleton?
A. Mapleton does not give the price of oil.
Q. But it appears to be a water gas plant, appears to use water gas?
A. Yes.
Q. Is it a U. G. I. plant.
A. I think not.
Q. What is the population?
A. Population 1500.
4318 Q. Maquoketa, I guess you gave that this morning?

Mr. BYERS: No that is one we overlooked.

Q. Maquoketa is what?
A. 2.5 for oil, population of city is not given, population of district supplied 4,500.
Q. Marengo, what is that?
A. 2.67.
Q. What is the population?
A. 2,100 population, the district supplied.
Mr. BYERS: Is that delivered?
A. It does not state—yes, it does, it says delivered.
Q. Then Marshalltown seems to be a coal gas plant?
A. Yes.
Q. Now Mason City is next, that is a water gas plant isn't it?
A. Yes, that is a water gas plant.
Q. What did they pay?
A. 3.35 population of city 12,286.
Q. Mt. Pleasant and Muscatine are coal, the next two.
A. Yes.
Q. Now Nevada is next is it not?
A. Yes.
Q. They pay what?
A. 3.86, population of city 2,300.
Q. Oelwein is a coal gas plant apparently?

A. Newton comes next, oh yes that is not next installed.
Q. Then Osceola that uses oil, that pays what?
A. 3.39 population 3,000.
Q. Oskaloosa next.
A. 3 cents population 9,466.
Q. And Ottumwa?
4319 A. 2.85, population 22,012.
Q. And Perry?
A. 3.55, population 5000.
Q. Red Oak?
A. 2.95 cents, population 5000.
Q. Now a low one there, Shenandoah?
A. 2.55 popul-tion 4,500.
Q. Sioux City is not given.
A. No.
Q. That is water gas?
A. Yes.
Q. That is a plant in which the U. G. I. company is interested?
A. Yes.
Q. Then Vinton comes next, 3 cents?
A. Yes, population 3,366.
Q. And Washington a low one.
A. Washington 2.75, population 4,500.
Q. Then Waterloo?
A. 3 cents, population of city 26,000.
Q. Then Waverly?
A. 2.62 population 4,000.
Q. And Webster City?
A. 3.08 cents population 5,208.
Q. That includes all of the Iowa plants does it not making water gas which are reported there in Brown's directory.
A. Yes.
Q. And I believe you have already said you know nothing about the variation in the freight rates?
A. No.
4320 Q. You don't know where their oil comes from?
A. No.
Q. And you also don't know what if any requirements they make as to the standard of the oil to be delivered except in so far as that may be shown as to the Des Moines plant by the record in this case?
A. That is true.
Q. Now do you think in the absence of these factors we can make any very intelligent comparisons about prices?
A. Not conclusive comparisons. I think the information has a bearing.
Q. Now your attention was called again this morning to municipal and private operation of public utilities published by the National City federation in 1907 in connection with your qualifications. Will you tell us again how much time that investigation took, how much time you devoted to it?

A. I was three months in Europe devoting all my time to it. I devoted a third of my time for another six or nine months to it.

Q. Two or three months more then?

A. Yes.

Q. Did all of the members of this committee turn out gas experts?

A. I can't say that they would claim to be gas experts.

Q. Now referring to this sinking fund, Exhibit 46 for a minute —by the -ay before I take that up, you stated once here either in answer to a question of General Byers or voluntarily that you found no evidence that any increase was likely to occur in the price of coal, coke or oil. Where did you look for it?

A. Why I didn't observe anything in the evidence in this case.

Q. That is what you meant?

4321 A. Yes.

Q. Have you your depreciation table with you?

A. I am looking for it.

Q. I don't mean this exhibit I mean the tables from which you get the figures, your sinking fund table, I want to get you to give some figures if you will?

A. I copied from a sinking fund table some three or four years ago some figures I often carry around with me. I have them here.

Q. Now can you give me say, taking an investment of a thousand dollars as a basis and a twenty year life, such as I assumed in this exhibit that I handed to you on cross examination, can you give me the amount of the sinking fund at the end of each year for that period on a thousand dollar basis?

A. $20,000 on a twenty year life?

Q. I assumed a thousand dollars. I suppose you have some base figure you take there and multiply it. What base figure do you take?

A. A dollar. A thousand dollars would probably be easier.

Q. Well I just took a round figure for that purpose. This is a four per cent basis.

A. I have a table here that tells how much a dollar yearly added to the sinking fund at four per cent will amount to at the end of each one of the period of years here.

Q. If you can't readily give me this I don't want to ask you to work it out.

A. Perhaps I can, what do you want?

Q. I want to get the amount of one dollar or a thousand dollars or ten dollars, some unit I don't care as to the amount you

4322 take, I want the amount of the sinking fund the first year and each year thereafter up to the end of the 20 year period take 20 year life on a four per cent basis.

A. A twenty year life on a four per cent basis will require a yearly amount added to the sinking fund of three cents 3.582 or for a thousand dollars a thousand times that or $3.358. One dollar put into a sinking fund would amount each year to a certain sum if you want me to work it out from that I can very quickly.

Q. I want to get at each of these years, if it is a matter of com-

putation, if you haven't the tables showing it, I think it will take more time than I want to spend on it.

A. I can take any year from these tables but it will take some time.

Q. This exhibit 46 now, in the first place you took your net profit on a four per cent basis?

A. Yes.

Q. How would it work out if you take six?

A. If you charge sinking fund at six too.

Q. No, take sinking fund at four and net profit sic. Then there would be a difference as you showed in your examination the other day and you would also reduce the amount necessary to set aside?

A. I have not worked it out as to what changes would occur?

Q. This result here depends on a coincidence between your net rate of return and your sinking fund rate and won't work out under any other circumstances?

A. If you put your sinking fund back into the plant it will work out no matter what rate.

Q. Take your sinking fund on your four per cent basis and this defendant's exhibit 46, the plant it illustrates will not work
4323 out unless you assume the same basis of net return will it?

A. Without calculating it, I should say that it would. Well I don't like to answer a question of that kind without working it out. It would strike me off hand that if you put your investment in a less profitable source than 8 per cent you would not work out that result? You have got to assume in working it out along this line the same percentage, but I would not undertake to say without computing it that you could not put it in a four per cent sinking fund and make necessary computations as to how much you would have to put in there and I have not worked out that basis. I would say that this is entirely worked out on the assumption that you get the same rate in your sinking fund that you get in your plant. I don't like to give any data without thinking it out.

Q. What I want to do is to find out how much force I can give to this on your theory. Then as far as you have gone you are unwilling to say that this is good as a general proposition but limited to cases where the sinking fund rate and rate of return are the same or what you call the net profits are the same.

A. Yes, that is as far as I am prepared to go today.

Q. Now your first column is four per cent on the investment for the year in question is that right—your third column it is, the one marked three?

A. The third column is four per cent on the declining values.

Q. You work out investment, average investment for reckoning profit.

A. Yes, and it is four per cent of that column, four per cent of column two.

4324 Q. And that average investment for reckoning profits each year is the difference between the amount in the sinking fund and $100,000?

A. Yes, exactly. It is what I had in the line before the last column 8. Column 8 amount of sinking fund——

Q. You are not right there are you, add your loss to sinking fund?

A. Column two always declines $1,000.

Q. Let's get back. You said that column 2 plus column 8 would equal $100,000 for any one year. Take the first year you have $99,000 in column two and $2,040 in column 8, that makes more than $100,000?

A. Yes. Column 2 states the $1,000 with a decline every year of the thousand dollars that is added to the sinking fund.

Q. Let's get back to what I asked you awhile ago, that is column two plus column five in any one year will equal $100,000?

A. Yes.

Q. And that means that column two is the investment less the principal of the sinking fund without adding interest to it?

A. That is right.

Q. That is not the basis on which you figured it in your report is it?

A. I think it is.

Q. Why don't you know that your report shows on its face it is not? Don't you know you deduct for instance 240 odd thousand while your report shows you only put in 191,000 into the sinking fund?

A. Each year——

Q. No, answer my question. Don't you in your report show a deduction from the investment of the amount of the sinking fund plus interest amounting to $241,117.06 while the amount put into the sinking fund shown in your report is $191,328.22?

4325 A. That is right.

Q. Now here you don't do that, but leave as your average investment the difference between the principal of the sinking fund and the original investment or total capital?

A. Yes, but I am justified in doing that if you close the investment for the balance at any time you would have to take the proceeds of the sinking fund out of the $100,000?

Q. I am not asking if you are justified?

A. I did the same thing in both places and come now to a point where we adjust the balance.

Q. Take your page 21, you worked this all out there haven't you?

A. Yes.

Q. And the valuation at the beginning of the year which is equivalent to your column two in this exhibit 46 is in each instance the amount of investment less the sinking fund with its accumulations of interest isn't it?

A. The first column valuation at the beginning is not depreciated I think. I think for example take the first two lines as an illustration that is the valuation of the year before, plus the entire additional investment which was twice the figure, or one half given in

the next column, I think you will find it was twice that figure that has to be added.

Q. I believe I was wrong in my question there and I think I should say so. It was the third column represents the average investment there on 21, the annual added average of investment aside from working capital, that is right isn't it?

A. Yes, that is the average investment also undepreciated. That is not depreciated any more than the first column. The depreciations are not taken out anywhere on that place.

4326 Q. Well let's go to another page then. Go to page 24.

A. The first column again represents undepreciated investment and with the sinking fund—net investment at the end of the year with working capital. Page 24 first column continues to represent undepreciated investment. It is only when you come to the last column of page 24 that you get depreciated investment.

Q. That is your depreciated investment as you show it in your report — the last column on page 24?

A. Yes.

Q. To get that in your report you have deducted in each instance the sinking fund with the accumulated interest have you not?

A. Yes, that is shown on page 24 last column.

Q. Is defendant's Exhibit 46 to get at your average investment for reckoning profits you have deducted only the principal of the sinking fund have you not?

A. I do not reckon profits on this last column of page 24 at all.

Q. I have not asked you anything about profits. I asked you how you got at the average investment for reckoning profits?

A. I should say yes to that question referring to column 2 in that exhibit.

Q. So that this exhibit 46 is not made up on the basis which you have adopted in making your report here?

A. Yes, so far as I used the figures it is because——

Q. Well but you don't use the same figures at all do you?

A. Yes, I should use page 24 just as I used this exhibit for any period in which you stop or balance accounts.

Q. What I want to know is whether you claim that in getting at the average investment as shown in defendant's exhibit 46

4327 you have used the same theory that you used to get your investment less depreciation as shown at page 24 of defendant's exhibit 43.

A. Yes, so far as I make any application of it.

Q. I don't know just what you mean by so far as you make any application of it. Of course if you don't apply it at all you don't use it.

A. I mean this in reckoning depreciation——

Q. Wait a minute, what I wast is a direct answer to the question if you can. I wish you would try to give a direct answer. In figuring your average investment as shown on column two of defendant's exhibit 46, you have not applied the same theory that is

applied in figuring investments less depreciation shown on the last column of page 24, defendant's Exhibit 43, have you?

A. No they do not purport to be the same thing, they are not named the same way.

Q. So that if we should apply the theory that is applied in defendant's Exhibit 46, to the facts in your report we would get a different result and a higher result in the last column, larger amounts in the last column of page 24 of defendant's Exhibit 43.

A. Provided you had set the money aside.

Q. No, not setting the money aside just applying these theories to these figures where we haven't anything but theories.

A. The last column of — 24 would be column two plus column 8 I believe of my whole exhibit.

Q. You don't mean that either do you? You mean you would get the last column of page 24, that is apply the same theory you applied to the last column of page 24 to Exhibit 46, we should deduct to get the average investment, column 8 from col-

4328 umn 1 instead of deducting column five from column 1.

A. You would deduct column 8 not from column 2, but from the first line of column 2 which is quite a difference proposition.

Q. Now let's go as little farther with this Exhibit 46. You have a column headed net profits. By that you mean the earnings at five per cent, the normal profits shown in column nine less the sinking fund?

A. The only column I have headed net profit is column 3 which is not the one you describe.

Q. You have a column here marked 3 headed net profit?

A. Yes, column three.

Q. That is obtained is it not by deducting something from the column nine each year?

A. No, it has no connection with column nine.

Q. How do you get at — then?

A. Column three is four per cent every year on column two.

Q. So that your man on this defendant's exhibit 46 theory only earns on a hundred per cent of his capital for the first year if he maintains his capital unimpaired.

A. The rest goes into — sinking fund which he still owns.

Q. On Exhibit 46 your man only earns on a hundred per cent of his capital for the first year if — maintains his capital unimpaired?

A. No, because he has obtained possession of the sinking fund at sessions too.

Q. That is simply to maintain his capital unimpaired is it not?

A. This shows that he gets the same income under either arrangement for the sinking fund is earning the same amount.

Q. Let's see, let's take one year to illustrate that. Take the last year you have, he has got in sinking fund including interest

4329 $6,632.97?

A. Yes.

Q. Now take investment $94,563.88?

A. He has got a hundred thousand dollars.

Q. Got a little more than a hundred thousand dollars?

A. That is right.

Q. That illustrates what I said awhile ago don't it, and I think it illustrates too the first question that I asked you about this identify in interest rates?

A. I am not sure as to that. I will tell you if you will add the previous line $5,416.32 and the $94,583.68 you get just — hundred thousand dollars.

Q. If you add column six to column three in each instance you will get $4,000?

A. Yes.

Q. In other words if you give him his sinking fund on a straight line basis without charging him any interest on it you maintain his return at the original figure including return on the sinking fund, that is the way you maintain — isn't it?

A. It is not any straight line basis, I don't understand I am using a straight line basis here. What I call straight line basis is the difference—sinking fund basis—this was only put in to meet your statement the other day that a man would not have equality of income and columns ten and eleven are intended to illustrate my theory that he would have that is all?

Q. His real income is in the two columns three and six isn't it that is after you have taken care of——

A. I hold his real income is ten and eleven, one illustrates one method and one the other.

Q. Ten and eleven is the total nominal profit if no sinking fund?

4330 A. That is that represents accumulated earnings under either system, they are identical.

Q. One more question, and see if I understand this. You say your last column eleven equals the sum of column four and column 8.

A. That is right.

Q. That is, it is the sum of what you call the net profits plus the entire amount in the sinking fund?

A. Yes, so that he could stop any year, he would have the same amount, whatever method he would follow.

Q. So that you have classified here as net profits the proceeds of the sinking fund which is maintained to prevent the impairment of your capital.

A. Yes, and you have got to, because otherwise if you have your 5,000 paid out directly as in column 10 at the end of forty one years the capital would divert and the man yould have nothing.

Q. Have you checked up these things you were asked to do for us?

A. No, I have not yet touched it, but I will do so.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

4331 Friday Forenoon Session.

SEPTEMBER 29, 1911—at 10 a. m.

Counsel for the respective parties all present.
Testimony on part of defendants resumed as follows:

Prof. EDWARD W. BEMIS, continuing his redirect examination, examined by Hon. H. W. Byers, testified:

Q. Professor Bemis, you were asked by counsel about the price of oil and the location of oil fields; do you know of any reason why the Gas Company at Knoxville, about 45 miles east of here, on the same railroad with Des Moines, a little town of less than 6,000 inhabitants, should get its oil delivered for 2.5 cents a gallon and Des Moines have to pay 2.8?

A. No.

Q. Now, about working capital, you were interrogated about $38,000 you referred to as covering the storage facilities; have you made any further examination of that question of working capital in connection with Mr. Haines' estimates and the books?

A. Yes, I have found Exhibit 31 which Mr. Guernsey asked me about on cross examination, complainant's Exhibit 31, analyzing the materials and supplies of the working capital.

Q. What do you find about it?

A. I find, I estimated yesterday how much coal and oil they could store and I find now how much they did have on hand; on the 31st day of December it was $21,711.89 a little below if I recall what I said they could store, although not a great deal below. In addition I was asked how much they probably would have on hand of tar and purification supplies——

Mr. GUERNSEY: I did not ask you how much they would have on hand; I asked you whether you considered that.

4332 A. The matter was brought up. Now they had on hand tar $1,335.34; purification supplies $4,114.30. The gas in the holder—known as gas stock—was valued at $811.44, a total of $27,072.97. They then included gas arc lamps in storage for either sale or use on the streets. I am going to modify that; I do not know entirely whether they were in stock or whether they had been sold and had not been paid for; but they valued these gas lights at -3,481.20. That brings up the material and supplies to $31,354.17. Then they valued their stable equipment at $5,805.40. If I understand aright Mr. Baehr's exhibit, page 137, he not only gave them working capital but put the stable equipment into the plant. Anyway, he has stable equipment there as cost of reproduction new $14,625 and present or depreciated value $9,653; but it is inventoried as $5,805.40 in Exhibit 31. Adding that brings the total of material and supplies and stable equipment and gas arc lamps to $37,159.57. When they have a payroll to meet. The total largest payroll of any month this year was July, $12,375. If they had to have on hand enough to meet that, it would bring the total of the material supplies and other matters just mentioned to about $49,000

to $50,000. Now, Mr. Hall, in Exhibit "F" gives the cash on hand at six different periods: March 1, 1906, $9,788.24; February 28, 1907, $34,755.59; February 29, 1908, $17,947.67; February 28, 1909, $107,632.85; December 31, 1909, $29,348.52; December 31, 1910, $49,434.15. Shortly after the date, February 28, 1909, when they had $107,632.83 there were some payments made I think on preferred stock contracts, and it appears that the money was being accumulated for some such purpose——

Complainant moves to strike out the statement "it appears money was accumulated, etc." as a pure conclusion of the witness, and argument.

4333 Answer continued: Omitting that abnormal amount, the average cash of the other five periods was $28,254.43, or twice the total monthly pay roll of any month in the year.

Q. This year or last year?

A. This year up to August. If then we add the $28,254.43 cash to $37,159.57 of materials and supplies and stable equipment and gas arc lamps, we would get $65,414. That leaves out the item of store room, which is given here as $40,251.89. I had the inventory Mr. Sangster had prepared some time ago of that. I have not yet thoroughly analyzed it but apparently over half of it is for construction of mains and other parts of the distribution system and would be therefore a capital in construction purposes; that is, of course, the property of the company just the same for whatever purpose it is used. It is for construction rather than for operation. I should say, to some extent.. But if half of it approximately were added to the $65,000 it would only make $65,000.

Q. What do you have to say now as to the estimate you made, of $80,000 being ample?

A. It appears to me—I have not yet fully analyzed the store room account—but that is the basis on which the working capital was arrived at in the Consolidated case in New York by Judge Huff, namely, how much cash they have on an average found it necessary and how much material and supplies, and ignored all accounts receivable and all accounts payable as matters which were more or less balancing each other, and took merely the materials and supplies on hand and added to that the necessary cash, in view of the fact that they must buy on a few days' credit, they can not store more than two months' supply, according to Mr. Haines' letter.

4334 Therefore $28,000 would apparently take care of the bills as they come in. I should say therefore, not from $80,000 of materials, supplies and cash necessary aside from construction purposes—I have not analyzed this to see what that separation of $40,000 would be, taking about $30,000 out of it, would make $85,000 for working capital.

The MASTER: Let me see if I understand the principle upon which you figure it. First they should maintain their credit and meet their bills promptly?

A. Yes.

The MASTER: They should keep on hand supplies so there is no

danger of their being short of supplies for accidents or difficulty in getting them shipped?

A. Yes.

Q. The MASTER: And they should also have enough money to meet their fixed salaries, interest on bonds and matters of that kind, so that the purchase of supplies and to meet their other bills ought not to interfere with that?

A. Yes. Now taking the average as it was on these particular dates, leaving out that abnormal period of one year, the average cash on hand was $28,254.43. Now adding all these supplies and assuming they had all been paid for, they were not running on credit, and they got their money in that time, assuming all these materials and supplies on hand were paid for, and the cash added, amounts in all to $65,414. That leaves—you add in $40,000 for all their store room account, and you get $105,000; but some of that is on credit for which they are not paying interest; that is the natural way in which bills are paid once a month; there is no interest charge until the end of the month, but the material is delivered right along.

The MASTER: That would not be true of commercial bills?

4335 A. I have asked and been informed by Mr. Sangster that their bills here are paid once a month.

The MASTER: Their commercial bills for supplies, I mean?

A. I understood him to say that.

The MASTER: Just one other thought. You think that $80,000 or $85,000 would be sufficient to meet that?

A. Yes.

The MASTER: Do you think that the fact that there is no provision for prompt payment would make some difference?

A. I think under the ordinance there would be necessary some alternative, and as I testified, as I read the decision of the Supreme Court of Iowa in the Cedar Rapids Gas case, they said the Company could adopt some other method of penalizing for non payment. I understood them it could be by consumers' deposits, if they wanted to do it that way. That is a way commonly adopted in New York, for example, where they cannot put in a penalty and where they do not lose any more money per thousand cubic feet of sales than they are losing here. They manage not to lose any more by exacting deposits in such cases as they wish, where the people cannot be relied on. If there was no deposit and no other method in exchange for the loss of the penalty, there would have to be a small allowance made for losses.

Q. There isn't anything you know of to prevent this company from selling all their gas through prepayment meters, is there?

A. I don't know anything about the law. I don't know that it would be practical.

The MASTER: It would require a large expense in meters though?

A. Yes, and it might not be a popular enough scheme to make it desirable.

Q. That is, it might not pay out?

4336 A. Yes.

Q. You were asked yesterday about this estimate and your

attention was called to the fact that Mr. Haines' estimate simply covered the daily output and you acceded to that; that is not quite true, is it? The maximum day, I mean?

A. I have not read his letter since, but I have discovered that from 1904 to 1910, using Mr. Baehr's Exhibit, page 143, the sales have increased from 305,227,167 feet to 556,117,412 feet. I must change it and say, not sales, output; he uses the word output. Gas sent out is the word they use. That was an increase of 82.1 per cent and during the same time the maximum day's send-out increased according to the same exhibit of Mr. Baehr, page 143, from 1,227,000 feet to 2,228,000 feet. That was an increase of 81.6 per cent. When therefore the maximum increase in this year was 81.6 per cent, the sales increased 82.1 per cent, and I have found the ratio of percentage of maximum to the total send-out for each year from 1910 inclusive and worked it out and it shows all through that same tendency to uniformity, showing that the maximum send-out is estimated to increase ten per cent, the average send-out would increase almost precisely the same. The difference between 82.1 and 81.6 being very slight; in fact so far as there is a difference, the tendency is for the sales to increase slightly faster.

The MASTER: Right there, the sales did increase about 6 or 7%; do you remember?

A. What time?

The MASTER: I don't remember. I think the sales over 1909 increased in 1910 something over 6%.

A. The sales in 1911——

The MASTER: I am speaking of 1909?

4337 Mr. BYERS: It was 6.6 increase in 1909, the sales.

Q. I was going to call your attention, Mr. Witness, you answered promptly to Mr. Guernsey that Haines only dealt with the maximum daily output; and in his letter of September 1st he states the percentage of increase in gas sent out for 1909 was 6.6 and then says for the year 1910, estimated, 10 per cent, and then he proceeds to show the months beginning with January to August and sets out the increase by months from January to August, 1910, and not by days. Now the estimate even as set out in the blank, which is the maximum daily output, that fact that he used the daily maximum output, instead of monthly or yearly, would that make any difference with your computation on his estimate?

A. No; his estimate shows——

The complainant objects to the last part of the answer as not responsive and clearly incompetent, because it is an attempt to construe or argue this estimate after he has answered the question.

Q. Why wouldn't it?

Complainant interposes same objection last made.

Mr. GUERNSEY: In what letter do you claim to find that statement?

Mr. BYERS: It is in the letter of September 1st, at the left hand upper corner, and it says August 1st, 1910——

The MASTER: I will call your attention to it now, Mr. Haines in his testimony states it for 1911. I will call your attention to it now because it may be I am mistaken. I am not sure whether Mr. Haines used 50% on the maximum output or on the total.

Mr. BYERS: You refer to his testimony on the stand?

4338 The MASTER: Yes.

A. If I answer that question. I would like that letter.

Q. You stated it would not make any difference and I simply asked you why and you had already practically given the reason.

A. My reasons are, as I testified yesterday, that one can argue pretty closely from the increase in maximum as to the increase in total sales; that is confirmed, as I find, very closely by the statistics of this company.

Q. I don't know whether you remember reading Mr. Haines' testimony at the beginning, at the time this Exhibit 18 was drawn out; the question was then put to Mr. Haines?

A. I don't remember that.

Q. Now, Professor Bemis, just another word or two on the matter that you were cross examined about, starting with Mr. Hall's operating expenses as given on page 20 of his report and adding sufficient to bring the taxes up to 7.22 cents, as they were in 1910, and he claims to 0.54 as they would be for the five year period if all the claims paid in 1906 had been included, and including as does Mr. Hall, the $10,000 of salaries paid to the United Gas Improvement Company, and all the donations, and excluding only the rate litigation expenses of 1909 and 1910 and including depreciation reduced from six cents, figured on the basis of four cents as you do, what results would be obtained?

Mr. GUERNSEY: Is that 1910 figure on the four year basis?

Mr. BYERS: That means the four year period for all things save manufacturing, leakage and taxes.

A. I have tabulated that here. Their result as shown on page 71, for the five year period, but for the four year period I substituted the very slight modification which I testified I realized should

4339 be made to be absolutely and technically exact for the four year period, which means a change of less than a thousand dollars in the profit and changes the profit per thousand feet on the four year basis from 28.65 which I had in that column, to 28.52 cents, merely a change of .13 of a cent which I had ignored. I have the tabulation here, and carrying it out also for 1911 on the supposition of $50,000 more capital being in the plant.

Q. What return on your valuation do you find figuring on the four year basis?

A. For 1910?

Q. Yes.

A. I find a return of 9.48 per cent.

Q. What on the five year basis?

A. 8.94 per cent.

Q. What did you add to the sales of 1910 to get the sales of 1911?

A. 6.41 which is the percentage of increase up to the first of

this month, compared with the corresponding period last year, which brought up the sales for 1911 to 563,091,000 feet and made the profit on a four year basis $161,495, and on the five year basis $152,283, with the same operating expenses per thousand feet as last year, not assuming any reduction this year in operating expenses.

Q. That is the sum per thousand feet?

A. Yes.

Q. What rate of return would that produce on your valuation?

A. On the four year basis, 9.79; for 1911, on the five year basis, 9.03 per cent.

Q. You say you have the tabulations?

A. Yes, I have three copies here. (Copy presented to
4340 counsel is marked Defendant's Exhibit 47).

The defendants here offer and read in evidence Exhibit 47, which is as follows:

4341 "DEFENDANT'S EXHIBIT 47.

Operating Expenses and Profits, 1910 *and* 1911.

Starting with Mr. Hall's operating expenses given on page 20, and adding sufficient to bring the taxes up to 7.22¢, as they were in 1910, and the claims to 0.54¢, as they would be for the five year period if all the claims paid in 1906 had been included; and including, as does Mr. Hall, the $10,000 of salaries paid to the United Gas Improvement Company, and all the donations; and excluding only the rate litigation expenses of 1909 and 1910; and including depreciation reduced from 6¢ to 4¢, the following results are obtained:

Description.	Four-year period for all save manufacturing leakage and taxes.	Five-year period for all save manufacturing leakage and taxes.
Mr. Hall, Page 30, for 1910.....	63.42¢	65.17
To reduce depreciation from 6¢ to 4¢ deduct.....	2.00	2.00
Balance	61.42	63.17
To raise taxes to 7.22¢ add.....	0.57	0.44
To raise claims to 0.54¢.....	0.19	0.16
Total expenses thus readjusted	62.18	63.77
Av. Price in Des Moines & Valley Junction	90.70	90.70
Profit	28.52	26.93
Profit in dollars.....	$151,769.75	$143,100.23
Return on $1,600,000 in 1910....	9.48%	8.94%
The profits are 8% on.....	$1,897,122	$1,788,753

The profits are 7% on.....	$2,169,496	$2,044,289
The profits are 6% on.....	$2,539,829	$2,385,004
With sales in 1911 increased by 6.41%, or to 566,091,000 ft., with same operating expenses per 1000 ft., the profits would be...	$161,495	$152,283
The percentage of profit on $1,650,000 of average investment for 1911 would be.....	9.79%	9.03%

4342 Recross-examination by Mr. GUERNSEY:

Q. Jus- a moment ago you stated that those results that you gave were attained with the same operating expenses as last year; that is not true, is it?

A. With the same operating expenses per thousand feet which Mr. Hall used on page 30 of his exhibit for the sales of 1910—no it is what he called his four years' and five years' operating expenses.

Q. Just answer my question, whether the statement that you used last year's operating expenses is true?

A. No. I stated it correctly in the exhibit though.

Q. Now, then, what you did, you took your 63.42 and 65.17 from Mr. Hall's table at page 20?

A. Yes.

Q. So that his testimony will show how they were made up to that time?

A. Yes.

Q. Now you deducted two cents to reduce the depreciation?

A. Yes.

Q. Then you made the same deduction in each instance?

A. Yes.

Q. Then you added .57 of a cent to each one to raise the tax?

A. No, not to each one; .57 of a cent to the four year period and .44 of a cent to the five year period.

Q. You took the actual difference there?

A. Yes.

Q. Then you added .19 of a cent on claims for the four year period, and .16 of a cent for the five year period?

A. Yes.

4343 Q. So that you got for your total operating expenses including depreciation for the four year period 62.18 cents?

A. 62.18 cents.

Q. In other words, the basis you have adopted is somewhat less than the average operating for the four years without any depreciation in it, which is 62.79—if you will turn to page 5 of Mr. Hall's report?

A. Yes.

Q. And the prices you have adopted includes Valley Junction and adds .7 of a cent there?

A. Just as Mr. Hall did.

Q. But answer the question, please?

A. Yes.

Q. So that your additions on account of putting in Valley Junction amount to just about as much as your additions on account of taxes or claims in the four year period and amount to .1 of a cent more than your additions on this account in the five year period?

A. Yes.

Q. And your operating including depreciation on what you call the five year period is 63.77 while the average operating for the five year period as shown by Mr. Hall is 63.34?

A. Yes; taking five years as given on page 5 of his report.

Q. Which of course you know involves certain deductions from the actual operating?

A. Yes, as I recall it, two claims——

Q. I don't care for how many. On the five year period you again added .7 of a cent to the return?

A. Yes, for Valley Junction.

Q. Did you make any figures to see what the result would
4344 be if you based it on actual result of operation instead of on those theoretical figures?

A. They would vary very slightly.

Q. I didn't ask you that.

A. I didn't make the figures.

Q. That is all I wanted to know. Do you think that the computations which you have testified to as to maximum sales, etc., affect the correctness of the statement that Mr. Haines made in this letter that he had estimated the increase in sales for 1911 at ten per cent?

A. I must see his letter——

Q. I don't think you have to see his letter to answer the question. You put in some computations here and what I cross examined you about yesterday was whether or not your statement was correct when you said Mr. Haines in this letter had estimated this increase at ten per cent for the year 1911. Do you think that these computations affect the correctness of that statement in any way?

A. They do not affect what he stated; the letter shows what he stated.

Q. And if we should follow your figures from 1904 to 1910 back, we should find, just as we did in Massachusetts, if you went down to details, it would appear that you could not assume that one year would be anything like the preceding year?

A. Yes, you can. I have taken that. There is a very slight difference. I have the percentage worked out for each year; there is a slight difference, but not much.

Q. Between any two consecutive years?

A. It is not precise.

Q. Let me get you to state definitely. You say there is a
4345 slight but not marked difference between any two consecutive years; is that right or not?

A. Yes.

Q. Now, then in the year ending December 31, 1905, there was an increase of 14.4 per cent—I am wrong about that; I withdraw that question.

A. May I ask what document you are using?
Q. You are testifying from your information?
A. I have the same page.
Q. You are testifying from your own information?
A. I am testifying from Mr. Baehr's data on page 143 of his Exhibit as to the maximum daily and yearly send-out as he gives it.
Q. Now, then, the percentage of increase in the year ending December 31, 1905, was what?
A. Is this the yearly send-out or maximum daily?
Q. I am talking about the yearly send-out.
A. Before I make the computation, I know that year was somewhat of a falling off from the usual conditions.
Q. I thought it was a high one?
A. The percentage or ratio of maximum daily send-out I have before me——
Q. I didn't ask you for it. You got Mr. Baehr's report before you. Please give me what I ask for. I want the percentage of the increase in sales over the sales of the preceding year, that is, 1905 over 1904?
A. 15.49 I make it.
Q. I make it 14.4, but we will accept either figure. Now, then, take the percentage, say of 1909, over 1908, what was that?
A. I think my figures are correct on the other.
4346 Q. I said I wouldn't make any question about that. Now, then, take 1909, over 1908—you are figuring on send-out and not sales, aren't you?
A. I am.
Q. You have not made any figures on the actual sales, have you?
A. Not here. I will if you wish; I thought you were asking me on the send-out.
Q. I was asking about the sales. I don't care, the difference won't be very great.
A. Shall I find the sales or continue the send-out?
Q. Continue the send-out.
A. I am comparing 1909 with 1908, as I understand you.
Q. Yes.
A. 7.1.
Q. About half?
A. Yes.
Q. Now you refer to requiring consumers' deposits. Do you think it would be a popular thing for the Gas Company to say to 20,000 people in Des Moines that they wanted them to put up some money, and do you think that would tend to increase the business?
A. No; it would not be desirable. They don't do it in New York even.
Q. It would be a very unpopular thing, wouldn't it?
A. I think it would not be popular.
Q. Now you said in New York they didn't lose any more money than they did here. Let us have the figures from which you deduce that conclusion, or is that just one of those general statements?
A. In my report I gave the one year that I said I had available, and that was the year in New York, in 1905 or 1906. There is a

page in my report that gives the exact figure. I think it was
4347 .63 of a cent per thousand feet of sales.

Q. Then you predicate that statement on some information for the year 1905 in New York?

A. It was sworn evidence printed by the company?

Q. Please answer the question?

A. I base it on, as I said in my report, all the evidence with me at that time; the one year in New York.

Q. That is predicated too on the statement by the Company without any personal investigation of the matter by yourself?

A. It was audited by Mr. Hall and confirmed.

Q. Are you swearing to it for Mr. Hall?

A. I am willing to.

Q. I think that is probably true.

A. I swear that he did testify he went through the books.

Q. I didn't ask you that. I don't want you to swear what somebody else testified to if I can possibly avoid it.

The MASTER: What is the increase, say for the last four years in cubic feet of gas without regard to percentage, say from 1908 to 1909 or 1907 to 1908?

Mr. GUERNSEY: I think I can give that to you. For that matter it is all in Exhibit 24, I think.

The MASTER: I guess I can get it myself.

A. It is here in Mr. Hall's report. There is a table of sales some where. In schedule 4 of Mr. Hall's report the sales are given for each year since 1894. Now the sales for 1910 are given as 531,991,000 feet.

Mr. GUERNSEY: Does it give Des Moines and Valley Junction separate?

A. This table does not separate them.

The MASTER: I would like to have them for Des Moines
4348 alone if you have got them.

Mr. GUERNSEY: The Des Moines sales for 1910 are 525,101,954; the Des Moines sales for the year ending February 28, 1909, are 460,142,433; for the year ending February 28, 1908 they are 436,550,893; for the year ending February 28, 1907, they are 387,247,556.

The WITNESS: Mr. Hall give the figures for the period asked for in Exhibit C. For the year ending February 28, 1907, for Des Moines alone he gives the sales, aside from what is used at the works, 385,013,006.

Mr. BYERS: Is that on the first page of Exhibit C?

A. Yes, in green figures.

Mr. GUERNSEY: That does not include the amount used at the works?

A. No, that should be added—2,234,300 and that would make 387,247,306. Now for the year ending December 31, 1910, the amount sold in Des Moines was——

Q. What year is that?

A. Ending December 31, 1910, 521,486,354 feet, to which should be added what is used at the works, 3,615,600, making 525,101,954. The amount used at the works should be added because that is also

included in the expense account on the other side at the same price, one dollar.

The MASTER: I notice there is quite a variation here.

Mr. GUERNSEY: The variation between our statement and this one, I think, is 250 feet.

The MASTER: I have it 24,000 between 1908 and 1909.

Mr. GUERNSEY: Then your honor has the figures wrong in some way. This has been carefully checked; the difference in five years was 250 feet, which would amount to 2½ cents.

4349 The MASTER: I notice between 1909 and 1910 there is a difference of 65,000.

Mr. BYERS: The trouble is one year ends in February and the other in December.

Mr. GUERNSEY: Take this same exhibit for the year 1909, the cubic feet given in the Hall exhibit for that year is 457,883,433, to which you should add 2,260,000.

The MASTER: That would make it about as I have it here.

Mr. GUERNSEY: I think each other year will check in substantially the same way.

Q. Now passing this question, you gave us some more figures on working capital this morning?

A. Yes.

Q. And in order to keep it down you omitted the high year in the cash, which you called an abnormal year?

A. Yes.

Q. Did you omit the abnormally low year?

A. I averaged the others.

Q. Can you give us any good reason why you should only omit the abnormally high year?

A. I omitted that high year—I asked Mr. Sangster, he said there was some special change——

Q. Wait a minute. I asked you whether there was any good reason that you knew of for omitting the abnormally high year and including the abnormally low year?

A. I would say yes; only I would say it was not years, but it was year.

Q. Of course you haven't any practical experience in this matter of working capital?

A. Only, we have had some idea in considering it in water

4350 works management but not in gas.

Q. Your experience so far as gas companies go has been such as your experience in this case, in trying to work it down?

A. Not work it down, but to try and give the value what it should be.

Q. That has always been low?

A. It is on the same basis that I made up my capital in the Cleveland Water Works——

Q. I didn't ask you that. That has always been low, hasn't it?

A. Usually lower than the Company claimed.

Q. Now you excluded the materials on hand that you say go into the capital account?

A. Or balance them with the bills payable. I think the total could be included and balanced with the bills payable.

Q. It must be included whether it balances or not?

A. Either in working capital or in some other capital.

Q. And through working capital is the only way it would get into this valuation, isn't it, as you are making it?

A. Probably.

Q. So that whether it balances with something else don't make any difference on that proposition, does it?

A. No.

The MASTER: You put meters on hand as belonging to the construction account, do you?

A. I did not analyze fully, except to find the pipe on hand——

The MASTER: I say you did not include meters on hand in working capital?

A. No, I did not.

Q. Now, you were asked whether you knew of any reason why Knoxville, a town of small size, about 35 miles east of here,
4351 should be buying oil at a less rate than Des Moines, and you said no. Now do you know enough about the situation to be able to explain that difference?

A. I don't know any reason; that is all I said.

Q. In other words, any small boy twelve years old could answer that the same way?

A. If he were familiar enough with it.

Q. If he wasn't familiar with it he would have to say that, wouldn't he?

A. If he were old enough to know the general principles, that buying on a large scale is buying cheaper than on a small scale.

Q. A man who had absolutely no kowledge on the subject would have to answer that question as you did?

A. He would.

Q. I took the boy as an illustration to emphasize the assumption that he had absolutely no knowledge.

A. Personally, he would have to say he had none.

Q. Now you testified in Cedar Rapids, didn't you?

A. Yes.

Q. What was the rate in controversy there?

A. My recollection—I haven't read the matter over to verify fully—I think the charge was a dollar and I think 90 cents was the rate being sought by the city.

Q. You testified there, did you not, that a lower rate than 90 cents would afford the company a fair return?

A. I don't remember.

Q. You have no recollection whatever?

A. I haven't looked that part of it up.

Q. Did you testify that 90 cents would not afford the company a fair return?

4352 A. I don't know.

Q. You don't know that you did not testify that a dollar rate would afford the company a fair return?

A. I don't remember, I say, what I testified.

Q. You testified in New York, did you not?
A. Yes.
Q. What was the rate in controversy there?
A. The rate in force was a dollar; the rate sought was 80 cents.
Q. You testified there, did you not, that 80 cents was more than enough to afford the company a fair return?
A. Yes.
Q. What was the rate in controversy in Buffalo?
A. The rate in force was a dollar, and I think the rate sought was 90 cents.
Q. You testified in Buffalo that a lower rate than 90 cents would afford the company a fair return?
A. I don't remember. I remember I favored a rate as low as 90, but whether I favored a lower rate I don't remember.
Q. Didn't you testify that a lower rate than 90 cents would afford the Company a fair return?
A. I did not, no.
Q. You testified in Lincoln?
A. Yes.
Q. What was the rate in controversy there?
A. I don't remember.
Q. You testified there, did you not, that the rate which the city sought would more than afford a fair return?
A. I don't remember. I remember testifying the rate sought would afford a fair return. I did that, I know, at Cedar Rapids; whether I testified a lower rate would in either Cedar Rapids
4353 or Buffalo, I don't remember.
Q. What was the rate in controversy in Syracuse?
A. I have forgotten; I think 90 cent.
Q. You testified there, did you not, that the rate which the city proposed would afford the company more than a fair return?
A. I don't remember.
Q. Now you made a report recently in Chicago, didn't you?
A. Yes.
Q. And you reported there, did you not, that the rate which the city proposed would afford the company more than a fair return?
A. Yes, for most of the years.
Q. You were able to do that without making either a physical examination of the plant or an examination of the company's books?
A. My report shows on what I based it.
Q. You can answer my question?
A. To answer it yes or no would be misleading.
Q. Did you, before you made that report make a physical examination of the plant of the company?
A. No.
Q. Did you prior to making that report make an examination of any of the books or accounts of the company covering its transactions for the last five years?
A. No.
Q. Or for the last ten years?
A. No.

Q. Now, then, where else have you testified?

A. In Boston, Springfield and Haverhill.

Q. Take Boston, you testified in Boston, did you not, that the proposed rate would afford the company more than a fair return?

A. I don't remember whether I testified that; I testified it
4354 would afford a fair return.

Q. Did you testify it would afford the company more than a fair return?

A. I did not.

Q. In Springfield you testified that the proposed rate would afford the company more than a fair return?

A. I don't remember.

Q. In Haverhill you testified, did you not, that the proposed rate would afford the company more than a fair return?

A. I don't remember.

Q. What other places did you testify in?

A. In Saginaw, Michigan.

Q. You testified there, did you not, that the proposed rate would afford the company more than a fair return?

A. I don't remember.

Q. What other places?

A. That would apply to all those places, except New York. I have testified in regard to gas matters, not exactly in rate cases, in Philadelphia, Baltimore, and in a rate case in Washington, D. C.

Q. In Washington you testified that the proposed rate would afford the company more than a fair return?

A. I think I did. In most of those places it has been proven by reductions since.

Q. In what other places have you testified as to rates?

A. I don't recall at the moment—Des Moines here.

Q. Here you testified that the proposed rate would afford the company more than a fair return?

A. I don't remember whether it would afford more than a fair return or not. I think I testified it would afford a fair return.
4355 Q. You said it afforded more than a fair return?

A. I don't remember.

Q. The fact is then that you cannot recall any single case in which you have testified where you have not said that the rate fixed by the city council, whether it was fixed after an investigation of the facts or not, would not afford the company more than a fair return?

A. I probably did as the company's experts always testified to the contrary and generally found to be wrong by subsequent results.

Q. You cannot recall a single case where you had testified, where you have failed to testify that the rate proposed by the city council would afford more than a fair return, can you?

A. I don't remember any case, nor any case in which the experts on the other side were not found to be wrong by subsequent results.

Q. Now, then, what I want to get at is whether you know of an instance where a rate fixed by a city council without any preliminary investigation has failed to be vindicated by you as at least high enough, and probably too high, where you have been called in?

A. I do not recall at the present.

Mr. GUERNSEY: That is all, subject to these matters that were left over.

Complainant moves to strike out the testimony of this witness and each portion of it on account of the general objections made to it, and because it is in each instance hearsay, argumentative, and because the witness has assumed to attempt to perform the functions of the court, and by an attempt to review the testimony he has
4356 in this attempt paid no attention to the testimony adverse to him and has attempted to decide and then under oath testified to the ultimate conclusions which are to be submitted to the court in this case, and because the testimony is hearsay, secondary, argumentative and is not proper testimony, and that it is not testimony either as to facts within the knowledge of the witness or as to matters of opinion predicated upon expert knowledge of the witness.

Witness excused.

4357 JAMES R. HANNA, being first duly sworn on part of defendants, examined in chief by H. O. Brennan, Esq., testified:

Q. You have given the reporter your name?

A. Yes, sir.

Q. You have resided in the city of Des Moines for how long?

A. Practically all the time for twenty-one years past.

Q. And what official position do you now hold in the city of Des Moines?

A. Mayor of the city.

Q. And how long have you been Mayor of the city of Des Moines?

A. Since the first Monday in April a year and over ago.

Q. That would be the month of April, 1910?

A. Yes, sir.

Q. And prior to the time that you became Mayor of the city, what particular line did you follow?

A. I was teacher in Highland Park College, teaching chiefly English and economic subjects.

Q. What experience did you gain in that respect as to the length of time that you taught those studies?

A. Well, I taught on those particular lines for the last several years before I came into office.

Q. In connection with your duties as teacher of these subjects, Mr. Mayor, I will ask you if you did in fact make investigations with respect to municipalities and the government of the same, and particularly with respect to the conduct and operation of public utilities?

A. Yes, sir; there were always those chapters and topics in the more modern and recent text book on the subject.

4358 Q. That line of investigation covered your entire period engaged as teacher?

A. Do not understand the whole twenty-one years I was teaching

these economic subjects particularly, but for the last six or seven years.

Q. You were a teacher in Highland Park College?

A. Yes, sir.

Q. That is a college located in the city of Des Moines?

A. Yes, sir.

Q. Now it is sometimes intimated or insinuated that the city council in dealing with public utilities do not measure up to a certain degree of efficiency with respect to investigations that should be made, and I wish you would tell the Master, Mr. Mayor, just what investigation, if any, you made with respect to the passage of the ordinance which is now in controversy, prior to the time that the ordinance was introduced in the council and placed upon its final passage?

A. It was a matter of common knowledge, of course, for several months that there was to be a revision of gas rates to become effective the first of January 1911. We had our minds more or less upon the subject, or at least I had my mind more or less upon the subject for perhaps two years before that time and more than that. But particularly as the end of the year 1910 approached I began making special investigations. I wrote to most of the cities of something like the size of Des Moines, particularly in the middle west; I made special investigation in the city of Minneapolis, where I happened to be when their rate case was on there, and I got these rates and tabulated them. The matter was referred by the council to Mr. MacVicar to formulate an ordinance and present it to the council. I got this matter together as a sort of a preliminary
4359 for my information in order to vote intelligently upon this proposition when it came to the council. This special investigation was perhaps in October, November and December, three months preceding the presentation of the ordinance, which was along about the 25th or 27th of December, I think.

Q. Now by virtue of your position as Mayor of the city of Des Moines, what title do you have with respect to the different departments of the city; are you a superintendent of any particular department of the city government by virtue of your office as Mayor?

A. Designated as Superintendent of the Department of Public Affairs.

Q. Did you make any additional investigations with respect to the gas situation, aside from securing information from other cities as to the price they were paying for gas; that is to say, did you make investigations with respect to the candle power and the thermal values of the gas and freight rates, the price of oils and matters of that kind, and if so, please tell the Master what investigations you made along these lines.

A. Well, perhaps I should say first—I hardly know whether it is in this question or not—that I had made quite a little investigation into the cost of gas, the actual cost of making gas in England and the estimates that our American economists put upon the increased cost of this product over that in England, to arrive at the general

cost of production of gas in the United States. Then I had studied the question of different kinds of gas, coal gas and water gas, etc., and the candle power and thermal or standard measures of gas, or testing gas by its candle power or thermal heat units and had worked out my own opinions along these lines quite fully.

4360 Q. And in securing data or information from other cities, did you apply the information which you had received by virtue of those investigations to which you have referred?

A. Yes, sir; particularly the information I got from Wisconsin and Minnesota, as being closest to our situation here

Q. Did you make any effort to ascertain the conditions in Des Moines as compared with other cities with respect to unit prices of coal or coke, oils and matters of that kind?

A. Yes, sir. I sent out a general letter to a great number of cities in which I asked perhaps eight or ten questions, among them was the question of special advantages in the price of coal and coke and oil that other cities had for the manufacture of gas.

Q. And did you receive a response to the questions which you propounded?

A. Yes, sir; not always intelligent, but many of them very good answers.

Q. I wish you would tell the Master in a general way, Mr. Mayor, just what length of time you were engaged in securing this information prior to the passage of the ordinance in controversy?

A. I do not know whether I could be very exact about that, but my impression would be that I probably began these inquiries along about October and that I was getting responses along in November and early December.

Q. You spoke of its being commonly understood that some readjustment would be made, or an adjustment with respect to the rates for gas in the city of Des Moines from and after the first day of January 1911; was that due and on account of the fact that the ordinance in force at the time would by its terms expire at that date?

4361 A. That was the understanding we had, and was spoken of, I remember, shortly after I came into office, that the period upon which the price of gas had been agreed upon between the city and the company would expire January 1st, 1911.

Q. And therefore it was considered necessary that these investigations should be made by you and the other members of the council to inform yourself with respect to the prices which other cities were paying and the cost manufacture and delivering gas in the city of Des Maines?

A. Yes, sir.

Q. Now, I will ask you, Mr. Mayor, if in connection with those investigations you considered the statements which the Gas Company had filed from time to time with the city treasurer with respect to the amount of gas they were selling during the several years under the ordinance in effect prior to January 1, 1911?

A. I do not know that I [illegible]nswer specifically, except that I

got statistics so far as I could with reference to the Gas Company, both as to the amount of sales and the capitalization, represented in the correspondence between the Company and the representatives of the City and statements to the Assessor, etc.

Q. What I wanted to ask you was whether or not you made any investigation or study of the development of the gas business in the city of Des Moines, say from the year 1893 up to the time that were making the investigations?

A. Yes, sir; I think I have gone into that with pretty close accuracy.

Q. Did you attempt to inform yourself with respect to the results which were secured both as to the out-put of gas and increase in the sales of gas covering the period when the ordinance to
4362 which I have called your attention would automatically reduce the rates?

A. That is to say, the increase of sales as corresponded with the reduction in price.

Q. Did you inform yourself with respect to the distribution system of the Des Moines Gas Company, as to the number of miles of mains which it had in the service.

Judge CARR: I would suggest that these questions are all very suggestive and leading, and I object to them for that reason.

Q. Do you now recall, Mr. Mayor, how many miles of main you were informed the Company had at that time?

A. My recollection is that there was—I got different figures, slightly different figures—about 180, 182 or 187 miles at different times.

Q. What did you learn as to the number of meters or services which the company had installed in the service?

A. The figure that I think was given me was between 19 and 20 thousand.

Q. I want to avoid asking leading questions as much as possible with reference to this matter, but I would like to have you in a general way, yet in some detail, tell the Master the scope of the investigation which you made with respect to this contemplated ordinance which the council had ordered Mr. MacVicar to report with respect thereto?

A. You mean investigations as to the factors in the local situation?

Q. Whatever investigations you made personally, or those you made in connection with Mr. MacVicar or any of the other members of the council.

A. Well, of course, I read very carefully the correspond-
4363 ence that was published between Mr. MacVicar and Mr. Haines. I had taken particular pains to follow up the assessments of the Gas Company during the years preceding. I had taken pains to get the number of miles of mains in the city and the number of consumers per mile, connections per mile; the total number of connections, and deducing the number of connections per mile, then making comparisons between this and especially

the city of Minneapolis, and also making comparison between the rates in Minneapolis as being the closest city and the city of Des Moines. I found as I recall now that the city of Minneapolis had about 120 or 125 connections per mile and the city of Des Moines had *had* 105 or 110 per mile.

Q. You mean services per mile?

A. Services, yes, sir. The Minneapolis rate being 85 cents per thousand for the public and 65 cents for the city, and making some deductions or additions in favor of the larger city, with perhaps certain more favorable conditions, I fixed in my mind that 90 cents would be about the same here as 85 and 65 there.

Q. Did you make any study with respect to St. Louis?

A. No, sir. I did not make very much comparison between Des Moines and larger cities. I tried to get cities mainly somewhat within the range and size of this city.

Q. And made comparisons as to the prices that were being paid in the several cities?

A. Prices and conditions.

Q. You say you read the correspondence between Mr. Haines and Mr. MacVicar?

A. Such as was published; there may have been some I did not see.

Q. I show you a copy of Defendant's Exhibit 44 and you may examine that and tell the Master if that is the correspond-
4364 ence to which you refer?

A. I believe this is the same thing as that of which I received a copy. It is, of course, the same thing.

Q. Did you study the figures which are referred to by Mr. Haines in the letters?

A. A large part of them at any rate.

Q. Did you confer with the other members of the council at any time with respect to the correspondence or with respect to the ordinance which was under consideration?

A. Very little. I did casually with Mr. MacVicar I believe.

Q. Now, getting down to the 27th day of December, 1910, I think that is the date upon which this ordinance was passed, I will ask you if the ordinance in controversy before it was put upon its final passage was discussed in the council chamber?

A. There was some rather brief discussion, yes.

Q. Did you have any data or information which you had secured at that time?

A. Yes, sir; I had this data I have outlined before here.

Q. Was that referred to in the discussion which was had with respect to the ordinance?

A. I brought my tabulation, as I recall it, before the council, that is in the council chamber, and had it on my desk before me and used it as a basis of my own remarks.

Q. I believe you have stated that prior to that time, from the investigations which you made, that you had satisfied yourself that a 90 cent rate would be fair and equitable to the Gas Company and to the consumers of the city of Des Moines?

A. Yes, sir.

Q. Did you in connection with that matter consider the rate of return to the company and what expenses they might pay
4365 from the 90 cent rate?

A. Yes, sir; I had a theory in my mind about the necessity of having depreciation taken care of and operating expenses, interest on bond investments, etc.

Q. And taxes?

A. And taxes.

Q. Did Mr. Haines confer with you at any time prior to the passage of the ordinance?

A. Not prior to the ordinance as far as I recall now.

Q. You had some conferences afterwards?

A. Yes, sir.

Q. I will ask you, Mr. Mayor, what the fact is as to whether or not the ordinance in controversy, as far as you are concerned, was passed on the 27th day of December, 1910, without any prior investigation with respect to the conditions in this city or other cities similarly located, and that a rate of 90 cents was arbitrarily fixed without any consideration of the subject?

A. No, sir. I had pretty clearly in mind what I thought ought to be a fair rate here.

At this time an adjournment was taken until 1:30 p. m.

4366 1.30 P. M. FRIDAY, *September* 29, 1911.

James R. Hanna.

Cross examination by Hon. GEORGE H. CARR:

Q. When was it you assumed the duties of the office of Mayor of the city of Des Moines, what date?

A. The first Monday of April, 1910.

Q. Prior to that time had you had any official position in the city of Des Moines?

A. I had been — member of the board of library trustees for some years, not otherwise.

Q. Prior to that as I understood your testimony you were a professor or instructor at Highland Park College?

A. Yes, sir.

Q. For how many years prior to April, 1910, had you been an instructor at Highland Park?

A. Well a regular instructor from 1892 up until that date with the exception of three years along about 1900, 1901 and 1902.

Q. And in a general way what was your business during the interim you have spoken of?

A. You mean these three years I was not in the college?

Q. Yes.

A. Well I was on my farm part of the time and doing a small business buying and shipping produce, etc.

Q. Was that in Des Moines the business you conducted?

A. For a Des Moines firm in Western Iowa.

Q. You did not during that interim reside in Des Moines as I understand?

A. Only about six months of these three years I was in Des Moines. Otherwise I was in western Iowa.

4367 Q. Prior to becoming an instructor in Highland Park College had you followed the occupation of instructor in any other school?

A. Yes, I have been not a regular member of the faculty, but assistant in western Normal college for some little time before I came to Des Moines.

Q. For how long?

A. Well I had been there in the school for three years, but during the last year or such a matter I was studying part of the time and teaching part of the time.

Q. Now I wish you would tell us precisely what subjects were embraced within the instructions that you were conducting at Highland Park College during the time you were there?

A. During these last years I speak of?

Q. During the entire period?

A. During the first years that I was there I was in foreign language chiefly and assistant in English. Those later years after I came back that I have spoken of I spent my time on English literature largely and on economics and government as secondary subjects.

Q. And how long a time followed after you returned to the college until you were elected to your present office?

A. About seven years.

Q. And during that time as I understand you, you devoted your time largely as an instructor in English and foreign languages.

A. No. Foreign languages in that first period and English and economic subjects after that time.

Q. Now will you tell us precisely what was embraced in the subject of economics which you covered as an instructor during that period, what subject or what particular branch if there are

4368 branches of the subject of economics you taught?

A. Well of course there is a general subject of economics and then that is generally divided into primary and what you might call a normal course or a teacher's course and then the general subject for college classes. My work would generally be that general subject for college classes.

Q. What was embraced within that field of study, just what particular subjects did you cover?

A. Well there would be just the general subject of economics dividing it into production and consumption and transportation different subjects, the text divided different ways.

Q. The broad general field of economics?

A. Yes, with chapters of course devoted to taxation, public utilities and things of that kind as phases of these general subjects.

Q. You say there was a chapter devoted to that subject of public utilities?

A. Generally, not in all books?

Q. What text books did you use?

A. Well we generally used something like Gide, or Patten or Laughlin or some of those of that class.

Q. Confining the inquiry now to public utilities, what particular branch of the subject of public utilities did your text books deal with if you confined yourself *yo* your text books and if not what particular branch of the subject did you deal with if you went outside or beyond the text books.

A. My teaching of course was confined to the general treatment of the subjects such as you would find in these general text books with perhaps a chapter on railroads, perhaps a chapter on municipal utilities.

4369 Q. Did the author deal with the subject of ownership of these utilities, that is public or private ownership?

A. Naturally.

Q. And was a good deal of the inquiry or study addressed to that question as to whether public or private ownership of public utilities was preferable.

A. A text book of course does not attempt to get at anything except to present the argument for different things. Private ownership will — discussed with its merits set forth and public ownership with its merits and demerits endeavoring to be entirely imparital in its setting forth of these things.

Q. That embraced a good deal of the study on the subject of economics as applied to public utilities did it not?

A. Well a reasonable per cent, yes certainly.

Q. Now aside from the question of public or private ownership what other special branch of public utilities did your text book deal with or did you deal with as an instructor of your classes?

A. Well I never taught any special subjects as for instance to spend a semester or quarter upon municipal utilities. You understand the subject I was teaching was always the general subject in which this would be rather an incidental subject dealt with in the chapter.

Q. Well did you go into the subject at all of rate making as applied to public utilities?

A. Yes, sir.

Q. And what was the field of inquiry along that line?

A. Well very naturally in teaching and treatment of the general subject a single chapter devoted to that subject could not be very extended you understand, and there would generally be in

4370 that chapter a setting forth of rates, some text books would not have this at all you understand and others would, setting forth the rates, perhaps a discussion of the rates as found in some foreign country and perhaps a discussion of the rate as found in this country.

Q. Will you tell us what particular text book that you now have in mind that you used up there that dealt with the subject of rates with the subject of public utilities.

A. W*w*ell the two that I have particularly in mind now I believe, I can't think of the names of the authors, were the general treatment of the subject by two men in Columbia University, one of which is

published in the American Science series, but I can't be so very specific as to which text might have these chapters in.

Q. Do you recall how extensive a treatment you found in any text book on that subject?

A. Well they were always brief.

Q. Very brief were they not?

A. Yes, sir.

Q. And very general?

A. Yes, sir.

Q. Did they take up the question as to the rate making power, I mean in what bodies the rate making power was placed?

A. No, sir; I think not.

Q. Did they take up the subject or the method by which an adequate rate was to be ascertained or determined?

A. Well I could not recall absolutely whether any of these particular text books did or did not. I rather imagine that most any of them that discussed that would have at least some little statement of the elements that enter into a rate making.

4371 Q. Of course I want to know you remember, not what you imagine. I presume you are expressing yourself as giving your recollection are you, or are you not?

A. My recollection as to either one of these books that I have in mind is that they did not discuss that particular phase of it at all.

Q. Then as I take it, you did not get much information on the subject of rate making from the studies which you pursued up there at Highland Park College?

A. Well there would be considerable information on certain phrases of it. There would be their deductions as to what would be average rates.

Q. Did you find in any text book that you had there that you can give to us, or authority or any discussion or statement as to what was an average rate of public utilities of any character or tabulation of any data on the subject?

A. Well one of these texts that I speak of Wilcox American city I believe had such statements.

Q. Some statements with reference to what precisely?

A. The rates that are to be found in England and in the United States.

Q. That are charged and received by the various public utilities.

A. Yes, sir.

Q. On what particular public utilities?

A. Well you probably would get more discussion of gas and street car transportation than anything else.

Q. Well did you get in any text book that you can name any discussion of the rates of gas charged in England or rates charged for gas in England and in this country?

4372 A. Well you are asking me a question there that I have not thought of, of course, for a long time, but my recollection is that Wilcox American city does have that kind of a discussion.

Q. Is that one of the text books which you used?

A. One to which I referred.

Q. Used that as a reference work in connection with your studies?

—. Yes, sir.

Q. Do you recall when Wilcox on Cities—is that the *tiel* of it?

A. I think the one I have in mind is Wilcox American City.

Q. Do you remember when that book was first published?

A. Well I think that was published about three or four years ago.

Q. Are you quite sure about that?

A. That is the first that I became familiar with it.

Q. Let me ask you if you have a distinct recollection that that book was published prior to the time that you ceased your duties as instructor at Highland Park.

A. The book I have in mind was published before that time, yes.

Q. Did any of the text books to which you have referred to reference books deal with the subject of the power of the rate making body and what limitations if any there were on that power?

A. No, sir; I think not at that time. Of course Wilcox has gotten out a book m-re recently that goes quite fully into these matters.

Q. Did any of the text books or reference books to which you referred deal at all with the subject of the method of ascertaining a fair rate of return?

A. Very little.

Q. Did it at all?

A. I think probably not.

Q. Just when was it you began first to try to gather data
4373 with regard to what would be a fair rate of return or just when was it that you first began to gather data on what would be a reasonable rate for gas in the city of Des Moines?

A. You mean specifically with reference to this problem?

Q. Yes.

A. Probably about October.

Q. Of last year?

A. Yes.

Q. Do you know what time in October?

A. No, I could not say. I am speaking i*j* general terms now, I could not say that.

Q. Was it about the time that Mr. MacVicar was appointed a committee together with the legal department by the council to formulate and report an ordinance?

A. Well I suppose in a general way it must have been about that time although I can't remember just when that was.

Q. The record shows here that was the 21st or about the 21st of October.

A. Well that is probably about the time, a little before that time I began making it.

Q. I think you told us that your inquiries consisted in part at least in writing l-tters to cities for information?

A. Yes, sir.

Q. Do you recall what cities you wrote to?

A. I wrote to Minneapolis, Duluth, Milwaukee, Fort Wayne,

Omaha, Rochester, N. Y., and I suppose a dozen or fifteen other cities.

Q. You have named all that you now recall?

A. Yes, I think so.

Q. You I assume addressed your letters to the mayors of
4374 these particular cities?

A. I don't recall for certain whether I add-essed them to the mayors, in some instances or not. If there was a gas inspector I probably addressed—I rather think I addressed to the Gas Inspector in care of the Mayor.

Q. You got responses to the letters of inquiry that you wrote did you in all cases?

A. Generally so, yes.

Q. Now you have told us, perhaps not in my precise language, but in effect as I understood you, some of those letters were good and helpful and others were not.

A. Well I don't know that I should say that none of them were otherwise than good or helpful.

Q. You preserved the *p*file of letters I -resume, did you?

A. I am not certain that I did, but I suspect I did.

Q. You think you have that file now and can produce them?

A. I think at least I have some of them.

Q. Do you know whether you have all of them or not?

A. No, I don't really know whether I have all of them, I am not positive that I have any of them.

Q. Will you make a search and see what you can find?

A. Yes, I will be glad to do so.

Q. Then I think you said you advised yourself on the subject under consideration by you, that you noted the correspondence which was published between Mr. Haines and Mr. MacVicar?

A. Yes, sir.

Q. Read all of the letters that were written, at least all that were published carefully as they appeared in the public press.

A. At least I tried to do so, I may have missed some, but my impression is I got all of them.

4375 Q. I think you stated to Mr. Brennan that you found in some letter written by Mr. Haines a statement as to the present value of the gas company's properry here in Des Moines did you not?

A. You mean in this testimony this morning?

Q. In your testimony before dinner.

A. I am not certain whether I stated that in the testimony this morning, but I did do that.

Q. Now will you refer to the letter or letters in which you found a statement made by Mr. Haines as to the value of the company's property in Des Moines?

A. I don't know whether I could find that readily or not. I think this is the letter I have in mind right here, that seems to be marked complainant's exhibit No. 7?

Q. Give the date?

A. November 22, 1910.

Mr. BRENNAN: That is contained in defendant's exhibit No. 44

is it not, the letter to which you now refer complainant's Exhibit No. 7?

A. The book is entiled Defendant's Exhibit No. 44, the letter I refer to is No. 7 in this book.

Q. As printed in this book it is the first letter isn't it?

A. Yes, sir.

Q. And is under date November 22d?

A. Yes, sir.

Q. Now will you call our attention or will you state into the record what part of that letter you took as a statement from Mr. Haines as to the value of the property?

A. I think here is a paragraph that I presume I probably deduc-ed it from on the second page as printed here in which it states this, $139,000 as the average net amount received by
4376 the gas company for interest and profits which amounts to 8 per cent on $1,739,094.

Q. In reading that you just read the round numbers of the first figure didn't you?

A. $139,191.52.

Q. Is that the statement to which you refer as being a statement taken by you from Mr. Haines' letter in which he asserted the value of the property?

A. Perhaps I would not say asserted, but admitted the value of the property.

Q. Would you say he admitted the value of the property?

A. At least that I took it he was admitting the value of the property.

Q. You read the entire letter of course?

A. I certainly did.

Q. And you tell the master now that you gathered from that statement that Mr. Haines was admitting as you put it the value of this property to be $1,739,094?

A. That is what I took it, yes.

Q. What did you understand the language used in the second paragraph following that, just three or four lines farther down the letter to mean?

A. Well I took it Mr. Haines was making as good an argument as he could for the company and guarding himself against any claim he might want to make in the future and perhaps from an absolute inventory that he might have made later of the property.

Q. As I understand you Mr. Hanna, you read this letter in which Mr. Haines set forth certain figures as revenues derived by the company, gross and net and then followed with a statement after making claimed allowance, giving a figure which he said should be taken for depreciation, arriving at this figure of $139,000 in
4377 round numbers and then his statement that the average annual net amount received by the gas company for interest and profits which amounts to 8 per cent on $1,739,094 was an admission by him as to the value of the property and which justified you in assuming that that was the company's claim as to the value of the property?

A. You put the question in a way that I hardly know how to

answer with a yes or no, because there were other things that entered into my mind in making up that opinion of mine.

Q. Well did you take that as a statement from Mr. Haines upon which you felt justified in relying and upon which you did rely as to the value of the property?

A. That in connection with the capitalization that I have seen, the statement of the assessor and the assessment that was placed against the property and perhaps some comparisons with other cities.

Q. But what I want to do now is to find out if I can what reliance you placed upon this statement as being a statement from the company as to the value of the property, whether you accepted that as a statement from the company's manager as to the value of this property?

A. If you put that to me directly that way I think I would have to say yes although other factors entered in my mind along with it.

Q. You did that notwithstanding what he does say later and what follows in which he says however I am clearly of the opinion that the present value of the gas plant and the assets is largely in excess of $1,739,894.

A. Yes, sir.

Q. Is there anything else that you have in mind in the letters written by Mr. Haines and Mr. MacVicar upon which you
4378 say you relied at the time you acted with respect to the adoption of this ordinance as giving you any information as to the value of the property than to which you have now called attention.

A. No, I don't have anything else in mind, that is in this correspondence you are asking. No, sir.

Q. Is there anything else in this correspondence?

A. No, sir.

Q. Now you say you knew something about the assessment. Just what about that. I am inquiring what investigation did you make along that line?

A. Well I had been rather familiar with the assessments of these different utilities and the gas company among the rest for three or four years before. I had in mind particularly the assessment that was made in the year before, April before this January and the assessment that was made I think two years before that and a conversation that I just happened to overhear between Mr. Haines and some gentlemen as to that assessment some two or three years before.

Q. You had seen all of the returns made by the company to the assessor had you for these years and did you have in mind at the time just your general information on the subject?

A. Well I had taken up the statements that the company had made to the assessor as well as the value fixed by the assessor upon the plant.

Q. You had examined the returns made by the company had you?

A. I think I had examined the returns made by the company in

the years 1907, possibly 1908 and in the year 1909 as well as the figures that the assessor fixed for the valuation of the property in these years.

4379 Q. Then I take it you did not examine the returns made by the company *by* 1910.

A. I am not positive whether I had the returns they *they* made in 1910 or not. I rather think I did but I could not say positively that I did. I should say that we had had some general discussion involving both figures in the equalization board in April preceding.

Q. At the time you were making this investigation that you have told us about you know that an inventory of the property was being taken did you not, being made?

A. I knew that the company were offering such an inventory, I am not positive I knew that they were making such an inventory.

Q. Did you not know that a member of the engineering staff of the city had been detailed to assist in the work of making that inventory?

A. At some time in the stage of the proceedings I knew that, yes, I don't remember just when that came to my knowledge.

Q. Do you remember who it was, the individual it was?

A. Yes, I think I do.

Q. Who was it?

A. Mr. Maxwell.

Q. Did you have any conversations with Mr. Maxwell at any time before the 27th of December with regard to the work he was doing?

A. I think I did.

Q. Did you get any information from him upon which you acted?

A. I got information I suppose from him, I can't recall absolutely now whether from him or not, as to the number of miles of mains and services, connections, etc.

Q. I understand you got from him the information as to the number of miles of mains, number of services, etc.

4380 A. Yes, I think so. I won't be just absolutely positive either, there were negotiations after this date of course and I got some of this information at later times and I could not always tell you whether I got this before the 27th or after, but it is my impression I had these service connections and miles of mains from him before that time.

Q. But you are not sure you got that information before the 27th of December?

A. I am sure I got that information, whether from him or not.

Q. Are you sure you got the information from some source prior to the 27th of December?

A. Yes.

Q. And you got the information that there were how many miles of mains?

A. Somewhere about 182 or 187.

Q. You got the information that there were how many services?

A. Something like 19,000 to 20,000.

Q. You got the information there were how many meters?
A. I don't recall.
Q. Did you get information on that subject?
A. Well I don't recall that I had any information separating the number of meters from the number of service connections.
Q. Did you know there was any difference between the number of meters and number of services?
A. I don't recall that I did.
Q. Do you now know whether there is in fact any difference in number between services and meters?
A. I don't know as to that, I judge a statement as to the number of meters and services—I had a statement as to the number of
4381 meters and number of services, but to state right now whether they corresponded or are different, I can't tell you.
—. Do you know enough about the gas business to know whether the number of services are uniform with the number of meters?
A. I would imagine they would be somewhat near the same.
Q. That don't quite answer it, do you know whether they precisely correspond?
A. No, sir.
Q. Don't know whether they did or not?
A. No.
Q. Now among other things you have learned was the duty that devolved upon the council with respect to this matter, is that not true?
A. Certainly.
Q. And what did you understand was the duty of the council.
A. To fix rates and make certain regulations.
Q. And what did you understand to be the duty of the council with respect to fixing rates, what were they to do as you understood it.
A. Well I don't know as I understand anything legally imposed except the moral and legal obligation that the investment, cost of production, depreciation and reasonable price should all enter into such consideration.
Q. You understood then that the council was to inquire into all these several subjects did you not?
A. I would have taken it that was the duty of the councilmen, ye-.
Q. You understood also it was the duty of the council to make the rate did you not?
A. Yes, sir.
Q. As distinguished from the individual members of the council.
A. Certainly, if there is a distiiguishing mark.
4382 Q. And were you not advised by the legal department at the very time that this ordinance was introduced that it was the duty of the council to fully and fairly investigate the subjects that you have spoken of for the purpose of determining and ascertaining a rate which would be fair to the public and fair to the company.

A. I don't recall any communication from the legal department on that subject.

Q. You don't recall any such communication?

A. No, sir.

Q. Do you recall whether the council in appointing a committee to prepare and report an ordinance appointed anyone other than Mr. MacVicar?

A. Mr. MacVicar as I recall now purely from memory, the resolution provided that Mr. MacVicar and the legal department be directed to prepare an ordinance regulating gas rates.

Q. Do you recall whether there was any report made by Mr. MacVicar or the legal department on the 27th day of December, the day on which the ordinance was presented for the first time to the council?

A. I don't recall that there was anything but the ordinance presented, there may have been.

Q. If there was a communication from the legal department on the subject you don't have any present recollection of it?

A. That is as aside from the ordinance?

Q. Yes, aside from the ordinance.

A. No, sir; aside from the ordinance I don't recall anything else. It is a very common thing to make a report and subjoin a resolution and ordinance and there may have been such a combination here but I don't recall.

4383 Q. But you don't recall anything in the way of an opinion or advice from the legal department which was submitted on that occasion setting among other things the duty of the council?

A. No, sir.

Q. But as I understand it you did understand that it was your duty among other things to ascertain the value of the property of the Des Moines Gas Company which was used and useful in the business of manufacturing gas in the city of Des Moines, you understood that didn't you?

A. I understood this too as part of it that it was our duty to find out as nearly as we could what would be a just rate and it would be in a large measure necessary to do that in order to get at a just rate.

Q. Would it be absolutely necessary to do that in order to get at a just rate didn't you understand?

A. No, I would hardly say that.

Q. Do you know of any way you could determine what was a just rate without determining upon what the rate wa- to be based?

A. Yes, certainly.

Q. I am not speaking of rate of return, but what it would be.

A. Yes.

Q. What was it?

A. If I knew of a city of somewhat similar conditions producing gas at a certain rate I would assume conditions to be like in our city and we ought to be able to get about the same rate.

Q. Then you concede it to be your duty to simply ascerrain what rates were being paid by some other city under somewhat similar conditions?

A. I didn't say that.

Q. That was not what you said.

4384 A. No, sir.

Q. What did you say?

A. I said that would be one way of doing it without getting absolutely at the valuation of the property, but would *noncede* also it was a good thing to get the valuation of the property.

Q. Didn't you concede it to be your duty to ascertain the value of the property here in Des Moines before passing an ordinance fixing a rate?

A. Yes one of the duties.

Q. And now what you did in the discharge of that duty as I gather from your testimony was to read a letter or letters, the letter which Mr. Haines wrote to Mr. MacVicar and to look ove- the assessments of the property for *piror* years.

A. That is so far as a means of getting at valuation?

A. Yes.

A. Largely so, perhaps also making comparisons with other cities.

Q. Well, how did the comparisons with other cities enable you to determine the calue of the property in Des Moines?

A. If I found another city that was making gas of somewhat the same—in a plant of somewhat the same size delivering that gas to about the same number of people per mile, I assume I had a basis for comparison.

Q. You see you are getting away from the question now aren't you. We are talking about how you ascertained what was the value of the property in Des Moines. You said you did that to a certain extent you did by comparison.

A. I would ascertain the value of the property of any city. I didn't take an inventory of any property to get an appraisal of the items or anything of that kind, but I did compare capitalization and did compare miles of mains, services, service connections and

4385 things of that kind.

Q. Have you in mind any city in which you ascertained in any way the value of the property of the company that was operating the plant in that particular city?

A. I don't think that I could name values as I found them, but I did make make comparisons for instance with Minneapolis.

Q. Did you ascertain the value of the company's property in Minneapolis?

A. I ascertained the valuation that the company had put upon its property by way of capitalization, bond issue, etc., just the same as I did here.

Q. Now did you take that valuation in fixing the valuation *in fixing the valuation* of the property in Des Moines?

A. In a measure.

Q. What did you ascertain the value of the gas property in Minneapolis to be?

A. I can't recall.

Q. You don't recall what the valuation upon the company's property was that you ascertained in Minneapolis?

A. No.

Q. Do you remember any other city in which you found out the value of the property which the company in a particular city and which it was using in the manufacture of gas?

A. I don't think I could recall at this moment, no sir.

Q. Aside from what you have told us as to the number of miles of mains and the number of meters or services rather, did you know what the company's property consisted of in Des Moines at the time you passed this ordinance?

A. Well I suppose hardly in a minute sense, no sir. in a detailed way, I knew about the plant in a general way and the dis-
4386 tribution system in a general way.

Q. What do you mean by general way, just what came from the common observation, what anybody living in Des Moines would obtain from common observation?

A. What anybody who was giving some attention to the subject, and remembering also that it was a plant designed to deliver gas to a city of 80,000 or 90,000 people.

Q. You had had no experience of course in what sort of a plant was necessary nor the value of the plant that was necessary to furnish gas to a city of the size you have mentioned, did you. You had had no practical experience in that matter?

A. Certain- I had not.

Q. Now would you say that you had then at the time you passed this ordinance any other information as to the value of this property than what you have now stated?

A. I thought that I had and I say now that I had.

Q. Tell us what it was. Confine the answer to the value of the property and not the value of the property some other place, but the value of the property here in Des Moines if you have any information as to the value of this property other than what you have now stated?

A. I had—if you will allow me to go over details, seems to me that is the best way I can answer the question.

Q. If you will confine your answer to the subject.

A. I had the distribution system and number of miles of main, I had the service gicing the number by deduction, the number of consumers or connections per mile and I had the statements of the company to the assessor for several years, I had the assessor's valuation for several years, I had the comparisons between this city and the plant delivering gas in this city and many other cities.

4387 Q. I didn't mean to have you reiterate what you had already said, but asked you if you had any information aside from that.

A. Outside of this knowledge of the material property that I have stated and statements to the assessor and comparisons between this and other cities I did not.

Q. You did not know how much ground, how much land was owned and used by the company in the manufacture of gas did you at that time?

A. No, sir.

Q. And you didn't know the value of it did you?

A. No, sir.

Q. You didn't know how much machinery they had nor the value of it did you?

A. No, sir.

Q. You didn't know how many buildings they had nor the value of them did you?

A. No, sir; except the knowledge that I felt to be sufficient of the total valuation of the plant.

Q. Such as you have given us that you had?

A. Yes.

Q. While you knew the number of miles of mains you didn't know what it would cost to lay these mains per mile or relay them did you?

A. Well I knew a little something about such questions as that yes.

Q. You did then?

A. Yes.

Q. A little something about it?

A. Yes.

Q. You never had laid any mains of course?

A. Never had laid any mains.

4388 Q. You never had bought any gas pipe?

A. Never.

Q. The session of the council at which this ordinance was passed extended from somewhere between nine and ten o'clock in the fore noon until, we have learned in this case that is correct is it?

A. I think so.

Q. We have also learned that there was some eighteen or twenty matters of more or less public importance that was transacted by the council during that session?

A. I don't recall, but I would suppose so.

Q. Can you give us any idea in minutes the length of time the council took with the consideration of this ordinance from the time it was presented and reported upon until it was put upon its final passage?

A. I suspect it was done within a half an hour.

Q. That would be an outside estimate wouldn't it?

A. Well I expect that would be about right perhaps.

Q. You said something about having gathered together in some form some data that you had on your desk while this ordinance was under consideration?

A. Yes, sir.

Q. I think you said you did not lay that before the council but that in remarks you made on the subject of the ordinance you made some reference to it?

A. Yes, that is my recollection.

Q. Have you that data?

A. Yes, I think so.

Q. You can produce it can you?

A. Yes, sir.

Q. Will you do so?

4389 *Q. Will you do so?*

A. Yes, sir.

Q. Did you give the council the full benefit of that data, that is did you read it all to them or present it all to them or did you simply refer to something in the data that you had that you thought might be——

A. I didn't make any formal reading of it no sir.

Q. It was in written form of course, do you remember how many sheets it coveerd?

A. It was just a little tabulation from some of the letters I have received including about the cities that I named awhile ago.

Q. Isn't it true that that consisted of some information as to the prices at which gas was being sold in other cities?

A. No, sir.

Q. Contained further information did it?

A. Yes, sir. Contained the tabulations of the answers to several of those questions?

Q. Now while that meeting was going on, you suggested to the council the propriety of taking further time to investigate before action didn't you?

A. If I just had to answer that question no or yes, I suspect I would have to say no, but I did make some protests against passing it at once.

Q. And why did you make that protest?

A. For two or three reasons.

Q. Was one of those reasons that you thought the council were not in possession of the information that they ought to have ton enable them to act inteiligently upon the subject?

A. I don't think that was so much my thought as that I

4390 had known that negotiations had been gone through with for some time and that this seemed like a precipitation of trouble and that I hoped that some further consideration with perhaps a hearing a discussion between Mr. Haines and the council might result in fixing the matter up without trouble.

Q. But one of the thoughts that you had in mind and that was prominent in your mind was that the council had not as a council the information that it ought to have in order to perform the duty which rested upon it, is that not true?

A. I knew at least that we had not had that material before the council discussed.

Q. So far as you knew outside of Mr. MacVicar who had been appointed as committee to collaborate with the legal department and formulate and report an ordinance and such investigation as you had made, so far as you knew the other members of the council had made no investigation, is that not true?

A. So far as I knew positively they had made no investigation.

Q. You said this forenoon that you have talked very little to the other members of the council at any time prior to the passage of this ordinance?

A. I don't think I have talked to any mem-ers of the council about this ordinance except some to Mr. MacVicar.

Q. By this ordinance you mean the subject, of course the ordinance was only introduced that morning, but you mean the subject of what would be a fair rate?

A. Yes, and regulations.

Q. In going into the subject of ascertaining what sort of an ordinance you ought to pass, what sort of a rate you ought to fix you started did you not with the assumption that the rates should
4391 be decreased, that the new ordinance should fix a rate that was lower than the existing ordinance, is that not true?

A. If I were to answer that question absolutely by itself I would have to say yes, but I would have to qualify it by saying that was not the beginning of my investigation of the subject.

Q. When you first began to investigate which was about the 21st of October you started out with the thought in mind did you not that the new ordinance which was to take effect after the *the* first of January that year should decrease the rate.

A. Yes, I had that in mind by October that there ought to be a decrease in the rate.

Q. That is the time you have told us you began to investigate the subject?

A. No, not the subject, but the subject with reference to rates in Des Moines.

Q. So I am right in understanding from you am I not that when you began to investigate the subject with reference to fixing the rate in Des Moines you started with the thought prominent in your mind that the present rate must be decreased?

A. Yes, considering other cities I had thought we ought to have a little better rate?

Q. The thought never occurred to you that by any possibility should there be any increase?

A. Well I think I would always be willing to consider that there—be necessary because of different conditions in the prices even to be large in Des Moines than some other city, yes.

Q. The question is when you started to make this investigation you have said that you started with the idea that the present rate, the then present rate was too high and that the ordinance the new o-dinance should decrease that rate. Now I was putting it
4392 the other way, the thought was never present in your mind for a moment that the new ordinance ought to fix a higher rate.

A. I don't think I had anything, any evidence before me ma*k*de me think that, no sir.

Q. The fact remains you never considered there would be any possibility of an increase in rate, that is correct is it not?

A. I suppose that is probably true.

Q. And isn't it also true that the thought never entered your mind at the time you began to investigate that there was no possibility of reaching a conclusion that the present rate ought to continue?

A. I don' think that would l[illegible], no sir.

Q. Now with respect to the investigation which you made by correspondence and otherwise and by the visit you made to Minneapolis wasn't your attention specially attracted to the inquiry as to the candle power of gas and as a practical proposition what the candle power of gas should be, what the ordinance should require in that respect.

A. Yes, I had some time previously gone into the question of candle power and standardization of gas based upon candle power or upon heat units, a considerable time before this.

Q. You reached the conclusion didn't you that an 18 candle power for all practical purposes was as good for the consumer as a candle power of 22 or some higher candle power, that was the net result of your investigation wasn't it?

A. No, the net result of my investigation was that a heat unit standard was a better standard, both for the company and the people.

Q. He will get to that in a moment. I want to confine the inquiry now to the candle power proposition. I will ask you again
4393 whether after your investigation, particularly at Minneapolis you did not reach the conclusion that for all practical purposes an 18 candle power in Des Moines, gas of 18 candle power was as good as a higher candle power?

A. For lighting purposes, my investigation of both Wisconsin and the public utilities commission up there and their experience all over the state and the investigation in Minnesota was that for practical lighting purposes 18 candle power would be of almost as good value for the public as 22 candle power.

Q. You had investigated the subject sufficiently to satisfy you that in the manufacture of gas the lower the candle power the less the cost to make or manufacture hadn't you?

A. Somewhat, yes.

Q. And with that knowledge before you you still reached the conclusion that this ordinance should provide for the candle power specified in the ordinance?

A. No, sir.

Q. Now then qualify that.

A. That was one of the points of discussion the morning the ordinance passed, was one of the points I raised myself in the consideration of the ordinance that the heat unit would be better all the way around than the candle power unit of standardization and it was urged that that could be taken up afterwards in a separate ordinance and that it was only a day or two before the old ordinance rate would expire and we had better pass this ordinance at once for that reason and then we could adjust that a few days later.

Q. You, as I understand it, then was urging that the ordinance contained the requirement that the candle power should be something less than that which was in the ordinance.

4394 A. Might be something else, yes.

Q. But you were overruled as to that?

A. Yes.

Q. You also made a pretty thorough investigation did you not and

wasn't the investigation you made largely devoted to this question of heat units?

A. Well I don't think you should say largely no. I had inquired pretty carefully into that subject.

Q. And after full investigation you came to the conclusion that the heat units as specified in the ordinance was the right thing didn't you?

A. Was a better basis for the standardization for gas——

Q. I didn't ask you that. You came to the conclusion that the heat unit standardization was better than candle power?

A. For everybody concerned, the company and the city, yes.

Q. On the question of rate of return I think you told us that some time was spent by you in determining what was a fair rate of return, that is after you had got the value of the property upon which the return was to be received and after you had determined what net rate might be received under a given ordinance you gave consideration to the s-bject as to what that rate of return should be, what would be a fair rate of return?

A. Yes, I always had that in mind as one of the things that ought *yo* be considered.

Q. I think you told us this forenoon you gave some thought and study as to that question as to what is a fair rate of return.

A. Yes, sir.

Q. And what conclusion did you arrive at as to what would be here in Des Moines a fair rate of return?

A. Well I think my own opinion on that has always been
4395 a little different from your scientific way of getting at it, I have always felt as though since most companies were organized on a basis of the capital stock and the bond issue that among the cost of operation should be included the interest on the bonds and then such a r-te as would make with fair management perhaps eight per cent on the capital stock and with better management what might be called wages of management rather than profit if you please, ten to twelve or fifteen per cent or any other per cent good management could produce.

Q. Then if I understand you it was your thought and your idea that a rate should be fixed by the ordinance which would give to the company a rate of return of not less than eight per cent and under very good management ten or 12 per cent, is that correct?

A. Under fair management 8 per cent. Under superior higher rates giving a *ded* profit for expert management.

COURT: You say capital stock there. Do you mean the actual capital stock or that which was fully paid up?

A. I mean what should be actually paid up capital, legitimate capital as part of the legitimate investment.

Q. We learn from the public press referring now particularly to the Tribune published under date of February 21, 1911, and the Register and Leader published under the same date that Prof. Wm. L. Marks of New York had sent a report to you in answer to a letter which you had written him from which both these articles purport

to quote. Have you that letter, have you the letter to Prof. Marks and his letter to you on the subject.

Objected to as incompetent, irrelevant and immaterial and for the further reason that it relates to a time subsequent to the commencement of this action, unless you want to go into the
4396 question there of negotiations that were had between the p-rties, immaterial and not cross examination?

A. I am quite positive that I have at least a copy of my letter and Mr. Marks' letter to me if I have in mind what that refers to.

Q. To refresh your recollection I will call your attention to these articles in the public press that I refer to. Having refreshed your recollection by an examination of these articles in the press to which I refer, can you now tell us whether you have a copy of your letter to Prof. Marks and his answer thereto which is referred to in these articles?

A. I have a copy of my letter and his letter that I think were no doubt here referred to under this date.

Q. Will you produce the correspondence, that is the copy of your letter to Prof. Marks and his letter to you. I presume you haven't them with you here?

A. I can do so.

Q. Will you get them and produce them.

A. Yes, sir.

Judge CARR: That is until he gets these letters The letters referred to are your letter to Prof. Marks and his reply to that letter which is referred to in these publications to which your attention has been called which contain or purport to contain quotations from Prof. Marks to you. I want also the report or memoranda you had before the council and also the letters or such of them as you have that you received from various persons to whom you wrote wnen you were writing conditions in other towns in respect to the rates that were being charged?

4397 Redirect examination by R. O. BRENNAN, Esq.:

Q. You have at this time as I understand it some of the data which you had in your possession at the time the council met at the time of the introduction and passage of the ordinance?

A. Yes, sir.

Q. So that you can produce that now as requested by counsel?

A. Yes.

Q. You might as well produce it if you have it or you may bring it all in at one time. Now your attention was called to some personal objections which you had in mind to the ordinance. I want to ask you Mr. Mayor, if you had any question in your mind at the time of the ad-ption of the ordinance with respect to the reasonableness of the rate which was fixed in that ordinance.

Objected to as not proper redirect examination and simply salling for a self serving declaration, therefore incompetent.

A. No, sir.

Q. Did you make that statement to the members of the council.
A. I did.

Q. Now as I understand it, aside from the comparisons which you made with other cities, from the information and data which you received through the correspondence and investigations that you made, you refer to some returns made by the company to the assessor?

A. Yes, sir.

Q. Mr. C. W. Schramm is one of the members of the city council?

A. Yes, sir.

Q. And was the former assessor of the city was he not?

A. He was assessor of the city at the time I first made an
4398 investigation of this question. I got my first figures from him.

Q. I show you what is known in this case as defendant's exhibit No. 1 which purports to be the statement of the Des Moines Gas Company to the assessor made in the month of February and in the month of March 1908 and endorsed upon this exhibit is the verified statement of Mr. Jansen Haines and I wish you would examine that and tell the Master if that is one of the statements to which you referred in your answer to one of the questions put to you by Judge Carr?

A. The best answer I can make to this is that in about February or March, early March, *pr* probably in the latter part of February 1908 I went into Mr. Schramm's office and got the data on the gas company, both their statement and the figures that the assessor was assessing the properties and I assume that this is one of the ones that I got at that time.

Q. At any rate you will say now and it is your recollection is it Mr. Schramm as early as the year 1908 furnished you some information with respect to the gas company.

A. Yes, sir.

Q. Now I notice in another letter written by Mr. Jansen Haines to Mr. MacVicar that substantially the same figures are referred to as in the first letter which you refer to in your testimony and I call your attention to the letter under date of November 26 1910, referred to in defendant's exhibit No. 44, and which is in the evidence in this case as complainant's exhibit No. 9, and you may tell the Master whether or not you read that letter in connection with the correspondence and if you regarded the statement therein made as a confirmation of the statement made by Mr. Haines in the former letter to which you refer?

A. My recollection is that I read this letter and assumed in
4399 a general way that it confirmed the figures that I had in my mind.

Q. Defendant's Exhibit No. 44 is in pamphlet form is it not?

A. Yes, sir.

Q. And purports to contain, among other things, the correspondence between Mr. Haines and Mr. MacVicar bearing upon the gas question in Des Moines and purporting to have been written in the fall and early winter of 1910. Now do you know whether Exhibit

44 was distributed or caused to be distributed by anyone in the city of Des Moines?

A. I know that I received a copy of it myself and had an understanding that it was quite generally distributed.

Q. And from what source did you receive your copy?

A. I suppose I received it from the gas company.

Q. How was it delivered to you?

A. By mail.

Q. Did you receive it in due course of mail.

A. It was at my house when I returned one evening.

Q. You may state if at any time any of the officers or agents of the Des Moines Gas Co., represented to you or stated to you that in order to earn a reasonable return upon their investment that it would be necessary to raise the rates for gas in the city of Des Moines?

A. Not that I recall at any time. Certainly not before December 27th.

Q. Then if I understand you correctly your consideration of the letter to which you have called attention under date of November 22d, you believed that would be the rate of return which the company would be willing to accept and receive upon that investment.

A. Yes, I took it that was what they proposed.

Q. And that they would be satisfied with a return of $139,-
4400 000 in round numbers as the net earnings from the business, take the letter of November 22, 1910?

A. Yes, sir.

Q. I think you refer to a conversation between Mr. Haines and someone else which you overheard or at which you were present.

A. Yes, sir.

Q. Was that in relation to the valuation of the property of the Des Moines Gas Co.?

A. With relation to the valuation with reference to the assessment some four or five years ago.

Q. Some four or five years ago?

A. Yes, sir.

Q. That would be about 1906 or 1907?

A. I think so.

Q. Do you recall now the substance of the conversation?

A. Yes, sir.

Q. Did Mr. Haines have anything to say as to the valuation of the property of the Des Moines Gas Company at that time?

Objected to as incompetent as not being a *tstament* that would be statement made by Mr. Haines would be in any wise binding upon the company in any way, made long ago and therefore wholly immaterial.

A. Yes, sir.

Q. Now I want you to tell the Master what Mr. Haines said on that subject.

Objected to as immaterial and incompetent, not showin*t* that any in any wise binding upon the defendant and as immaterial having been made years before the inquiry which is now materiai.

A. The conversation was concerning the assessment that
4401 wa- placed against the property for that year. Mr. Haines was protesting to some gentlemen that he increase as I recall it, the increase in the assessment was entirely unjustifiable.

Q. Do you remember what the assessment was at that time?

A. No, sir; I do not. My recollection is that there had been quite a little increase in the assessment and Mr. Haines was protesting very vigorously against that inersase.

Q. Now you had made some study of thermal values of gas as manufactured and sold in different cities?

A. Yes.

Q. And especially the experience which they had in Minneapolis?

A. Minneapolis and Milwaukee.

Q. And it was your personal view of the matter that it would have been well for the council to have incirporated in the ordinance which had for its purpose the fixing of the rates for gas a privision regulating the heat units of the gas to be furnished.

Objected to as leading as is practically every question which counsel puts to the witness.

Q. I want you to tell the Master just what your personal views were with respect to the subject of heat units of the gas which you had in mind at the time of the discussion of this ordinance.

A. My thought was it was very much more in accordance with modern methods of standardizing to fix upon heat units as a basis because light units since the introduction of mantles was less important, if you have heat units you could get the light unit with the mantle and a far larger amount of gas, perhaps 90 or 95 per cent of gas consumed would have its value altogether based on heat units, perhaps 90 to 95 per cent of the gas consumed in a city like ours would have its value places almost entirely on its heat units
4402 instead of light units. Furthermore I had that in mind as a means or basis of some concession to the company to give the company and save trouble.

Q. But the views which you had upon the general subject were not opposed as I understand you to the rate which was prescribed *to* the ordinance?

A. No, sir.

Q. Did you make your views known to the members of the council as tro the rate?

A. Yes, I brought that out very distinct. I had to do that because of the fact that I was protesting against the passage of the ordinance there, the provisions of which in the main I was absolutely in favor of, the rate in particular, because that was the main thing that was set forth in it, outside of the candle power as a standard and while objecting to hurrying the ordinance through because it precluded the possibility of a settlement, etc., I wanted to make it clear that I had gone into the question of rates and felt that to be just.

Recross-examination by Hon. GEORGE H. CARR:

Q. Because it precluded the possibility of settlement, etc. You mean to include in that just what you said before that it precluded just such investigation as you felt ought to be made before an ordinance was passed, isn't that true?

A. Possibly in a measure.

Q. You can answer that by yes or no can't you?

A. In a measure only. I would like to make the matter so clear to the court here——

COURT: I understand what you mean. You thought it would be better to do that than to——

4403 A. Precipitate a law suit.

Mr. BRENNAN: I want to ask you this question whether the standard which had in mind incorporating in the ordinance, whether that standard was suggested to you by any one connected with the Des Moines Gas Co.?

A. No, sir.

Mr. BRENNAN: If I understand you correctly your thought was that by suggesting a reduction in candle power you might agree upon — standard with the company as to the heat units or value to be used?

A. To be specific I thought to substitute 600 British Therman units for 22 candle power a*w* the main standard, the standard to provide a minimum of 17 or 18 candle power below which the company should not go.

Judge CARR: You say you got confirmation of the impression which you told us you received after reading the letter of November *wwd* in Mr. Haines' letter to Mr. MacVicar of November 26th. That is correct is it?

A. Yes, sir.

Q. What language do you find in the letter of November 26th that confirmed the impression that you had received prior to that?

A. In the first paragraph Mr. Haines speaks of these same figures and then goes on to guard against that being accepted.

Q. Perhaps it would be the better way to read into the record the language which you say confirmed your prior understanding of what Mr. Haines had said?

A. The latter pa-t of the first sentence reading also computation showing this amount of net revenue would yield but 8 per cent upon $1,739,894.

Q. Did you stop there?

4404 A. You mean did I stop reading there?

Q. When you were looking after confirmation of the preconceived notion which you say you had, did you stop reading there at that point or did you read the balance of the letter?

A. I don't think I was seeking confirmation particularly, I was trying to get a general impression of facts.

Q. I am asking what the fact was, whether you stopped reading at that point or read the next sentence?

A. I read the letter.

Q. Please read into the record the next sentence?

A. I express the opinion that the present value of the plant and assets of the company *was* largely in excess of that sum.

Q. You say that some several years ago you recall hearing Mr. Haines talk to somebody protesting about the assessment of the gas company's property being raised, that is correct is it?

A. Yes, sir.

Q. Do you remember who it was he was talking to?

A. No, I don't believe I do.

Q. Do you remember where it was?

A. I do.

Q. Where?

A. It was in the lobby or going up the steps of the Savery Hotel.

Q. Was he walking along?

A. He was walking along with one or two gentlemen and I was walking along, just happened to be going in at the same time.

Q. Would you undertake to state just what Mr. Haines said, do you remember the words he used?

A. No, I don't think I could reproduce his words.

Q. To refresh your recollection was it some person connected with some of the public utilities in Des Moines, Charles
4405 Denman for example or George Hippee?

A. It is not my impression that it was, no sir.

Q. Of course during the last four or five years you have heard a good many people complain about their taxes haven't you?

A. Yes, sir.

Q. Still you remember this particular conversation and where it occurred?

A. Yes, sir.

Q. But don't remember who Mr. Haines was talking to?

A. No, sir; not positively.

Q. Was it the substance of what Haines said in the nature of a protest against the valuation put upon the gas company's property in comparison with the valuation that had been put on other property and particularly on other public utilities? Wasn't that what he was complaining of that the gas company had been assessed relatively higher than some — utility or some other class of property? When I suggest that don't that bring it back to you that was the nature of the conversation or statement from Mr. Haines?

A. I think there was some part of what you said would form perhaps a part of his observation, that is he perhaps said something about the relative increase in his property and other property or the value of other property—no I don't think the increase on the assessment on other properties and protesting that the valuation of his property was unjust as compared with the valuation of city property in general and not with reference to public utilities, at least I didn't get any such thing.

Q. Of course I assume you didn't hear all the conversation?

A. No, sir.

Q. Didn't get much of it, got a few words walking along?
4406 A. There probably was something before what I heard.

Q. It is perfectly fair isn't it to assume what you heard

might have given you an entirely wrong impression of what Mr. Haines was saying if you had heard all he said on that subject, that is true isn't it?

A. I think not because the remarks Mr. Haines was making seemed to be summing up his conversation, his whole position.

Q. Then you only heard the summary of what he said apparently?

A. I heard some of the conversation, including the summary.

Q. You would not want to be understood as saying you heard enough of the conversation to recall after the lapse of years just exactly the idea that Mr. Haines meant to convey would you just from overhearing some things that he said as you walked along together?

A. I got a very distinct impression because as I recall now of some animated discussion there had been about assessments and immediately upon the heels of that hearing Mr. Haines sum up the situation with reference to his company.

Q. Now wasn't the discussion between these people a discussion as to the relative assessments that had been made upon property that was being brought into comparison and wasn't Mr. Haines contending that the gas company's property had been assessed relatively higher than some other properties and wasn't the person with whom he was talking taking an opposite view and insisting that the gas company's property was not assessed relatively any higher than other properties that were being compared? Isn't that the scope of the discussion which you heard?

A. I don't think so. I think that the conversation was along the same lines—I don't think there was any particular protest on the part of the other party and I think that the question of
4407 relative values did come in, but was only a part of Mr. Haines' protest.

Q. At the risk of getting this in twice I want to ask Mr Hanna who is the present assessor in Des Moines?

A. Mr. James Parker.

Q. Who was assessor last year?

A. Mr. Parker.

Q. And who the year before?

A. Mr. Parker would certainly have been assessor the year before that.

Q. Who the year before that?

A. Mr. Parker I think.

Q. So in speaking of Mr. Schramm as assessor you go back several year-?

A. Yes, since the beginning of the Des Moines plan-. Mr. Schramm came in from the assessor's office into the city council.

Q. The beginning of the Des Moines plan- was——

A. Three and one half years ago.

Q. It was some time prior to that Mr. Schramm was assessor?

A. Three and a half years ago he was assessor.

Q. You think he was assessor up to the time he went on the city Council.

A. I think so.

Redirect examination by R. O. BRENNAN, Esq.:

Q. Referring to the l-tter of November 26, 1910 a portion of which you have read into the record, I will ask you if you analyzed in connection with your investigation the language which follows the figures which you have read into the record, namely $1,730,894 the following, I express the opinion that the present value of the plant and assets of the company was largely in excess of this sum?

A. Yes, sir.

Q. So that the letter when he expressed his opinion as to the value of the plant did not limit it to the plant, but included the assets as well.

A. Yes, sir.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

4408 Saturday Forenoon Session.

SEPTEMBER 30, 1911—at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JANSEN HAINES, re-called for further direct examination, examined by Hon. H. W. Byers, testified:

Q. Mr. Haines, you have looked up the items that you were asked to examine some days ago covering the items of credit on the books of the Des Moines Gas Company in favor of the United Gas Improvement Company?

A. Yes, sir.

Q. The first item I wish to inquire about is the item under date February 28, 1907, of amount $2,365.13. Will you please state what is covered by that item?

A. Well, now, I have checked that item with the sheet which was prepared by Mr. Sangster and attached to the sheet that you have there.

Q. Just give me first what that item covers under date February 28, 1907?

A. That item is made up on the first page of Mr. Sangster's sheet and is made up of a number of items which are referred to on the next to the last sheet under the heading, "year ended 2-28-07".

Q. Next to the last sheet of what?

A. Of those three sheets you hand- me yesterday.

Q. That is not what I wanted to know; I want to know from you what the item covers?

A. I am just getting to that. He has that item distributed under a number of heads in the column headed "Year ended 2-28-07"
4409 on a sheet which he has named United Gas Improvement Company analyzed ledger account by years from February 1, 1906, to December 1, 1910. I find that he has not made an analysis of the account, but simply made a summary of some items entering into it. He has used in making up that summary

a different classification, an arbitrary classification of his own which does not correspond to the classification which we used, and therefore it was impossible to make a correct comparison between the two without reclassifying his items according to our own books, and I have prepared an analysis of this account according to the correct classification of our books.

Q. I have not asked you for that at all. I simply asked you to tell me in a general way what is covered by this item of $2,365.13. I want to know whether it is credited for services or whether it is credited for interest or whether it is credited for salaries or what it is.

A. The items covered by it are purely arbitrary items which he has taken according to the classification——

Q. I have not asked you that.

A. You will have to have Mr. Sangster analyze that account before a correct comparison can be made of the account. Now, Mr. Byers, some of these items I can reconcile according to our classification.

Q. I just simply want to know what is covered by that item. You can answer that without any explanation.

A. Mr. Sangster covers in that item, manufacturing, distribution, organization, expenses——

Q. That is where it is charged to. That is not what I am asking you about. Go on with your answer.

A. Office expenses——

Q. Wait a minute. You will have plenty of opportunity
4410 to answer it that is not what I am asking about now. All I want to know now, Mr. Haines, from you, and I have no objection to your putting, when you get through, any explanation you want in there or any other classification. All I want to know in this question, what is covered by that item of $2,365.13.

A. I was just telling you, General.

Q. You was telling me how it is charged on the books. I don't want to know how Sangster has analyzed it.

A. I am just giving it to you.

Judge CARR: I suggest, Mr. Haines, that you go on and answer the question.

A. The items are all covered in Mr. Sangster's classification as manufacturing, distribution, organization expenses, office expenses, general expenses, works expenses, distribution office expenses, store room expenses, appliance demonstration expenses, soliciting expnses, accident and dam-ge, advance insurance, and advertising.

Q. Are you through now?

The MASTER: If you will give the amount of each, you will answer his question.

A. Under the head of manufacturing, $16.08; distribution $16.08; organization expenses $993.52; office expenses $882.72; general expenses $161.52; works expenses $132.85; distribution office expenses $48.82; store room expenses $13.51; soliciting expenses .65 cents; accident and damage $9.38; advanced insurance $90 total $2,365.13, according to the item you asked for.

Q. Well, now is that all the answer you have to make now?

A. That is with what I have already said.
Q. What does the manufacturing $16.08 represent?
A. The manufacturing $16.08 was the traveling expenses
4411 of Rollin Norris, in connection with the inspection of the works during that year.
Q. Who is Rollin Norris?
A. He is superintendent of works.
Q. How does that come to be credited to the U. G. I.?
A. Because the U. G. I. advanced the money for his expenses.
Q. You charged $16.08 of it to manufacturing?
A. There was a total charge to the Des Moines Gas Company of $32.16 and that was divided, one-half was charged to manufacturing and one-half to distribution in the classification of our accounts.
Q. Who do you say Mr. Norris was at that time?
A. Superintendent of works.
Q. Of what works?
A. Of the various works that the U. G. I. was interested in.
Q. Where does he live?
A. He lives in Philadelphia.
Q. And what is his relation to the Des Moines Gas Company?
A. He has no relation to the Des Moines Gas Company except when he is called in consultation.
Q. Now, Mr. Reporter, I wish you would read the last answer.

(Last answer read.)

Q. What do you mean by called in consultation?
A. He is called in consultation about the engineering and operation of the plant, but when he is called in consultation no charge is made for his time, but only for the traveling expenses incurred in connection with his work.
Q. Who does he represent when he is called in conference here?
A. He is the representative of the engineering staff of the United Gas Improvement Company.
4412 Q. You just divided that charge and charged $16.08 to manufacturing and the other half to distribution?
A. Yes.
Q. That accounts for those two items of $32.18?
A. Yes, that is according to our classification.
Q. That covers Mr. Norris' traveling expenses to come out here to Des Moines?
A. It covers a portion of them; undoubtedly at that time he was visiting other plants and in making his circle only a portion of his expenses were charged to this plant.
Q. So he visited other plants, is that the way you understand it?
A. That is the way I understand it.
Q. He stopped here on one of his trips?
A. On one of his trips.
Q. The United Gas Improvement Company divided up his expense when he got back and sent you a statement of what should go on the books here?

A. Sent me a bill for his expenses.

Q. That is the way the item got on your book?

A. Yes.

Q. You had nothing to do with it here except to take the direction that came from U. G. I.?

A. That is not exactly correct; it came in the form of a bill from the U. G. I.

Q. What do you mean by in the form of a bill; wasn't it paid by the treasurer there in Philadelphia?

A. You mean paid by the treasurer of the Des Moines Gas Company?

Q. I don't care whether you call him treasurer of the Des Moines Gas Company or treasurer of the U. G. I.

A. He is treasurer of the two companies.

4413 Q. This item was settled in Philadelphia?

A. No; it simply came as a bill, the same as it would come from any concern furnishing labor or material.

Q. All the Des Moines Gas Company had to do with it here was to make the entries on the books?

A. Certainly.

Q. There was no bill paid here?

A. At that time, in 1907, that bill was paid in Philadelphia——

Q. All you know about it, the bill came here with directions to make the proper entries on the books?

A. The bill was paid in Philadelphia, and the bill was sent out to us, or sent out to me to be placed on our books as giving credit for that amount so paid to the United Gas Improvement Company.

Q. Well, I understand from that whenever the United Gas Improvement Company, which owns all the stock of the Des Moines Gas Company, sends out any of its representatives to look over the property, the expense of the trip is charged to operating expenses here, is that your understanding of it?

A. It is charged in accordance with the classification, which would depend on the character of the work for which they were sent out, but they do not send men out here as a gratuity.

Q. What did his trip have to do with the manufacturing institution here?

A. General, it is just exactly owing to what he did when he was here. He comes out at intervals to inspect the operation, to prepare and discuss the features of the operation from an engineering standpoint, and to discuss with me the contemplated improvements, the question of location of apparatus, and to keep himself familiar with the details of the plant, so that when correspondence
4414 is had between myself and the engineering staff of the United Gas Improvement Company, he can intelligently make out his report of the situation here to the officers who are there.

Q. How often does he come?

A. He does not come out at any particular stated intervals, but generally when there is something of importance under discussion

relative to the construction or operation of the plant. I think it will be safe to say he comes about once a year, or possibly twice a year, depending somewhat on the local conditions and necessities.

Q. Whenever he does come that portion of his expense is taxed here?

A. Only his traveling expenses, not his time; there is no charge made for his time.

Q. And in respect to that a check or draft is sent here from Philadelphia; that is, an authorization or direction as to what entry to make on the books?

A. The same as I would for anyone who renders services and sends a bill for it.

Q. Who directs the accounts to which that item shall be charged, is that done from Philadelphia?

A. Yes, usually done from Philadelphia, because the man who is on the work himself and turns in his expenses would classify the proportion in accordance to what he thought was a fair proportion of the time which he devoted to his work here.

Q. In sending the account or statement here do they include in that statement the total expense of his several trips, so that you know just what proportion to get?

A. No.

Q. You have no way of knowing about that?

A. He makes out his expense account to the United Gas
4415 Improvement Company and classifies that expense account as to what proportion should be correctly charged in proportion to his time spent at these different properties.

Q. You don't see that?

A. No.

Q. That don't appear on your books anywhere?

A. Not at all.

Q. So that whatever they want to charge, they make the charge and direct you to enter it on the books?

A. They make the charge according to his classification. I am familiar with that. I have done a great deal of that work myself and know how it is made out. But obviously that $32.16 would not pay his expenses from Philadelphia and return.

Q. It is not the question of $32.16, but I want to know the method and manner in which this business is done. You say you are somewhat familiar with the way that they make out these statements; do you know how many gas plants the U. G. I. controls?

Objected to on part of complainant as being immaterial.

A. I don't know off-hand. I think Mr. Douthirt has already testified to it.

Q. No, not as to all of them.

A. I wouldn't have any way of knowing; approximately 20 or 30 or 30 or 40.

Q. Do you know how many they have in Iowa?

A. Yes.

Q. How many?

A. I know as a matter of general knowledge, not as a matter of personal information, they are interested in Sioux City, Burlington and Des Moines in Iowa.

Q. So that there would be at least those three Mr. Norris would visit while in Iowa?

4416 A. Very likely.

Q. Now the next item $993.52 just what does that item cover?

A. That is organization expenses. That covers the expenses of Mr. E. C. Morgan——

Q. Who is he?

A. Mr. Morgan at that time was one of the assistants to the counsel of the United Gas Improvement Company. And Mr. D. D. Rinehart, who was one of the auditors of the United Gas Improvement Company, and it covers a proportion of the bill which was rendered by Governor Cummins for legal services in respect to an opinion on the Des Moines Gas Company franchise.

Q. Where did you get that from?

A. That bill of $800 was a part of a bill which he rendered the United Gas Improvement Company, amounting to $1,500 with respect to the franchise.

Q. This was long before that opinion was rendered, wasn't it?

A. No; he rendered a further opinion later on I think, for which he was paid.

Q. Have you got the original bill sent here from the U. G. I. covering this item?

A. Yes, I think I have Senator Cummins' bill and his opinion.

Q. That is not what I asked you. Have you got the original statement of these items that were sent to you by the U. G. I. to be entered on your books here?

A. Certainly.

Q. That will help us if you have that here?

A. I don't know whether it is in the room or not. I was just saying or started to say that bill was apportioned between the $1,500 between the plants at Sioux City, Burlington and Des Moines.

4417 Q. Which $1,500?

A. The bill of Governor Cummins.

Q. Who did the apportioning?

A. That was done by the United Gas Improvement Company; the bill was rendered to them.

Q. That is what I would like to have, the statement of the United Gas Improvement Company sent to you and that you used here in making up the book entry?

A. I think I can get that.

Q. Now do you have the statement that was sent from the U. G. I. to the Des Moines Gas Company from which this item was entered on the books?

A. Yes.

Q. I wish you would let me look at it please?

(Presents statement to counsel.)

Q. This does not seem to cover what I am asking for.

A. That covers the item of $800.

Q. That does not cover the item of $953.53.

A. I have not given the various distributions of these items. They cover a period from March 30, 1906, to February 28, 1907.

Q. Then this is one of the bills that covers part of this item?

A. Yes. Do you want the others?

Q. I would like to have them all.

A. I thought you only asked for that one, General, excuse me.

Q. I notice at the right hand lower corner of this statement written the initials "J. E. 3-31-06 B. P."

A. That refers to the journal entry. J. E. refers to the journal entry, and B. P. means Ben Parks, the book keeper who entered that.

Q. And above the amount is written what looks like O. K. 4-6-06.

4418 A. I think that probably is my O. K. of the bill with my initials on it.

Q. Now have you the others making up the balance of that entry?

A. I have, yes sir. (Witness produces them.)

Q. Now the first one of these three last statements you handed me, which will be marked Exhibits 49, 50 and 52, reads as follows:

PHILADELPHIA, PA., *March* 16, 1906.

Des Moines Gas Company, Des Moines, Iowa, to United Gas Improvement Company, Dr.

Broad & Arch Streets.

Terms Cash.

February expenses of F. C. Morgan.....$69.10"

Followed by what looks like the letter "J." In parenthesis. Organization expenses. At the right hand lower corner the letters "J. E." 31-06 B. P. O. K. J. H. 30-06.

Now that was the authority that you had for making this charge of $69.10 into organization and expenses?

A. That is right. That bill came to me, of course, from the treasurer's office, treasurer of the Des Moines Gas Company.

Q. That you mean came to you from Mr. Lillie?

A. From Mr. Lillie's office.

Q. Do you know what Mr. Morgan was doing just about that time, what his duties were in connection with the U. G. I.?

A. I said he was assistant counsel to the U. G. I.

Q. Lawyer, do you mean?

A. Lawyer, yes; member of the Philadelphia bar.

Q. Was he regularly retained by the U. G. I.; was that your understanding?

A. That is my understanding.

Q. This $69.10 is for some work he did in Philadelphia for the U. G. I. with respect to the Des Moines plant?

4419 A. The $69.10 is for his traveling expense to Des Moines at the time of the organization of the Des Moines Gas Company. No charge was made for his time.

Q. He was here?

A. He came out here from Philadelphia to be here at the time of the organization of the Des Moines Gas Company in connection with some papers which were filed and so on, and this charge is to cover this expense.

Q. When was he here?

A. You mean the exact dates?

Q. Yes.

A. I can't give you the exact date.

Q. Do you have any other memorandum except this one from which you could get it?

A. Yes. He was here on March 1, 1906. My recollection is that he came here a few days before that and remained a few days after that.

Q. When were the articles of the Des Moines Gas Company filed, do you know?

A. March 1, 1906, I think.

The MASTER: Either February 28th or March 1st.

A. They were filed February 28, 1906.

Q. He was here then prior to February 28, was he?

A. Yes; he was here during that period of the organization of the company as attorney or lawyer.

Q. He was here as one of the attorneys of the United Gas Improvement Company?

A. Yes.

Q. Or was he then an attorney of the Capital City Gas Light Company?

A. No, he was attorney for the United Gas Improvement
4420 Company. If he had been the attorney of the Gas Company, we would have paid him directly the compensation for his time, and we only paid him for his expenses.

Q. It is your understanding this simply covers his traveling expenses to Des Moines?

A. His traveling expenses as indicated on the bill.

Judge CARR: Which included of course hotel expenses?

A. Oh, yes.

Q. Now the Morgan bill I have had marked Defendant's Exhibit 49. Defendant's Exhibit 50 reads as follows:

PHILADELPHIA, PA., *March* 31, 1906.

Des Moines Gas Company, Des Moines Iowa, to the United Gas Improvement Company, debtor.

Broad & Arch Streets.

Terms cash.

February and March Expenses of D. D. Rinehart.....$117.92

In parenthesis, organization expenses.

Endorsed: J. E. 3-31-06. B. P. O. K. J. H. 4-2-06.

Who was Mr. Rinehart?

A. He was an accountant who was sent here to open the books of the new company and close the books of the old company, and his expenses but not his time were paid for by the Des Moines Gas Company.

Q. Who was this man?
A. He was an expert accountant.
Q. Was he one of their regular expert accountants?
A. Yes.
Q. Is this item of $177.92 does that cover his entire expenses on that trip here?
A. I believe it does, yes.
Q. He was here in February and March.
4421 A. Yes, he was here a few days before the end of February, and a few days after the first of March.
Q. He was just here long enough to close the accounts of the Capital City Gas Light Company and open the accounts of the Des Moines Gas Company and see that the proper entries were made on the books of the Des Moines Gas Company.
Q. How did he happen to get here, do you know?
A. I don't know exactly how you mean, General.
Q. You mean you don't know what I am trying to get at?
A. I don't understand exactly what you mean?
Q. Did you send for him?
A. No, certainly not.
Q. Did anybody you know of here in Des Moines send for him?
A. No, he was sent by the United Gas Improvement Company.
Q. Who did he represent when he came here, Mr. Marshall, or the Capital City Gas Light Company or the U. G. I.?
A. He represented the United Gas Improvement Company.
Q. Was Mr. Marshall here at that same time?
A. No, I don't think he has ever been here—he has been here, yes.
Q. When was he here last?
A. I think he stopped here some time last winter, I don't remember.
Q. The only time he was ever here?
A. The only time I have any recollection of.
Q. How does it come that he wrote a letter from Des Moines in 1906; do you know anything about that?
A. No.
Q. He was not here at any rate at that time?
A. I don't think he was, but I am not sure.
Q. You would know whether he was here, wouldn't you?
A. My impression was when I answered your question first
4422 that he was here, but I remember seeing him in Chicago some time ago and I had the impression from what he said then that he had never been west of Chicago until some time last winter.
Q. If he was here you have not happened to find any credit for his expenses here, have you?
A. No.
Q. If he was here at that time, you would be apt to find it?
A. That would depend upon what his mission was here.
Q. Don't you know what he pretended to be here for at that time?

Objected to on part of complainant because the witness has stated he had no recollection of him being here.

A. I think the record would show.

Q. You know that the record shows that he pretended to enter into an arrangement between your old Gas Light Company and the new Des Moines Gas Company, and wrote a letter from Des Moines setting out the proposition?

A. Of course I won't testify as to what a man pretended; I will testify to the fact.

Q. If he was here at all in 1906, it was in connection with the Des Moines Gas Company and the Capital City Gas Light Company and the U. G. I.

A. Certainly.

Q. If he had been here for that purpose his expenses would be charged up the same as these other matters?

A. That I couldn't say; it would depend on his mission here.

Q. At any rate it is not here. Now, Mr. Rinehart, have you got any report, or anything on file that he made at that time? I would like to have a copy of his final report as to the condition of the books of the two companies.

A. I think that the first ledger of the Des Moines Gas
4423 Company will show it.

Q. No, I want the report that he made. Did you send for it??

A. Yes, I have sent for the book. There is no report; I simply sent for the books.

Q. You don't mean he didn't make a report to you?

A. Certainly.

Q. Who told you, Mr. Douthirt?

A. No, I sent for the books.

Q. I don't want but one witness on the stand at one time. I think it is entirely improper for counsel to tell the witness what to say. Now, you said that this Mr. Rinehart did not make any report?

A. He made no report of which I have any knowledge whatever, except that he opened the books of the company, started the accounts, instructed our book keepers how to keep them, and they have been kept so ever since, that is the purpose for which he came.

Q. You are ready to swear he made no report and you never seen any report that he made?

A. Certainly.

Q. You know you are not mistaken about that?

A. Absolutely, so far as I know. If he made any report I have absolutely no knowledge of it, except what he shows on our general ledger and journal and cash book. I believe he opened all three books when here.

Q. What did he do with his memoranda?

A. I suppose he entered it on the journal and ledger.

Q. No, but the memoranda, he didn't put all the memoranda on the journal and ledger?

A. That is the only place he would put it.

Q. Do you say he put it there?

A. To the best of my knowledge and belief.

4424 Q. How long was he here?

A. I can't tell you the number of days he was here. I

think in the neighborhood of four or five days or a week, General.

Q. What character of expense does this item cover shown on Exhibit 50, $117.92.

A. It covers the proportion of his expenses from Philadelphia here and return which would be classified and charged to this Company.

Q. Do you mean traveling expenses and hotel expenses?

A. Yes.

Q. It is not a portion of it?

A. It is all apportioned to this plant. If he had made any other investigation or inspection at any other point, part would have been charged there I presume.

Q. Did he at that time?

A. I don't know. I don't know what became of him after he left here.

Q. Is there any way we can tell without having the books of the U. G. I. what he did on that trip and how much should be charged to each place?

A. I suppose you could produce Mr. Rinehart and find out from him.

Q. Can you produce him?

A. I don't know where he lives.

Q. Anyway you have no record from which you can say just what this $117.92 covers except what is shown here on Defendant's Exhibit 50?

A. Certainly not.

Q. That is the only thing you know about it?

A. Except what I testified to.

Q. Except you know he was here during the month of February and some part of March, is that right?

A. Yes.

4425 Q. Now the next one that I have before me here is the Defendant's Exhibit 51, which reads as follows:

PHILADELPHIA, PA., *April* 3, 1906.

Des Moines Gas Company, Des Moines, Iowa, to the United Gas Improvement Company, Dr.

Broad & Arch streets.

Terms Cash.

To Notary service for three month- to March 31, 1906 as follows:

March 2, in re mortgage Des Moines Company

Mr. S. T. Bodine, President	$2.50
Mr. W. A. McCune, Secretary	2.50
Mr. H. G. Lloyd, P. T. Con. Trust Co.	2.50
To W. A. Opdike, Secretary	2.50

The- on March 1, in re Capital City Gas Light Co. by

Mr. S. T. Bodine, President, 9 affidavits	2.25
Mr. James Beal, Assistant Secretary, 9 affidavits	2.25
Total	$6.50.

Stamped on face of paper. Received April 5, 1906.
Answered..... Referred to.....
Date .....
Endorsed J. E. 31-06 B. P., and O. K. J. H. 4-6-06-

Now, all you know about that charge, or credit rather, is what appears on this Defendant's Exhibit 51?

A. Yes, of course the bill for notary services is the charge which is required by the Pennsylvania statute for notary services.

Q. I am not raising any question about the charge or size of the bill. I am trying to find out if I can how you did this business and why you did it the way it appears to have been done. Do you know what those affidavits were.

4426 A. No, I presume they had to do with the transfer of mortgage in the hands of the trustees.

Q. It says, in the Capital City Gas Light Company matter. Do you know anything about what affidavits they had to have—who was Mr. S. T. Bodine at that time?

A. The minute book will show.

Q. Well, he was an officer of the Capital City Gas Light Company?

A. Yes.

Q. Also an officer in the U. G. I.

A. Yes.

Q. All of these bills to which I have referred are bills that were originally presented to the U. G. I. for payment, were they not?

A. Yes, that is correct.

Q. The opinion that you have referred to that was made by Mr. A. B. Cummins was prepared for the United Gas Improvement Company of Philadelphia, was it not?

A. At their request.

Q. Well it was prepared at their request and for them. Now why is it credited up to the U. G. I. in the books of the Des Moines Gas Company?

A. Because the opinion of Senator Cummins, or Governor at that time, was one of the essential features in financing the securities of the Des Moines Gas Company in respect to the trustee and to the subsequent holders of those securities.

Q. Why didn't you charge it up to the Capital City Gas Light Company?

A. Because it passed out of existence at that time.

Q. When?

A. February 28, 1906.

Q. It had not passed out of existence when all these other

4427 men were here, had it, Mr. Rinehart and Mr. Morgan?

A. It was passing out of existence at that time.

Q. Wasn't some of those services, most of them, performed for the Capital City Gas Light Company?

A. No, the services here in connection with the company which was coming into existence at that time.

Q. Who was bringing the company into existence?

A. The incorporators.

Q. And who were they?

A. They show on the minute book.

Q. What did the United Gas Improvement Company have to do with it, why should their expenses be charged to the Des Moines Company?

A. They were expenses they incurred in the organization of the Des Moines Company.

Q. Then they organized it?

A. It was organized under their direction and their ownership of stock.

Q. Have you got anywhere among the files of your Company here a copy of the request that was made to Senator Cummins for the opinion, and his response with his bill?

A. I have had it; I don't know whether I can find it now. I have in my desk, I think, a copy of that.

Q. What was the date of his first charge?

A. I don't recollect.

Q. Have you got something there that shows?

A. I have nothing here except that bill which you have there.

Q. Well this is not the only bill that the senator presented to the Company. The date on this Exhibit 48 which was mailed to you from Philadelphia, as I understand it, is March 23, 1906. You do have, don't you, his bill that he rendered for services?

4428 A. I can produce it I think.

Q. I wish you would do that; that will show the date. Now we will pass that item for the moment and go down to office expenses, $882.72. What is covered by that?

A. You are referring to the $882 in Mr. Sangster's summary of these accounts?

A. I am referring to the $882.72 credited upon your books to the U. G. I. and included in the item that I asked you about this morning of $2,365.13.

A. That item Mr. Sangster has improperly classified and it does not check out with our classification. Therefore I think you have to ask Mr. Sangster to explain how he arrived at that figure. I have on the statement on which I have the account, according to our classification $879.85.

Q. We will take your figures, the difference is so small, and you may state what that covers and let me have the bills and vouchers, whatever you call them.

A. The first item is stationery and office supplies.

Q. How much is that

A. $160.80.

Q. Where is the bill that covers that, which you got from the U. C. I.

A. If you want to go through each one of these items, it will take us two or three weeks. These bills are made out in very great detail and minuteness. I would suggest you have Mr. Sangster check this thing and make an audit of the account. We can produce all of this stuff, but we will have to go to our books and vouchers and it will take us from two to three weeks to prove up each item in detail.

Q. I think we can get along without taking two or three
4429 weeks, because I am only going to cover in a general way the one year and then have you say that is the manner and method pursued in these subsequent years. If you will sit down a minute, maybe we can get along without having that statement; if you will tell me what this stationery and office supplies, as you call it, what it was, and where it come from and when—what I want to get at is enough of these items so that we will know just exactly what they cover and how they come to be charged. I do not want to annoy you or take any more of your time than is necessary.

A. Not at all. I was just giving you an estimate of how long it would take. The stationery and office supplies are paper and printing and report pads, like accident pads, which are forms upon which we make reports of accidents; journal entry sheets, and things like that, which are specially prepared forms to show the accounts of the Company. I referred to the accident reports in there. The accident reports are not charged to the expense of the office properly; they are charged to another item of damages.

Q. In other words, that item of $160.80 represents the stationery the office stationery, letter heads, bill heads and such other stationery as you have to use in the office that was printed in Philadelphia for the Des Moines office and sent here by the U. G. I. with a statement of the account.

A. Yes.

Q. And direction to credit it to the U. G. I. on the books?

A. Such general office supplies—of course the reason why that is purchased from the U. G. I. is that the principal blanks are made up in the same form and used in several places, and a proportion of it is charged to this company, in proportion to the stuff
4430 they receive.

Q. For instance, I noticed yesterday in going through some of these other exhibits, especially a letter signed by Mr. Norris and attached to your estimate for next year appears to have been prepared as a sort of a general circular letter and then the name of the manager written in?

A. Yes.

Q. Now, I suppose what you mean is that the U. G. I. have stationery for all the plants that they control printed in Philadelphia, and in so far as the forms can be general they use them for all their companies and charge this office with its proportionate part of the expense?

A. No, that is not correct. They charge for the actual stationery which is used. That is, if they buy a thousand envelopes or a thousand letterheads, we would be charged only for that thousand at the prices which they pay for them. But if they have a report blank, such as you remember I showed you, the 26 report blanks, those will apply to any place, because their name is not printed in them and they may purchase those in quantities of two or three thousand sheets. Suppose I send in a request to furnish me with say two dozen sheets or pads and they would charge me for that pad;

they keep them in stock in the store room. I purchased them from them the same as I would from any stationer.

Q. You say you purchase them from them the same as you would from any stationery house, you don't do that at all, do you?

A. How do you mean?

Q. You don't purchase them from them in that way at all. The U. G. I. directs just the amount and number of those blanks and envelopes that shall be printed?

4431 A. They never have with me. They may have done so with somebody else.

Q. Anyway, that printing is all done in Philadelphia, is it?

A. I don't know where it is printed; it may be in Buffalo, Syracuse, Philadelphia or any other place, but they carry this form of stationery in stock. When I run out I order it from the U. G. I. and they ship it the same as any stationery house would.

Q. All these authorizations that were here some weeks ago, these are all printed as made out in Philadelphia?

A. The authorization form?

A. Yes.

Q. Yes.

Q. All these annual estimate forms are printed in Philadelphia?

A. I don't know where they are printed.

Q. You don't order any of them?

A. I don't have to order them. I don't use that form.

Q. You did use it?

A. I copied it. I simply copied the annual estimate form that was sent here, only one sheet which was sent here, the original request for the information was sent to me.

Q. That class of printing is credited here to the U. G. I. and is covered by these items for that year anyway, $160.80?

A. I don't know whether it is all covered, but that item covers similar items. All such things might be properly charged to office expenses.

Q. All you know about it is what some officer of the U. G. I. says in the statement that is sent to you to be used for the basis of the credit on the books here?

A. That is not strictly correct, because where the stuff is ordered, these bills are checked here.

4432 Q. Have you that?

A. I don't believe I can locate it.

Q. The next item is $356.55—J. S. Harrison, who is he?

A. At that time was one of the traveling auditors of the company.

Q. I would like to see his bill?

A. That includes his time and expenses while in Des Moines.

Q. That is all right. I would like to see it.

A. There are two bills for that amount here.

Q. Let me have them?

(Witness produces bills.)

Q. That item $356.55 is covered, is it not, by the two exhibits just noted by the reporter as Exhibits 53 and 54, the Exhibit 53 representing $153.13 and Exhibit 54 representing $203.42?

A. That is correct.

Q. Mr. J. S. Harrison, who did you say he was?

A. Mr. Harrison was a traveling auditor, and he and Mr. W. N. Porter——

Q. I want to dispose of Harrison now.

A. Mr. Harrison and Mr. Porter came here to make an audit of the consumers' accounts and cash, and check up the materials and supplies on hand, and check up the meters in stock. They are the force or part of the force of the traveling auditor who make periodic audits of these matters which cannot be sent to Philadelphia and audited there by the Philadelphia force. In other words they come here and audit some 25,000 or 30,000 account- from our consumers ledger and sundry sales ledgers and check up the honesty of the management.

Q. Who are these men checked up to?

A. They send out a notice to each one of the consumers saying "We notice on the books of the Company the amount of your
4433 bill is so much. Kindly return this in the enclosed envelope if correct; if not, indicate it, and then they sign their name at the bottom of it and enclose a stamped envelope addressed to them for reply.

Q. Then, if I understand you, these two men you are referring to are two men employed by the stock owners of this Company to go out and check up the managers of their properties to see whether the business is being honestly done?

A. They are a part of the regular force of the United Gas Improvement Company whose time and expenses are charged to this plant when employed here in making an audit as I have described.

Q. And for the purpose as you stated?

A. For the purpose of checking up the correctness of these consumers' accounts and the cash and the meters in stock and the supplies, all of which are reported in total.

Q. Well, what has the United Gas Improvement Company got to do with the Des Moines Gas Company's honesty of management?

A. They have this to do: they have these traveling auditors in their employ and that gives an opportunity for the benefit of their employment to be given to the Des Moines Gas Company for a limited length of time in order to accomplish this same audit by a general accountant firm which would cost very much more money.

Q. This Company had only been running a few months at that time?

A. I don't know what date they were here.

Q. The first bill is for September 1906?

A. These traveling auditors come in about every nine months to a year. They drop in unknown, unawares and make their audit.

Q. They drop in without notice to you or anybody in control here?

A. Yes, they are sent by the treasurer of the company in Philadelphia.

4434 Q. They come out exactly the same way that the checking auditors of railroads and other corporations go out to check up their agents; that is the way you understand it?

A. Yes, I think so; I think that is a general statement of the proposition.

Q. These two bills, Exhibits 53 and 54 is the only authority that you had for having your book keeper here make these credits on the books of the Des Moines Gas Company, are they?

A. Yes.

Q. All you know about the accuracy of the items is what appears on the face of those two exhibits?

A. Those auditors, of course, make out their expense sheets and turn them into the treasurer of the Des Moines Gas Company in Philadelphia. These bills are approved by him and sent out by him.

Q. That is not correct, is it?

A. That is correct.

Q. Well, that is not where you get the bills from at all?

A. I get them from the United Gas Improvement Company.

Q. So that they make out their bills to the United Gas Improvement Company?

A. Well, General, it simply comes from a confusion of the fact that there is one man instead of two acting for both companies.

Q. If they made their bill to the Des Moines Gas Company and the Des Moines Gas Company's treasurer paid it, it would simply be charged to the expenses of the Des Moines Gas Company and entered into the record of the Des Moines Gas Company, instead of being credited to the United Gas Improvement Company?

A. They practically go through the same process.

Q. Have you got any statement in your books anywhere
4435 from the treasurer of your Company to show these bills were made to him?

A. No except they come from him to me.

Q. He don't send these men out here?

A. Yes, they came out as a part of his general organization.

Q. I thought you said a moment ago they were all the time for the U. G. I. and dropped in and kept checked up the plant for the purpose of testing the honesty of the local management?

A. You misunderstood me. I did not mean to say they simply traveled around. That I mean is, so far as their time of arrival here goes, I have no information of, but their movements are directed by Mr. Lillie.

Q. Do you mean you want us to understand that the auditor that is coming to find out about the honesty of the management would let the treasurer of the company know he was going to check up the company, the very man that has the fund?

A. I am not the treasurer of the Company. They make an audit here locally.

Q. But you do not have anything locally?

A. I have a good deal of money and property.

Q. How much money did you ever have here locally?

A. About, I suppose fron ten to fifty thousand dollars.

Q. I wish you would bring in your bank pass book at the next

convening of court showing the deposits of the Des Moines Gas Company in the local banks, covering say the year 1910.

A. I am perfectly willing to bring the book in, but all the money received by the Des Moines Gas Company is deposited in the local banks, so they will simply show each day's receipts as deposits.

Q. They show when it goes out?

A. The check book will show.

Q. The Bank book will too?

4436 A. Only at the end of the month the checks which have been turned in for payment at the bank.

Q. What checks do you pay with?

A. I pay all checks here.

Q. What checks do you draw here on the funds of the Company?

A. All the checks, except a few, such as checks for bond interest to pay to the trustee which the treasurer draws in Philadelphia.

Q. Who is the treasurer here?

A. Keffer is assistant treasurer here.

Q. He is not doing any business now?

A. During his absence Mr. Sherman is acting in his place.

Q. Who is Mr. Sherman?

A. My book keeper.

Q. He is acting temporarily as treasurer?

A. Just temporarily.

Q. You do not send any checks to pay bills of the U. G. I. to Philadelphia?

A. I always do now. During the years you have under consideration we did not have money enough, so they simply sent them to us as a charge on our books. But I now pay all their bills just the same as I would pay a local merchant or any other bill.

Q. Tell us how you do it—suppose last month the U. G. I. had shipped to you $10,000 worth of cast iron pipe, just tell the Master how you would dispose of the cash side of that transaction?

A. In the first place, your premises are wrong, because they do not ship us cast iron pipe.

Q. But assume that they sent you $10,000 worth of cast iron pipe, how would the pipe be paid for, just — the Master what the method would be?

A. They would render a bill for the $10,000 worth of cast iron pipe.

4437 Q. The U. G. I.?

A. Yes. It would come to my office and the amount of pipe would be checked by the receiving store keeper according to the *weigh*-bills so as to see that the amount was accurate, and he would return that check to my office, and when the bill for the pipe was received by me it would be compared with his check and if it was correct, a voucher made out and a check would be made out in accordance with the voucher on one of the three banks with which we deposit our funds in the city.

Q. Who would the check be payable to?

A. It would be made payable in that case to the United Gas Improvement Company.

Q. And drawn upon the bank here?

A. Yes, and signed by Mr. Sherman as acting for Mr. Keffer, and counter-signed by myself as president.

Q. Where would it be sent to?

A. To Philadelphia, or from whom the pipe was purchased.

Q. It would be sent to the U. G. I. or go to the treasurer and would be counter-signed by the treasurer in Philadelphia and endorsed by him?

A. It would be sent to the United Gas Improvement Company and deposited with their receipts.

Q. What money is it the treasurer has on deposit in Philadelphia that belongs to this Company?

A. The money that is deposited there in order to meet the payments for bond interest.

Q. How does it get there?

A. It is sent there from this office. I send it there.

Q. When do you send it, when the interest is due or before?

A. I try to send it before the interest is due so as to avoid the necessity of his borrowing it.

4438 Q. Mr. Haines, do you have in your office here now any record that is a duplicate of the Treasurer's books in Philadelphia?

A. Well, now, what books do you mean; I have some and not others.

Q. Well, whatever books he keeps as treasurer of your Company.

A. No, I only have our general ledger and journal, a copy of which he has there.

Q. But as I understand it, Mr. Lillie now keeps a set of books at least covering his own transactions as treasurer for your Company, bank books, and probably a ledger and journal and a deposit record; do you have duplicates of those things?

A. He would only need to keep a bank book and check book, because if he makes a payment there on account of bond interest or for whatever other purpose is necessary, it would show on our books; he would make out the voucher there and send it to me to approve and put on my books here. Then he would draw his check and make a payment there from this money I have sent to him, and which he deposits in the name of the Des Moines Gas Company. Do I make myself clear?

Q. Yes, entirely clear. You have not, as I understand it, here any books that are duplicates of his books in Philadelphia?

A. No, we have no duplicates.

Q. You don't even have a copy of his cash register, whatever he keeps his cash account on as treasurer of the Des Moines Company.

A. I suppose he would simply keep that on his check book, because it would correspond with our cash account here.

Q. Then he has nothing to do with any part of the business of the Des Moines Gas Company, except to handle the little money, whatever it amounts to, that must be used at the Philadelphia end to pay interest of the U. G. I. there?

4439 A. That is all he has to do with that account. It is all the cash that he handles, except I don't know whether I understood your question to include what I thought it did. He handles all the cash I send down from this plant to meet these payments. But of course what money he receives from the sale of securities as they are issued, they are deposited to this same account.

The MASTER: You charge him with the money that is in his account as treasurer?

A. Yes.

The MASTER: You credit him with the amount he pays?

A. Yes.

The MASTER: You keep a separate account of that?

A. Yes, just a separate account.

Q. You do have a duplicate of the record that he keeps, don't you; those two books would check up?

A. Certainly, I have a duplicate of his record, or a duplicate of his check book or pass book.

Q. But you do have what could be said to be a duplicate ledger account?

A. Yes; that is, I have the original and he keeps the duplicate himself; it is a part of our regular book keeping.

The MASTER: His entries would be just the reverse of yours?

A. We charge him as treasurer with the money he has deposited.

The MASTER: Then he would charge himself with it?

A. Yes, he would charge himself with it when he made those payments.

Q. I will get what I want in another way. You spoke about when he sells securities; when he sells securities and gets the money for them how do you find out just what money he has got?

A. He sends me the entries to put on the books.

4440 Q. He writes a letter with the statement showing just what securities have been sold?

A. Yes.

Q. Who they were sold to?

A. Yes.

Q. What was received for them and whatever expense was made in connection with the sales and directs you to make these entries on your books here?

A. I don't know that he tells me who they are sold to. He simply sends the entry to put on the books showing the amount received and number of bonds.

Q. Do you remember the last sale of bonds, when it was?

A. No, we can find it in the books in a few moments.

Q. You have his statement showing the sale of the last bond and the statement from which you made up your record on your books?

A. Yes, it is on the journal.

Q. Well, get that, we might just as well have it now. It is the statement I want which Mr. Lillie sends to you.

A. It is copied in the journal.

(Witness produces journal.)

Q. You referred, Mr. Witness, to the record on page 200 of journal #3 as being a copy of all the treasurer sent to you with respect to the sale of bonds in amount of $60,000?

A. I don't think this is his sale of bonds. This is simply an authorization for the issue of bonds.

Q. That is simply a statement covering bond sales for several years and showing balance unsold, don't it?

A. This is the entry for the amount of bonds certified and delivered.

Q. But that is not the entry and that is not the statement that was sent to you by the treasurer for the purpose of making up
1441 his account on your books?

A. No, I think not, General.

Q. Do you have now, Mr. Haines, before you the record which you say is a copy of the statement of the treasurer of the Des Moines Gas Company covering the last sale of bonds of the Des Moines Gas Company?

A. I believe that is the last sale of bonds, General, yes.

Q. Do you have the record?

A. Yes, page 116, Journal #3 of the Des Moines Gas Company.

Q. Now does page 116 of Journal #3 contain all of the record, all of the statement that you have from the treasurer of the Des Moines Gas Company for the last sale of its bonds?

A. I think so, General; the practice is to keep that statement right in the Journal.

Q. I don't care about the practice.

A. Of course I do not keep this think myself; my recollection is this is a copy of the exact statement.

Q. Have you the exact statement?

A. I think it is on file somewhere.

Q. I wish you would bring that, then we can tell.

A. This statement is sent to me by the treasurer and I turn it over to the book keeper and it is copied right into the Journal as it is sent, unless there is some error in copying, this would be an exact reproduction of that statement.

Q. What I want, Mr. Haines, is everything that you have now from the treasurer from which you made the entries in your books covering the last sale of bonds of the Des Moines Gas Company.

A. Your own book keepers have been over all this. Mr. Sangster had opportunity to investigate this.

Q. I would much prefer to have it from you; if there is anything I would like to have it.

At this time an adjournment was taken until 9:30 a. m. Monday October 2nd, 1911.

4442 Monday Forenoon Session.

OCTOBER 2, 1911 — at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JANSEN HAINES, continuing his direct examination, examined by Hon. H. W. Byers, testified:

Q. Now, Mr. Haines, on Saturday forenoon we were inquiring about the statement from the treasurer covering the last sale of bonds, did you find that statement?

A. I did.

Q. You have it with you?

A. This is it, yes sir. This is the entry for placing on our books in Des Moines, of the Des Moines Gas Company, and a letter accompanying it, and my acknowledgment of the letter, under date of October 2nd, 1911.

Q. Defendant's Exhibit 55, Mr. Haines, made up first of your acknowledgment to Mr. R. C. James, of October 5, 1910; his letter to you of September 29, 1910, and the sheet marked "Des Moines Gas Company Journal Entry, September 15, 1910," is the statement that you produce as being the authority for the entry on the Des Moines books of the sale of the last bonds sold?

A. Yes.

Q. Now, this entry on the books of the Des Moines Gas Company, Mr. Haines, after the heading of the date, says "Sundries" and then "Treasurer $77,107.50." Now that item indicates what?

A. Which item is that?

Q. The item of $77,107.50—what does it mean when you get it on your books here?

A. That would mean the amount of cash received for the
4443 sale of $81,000 worth of bonds.

Q. That would mean a charge to the treasurer, Mr. Lillie, of that much money?

A. That would mean a charge to the treasurer, Mr. Lillie, as Treasurer of the Des Moines Gas Company for that amount $77,107.

Q. In other words, when that entry was made on the books that indicated that Mr. Lillie had that money in his hands in Philadelphia, didn't he?

A. That he was charged with that much money as treasurer of the Des Moines Gas Company.

Q. That was not the question.

(Question repeated.)

A. I don't suppose he had it in his hands; he probably had it in the bank.

Q. It indicated that he had that much money at that time that belonged to the Des Moines Gas Company.

A. He was charged with that much money that belonged to the Des Moines Gas Company.

Q. Why do you make a distinction between having the money and having it charged?

A. I don't understand what you mean by having the money or having it charged.

Q. It want to know whether he had that money at that time or had it been paid out?

A. Oh, he had the money; had on deposit in the bank to his name as treasurer of the Des Moines Gas Company.

Q. That is all I wanted. How was it paid out and when?

A. You will have to turn to Mr. Lillie's check book to find that out.

Q. Have you got something here that will show; we haven't Mr. Lillie's check book here, you know?

A. Yes, the entries would be sent to me; if he paid it out on
4444 his check as treasurer of the Des Moines Gas Company in Philadelphia; he would send the entries to be made on our books, crediting himself with that amount and charging the account for our entry here, on whatever account it was paid out here.

Q. Well, has it been paid out?

A. Why, I presume it has, General; our books will show.

Q. Is the book here that will show?

A. I suppose all of our books are here and they will show. Mr. Hall and Mr. Sangster have been over them and they should be able to tell you whether they will show or not.

Q. You can turn to the ledger account very promptly can-ot you?

A. It is probably more than one entry, probably a number of entries; we will send for the books and bring it in here and let your auditors make an audit here if you wish.

Q. Mr. Haines, I want this testimony from you and not from Mr. Sangster or somebody else, or some of your people; I don't care if there is somebody else among your men that can do it better than you can. You ought not to have any trouble to tell where that $77,-107.50 went to.

A. I won't undertake to tell you where all the funds have been distributed without the books.

Q. Now the next journal entry is "Property Purchased $4,050.00" what does that mean?

A. That represents the discount on the sale of these bonds.

Q. That item of property purchased is just simply the term you used to balance the account, to show the discount on the bonds, that is all that is?

A. The discount on the bonds is charged against the property purchased.

Q. Well, what do you mean by the property purchased?

4445 A. Well the property purchased account is the original account of the properry which was purchased.

Q. You mean whatever was purchased, that the $81,000 in bonds is charged up to the full $81,000 and that is what the entry means, is it?

A. Well, General, I don't think that you and I understand the same thing by the entry. The books will show what the entry means; I prefer to produce the books.

Q. Will the books say anything different from what you furnished me?

A. They will show what became of the money; that is what you asked me for.

Q. As I understand it Mr. Lillie is charged with $77,107.50 on the theory that that much money actually came into his hands for the sale of bonds in the sum of $81,000.

A. There is no theory about it; we are not dealing in theories; we are dealing in facts; that is a fact that he was charged with that much money.

Q. Why are you so positive about that being a fact; do you know that Mr. Lillie actually had this money or he got it for these bonds, other than simply a book matter all the way around?

A. I will show you what proof we have of it in a minute.

Q. While they are getting that, you stated yesterday when I was asking you about this——

A. I would rather answer this other question first, General.

Q. All right.

Judge CARR: We have Mr. Lillie's check book in which these accounts were kept. Mr. Haines assumed they were here; they are at the office and we will have them here in a moment.

4446 The WITNESS: Have you that statement General?

Mr. BYERS: No, I have not,

The WITNESS: Here it is, I have it. Now, General, if you will step over here I will show you this check book.

Judge CARR: You had better make your record as to what proof you have.

Q. Do you now have the check book of Mr. Lillie that you referred to a moment ago from which you said you could find the proof of the payment of this money or receipt of the money?

A. I have.

Q. Will you produce it, please, and have the reporter mark it "Defendant's Exhibit 56?" You have had it marked as Exhibit 56?

A. I have.

Q. Now let me look at it.

(Witness produces book.

Mr. BYERS: Let the record be clear that Exhibit 56 is the book produced by the witness Haines as the check book of Mr. Lillie, treasurer of the Company. Now this Exhibit 56 you say is the check book used by Mr. Lillie in his business with the Des Moines Gas Company?

A. As Treasurer of the Des Moines Gas Company.

Q. I wish you would call my attention to the place in this book where you say the proof can be found that Mr. Lillie received $77 thousand dollars and a fraction for the $81,000 in bonds; what there is in that book that will show he got that money from anybody from any place?

A. That is the entry which he has made in his check book and it is sufficient proof for me to believe that his transaction was made in accordance with his entry.

Q. I know, but it is not proof sufficient to you that I am looking

for or that the Master is looking for. Is there anything else
4447 than just the memoranda that is on the page marked Defendant's Exhibit 56 that shows anything about the money?

A. There is this—this book is a regularly kept check book, kept in the usual form, in the way that practically all check books are kept by competent business men. That is simply one of the entries in the book and there is every indication that his book is properly kept.

Q. Who were the checks made payable to, you are talking about?

A. I am talking about the check book.

Q. You mean you find in Mr. Lillie's check book his ledger account showing that he actually got this money and paid it out?

A. I didn't say that. I said I find in his check book the entry which was made.

Q. Let me see if I can find it out. (Check book examined by counsel.) Is this entry on the back of the three stubs of date June 30, July 16, and July 29 all the memoranda that can be found in this Exhibit 56 referring to this sale of $81,000 of bonds?

A. You will have to show me the book before I can answer.

(Counsel produces book.)

(Question repeated.)

A. This is all of the entry in this book. The balance of the entries covering this would be found in the minute book and journal and ledger of the Des Moines Gas Company.

Q. I am not asking you about any balance; just answer the question as it is stated there.

A. I think I have answered it.

Q. Do you know whose handwriting that entry is in?

A. No, I do not. It is made under Mr. Lillie's direction as treasurer of the Des Moines Gas Company.

Q. Do you know who made that entry?

A. How do you mean?

4448 Q. Who wrote it on there?

A. Who did the actual work of writing the entry on this sheet of paper with the pen?

Q. Yes.

A. I haven't the faintest idea.

Q. When was it put there?

A. It was put here under date of September 15, 1910.

Q. You read that, did you, from the entry?

A. I did.

Q. Do you know when it was placed there?

A. I haven't the faintest idea.

Q. When did you first see it there?

A. When I asked for it just now.

Q. Now my original question, to get back to it, Mr. Witness, was to inquire of you with respect to the money for the sale of the $81,000 in bonds, and you said you would furnish me the proof in the check book; is this the proof you refer to, found here on Defendant's Exhibit 56?

A. Certainly; that taken in connection with the minute book and our general books would be sufficient proof for any bookkeeper to determine the question you ask.

Q. Is that all the reference you have of it in your office, what appears on this Exhibit 56, of this money $77,107.50?

A. No, certainly not. In the first place this check book is not a record kept in my office. This is a record the treasurer of the Des Moines Gas Company keeps in Philadelphia.

Q. Doesn't your record agree with this?

A. Certainly. And this entry which is marked Exhibit 55 is the entry which was sent me by the treasurer of the Des Moines Gas Company when he received this $77,107.50 for the sale of
4449 these bonds, and when he deposited this $77,107.50 in the First National Bank of Philadelphia as is shown by the record which I made of it at or about that time, or under date of September 15, 1910, on Exhibit 56. Does that answer your question?

Q. Not quite, Mr. Haines.

A. If you would only tell me what you are trying to get at I would be very glad to help you.

Q. I will tell what I am trying to get at. It is not the question you suggested to the Master a few moments ago that I am worrying about at all—as to whether or not these entries were made as you say they are made, or whether they agree with your books or whether they are correctly made; what I am trying to get at is just where this money went; I am trying to get at the method of business of the Des Moines Gas Company and the United Gas Improvement Company; there need be no misunderstanding about that?

A. We will take out hooks and go right to it. Our books will show it directly.

Q. No, I will take my own method. You say the $77,107.50 actually came into the hands of Mr. Lillie in money; now what I want to know from you is when it was paid out and to whom?

A. That we will show by our own books; that is our journal, ledger and cash book, and by the stub of the check book which was kept by Mr. Lillie, and by the cancelled checks to correspond with these stubs.

The MASTER: Is there no order issued by the president for the payment of this, or how is that done? For instance, a bill comes here now and is there a warrant issued by the president and countersigned by the secretary, directed to the secretary?

4450 A. If a bill comes in, Your Honor, the treasurer don't pay it, except in a very few instances. He only pays approximately thirty or forty bills a year, including interest. But the bills that are paid for materials, supplies and current operation business are all paid in Des Moines by checks drawn on the Des Moines banks and signed by the assistant treasurer of the Company and countersigned at this time by myself as president.

The MASTER: Is a warrant issued, an order drawn by the presi-

dent of the company upon the treasurer or assistant, and countersigned by the secretary of the company, or how is it?

A. I don't quite understand what you mean by warrant.

The MASTER: I mean by that an order on the treasurer to pay this amount of money?

A. If the treasurer was to pay a bill for interest or any other purpose, he would make out a voucher for that amount and that voucher would be sent to me with an explanation for approval and if it was for interest, it would be self-explanatory, and I would approve it and he would pay it out of his treasurer's account and make the entry in his check book and the voucher would be entered on our books here.

Q. Let me ask you, Mr. Haines, if this is not true, see if I cannot help you to find this right here: the entry you called my attention to purports to be the treasurer's account carried on the back of his check stubs. He carries over on to the back of three checks that appear to have been drawn, one on June 30, 1910, one July 16, 1910, and one on July 29, 1910, a balance of $26,922.01. Then the next item is 9=1 deposited interest on daily balance, August $18.04. Then under 9=15 deposited U. G. I. sale of $81,000 par bonds at 95, equals $76,950. Nos. 1017 to 1097 inclusive; accrued interest 9=1 to 9=15 $14. at 5% $157.50; now that means,
4451 does it not, just what it says, that there was deposited with the U. G. I. that amount of money?

A. No, sir, exactly the reverse. That money was received from the U. G. I. and deposited to his account as treasurer of the Des Moines Gas Company.

Q. Then it was received from his account?

A. That is exactly what it states.

Q. The money then, if there was actual money, came from the U. G. I. to Mr. Lillie?

A. Certainly.

Q. Let me see if I can't show you where it went to. Following in the same book on August 30, 1910, is the stub of a check showing payment to the Commercial Trust Company, six months' interest due, 9-1-10 on first mortgage 5% twenty year gold bonds, No. 109, or amount; I don't know whether it is number or amount. The figures are 109,730. less amount held in treasury $81,000. Then the figures 101,630 interest on 101,630 for six months $25,400. Of course, it was no part of that money, was it?

A. What part of the money?

Q. Was that a part of this sale of $81,000 bonds—when was that sale?

A. The $77,107.50 that went into the deposit of the treasurer together with what other deposits he had there and the interest on bonds, preferred stock contracts, and retirement of preferred stock contracts was paid out of that, just as everything else would be paid out of it. You can't say a part of that money went to any one purpose; it went into the deposits to the account of the Des Moines Gas Company, or rather to the treasurer of the Des Moines Gas Company

and stood in the name of the treasurer of the Des Moines Gas Company in the First National Bank.

4452 Q. Do you know when this sale was made?

A. The sale of bonds was made?

Q. Yes.

A. Have you got the minute book?

Q. This memoranda shows September 15, but that couldn't be the time they were sold?

A. Well, we will produce the minute book and find out when the sale was made.

Q. You were down there about that time, weren't you, in Philadelphia, in September, 1910?

A. I was there in October; I am not sure, probably I was, I may have been. I really would not want to answer without looking it up. If you want me to I will, I think I have the record of it. Now, General, Defendant's Exhibit 27, the stockholders and directors minute book of the Des Moines Gas Company, No. 1, on page 219, at a meeting of the board of the Des Moines Gas Company, held of date August 15, 1910, has the following minute: Sale of $81,000 worth of bonds, authorizing the treasurer to sell at 95 accr-ed interest $81,000 of the Company's first mortgage bonds, being $32,000 par value of bonds now held in the Company's treasury and $49,000 par value of bonds for certification of which provision has been made at this meeting.

Q. Are you giving that now as the date of the sale; that is what I am trying to get at, the date of the sale?

A. Now, let me take the check book and I believe I can figure out when the sale would have been.

Q. I wish you would take your pencil a minute and make some figures for me, if you care to. I find that on the 31st day of August, 1910, following the entry on the book, the checks I have referred to heretofore in defendant's Exhibit 56, the following amount

4453 entered: As August salaries $833.33 to S. T. Bodine, W. Clark, L. Lillie, W. F. Douthirt and J. A. Pearson. On September 15, the date that this deposit is noted here on the back of the checks referred to heretofore, is the stub of a check drawn to the United Gas Improvement Company for six months' interest to 9-1-10 on preferred stock contracts of this Company at 6%, $14,222.67; on the same date September 15, 1910, I find a check which purports to have been drawn payable to the United Gas Improvement Company and the stub shows the amount paid pursuant to a resolution adopted by the board 8-15-10 on surrender for cancel of preferred stock contracts $63,236.41; then on October 3, 1910, September salaries $833.33 and on October—I don't know whether it is 4th, I guess it is 24th, a check to yourself for $50 and another one of the same day for $50——

A. What date was that?

Q. October 24th; they are both on October 24th. Now will you foot up that amount and see if that does not about account for the sale of these bonds?

A. Have you got it footed up?

Q. No, I didn't foot it up. What does it amount to?

A. The total of these items which you have just given me would amount to $79,225.74.

Q. Then if I understand this record correctly here, on September 15, 1910, the United Gas Improvement Company bought from its treasurer, who is the treasurer of the Des Moines Gas Company, $81,000 worth of bonds for the sum of $77,107.50 and out of that this $63,236.41 to retire stock contracts, and $14,222.67 interest on the contract was paid to the United Gas Improvement Company; is that right?

4454 A. No, it is not right.

Q. The truth, I suppose, is all there was to it was simply a book entry, isn't that right, so far as Mr. Lillie is concerned?

A. Your statement of the transaction in the first place is incorrect.

Q. In what respect?

A. If you will read the statement perhaps I can correct you, if that is what you want.

Q. Yes, I want to get it right. I want to know just how this business is done.

A. In the first place, the United Gas Improvement Company bought these bonds, not from its treasurer, but from the treasurer of the Des Moines Gas Company, upon the authority of the board of directors of the Des Moines Gas Company.

Q. Who were they?

A. As already shown, in previous testimony.

Q. Who were the directors you claim authorized it?

A. I will look at the minute book and see. On August 15th, the directors at that meeting were President Bodine and directors Clark, Douthirt and Thompson constituted a quorum, of the Des Moines Gas Company.

Q. President Bodine is also vice president of the United Gas Improvement Company, or was he president?

A. Mr. Bodine, I think, at that time was vice president of the United Gas Improvement Company.

Q. All these men whose names you read are officers of the United Gas Improvement Company, as well as of the Des Moines Gas Company?

A. Director Clark, that is Mr. Walton Clark, he was I think third vice president at that time and general superintendent in charge of the superintendent's department. Mr. Douthirt and Mr.

4455 Thompson they are all employed by the United Gas Improvement Company in the active operation of its business and the business that comes to it by reason of its—well in the operation of its business.

Q. Its, whose business?

A. The United Gas Improvement Company's business.

Q. They are all officers of the United Gas Improvement Company?

A. I don't think Mr. Thompson was an officer.

Q. How did he come to be authorizing the sale of bonds in the Des Moines Gas Company—is he an officer of the Des Moines Gas Company?

A. He is a director of the Des Moines Gas Company and in that capacity he voted on the sale of these bonds.

Q. What is his relation to the United Gas Improvement Company?

A. He is employed by the United Gas Improvement Company in the capacity of assistant to Mr. Clark. I do not think his title is assistant to the vice president but——

Q. Is there anything in that record, that minute book that authorizes the sale of these bonds to the United Gas Improvement Company at 95 per cent.

A. I think so. It is in the authorization to sell the bonds at 95 per cent to the United Gas Improvement Company, and the United Gas Improvement Company was the only purchaser who would pay such a price. No other concern would buy them except some one who was interested in the property, and to protect itself——

Q. You mean except some one who was buying their own bonds?

A. I don't see how you can say that.

Q. I will not argue it with you. I notice on the back of the list of check stubs——

A. I did not complete my answer to that previous question.

4456 The first question that you asked, when I stopped the reporter and asked him to read a part of the question.

Previous question read as follows: Then if I understand this record correctly here, on September 15, 1910, the United Gas Improvement Company bought from its treasurer, who is the treasurer of the Des Moines Gas Company $81,000 worth of bonds for the sum of $77,107.50, and out of that this $63,236.41 to retire stock contracts, and $14,222.67 interest on the contract was paid to the United Gas Improvement Company; is that right?

A. I can't answer that question until I see the check book. I want to see what the previous balance was and the subsequent balance was. The retirement of preferred stock contracts and the interest I think was paid out of the total deposits on hand at that time.

Q. What were they. I want to know whether any part of this $77,000 of the proceeds of these bonds went to the United Gas Improvement Company to retire stock contracts, and if so, how much?

A. The proceeds of the sales of bonds was deposited to the treasurer's account and the money which was used together with the deposits which were received as remittance from Des Moines and interest and other balances in the bank and from every other source—the preferred stock contracts interest I think and the salaries, and the two $50 checks which were paid to me for my expenses returning to Des Moines from Philadelphia, were all paid out of the money which the treasurer had deposited to his account in the bank and which was or had been received from these various sources I mention.

Q. Including the bonds?

A. Including the bond.

4457 Q. Then the answer is that the $77,000 did go to the U. G. I. for the purpose of paying interest, salaries and retiring a certain amount of preferred stock contracts?

A. It is true in part; it went together with whatever other deposits he had.

Q. The treasurer according to his statement on the back of these three stubs that I have referred to, made as of date June 30, July 16, and July 29, 1910, had on hand $26,922.01. Now it is fair to assume that is what he had after the payment of the check of July 29, 1910?

A. Well, the account is balanced at the foot of every page. You can tell——

Q. No, you can't tell. Now it is fair to assume that is the balance carried over?

A. I don't want to assume anything. Let me have the treasurer's account on our ledger; that will show exactly.

Q. Now to make this little checking up complete you had better have your own bank book there too, because I am going to inquire about what you have here.

A. We have them all here.

Q. Now, then, what was Mr. Lillie's balance on July 29, 1910?

A. I haven't got it on July 29. It is on the 31st here, July 31, it is $5,920.89.

Q. That don't agree with his account here?

A. Don't agree with his account of that date?

Q. No.

A. Of July 31st?

Q. No.

A. You better get your book keepers and help you check it out?

Q. At least, the check drawn here, Mr. Haines, is a check 4458 drawn for July 29, 1910, for $833.34 by Mr. Lillie to the First National Bank, and then he carries it over from July 29th, 1910, on the back of these stubs, where he is carrying forward his balance $26,922.01.

The MASTER: Your books show a different date of entry?

A. What is your question?

Q. My question was, what was Mr. Lillie's balance on the 29th day of July, 1910, or the 20th day of July 1910, if you prefer to have it that way?

A. The balance as shown by his check book is——

Q. Let me have it a minute, Mr. Haines, and I will get at it in another way.

Judge CARR: What is the amount stated there?

A. $26,922.01.

The MASTER: The books do not agree as to the dates; that is the trouble.

A. His balance on the 31st of July, 1910, which is the way in which the books are kept, was $5,920.89.

Q. On the 31st, you say?

A. Yes.

Q. What do you say the balance was?

A. $5,920.89.

Q. That is what your books show?

A. That is what his book already offered in evidence shows too.

Q. You say that is what his book shows?
A. That is what his book shows.
Q. Perhaps we had better let his book speak for itself?
A. It does.
Q. What does this $26,922.01 carried to the last page, July 29, 1910, what does that represent?
4459 A. That represents the balance which the treasurer had on deposit after entering his receipts and deducting the checks paid by him up to the period at which the balance was made.
Q. Represents exactly what I stated it did, does it not, the balance after the payment of the last check there on July 29, 1910, which appears in Mr. Lillie's balance?
A. It does not represent the balance after the payment of that check, because there are receipts after the payment of that check under date of August 2nd, interest on daily balance $1.12 and August 22nd $15,000.
Q. But you are away over in August now.
A. August 26th, $6,000.
The MASTER: On that day there, July 29th, I don't see how that would affect it.
A. That is the date on which the last check was drawn, but not the date at which the balance is made. The balance is not made until after all these deposits have been received. It shows right here on the book.
Q. Whatever the fact may be about the dates of these entries and the balance Mr. Lillie had on hand just prior to the issuance of a check on August 30, 1910 and before receiving the September money for these bonds $26,922.01 didn't he?
A. That is the balance $26,922.01 which is shown as carried forward from the previous page on his check book Exhibit 56, being the difference between the receipts by him or money deposited by him and the checks paid by him prior to that date.
Q. Prior to what date?
A. Whenever that balance was carried forward.
Q. When was it carried forward?
A. It was carried forward prior to September 1st.
4460 Q. When did he make the balance—didn't he make it on the day he drew the check July 29?
A. Not necessarily.
Q. Isn't it written on the stub here?
A. No, it is not; in fact it shows to the contrary.
Q. Well, give us two days between which you say that was?
A. It is very evident after this check, July 29, 1910, was drawn there are three deposits——
Q. I'll get to the deposits later. I want to get the balance on some day when you are willing to fix the date of the balance.
A. Some time prior to September 1st, on this book.
Q. You are sure it is before September 1st, are you not?
A. Yes, I think it is before September 1st.
Q. Now he makes an entry on the book here, does he not, on the very first day of September, for deposit, interest on daily balance for August $18.04.

A. That is correct.

Q. Now it is fair to assume, is it not, that the balance $26,922.01 was his balance on that day and before the deposit of this $18.04.

A. That would depend on whether there were checks drawn between those two periods, General.

Q. We are safe in assuming anyway it was before the first of September?

A. It was about the first of September.

Q. Now the next check that seems to have been drawn here, can you tell there what Mr. Lillie's balance was on the 1st of September, 1910, according to your books?

A. On August 31, the balance was $688.68.

Q. On August 31st?

4461 A. Yes.

Q. How much do you say it was?

A. $688.68.

Q. Now that is August 31?

A. August 31.

Q. Now he has here an entry just prior to this September 1st, $26,922.01; now what payments have you got charged up to him there in August; he seems to have drawn two checks according to his check book in August.

A. There is a payment for salaries $833.33.

Q. What date have you got that on?

A. That is entered under date of August 31—I'll have to go back to the vouchers.

Q. Let it go at that, August 31.

A. Paid to the Commercial Trust Company six months' interest on first mortgage bonds $25,400.

Q. Now that is $26,233.33?

A. That is all that is charged against him; I mean that is all that is credited to him.

Q. There is $18.04 somewhere, isn't there?

A. That is not credited to him. That is charged to him. That is interest on daily balances.

Q. That means that he received $18.04?

A. He received $18.04 from the bank as a credit to his account in the bank.

Q. That makes the balance just that much larger?

A. Yes, would make it $18.04 larger in the bank.

Q. Now, what do you say you have his balance on the 31st day of August after the payment of these checks?

A. $688.68.

4462 Q. I have it $706.72; that of course would go into his September account, $18.04, $688.68?

A. That is what I have here.

Q. Then on the 1st day of September his balance here as he has it is correct $26,922.01?

A. Yes.

Q. Out of that he paid these two items that you gave me $25,400. for interest and $833.33 for salaries which amounted to $26,233.33

and left in his hands on the 31st day of August $688.68. Now then what money did he receive if any during September and prior to the 15th according to your books?

A. During September to prior to the 15th?

Q. Yes.

A. I can only give you during September.

Q. Your books don't show any?

A. Yes, my books show, the ledger of the Des Moines Gas Company, No. 2 shows that he received $77,107.50.

Q. That is on the 15th, I am talking about the time prior to that; there is nothing prior to that?

A. He also received $18.04 entered under date September 30th. Now I will turn to the entries and see what I can find. This won't show the date of when that was received. That will show on his check book, and the voucher would show.

Q. Then if I have this right, Mr. Lillie had left in his hands after this sale of the bonds $77,125.54.

A. I don't know whether you are right or not.

Q. I have added $18.04 to the $77,107.50, so that on the 15th day of September after the transaction, Mr. Lillie would stand charged with that amount, $77,125.54.

A. Charged here under date of September 30th. I don't know what the exact date would be but some time prior to that.

4463 Q. Don't you think he has it right here on the 15th day of September?

A. If he has it entered that way, undoubtedly that would be correct. I was reading from the ledger account in the books of the Des Moines Gas Company and not from his book.

Q. It was September 15, was it not, that he received and noted on his check book the $77,107.50?

A. That is correct.

Q. He had $18.04 before he got that that should have been charged to him?

A. Yes, he had $18.04, he had received $18.04 under date of September 1st, and it was charged to him as a deposit on interest daily balance in August.

Q. In addition to that he had a little balance of $688.68?

A. He had a balance on September 1, of $688.68 as shown by our ledger account of the Des Moines Gas Company.

Q. So that when he made the transfer of the bonds then he stood charged with $77,814.22, didn't he?

A. $77,814.22 I think would be correct.

Q. $77,814.22 now that is what he had in his hands when he got the bonds, and what was the very next thing that he paid out?

A. He paid out a check to the United Gas Improvement Company, six months' interest to September 1st on preferred stock contracts at six per cent.

Q. What is the date of that check?

A. September 15, $14,222.67.

Q. What is the next?

A. The next amount of the check is $63,236.41.
Q. Who was that payable to?
A. September 15, payable to the United Gas Improvement Company, amount paid pursuant to resolution adopted by the
4464 Board 8-15-10 on surrender for cancel of preferred stock contracts 13.307453 per cent of total amount outstanding $474,089.20.
Q. Now give me the amount of the check?
A. $63,089.20. Interest 9-1 to 15-10 at six per cent $147.21. Total $63,236.41.
Q. Now let us see what these two checks amount to.
A. $77,459.08.
Q. So that we have finally worked out, have we not, from Mr. Lillie's books that the entire amount that was received upon the sale of $81,000 in bonds was paid to the U. G. I. and in addition thereto something like 250 odd dollars of the same balance that was left over from some other receipts?
A. The amount of all the retirement of the preferred stock contracts and interest and salaries was paid.
Q. There is no salaries in this?
A. I guess not in this item, but this amount of interest and retirement of the preferred stock contracts was paid among other things out of the proceeds of the sale of bonds.
Q. There is no among other things to it. Every cent of the money now that the treasurer claims to have received for the sale of these $81,000 in bonds was immediately turned over, if he had the money to the United Gas Improvement Company to cancel preferred stock contracts and interest.
A. To pay interest and cancel preferred stock contracts.
Q. All of it?
A. Practically all of it.
Q. It was more than all of it?
A. Yes, I think more than all of it, because I don't think the sale of the bonds would have provided enough.
4465 Q. So that the sale of bonds you say was authorized by the officers of the Des Moines Company?
A. By the Board of the Des Moines Company.
Q. Which was made up of officers of the United Gas Improvement Company directing the sale of $81,000 of these bonds to retire preferred stock contracts that were then held by the United Gas Improvement Company; is that correct?
A. No, I should not say they directed them for that purpose.
Q. You would not say that with this record before you?
A. I don't think it appears from this record.
Q. It wasn't intended to appear from this record?
A. Nor do I think this was essentially the purpose. The preferred stock contracts were retired when sufficient funds to retire these bonds were offered for sale and the treasurer was able to sell them to the United Gas Improvement Company at 95.
Q. Was you down there when this transaction took place?

A. I was not in the room when it took place.

Q. Were you consulted?

A. I was not asked to advise about it; I was informed about it.

Q. What was your relation to the Des Moines Gas Company at that time?

A. I was manager.

Q. Did you have any relation with the United Gas Improvement Company?

A. I did not.

Q. Well, now, when did you first know about this transaction; did you know about it the other day when you were on the witness stand?

A. Oh, yes; when the entries came through I did.

Q. You knew about it when I was inquiring of you early in this trial as to who held these bonds and who they were sold to and what was done with the money?

4466 A. I don't remember in regard to who held the bonds. I was not familiar with who purchased the bonds until I saw this check book of Mr. Lillie's, I had not that information.

Q. You are president of the Company now?

A. Yes.

Q. Where do you think the United Gas Improvement Company's officers, acting as officers of your Company, had any authority to use that money for that purpose and to use these bonds for that purpose?

Objected to on part of complainant as incompetent and calling for the conclusion of the witness.

A. This is a question of law you will have to argue with counsel.

Q. You think it is a question of law?

A. From the way you put it, I do. You put it to me as a question of law.

Q. No, sir; I do it to find out what you know about your own company. You know the authority your officers have for issuing bonds?

A. I presume that would be given them by virtue of the articles of incorporation and the by-laws of the company; I really am not familiar with that.

Q. Your counsel have introduced into this record for some purpose the other day a mortgage on this property here.

A. Yes.

Q. Securing and authorizing the issuance of bonds for a specific purpose?

A. Yes.

Q. You knew that, didn't you?

A. Yes.

Q. You have examined that mortgage carefully, haven't you?

A. Some time in the past, not recently.

Q. Is there any authority in that mortgage as you understand it for this sort of business?

4467 A. What business do you mean?

Q. Issuing these bonds under the direction of the officers of the U. G. I. Company who were also officers of the Des Moines Company, to be sold to the U. G. I. at a discount and the money to be turned over to the U. G. I. to take up stock contracts?

Objected to on part of complainant as incompetent, calling for the conclusion and opinion of the witness and not the best evidence.

A. Is there any authority in this mortgage—you refer to this mortgage shown in Exhibit 27?

Q. Is there any other mortgage except that one on your plant that you know of?

A. I am trying to answer your first question.

Q. I am referring to the only mortgage I know of that is on your plant.

A. Of course the bonds in the first place are not issued by the U. G. I. Company. They are issued by the Des Moines Gas Company. They could not be issued by the officers of the United Gas Improvement Company acting as such. That is correct, isn't it?

Q. Is that your answer?

A. To part of the question. Does your question go to whether these bonds could be issued by the officers of the Des Moines Gas Company?

Q. No.

A. Isn't that part of the question?

Q. They are already issued, as I understand it, it is simply a question of delivering them.

A. I am trying to answer your first question there, I don't think it is very specific.

4468 Q. If that is all the answer you are going to make, I will proceed.

A. If he will read the remainder of the question, I will try to answer it.

Q. Before we adjourn, Mr. Haines, I wish you would produce for me the two statements that you took out of this book and handed over to Mr. Douthirt and Mr. Douthirt handed them over to Mr. Ourran; I want all these matters with reference to this matter.

Judge CARR: Let the record show that Mr. Haines has handed to General Byers the papers called for.

Mr. BYERS: The defendants at this time in connection with this examination offer in evidence Defendant's Exhibit 56, the check book produced by the witness Haines with blank checks in it, of the First National Bank of Philadelphia, together with the stubs and entries therein.

At this time an adjournment was taken until 1:30 P. M.

4469 1:30 P. M., MONDAY, *October* 2, 1911.

JANSEN HAINES continued on direct examination — Hon. H. W. Byers, testified as follows:

Q. Now then a word further Mr. Haines about Exhibit 56. This morning in your testimony you referred to a check to the United Gas Improvement Company for $63,236.41 as having been drawn pursuant to resolution of the board of date 8-15-10. Can you turn to the resolution please?

A. Yes. You say that was drawn pursuant to a resolution.

Q. Yes, of date 8-15-1910.

A. Here is the resolution on page 221 of the minute book No. 1 of the stockholders and directors of the Des Moines Gas Company.

Q. The record that you refer to Mr. Haines as authorizing the payment by the treasurer of the amount of $63,236.41 is found on what page or pages of Exhibit 27 the minute book of the director's meeting, it is more than one page is it not?

A. In order to complete this authority you would have to property refer to page 27 of this minute book and then refer to page 217 *w*18, 219, 220 and 221 of the exhibit 27.

Q. There is nothing in this refers to page 27 is there?

A. No, but page 28 would have to be taken in connection with these in explaining this transaction.

Q. Is the mortgage part of it.

A. That is the mortgage. I can read this if you wish this record.

Q. I don't care about having it read unless you haven't anything else to do. Is that all the record there is that you know of that covers this transaction?

A. Why no.

4470 Q. I mean as far as the authorizing of the sale of the bonds and the application of the money is concerned. That is all I have in mind at the present time.

A. I think that is all. The is all I have in mind.

Q. Now I wish just for the purpose of getting some information here with reference to the manner in which this record is kept, I find under date of October 13, Mr. Lilley's memorandum on the back of one of his stubs October 17, deposit $5,000, can you tell me what that was?

A. That is October 17, 1910, that is an entry in his check book as October 17, 1910, deposit $5,000 and was a remittance of $5,000 made by me from Des Moines by draft drawn on one of the local banks payable to Louis Lilley treasurer and accompanied by voucher as shown on page 171 of the cash book No. 1 of the Des Moines Gas Co., the payment here was made under date of October 15.

Q. You don't mean payment do you, why do you use the word payment, remittance you mean I suppose?

A. Well what is the difference and payment.

Q. Well it might make some dofference, depends on what it is.

A. A draft here drawn and entered under date October 15, the time going to Philadelphia would occupy until the 17th and the deposit was made by him on the 17th

Q. Then in other words the money was remitted from here on the 15th.

A. Yes.

Q. Received by him on the 17th?

A. Yes, sir.

Q. And that accounts for the difference in dates?

A. In the two dates.

Q. You used the term payment there, you mean remittance don't you?

A. I used the term payment and meant the date on which
4471 the check was drawn here for the draft as shown in the cash book.

Q. Didn't use the word payment with respect to the $5,000 at all?

A. Yes; my check was drawn for $5,000 here, taken over to the bank and they gave me a draft for $5,000 there payable to Louis Lilley Treasurer. That was forwarded to Louis Lilley, treasurer, under that date.

Q. That was money you had on hand that you were simply turning over to the treasurer of the company.

A. Certainly. Money that was on deposit here in the cash account and it was being turned over to him as treasurer of the Des Moines Gas Co., to deposit to his account as treasurer held in Philadelphia.

Q. Now on the 15th day of September, 1910, what was the balance of the Des Moines Gas Company in the banks here? Mr. Haines we have waited a little over half an hour, can't you give us in round numbers something about it?

A. I would rather give it accurately.

Q. Does it take you that long to tell what your cash was on hand a given date. We have waited just a half hour now.

A. Of course General, I am not an expert bookkeeper, I would admit I am slow on this work. I am sorry for the delay.

Q. Haven't you any book that shows the cash balance on that day without taking half an hour to figure it out?

A. Of course our cash is balanced at the end of the month, when I balance the middle of the month I have to make the necessary credits and debits up to that period. We don't balance our books every day.

Q. Well give it to me in round numbers as near as you can?

A. The balance on hand, according to the cash book, page 168, is $26,328.16.

COURT: Does that mean the balance here?

4472 A. That is the balance in Des Moines charged to the treasurer's account that would show on the treasurer's account.

Q. Now Mr. Haines we have covered the cancellation of the preferred stock contracts September 15, 1910. Now all of the stock contracts that have been cancelled and retired have been cancelled and retired in the same way have they not been the sale of bonds and proceeds of the sale of bonds used to cancel the stock contracts. The first transaction of that kind if I understand this record here correctly being June 1, 1908, amounting to $109,620. And I

right about that? And the next was on March 15th, 1909, and is shown in this check book as $83,000.

A. $108,000 for the preferred stock contracts and the balance for interest.

Q. That was paid by the proceeds of bonds sold on the same day to the U. G. I. for $110,412.50 was it not? The stub check refers to the date of the transaction or authority to dispose of the bonds as of May 20, 1908.

A. Yes, I have the minutes of the directors' meeting under date of May 20, on page 135 of the minute book Exhibit 27.

Q. So that that payment was made out of the proceeds of the sale of these bonds?

A. I will read the method of making that payment so that it can be thoroughoy explained.

Q. Well if there is anything different there.

A. I think there is a great difference between the way in which you state it and the way stated here if you will pardon my saying so. The record of the directors' meeting on May 20, 1908, reads as follows on page 135 of Exhibit 27: Sale of $121,000 worth of treasury bonds. The treasurer advised the board that he could
4473 sell at 90 and interest the $121,000 of the company's first mortgage five's received from the trustee under the company's mortgage of March 1, 1906, on account of expenditures to December 31, 1907, for additions, extensions and betterments thus reimbursing the treasury for such expenditures to the extent of the proceeds of the bonds. The treasurer was authorized to sell the bonds. Preferred stock contracts, $108,000 retired. The treasurer advised the board that when the treasury is reimbursed by the sale of bonds as authorized by this meeting there will be cash available which may property be applied to the purpose sufficient to enable the company to relieve and discharge itself in part say to the extent of 13½ per cent or 1,080 shares or $108,000 from the obligation of the contracts provided the holders will waive certain conditions of the contracts. The following was then unanimously adopted: Whereas, this company has issued and outstanding its so called preferred stock contracts entitling the holders thereof to a total of $8,000 shares of the par value of $100 each or $800,000 of preferred capital stock for which certificates in due form are to be issued on surrender of the contracts whenever the company shall be authorized by law to issue such preferred stock and the holders of the contract shall demand the same and the company is in the meantime pledged to pay interest at the rate of six per cent per annum upon a sum equal to the face value of the shares mentioned in the contracts, which interest has been paid to February 29, 1908. And whereas it is provided in the contracts that having previously given thirty days' notice in writing to the holders by mailing the same to their last post office address on its books, the company may on any 15th day of September or any 15th day of March at its option relieve and discharge itself in whole or in
part from the obligations of the contracts upon paying to the
4474 holders cash at the rate of $100 per share for the preferred stock therein mentioned or such parts thereof as the company may elect, provided that in making such payment the company shall

treat the holders of all similar contracts then outstanding alike, that is to say the company will also on the same date make payment of the same relative sums to the holders of all contracts then outstanding. And whereas, the company now has cash available and which it may properly apply to the purpose, sufficient in amount to relieve and discharge itself in part namely to the extent of 13½ per cent or 1,080 shares or $108,000 from the obligations of such contracts provided that upon payment of interest at six per cent from March 1, 1908, to date when paid, the holders thereof will waive the above mentioned provisions of *b* the same which permit the company's relief and discharge first, only on thirty days' notice in writing by mail and second, only on March 15 or September 15th in any year, such thirty days' notice having previously been given, and will on or before June 1, 1908, surrender contracts for cancellation as hereinafter provided now, therefore resolved that in order to relieve and discharge the company in part from the obligations of such contracts, namely to the extent of 13½ per cent or 1,080 shares or $108,000 the treasurer be authorized and directed to pay to the holders cash to the amount of $108,000 plus interest thereon at the rate *p*f six per cent per annum from March 1, 1908, to date when paid on surrender to the treasurer for cancellation the contracts representing 13½ per cent of the total outstanding amount thereof or 1,080 shares or $108,000 provided same shall be so surrendered on or before said June 1, 1908.

Q. That is the first payment of preferred stock contracts is it that you know anything about?

4475 A. That is the first retirement of the preferred contracts that I know of from the books.

Q. Now to go back where we started from when we drifted into this check book business, you were going to prove by the check book that the money was actually received by Mr. Lilley? I find here part of Exhibit 56, this journal entry, and we started on the question of property purchased first. Now I notice there was $157.50 accrued interest on those bonds. That would mean I suppose that the bonds date from the first of the month, but they were not turned over or sold until the 15th of the month so there was half a month's interest accrued on them. Is that what that means?

A. Defendant's exhibit 55 states as follows——

Q. I have not asked what it stated, I want to know if that interest is accrued interest on the bonds from the first of the month until the 15th of the month?

A. Well it states in the journal entry here for $81,000 par value of this company's first mortgage five per cent 20 year gold bonds Nos. 1017 to 1097 both inclusive, of $1,000 each with March 1, 1911 and all subsequent coupons attached sold by the treasurer at this date for cash at 95 and accrued interest (September 1, 1910 to September 15, 1910, or fourteen days at five per cent equals $157.50.

Q. Now does that mean that bonds representing a valuation of $81,157 were sold to the United Gas Improvement Company for $77,107.50, is that the way you understand it? If you don't know without run-ing down the books I will withdraw the question.

A. I will just read you the statement in here, this entry is part of Exhibit 55, and reads as follows: Des Moines Gas Company Jou-nal Entry September 15, 1910. Sundries. Treasurer $77,107.50, property purchased $4,050. Treasury bonds $81,000, accrued in-
4476 terest on bonds $157.50. For $81,000 par value of this company's first mortgage five per cent 20 year gold bonds Nos. 1017 to 1097 both inclusive, of $1,000 each with March 1, 1911, and all subsequent coupons attached sold by the treasury at this date for cash at 95 and accrued interest (September 1, 1910, to September 15, 1910 or fourteen days at five per cent equals $157.50.)

Q. That property purchased $4,050 is made up of the discount, five *0*er cent discount and this $157.00 interest isn't it?

A. The property purchased does not include the accrued interest on the bonds, it is discount on the bonds. That is five per cent of $81,000 worth of bonds. The treasure- would receive the accrued interest on the bonds under the terms of this sale. I think I am correct about that.

Q. Just a straight five per cent discount the way you understand it, the*h* discount that was actually taken?

A. The discount actually taken off the bonds was a straight five per cent discount on the par value of the bonds and the accrued interest was paid by the purchaser of the bonds.

Q. How many of these bonds are still out*w*tanding or these contracts are still outstanding at this time?

A. You asked me that the othey day with some other questions. Do you want me to answer the rest of these questions now.

Q. No, I will just take this one now.

A. No you asked me the amount paid for redemption of stock contrafts according to this memorandum. That has all been testified to by one of your own witnesses I think, Mr. Hall.

Q. Oh no, Mr. Hall *Mr. Hall* didn't testify to the still outstanding, if he did I don't remember it at all.

A. Refer to Mr. Hall's report Exhibit "A" page 2, I think you will find it. No, I have got the wrong reference. Try Mr. Hall's
4477 report page 27 December 31, 1910, preferred stock contracts $411,000.

Q. That is not the question I asked you now, I am asking you what of these stock contracts that are still outstanding, there have been payments since that.

A. I will look at the books and tell you, I don't keep the books in my head you know.

Q. I give you two statements the report has marked defendant's Exhibit 57 and 28.

A. There have been no payments on our books here as having been made since December 31, 1910, as yet.

Mr. BYERS: Defendants at this time offer- and read- into the record defendant's Exhibit 56, under date June 1, 1908, deposit U. G. I. proceeds sale 121 par bonds at 90 eq-al $108,900. Interest 3-1 to 6-1 at five per cent $1,512.50. Total $110,412.50. On the opposite page in the same book under check stub No. 40 June 1, 1908 W. H. Marshall, United Gas Improvement Company amount paid pursuant to resolution adopted by board at meeting held May 20, 1908,

on surrender for cancellation of preferred stock contracts representing 13½ per cent of total outstanding amount thereof or 1080 shares or $108,000 interest from March 1, to June 1, three months at six per cent $1,620, total $109,620 check to order U. G. I. Co. From the same exhibit under date March 15, the entry deposit proceeds sale of 41,000 par five per cent bonds to U. G. I., $41,489.44. On the opposite page of the same exhibit upon stub check No. 47 March 15, 1909, the United Gas Improvement Co., amount to pay off preferred stock contracts amounting to $103,800, 1038 shares at 100 par, $83,000. From the same exhibit under October 25, 1909, deposit U. G. I. Co., proceeds sale of 64,000 bonds at 95, $60,-
4478 800, interest 9-1 to 10-25, one month twenty four days, five per cent $480, bonds numbered 953 to 1060 inclusive, total $61,280. On the opposite page under same date October 25, 1909 on the stub check No. 52 the United Gas Improvement Co., amount paid pursuant to resolution by board of directors 10-20-09, on surrender for cancellation of preferred stock contracts 19.4 per cent of total outstanding amount thereof, $588,200 or $114,110.80, interest from 9-1 to 1-25-09 at 6 per cent $1,027, total $115,137.80. From the same Exhibit under date of September 15, 1911, deposit U. G. I. Co., proceeds sale of $92,000 par of bonds 95, equal $87,400 accrued interest 9-1 to 9-15, fourteen days at five per cent $178.89, Nos. 1098 to 1189, inclusive. On the opposite page of the same Exhibit under same date, stub of check No. 91, United Gas Improvement Company, amount paid pursuant to resolution adopted by board 8-28-11, on surrender for cancellation preferred stock cont-act $75,-000 interest 9-1-11 to 9-15, six per cent $175. Total $75,175.

Mr. BYERS: Defendants offer- and read- into the record Defendant's Exhibit No. 57. Form No. 222. Des Moines Gas Company Des Moines, Iowa. To the United Gas Improvement Company. Order. Date September 15, 1911. For amount paid pursuant to resolution adopted by board of directors August 28, 1911, on surrender for cancellation of preferred stock contracts, 18.2482 per cent of 411,000 or 75,000. Interest from September 1-11, to September 15-11 on 75,000 at six per cent $175.00. Total, $75,175. Paid by check dated September 15, 1911, No. 91. Endorsed received September 15, 1911, from Des Moines Gas Company, $75,175 in full for above bill. $75,175. The United Gas Improvement Company, James Ball, Assistant Treasurer.

Mr. BYERS: Defendant also offers defendant's exhibit No.
4479 58 and same is read into the record and shows payment of six months interest on preferred stock contracts $411,000 at six per cent amounting to $12,330. Endorsed under date September 15, 1911, as having been received from the Des Moines Gas Company by the United Gas Improvement Company through James Ball Assostant treasurer, the Exhibits being made out in duplicate.

Q. These forms, Mr. Haines, are they made up and prepared here or in Philadelphia?

A. What forms do you mean?

Q. From which this statement Exhibit 58 appears.

A. Exhibit No. 58 is made out by the treasurer, Mr. Lilley in

Philadelphia as stating his transaction and the authority for it in connection with the purchase of the preferred stock contracts and expenditures of the money therefor.

Q. The forms are made out there, they are not made out here, you don't have them here?

—. Oh no, they are not made out here. It is part of his duty.

Q. To go back just a moment where we were yesterday when we started on this business, I had gone through 1907 down to Mr. Harrison, we had got down to the item of $356.55 of the total of $2,365.13 that I was inquiring about and you had explained the item as representing two charges in two separate months for some auditing Mr. Harrison did for the company. Now the next item that I want to inquire about was of W. N. Porter. $362. Is that a similar charge to the Harrison one for a similar purpose?

A. Mr. Porter and Mr. Harrison are two auditors or accountants who are employed by the United Gas Improvement Company, but when detailed to do work for the Des Moines Gas Company their time and expense is charged to the Des Moines Gas Company
4480 just the same as if the Des Moines Gas Company employed a regular auditing firm to audit their accounts, that is the accounts locally in Des Moines and check up the funds and stores on hand, the consumers' accounts as is generally done in any large company and on which the management generally insists for its protection shall be done periodically.

Q. That is not quite an answer to the question, it may be for you perhaps, not to me. I simply asked you is Mr. Porter in the same class and was his service similar to Harrison's?

A. I think my answer covers an answer to the question.

Q. I simply want to know if Mr. Porter, his services were similar to Harrison's and his coming here came about in much the same way.

A. I just stated Mr. Porter and Mr. Harrison came here and I state how and why they came here and if I could answer further I would be glad to do it.

Q. Mr. Porter came here without notice to you?

A. Mr. Porter and Mr. Harrison came here in the same way.

Q. Without any request from anybody here?

A. They came without any request here as to time, but I should insist upon their coming here during the year and checking up the work that is done under my responsibility and supervision for my own protection.

Q. Mr. Porter was sent here in the same way Mr. Harrison was, I mean in the same general way.

A. They came here together just as stated.

Q. In this $2,365.13 credit to the U. G. I., for the year ending the 28th of February, 1907, I notice an item of special fitting material and inspection, $7,494.50. Now what is covered by that item further than what is stated there. What were those special
4481 fittings?

A. You state in your question that in this item of $2,365 there is an item of $7,400. What do you mean by that?

Q. In this column you have furnished me showing the total credit to the U. G. I. for the year 1907, I was mistaken when I said it was included in the item of $2,300, it is not included in that item but it is in the account. I want to know what is covered by the $7,494.50. It says inspection special fittings and material.

A. The first item which is included in the $7,494.50 credit to the United Gas improvement company for special fittings, material and inspection furnished in 1907 as shown on analysis of account with United Gas Improvement Company March 1, 1906, to December 31, 1910, is as follows: Page 152 of voucher book No. 1, February 27, 1906, 150 pieces of six inch pipe 68,600 pounds at $31.45 per net ton, $1,078.91 less credit memorandum under date of 3-2-'06 allowance for overcharge of 600 pounds on car C. C. C. 38,585 as per invoice No. 5005 at $31.45 per net ton $9.43, net amount being $1,069.48.

Q. That you say was pipe?

A. That was six inch pipe. Next item page 153 same voucher book.

Q. Before you leave that. Pipe that was sold by the U. G. I. to the Des Moines Gas Company?

A. That was pipe which was furnished by the United States Cast Iron Pipe and foundry company and billed by them to the United Gas Improvement Company. The United Gas Improvement Company then made out a voucher in favor of the United States Cast Iron Pipe and foundry company giving the data which I have just read and sent it to Des Moines to be compared with the way bills when the pipe was received and after the pipe was received here as stated in this voucher the voucher was approved by me and
4482 copied on our voucher book, entered on our books as a credit to the U. G. I. and returned to the U. G. I. for payment.

Q. The item you have just read of pipe was pipe purchased by the U. G. I from the United States Cast Iron Pipe and foundry Company?

A. United Cast Iron Pipe & Foundry Co., 71 Broadway, N. Y.

Q. And shipped directly to the Des Moines Gas Company and voucher sent here to be checked up upon the arrival of the pipe and if it checked then credit was to be given to the U. G. I.

A. Yes, sir. It was just the same as if you wrote a friend of yours in New York to send you a box of cigars of special brand and that friend bought the box and told the store to send them to you and bill them to him and he sent the bill to you so that you could check when the box arrived and return to him for payment and then you gave him credit on your account for the cigars as received, that is the process?

Q. Did you order the pipe?

A. Did I order the pipe from here? Certainly. Do you want the order for that?

Q. Who did you send the order to?

A. Mr. Pearson.

Q. Of the U. G. I.

A. Yes, Pearson purchasing Agent of the Des Moines Gas Company of course when on the Des Moines Gas Company work.

Q. Instead of buying it for you he bought it for the U. G. I.

A. Bought for account of the U. G. I., but for use of the Des Moines Gas Company.

Q. Now the next item?

A. Do you want me to get my order to Mr. Pearson for the
4483 pipe *for the pipe* and his confirmation——

Q. If I do I will ask for it. What is the next item?

A. Under date February 2, 1906, one barrel H. B. Engine oil 52 gallons at 20¼ cents $10.53 less one per cent for cash in ten days 11 cents net amount $10.42.

Q. Is the United Gas Improvement Company, or is that another cigar case.

A. That was another cigar case. That was bought from Trew, Levich & Company and shipped by them to the Des Moines Gas Company and billed by them to the United Gas Improvement Company. All these items the same process.

Q. Give us the next item?

A. The next item February 21, 1906, this was purchased from N. Z. Graves & Company, 55 gallons case black enamel at $2.00 a gallon $50 less one per cent cash ten days 50 cents, $49.50 total.

Q. That is another cigar transaction where they furnished the U. G. I. Company or they purchased and had the material billed here and you checked it up and gave them, the U. G. I. credit for it, is that right?

A. Well had the material shipped to Des Moines and the bill sent to the U. G. I. and then the U. G. I. Forwarded the bill to us for checking on receipt of the material to prove correctness, then we checked the bill, the voucher was entered on our books and returned to the U. G. I.

Q. They did the paying at that end?

A. Yes, they did the paying because we didn't have the money.

Q. But they did?

A. They had money to pay these bills, certainly.

Q. What is the next item?

4484 Q. You see they took advantage of the one per cent cash discount.

Q. There was a little something in that besides just a friendly matter.

A. You will notice they got all these cash discounts which they have and they are allowed to the Des Moines Gas Company so that we got the benefit of the advance in money which they made to the extent of one per cent for cash in ten days.

Q. They did take the discount?

A. They took the discount and gave it to us. You understand me?

Q. I understand you thoroughly. What is the next item.

A. In other words the Des Moines Gas Company got the benefit of the discount, that is what I mean. The next item is Cornell and

Henley, No. 43 Arch street, N. Y. This is for pipe, February 13, 1906.

Q. What kind of pipe.

A. Three hundred plugs three fourths inch at 3 cents $9.00 less 80 and five per cent discount $7.29 total of that item $1.71. 2000 maleable street L's one inch 1390 pounds D at 13 cents $180.70 less 45, 5.5 and 5 per cent $95.49, total of that item $85.21. 420 nipples, three quarter inch at 9 cents $37.80, 30 nipples 1¼ by short at 11 cents, $3.30, 30 1¼ by 3½ nipples at 17 cents, %5.10, 66 galvanized nipples by ¾ by short at 8 cents $5.28, total of this item, $51.48. Less 85 and 15 per cent discount, $44.91. Total of this item $6.57; total of all items $93.49. Less two per cent for cash in ten days $1.87 total net amount of bill $91.62.

Q. That is a similar transaction to the ones just preceiding.

A. One similar to those transactions.

4485 Q. That would be true of all the $7,495.54.

A. No. I don't think that is true of all of them. I better read the ones it is true of and leave the others afterwards because there is a change if you want all of them. The next is Welsbach Company 68 Wabash Avenue Chicago, Ill., February 1906, No. 61 lights 197 and A. P. mantles No. 432 opal globes, No. 310 cylinders at 52.50 per hundred $13.13 less ten per cent $1.31 total of this item $11.82 less two per cent cash ten days 24 cents, total $11.58.

Q. What is the book you are reading from?

A. This is a pressed copy book in which these vouchers were copied at the time they were sent to Des Moines.

Q. Where are the vouchers now?

A. I don't know where they would be. This is a press copy of them.

Q. Is there anything in this item of $7,494.50 that is different from the ones you have read and procured in any different way?

A. Oh yes, I told you there was some more down here that was different from these.

Q. Different, how do you mean, not the same kind of material and purchased the same way?

A. I can go over this, what I gave you is the second, the third and the fourth——

COURT: They all go through the same channel don't they?

A. They go through it in a different method of bookkeeping, however. The items shown on page- 152, 153, 154, 157-A, 157-B, 158-A 158-B, 159-A 159-B 16- 16-B 161-A, 162, 164, 165-A, 165-B are all handled in the way I have described. Now after that there were some more items. Then follows the item of inspection of 6, 8 and 1 inch pipe, $117.75.

Q. Now what does that mean?

4486 A. That is the cost of inspection at the foundry as the pipe is being made of the 8, 12 and 16 inch pipe specified in the bill of the United Gas Improvement Company dated Philadelphia, Pa., March 17, '06, and reads as follows: Des Moines Gas Company Des Moines, Iowa, to the United Gas Improvement Company Dr., Broad and Arch Streets, to cost of inspection of materail

shipped from the foundry of the U. S. Cast Iron Pipe & Foundry Company from January 27 to February 24, '06 at 40.68 cents per gross ton, 8 inch pipe 129,154 pounds 12 inch pipe 235,015 pounds six inch pipe, 284,236 pounds total 648,405 pounds $117.75 account store room.

Q. That $117.75 is for inspecting that pipe?

A. The United Gas Improvement Company employs inspectors at the principal foundries and at the places where brass fittings and brass cocks are made to inspect the material as it is being made, that is they take the pipe as it comes from the foundry and sound it with a round head hammer when it is suspended in air to see it rings properly and has the proper strength, they see that it is weighed and the inspector writes the weights on each piece of pipe and write their number on each piece of pipe and have a number for the corresponding weight and a list of these numbers and corresponding weights are sent from them to Des Moines and are checked by the receiving store keeper when the pipe comes in. If they find a defective pipe it is rejected right there at the foundry and avoid the expense and delay of inspection here.

Q. That is to say the United Gas Improvement Company has inspectors at the different foundries where they are buying material for these numerous plants that they control and the cost of the inspection is divided up among the respective plants according to the amount of material sent to each place is that right?

4487

A. The cost of the inspection is paid by the United Gas Improvement Company and is billed on the tonnage basis with the pipe divides into the total number of tons of pipe that is inspected, as this bill indicates so many pounds of pipe bears to so much at the rate of 40 cents a ton.

Q. $117.00 that is charged there for inspection was on a very large order of pipe wasn't it?

A. About 324 tons. Pipe is inspected on the gross ton basis and shipped on the net ton basis.

Q. Asll I want to get at is the method. This iron for which this inspection was made was iron that the United Gas Improvement Company had ordered from some foundry and had been inspected by one of their men, is that right?

A. No,—let me see. This pipe—I can't tell you that whether ordered from the United Gas Improvement Company by the Des Moines Gas Company or whether ordered from the foundry by the Des Moines Gas Company, I would not have any way of knowing from this bill.

Q. You have no way of knowing anything about the inspection charge except the bill of the United Gas Improvement Company sent you?

A. Well as I have already carefully described to you, inspection reports from the inspectors come in very carefully made out in detail of just what they inspect. Some of these inspectors I know personally, meet them there at the foundries continually but I have not seen one of the inspectors at the work of inspecting and marking one of our own individuals pipes if that is what you mean?

Q. You pay no attention to it further than when you get the bill, whatever it is you credit it up to the U. G. I.

4488 A. When I receive a bill and check it myself I O. K. it and approve it and it goes to the credit of the U. G. I.

Q. And that is true of all these bills that come in that way?

A. Of course I had knowledge this pipe had been thoroughly inspected, had been inspected by competent men and that the price was not too high, if it had been an abnormal charge or had been anything irregular about the bill I should have refused to O. K. it for payment as I have done until I was satisfied that the items were correct and the amount was fair.

Q. Now you say you knew it had been inspected. Of course you mean by that that the U. G. I. mark was on the pipe and so you conclude it must have been inspected by somebody?

A. I don't know of any U. G. I. mark on the pipe.

Q. I thought you said a moment ago where they inspected——

A. No, I said the inspector placed an inspector's mark which is a mark of the individual inspector so if there should be any defect in the pipe it can be traced back to the individual inspector.

Q. He can be held responsible?

A. Yes, sir.

Q. The men who make inspection are employed by the U. G. I.

A. Employed by the U. G. I. But whose services when used for the benefit of the Des Moines Gas Company are so charged to them according to the tonnage inspected as I stated.

Q. That covers the inspection. Now is there any other item in there that is different from the two classes you have so far referred to. I want to cover this fully and then we won't need to go over the next three or four years.

A. Well I think you will find a great difference in the other years I could not say that this applies to the other years. Take

4489 the next item of $78 for bray burners included in this item of $7,475.50, that is a bill for five gross of 8 foot H. B. bray burners, 10 gross 7 foot H. B. bray burners, five gross 6 foot bray burners which was treated the same as the inspection bill except that these burners are the burners which are used on the gas jets and which were purchased by Mr. Pearson for the Des Moines Company as purchasing agent on my order and shipped to me from the store house of the United Gas Improvement Company. They buy these burners in large quantities and get the advantage of the discount in that way and we get them at the net price which we pay for them. Another item here—those I think are generally descriptive of that class of items.

Q. I have been over the stationary and office supplies. He- is an item of $453.30 interest on open account. I suppose that represents interest on balances due the U. G. I. on their open accounts.

A. Interest on open account, that is when the United Gas Improvement Company was furnishing the money for these purchases, in other words advancing money to the Des Moines Gas Company for this material furnished there was a charge made to their open account on the average daily balance of the month at the rate of six per cent

and they were credited with interest at the end of each month, during this period.

Q. That is what that item represents.

A. That is what that item in 1907 represents. In November 1907, I think it was November, 1907, that system was changed so you get into another method of keeping the account after that date.

Q. We will come to that later. A little further down on the page is an item of draftsmen, $182.26. Just in a general way tell
4490 us what that is?

A. That is the time of the draftsman in the United Gas Improvement Company's drafting department where they are making drawings of the property or so on under the direction of the engineer in charge.

Q. Now a little further down on the page is telegrams sent prepaid $34.03. I suppose that represents the expense of messages they sent to you and prepaid them during the year, I suppose it represents just what it says.

A. I will give you the classification of that expense general and then see if that is an answer to your question. It is expense of telegram- during the year which were sent prepaid and a record kept as they were addressed to this office to the office here they were charged to expense general because they were small items too small to be classified to individual accounts. Classification of expense general in this account is anything charged to expense not specifically chargeable to any other account.

Q. $46,000 cash, that is I suppose money that was advanced to the company for its use, advanced by the U. G. I.

A. That is money advanced by the U. G. I. for extensions and improvements.

Q. There is one other item on this first sheet I want to inquire about and I think that covers it as well as I care to, that is the item of $90 that is distributed out of the miscellaneous charged at $98.24 in advance insurance column, part of the miscellaneous charge of $98.24.

A. That is a bill as follows: Philadelphia, Pa., December 28, 1906, Des Moines Gas Company Des Moines, Iowa, to the United Gas Improvement Co., debtor, Broad and Arch streets,
4491 Boilers' insurance on schedule boiler No. 48032, Hartford Steam Boiler Inspection Company for the period of three years November 1, 1906, to November 1, 1909, viz: No. 1, 2 and 3, three boilers at $30 per boiler, $90. Account of advance insurance.

Q. That is to say the U. G. I. insured your three boilers, paid $90 for it and you gave them credit.

A. No, sir; that is not correct. The Hartford Insurance Company insured the boilers and sent the bill to the United Gas Improvement Company and we gave them credit for it on our books.

Q. Then the United Gas Improvements Company had the boilers insured, paid the $90 and you gave them credit on the books here upon receipt of their statement or bill?

A. No, sir; that is not correct. The Des Moines Gas Company

had the boilers *insurance* and the United Gas Improvement Company advanced the money to pay the bill.

Q. Is that right?

A. Exactly right. You want to see the policies of insurance; they will show in whose favor the policy is made out.

Q. I have no doubt the policies are made out to the Des Moines Gas Company?

A. Then how is the United Gas Improvement Company going to be the beneficiary?

Q. The business was done by the United Gas Improvement Company at any rate the money paid.

A. The bill was paid by the United Gas Improvement Company and we gave them credit on our books for paying the bill.

Q. That was another cigar and friendly deal?

4492 A. That is a little different from that. As I explained to you there was a change in the system in the latter part of the year 1906 in the method of handling these payments.

Here the further hearing was adjourned until 9:30 A. M. tomorrow.

4493 Tuesday Forenoon Session.

OCTOBER 3, 1911—at 9.30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JANSEN HAINES, continuing his direct examination, examined by Hon. H. W. Byers, testified:

Q. Mr. Haines, who is Mr. C. W. Hare?

A. Mr. C. W. Hare is employed by the United Gas Improvement Company as an expert in matters pertaining to the organization, development, promotion of the sales of gas and appliances for the consumption of gas, and is the head of the department which is organized for that purpose. When his services are demanded by the Des Moines Gas Company——

Q. I have not asked you about that; I just wanted to know who he is——

A. That is what I am trying to tell you——

Q. I want to suggest that it is entirely improper for you to pad this record with your voluntary statements; just answer the question and we will get along with less confusion.

A. I was just telling you who he was; I had not finished.

Judge CARR: *Ho* on and complete your answer.

A. In his position as head of this sales department, when his services are demanded——

Mr. BYERS: I submit, your honor, I have not asked a thing about that.

The MASTER: He has not asked about that. He wants to know who he is.

Q. Who is Mr. J. B. Klumb?

A. Mr. J. B. Klumb is an engineer, a graduate of the Stephens Institute of Technology, who has been engaged in the operation and construction and investigation of gas works and questions pertaining to the gas industry since, I think, 1903.

4494

Q. And in whose employ is he; who is he working for generally?

A. He has been employed by a number of gas companies and is now in the employ of the United Gas Improvement Company of Philadelphia.

Q. Who is Mr. W. H. Marshall, whose name appears on this tabulation you gave me. Is he the same Marshall that has been referred to heretofore—I asked you whether he had been in Des Moines—name appears on the last page?

A. Yes.

Q. And Mr. C. M. Benedict, who is he?

A. Mr. C. M. Benedict is an expert in the organization of new business forces and in the question of costs and results to be obtained by an organized force of new business men.

Q. In the employ of the United Gas Improvement Company?

A. He is not in the employ of the United Gas Improvement Company now. He is in the employ of the Charleston Railway & Light Company, I believe.

Q. Was he in 1910?

A. He was at one time, about that time I think it was; I am not sure about the date.

Q. J. F. Wholley, who is he?

A. J. F. Wholley is an expert the design and construction of industrial appliances, that is, appliances for the use of gas for manufacturing purposes, such as heaters, boilers, welding apparatus and things of that kind.

Q. In the employ of the United Gas Improvement Company?

A. Yes, sir.

Q. And H. C. Stahler?

A. Stahler is an expert in the domestic use of gas.

4495

Q. And in the employ of the United Gas Improvement Company?

A. And in the employ of the United Gas Improvement Company.

Q. E. M. Colquhoun, who is he?

A. Mr. Colquhoun is an expert in the designing and construction of gas ranges; and also in the question of cost as compared—not as compared—with the cost of the services rendered the consumers in connection with the supply of gas.

Q. And is he in the employ of the United Gas Improvement Company?

A. He is a part of the new business staff of the United Gas Improvement Company.

Q. Mr. A. B. Wainwright?

A. Mr. A. B. Wainwright was for a few months during that year employed with the staff of the new business department of the United Gas Improvement Company. He is a graduate engineer.

Q. He was on that staff at the time he was here?

A. He was on that staff at the time he was here. He was detailed here for work in Des Moines for the Des Moines Gas Company and the Company paid for his time and expenses while in this service.

Q. Now C. S. Jackson?

A. C. S. Jackson is auditor.

Q. Is his work similar to Mr. Harrison's?

A. Yes.

Q. And he is on the staff of the U. G. I.?

A. He is on the staff of the U. G. I. and especially detailed to work for the Des Moines Gas Company on this Exhibit G here.

Q. C. J. B. Dixon, who is he?

A. He is an auditor who worked with Mr. Jackson a part of the time when Mr. Jackson was making the audit.

Q. He is on the staff?

A. He is on the auditing staff of the United Gas Improve-
4496 ment Company, detailed for the service of the Des Moines Gas Company in making this special audit.

Q. There is an item here in the advertising department of $890.02, just what was that; just tell me in a general way.

A. I cannot tell you off-hand; I haven't any recollection of these figures. (Mr. Curran produces papers for the witness). I am having a statement of that kind prepared for you, but I haven't it yet. I will give you the statement and the vouchers, or I can give you in a general way what the items are from this memoranda, which includes all the advertising for that year.

Q. All I care for is what it was; was it advertising matter sent here or was it some item of advertisement that was paid for by the United Gas Improvement Company, I simply want to know the character in a general way.

A. Here is one item on page 27 of the Journal, U. G. I. 17,650 gas bill stickers, $31.03. Those stickers are advertising matter which the United Gas Improvement Company has printed in very large quantity and which I buy for the Des Moines Gas Company at the prices they pay for the whole quantity; in other words, at wholesale rates.

Q. In other words, they have a large quantity printed down there, not only for use for the Des Moines Gas Company, if they wish them, but for any of the other companies in which they are interested?

A. Yes, and if I want to use it I get what I want of them at the wholesale price they paid for them.

Q. That is a new departure, is it not; they haven't been doing that before until 1910, have they?

A. Oh, yes; they have been doing that for I suppose fifteen years.

Q. The reason I suggested that, I do not find any adver-
4497 tising in any of these other, at least I don't remember seeing it in any of these other lists. I don't care anything about it; I hadn't noticed it anywhere else.

A. I think, General, that probably occurred from the fact that the advertising in the earlier years was simply, in many cases, billed

direct from the advertising, and the form of the advertising was made up by the new staff and furnished to these printers and they furnished the stuff to the local company as ordered.

Q. Now that one item in a general way covers all of them, don't it?

A. I think it is the bulk of them; that same sort of thing.

Q. Now on this last sheet here I notice special fittings, material and inspection, $160.94?

A. What column is that in?

Q. It is in the first column of the last sheet.

A. The $82.88?

Q. No.

A. $250.00?

Q. Yes, $250.45, and I notice, or it seems to me, maybe I am not looking at it right, it may be stationery and office supplies, $234.26 is carried into the advertising account; I wondered if that was?

A. That is the wrong line.

Q. That is stationery and office supplies?

A. Yes.

Q. That was in the nature of this advertising material too, advertising stationery, was it?

A. I will have to look up the vouchers.

Q. Oh, I don't care enough about it to do that.

A. Understand, there is a tremendous amount of detail getting this stuff out. I have been getting it out for you for three
4498 weeks I have gotton it out in such shape, that in most of the years I can show you the voucher, a sample of which was purchased.

Q. You have been making up this tabulated sheet for me, showing all of that class of items, or the class of items as they have been charged on the books and classified here on this sheet, as far as you know?

A. Well, let me answer that in my own way. This is an analysis of the account with the United Gas Improvement Company from March 1, 1906, to December 31, 1910, showing the item and the classification of the charges.

Q. And is a detailed statement covering all items that was on the sheet that I handed to you that Mr. Sangster made out, or the two sheets?

A. Well the sheet I have just referred to myself is a correct classification of these charges and all of them. Mr. Sangster has two omissions on his and has not the same classification.

Q. The way you have it is the way it was classified on the books.

A. The way it appears on the books of the Des Moines Gas Company.

Q. I hand you what has been marked in this case, Mr. Haines, Defendant's Exhibit 44 and ask you if that is—that booklet was printed in Philadelphia?

Objected to on part of complainant as being immaterial.

A. This book was printed by the Heilhecker Printing Company, of Des Moines.

Q. When was it printed, if you remember?

Complainant interposes same objection last made.

A. I will look up the vouchers and let you know.

Q. Who had these booklets printed?

Complainant interposes same objection last made.

A. The Des Moines Gas Company.

4499 Q. After they were printed, what did they do with them?

Complainant interposes same objection last made.

A. They were printed at my direction as a correct compilation and explanation of the correspondence between John MacVicar, Superintendent of Streets and Public Improvements, and myself and Mayor Hanna and the city council and myself, for the purpose of properly presenting this entire subject to the consumers of the Des Moines Gas Company in Des Moines, and were distributed by mail to the consumers as the names and addresses appeared on the books of the Des Moines Gas Company. Is that an answer to your question?

Q. About the last dozen words is. You had a great many of them printed, did you?

A. I think about 20,000, if I remember right.

Q. Did you have an authorization for their printing?

A. What form do you mean?

Q. Any form?

A. Advertising matter of this kind don't require an authorization under our system; not the same kind of authorization that is required for a street main extension or other improvement.

Q. What kind of authorization does it require?

A. Merely a confirmation of the action of the management.

Q. Did you get that?

A. Yes.

Q. Where did you get that?

A. I don't remember.

Q. Did you get it in the form of a letter?

A. No, not that I recall; I may have, but I don't remember.

Q. What form do you remember that you did get it in?

A. Now, I really don't remember, General.

Q. Well, you mean you don't remember whether you got

4500 a written confirmation?

A. Probably not.

Q. Well who did you consult about it?

A. I consulted Mr. Douthirt about it at the time.

Q. Did Mr. Douthirt have something to do with making up the letters originally?

A. I consulted Mr. Douthirt about making up some of the correspondence, but not all of it.

Q. As to that first letter, you consulted Mr. Douthirt and the lawyers, both?

A. Certainly; you don't think I would write a letter of that kind without proper confirmation.

Q. Who else besides Mr. Douthirt and the attorneys did you consult about it?

A. I think that was all, except to get the proper figures.

Q. Now the first letter, as I remember, was written on the 22nd day of November?

A. Yes.

Q. Was Mr. Douthirt here at Des Moines at the time?

Objected to on part of complainant as a mere repetition, the witness having been interrogated when first on the stand by counsel as to writing that letter, when it was written and where it was written, the testimony showing fully in answer to the interrogatory put to him that the letter was written in Des Moines.

Mr. BYERS: If that was so. I wouldn't go another inch with this.

Judge CARR: I think I have a very distinct recollection of it, but I don't know whether Mr. Douthirt was here. You asked him where he wrote it and he said he wrote it in Des Moines.

4501 Mr. BYERS: I have not asked him anything about Mr. Douthirt. I am only asking it now on account of the suggestion by the Master and counsel.

The MASTER: Of course, if these statements in there are ratified, it is not material. What the effect will be is another question.

Q. Now was Mr. Douthirt here in Des Moines at the time?

A. My recollection is that he was not; I am not sure whether he was or not. I wouldn't like to swear to that. I think not.

Q. Then you consulted him by telephone or wire, or how?

Objected to on part of complainant as being immaterial.

A. My recollection about that matter is, I think I met him in Chicago and discussed the matter with him there and brought back certain memoranda and data here and made some changes in the memoranda and data and wrote the letter in my office. I think that is the best of my recollection of it at the present time.

Q. The data and information that was furnished as a basis for the letter was made up then in Chicago?

A. That is not correct exactly. The data, of course, was not available in Chicago.

Q. Mr. Douthirt brought it with him?

A. The data was prepared in Des Moines from our books and was taken up there and gone over.

Q. Was the same process gone through with as to the letter of November 26th?

A. I really don't remember, General. There were some of those letters for which I went to Chicago and consulted Mr. Douthirt with regard to some of the matters contained therein, and Judge Carr and Mr. Read. I wouldn't like to swear as to which was which. I paid no particular attention to it to bear it in mind or I would be glad to tell you.

4502 Q. In the letter of November 22nd I notice you stated that the average annual net earnings for the period referred to was $188,369.65? From this sum there must be deducted for de-

preciation the sum of $49,178.13. Then you follow with a statement, after stating it is ten per cent and so on, with this statement which you have printed in black caps, as we call them. This leaves, $139,191.52 as the average annual net amount. Was that correct?

A. That large sheet that has already been offered in evidence here—I will produce it in a minute—I think that is one of Mr. Hall's exhibits.

Q. I just want to know whether you verified it at the time?

A. Certainly.

Q. And know it is correct?

A. Yes.

Q. That Brereton contract, have you found that for me?

A. I have not.

Q. Did you look up the minute record; it is in there, is it not? Is it copied in the minute record? I know there is some mention in there.

A. I think there is a minute of it in there somewhere. I think you referred to that the other day. I can answer one of your recent questions now. There is on complainant's Exhibit 28, I think the figures which check with the figures given November 22, 1910, as to the average annual net earnings for the period $188,369.65.

Q. I did not ask you what there was in the exhibit, I just wanted to know if you had verified that at the time and knew it was correct?

A. I have that entry here in regard to the printing of these books. That was paid for on March 11, 1911, to the Heilhecker
4503 Printing Company.

Q. How is that?

A. Payment was made to the Heilhecker Printing Company for printing those books, Exhibit 44, on March 11, 1911.

Q. Where is this printing house?

A. I think it is in the Marquardt Building.

Q. Over on Locust?

A. Yes.

The MASTER: Have you answered that question as to whether that statement in the letter was correct?

A. Yes, sir.

Q. Now with respect to the Brereton contract that I have asked you about, I find on page 184 of Defendants' Exhibit 27, the following: Contract with W. H. Brereton. Approved the action of the officers in executing contract with W. H. Brereton for the erection of a meter house and foundation for the sum of $1,385. Now that was the contract price for that meter house, was it?

A. I believe it was.

Q. And this record is made under date of October 20, 1909. Now I find also the following: Agreement with W. H. Brereton. Approved the action of the officers in signing an agreement with W. H. Brereton for the removal of the present generator house

wall and the building of a generator house at a cost of $4,000. Is that the price paid to Mr. Brereton for the generator house?

A. I would have to look this up; I haven't got the figures before me. It was in that neighborhood. I don't recall exactly what was paid for it.

Q. This minute book is correct; that was the contract price?

A. That was the contract price for the work which was specified in the contract.

4504 Q. Now, just a word or two further along the line of these gentlemen that are employed in the business of the Company. How many of the United Gas Improvement Company men are on the pay roll of the Des Moines Gas Company?

A. Well, I cannot answer that off-hand. The only men whose services are paid for by the Des Moines Gas Company are subordinates who are sent here for certain specified work, to perform certain specified work for the Des Moines Gas Company, and the heads of the departments, the services of the heads of the department are not paid for by the Des Moines Gas Company, and as to the matter of time and expenses, the same as the subordinates are. But so far as the present goes, I would have to look that up.

Q. The United Gas Improvement Company are furnishing the gentlemen who are making this contest here in this case, and are paying them in the first instance, is it not?

A. That would only be true of some. Of course we had to go outside of the force of the United Gas Improvement Company and call in other consulting engineers, like Messrs. Baehr, Lea Randolph and Hagenah, for the purpose of assisting in this case.

Q. But the United Gas Improvement Company in the first instance are paying these men?

A. They are not; the Des Moines Gas Company is paying them. Their bills are rendered directly to the Des Moines Gas Company; the Des Moines Gas Company employed them and they have no connection with the United Gas Improvement Company whatever.

Q. The United Gas Improvement Company has already paid a large amount of the expenses of this case, haven't they, forty or fifty thousand dollars?

Objected to on part of the complainant as being immaterial.

A. No, that is not at all true; not true in any sense.

4505 Q. How far is it short of the truth?

A. It is short of the truth to this extent; that the Des Moines Gas Company has paid the time and expenses of the subordinate men who were sent here. It has paid the time and expenses of Messrs. Lea, Hagenah, Randolph, Mr. Almark, Mr. Cook, and all the witnesses that have testified in this case, except that what you say might have a shadow of truth in it in this way; some of the employés of the United Gas Improvement Company have been detailed to special work in Des Moines, and their time and expenses when in Des Moines, or when on the Des Moines work exclusively, has been billed to the Des Moines Gas Company and is being paid

for by the Des Moines Gas Company, just the same as they have employed these other experts.

Q. Do you know how much has been credited to the United Gas Improvement Company up to this time for services in this law suit?

Objected to on part of complainant as being immaterial.

A. I can very easily tell you by turning to the books.

Q. It won't take you but a minute, I wish you would.

Mr. BYERS: Let the record show that the defendants have had marked as Defendants' Exhibit 59 which is entitled "Analysis of Account with the United Gas Improvement Company March 1, 1906, to December 31, 1910," the Exhibit having been produced by the witness, Mr. Haines, and identified by him. This statement is made because there is some doubt or question at this time as to whether or not the same paper had been marked as an Exhibit heretofore in the record.

A. I have this account now, General.

Q. All right, give it to me. I don't care for the detail, just the amount.

4506 A. On page 243 of Ledger No. 3 of the Des Moines Gas Company under the United Gas Improvement Company account: January 31 there is credited $211.99, referred to on page 197 of Journal No. 3 of the Des Moines Gas Company which is distributed as follows: January, time and expenses of H. S. Batten $126.15—no that is wrong, strike that out, that is another account. Rate litigation expenses: 1-19 5 14x17 negatives at $5=$25. 5 14x17 prints at $3. 30 16x20 prints, 90¢, $27. 1-27. 219 large brown line prints, 8¢, $17.52. 222 small brown line prints, 6¢, $13.32. Total item $80.34. Total of the two items on that page $84.84. Now the next item is on February 28th on Ledger No. 3 page 243. The items are on Journal No. 3 page 213 as follows: January 27 mounting 5 photos, enlargements on muslin, 75¢. January 7, call to phone, H-4303, Chicago, Illinois, by Mr. Lewis Lillie, $8.00. February 1, for labels, $1. February 9, iron clamps 40¢. Cutting and retapping brass posts, drilling holes in strips 50¢; one drill and handle for same 49¢. Total of the items $1.39. Expressage on package 30¢. Expressage on package to Jansen Haines, Des Moines, Iowa, $1.40. For lunches during the month of February, 1911, $24.50. February 3, 6 binders at $3.25, $19.50. This covers some of these documents and reports. I can go to the vouchers I presume——

Q. I don't care anything about it. In fact I don't care anything about the details.

A. I cannot give you the amounts without giving all the details.

Q. Go ahead and do it in your own way then. I am only asking for the amount though.

A. These amounts are split up and I have to give them to you in this way in order to get them correct. February 7, 500 sheets

of paper ruled, 2,000 sheets commercial bond, 8¼ x 11,
4507 $11.50. February 16, 4,000 commercial bond, 8¼ x 11, $20.00. For time draftsmen, working on maps, January, nature of ground, $2.00. Paving map, $3.00. Checking miles of mains $30.00; entering mains on street main map $1.50. Total $36.50. Correction of street main map $1.25; entering mains on trunk main map $3.50; entering mains for Des Moines map $2.50. Total $7.25—$43.75. For services of stenographer 40 days, $3.00 a day, $120.00. For telegrams sent prepaid during February, $30.80. February expenses Messrs. Douthirt, Curran, Klump, Brodnax, Henninger, $608.20. February expenses of T. S. Genay, $16.40. February expenses J. B. Klump $135.98. Time and expenses of D. Cooley $65.45, Same F. W. Downs, $128.04. Same E. L. Hiser $114.85. Same J. M. Harrison $85.82. Same S. G. Elliott $81.64. Same E. S. Olmstead $104.50. Same W. Sturtevant $62.36. Same W. E. Oberly, draftsman, $38.57.

Judge CARR: Can't we shorten that and isn't there some way to save time by getting the statement you had from these books covering this matter?

Mr. BYERS: I have been trying to get nothing but the amounts. I have not cared anything about the detail.

Q. All I want from you, if you can tell me, without all that trouble of going through each account, in round numbers the amount of money that has already been credited up to the U. G. I. in this lawsuit, the money that they have paid out?

A. I couldn't tell you that at all without making a computation and going through the books, General. I do not keep the books in my head.

Q. Now, then, the memoranda that you have read so far from the Journal, where you have given the names of persons as being credited with time and expense, those were U. G. I. men that
4508 have been here during this trial, or getting ready for the trial?

A. They were men who are, I think most of them are men who are regularly employed by the U. G. I., but who have been detailed by that company to enter the service of the Des Moines Gas Company for this purpose.

Q. During this lawsuit?

A. Yes.

Q. The U. G. I. pays them and sends a statement in the regular way here and you credit it up, the same as these other statements we have gone through?

A. No, that is only partly true. They send a bill for their time and expenses, whichever it happens to be and I pay that bill as a cash item, just the same as if I bought a wagon load of oats.

Q. The U. G. I. sends the bill and you pay the U. G. I. bill?

A. That is correct for all these statements I have read.

Q. One thing more, that I have not been able to find in Mr. Moul's testimony; maybe you can give it to us and that is the length of the high pressure main from the works to the city limit?

A. I couldn't give it to you off-hand.

Q. Does the map show this high pressure main?

A. Which map do you refer to, because some of them may? I can get that for you I think. That high pressure line extends to Sixty-third street and includes a branch on Fifty-first street, and is designed also to supply South Ninth Street.

Q. All I wanted now, if I could get it, the length of feet of that high pressure main.

The MASTER: It would be six miles long.

Mr. BYERS: Of course, if it went straight out we could tell.

Q. The high pressure main I am speaking about is the main that serves Valley Junction; I understand you have it branch off
4509 to serve some parts of west Des Moines, but not all high pressure main.

A. Yes, that main on Fifty-first Street is a high pressure main just the same as the six inch main on Grand Avenue.

The MASTER: My recollection is there is a governor out at Sixty-third street?

A. There is a governor in Valley Junction for all the consumers that come off of that system. This side of the governor in Valley Junction each one of them is provided with a house governor so as to reduce the pressure at the house to the pressure required for the burner.

The MASTER: The house governor is in Valley Junction?

A. No, it is in Des Moines. You cannot furnish this high pressure right up to the burners in the house. It is regulated to give it an even pressure at the burner.

The MASTER: That is at the end of each service?

A. It is at the end of each service where it enters the house.

Q. Now another matter I want to figure up if I can and that is in respect to the services, any part of the services here in Des Moines used now by the Des Moines Gas Company whether any part of them are owned by the consumers?

A. No.

Q. Were they at any time?

A. No.

Q. What was the original plan?

A. Not that I know of General; to the best of my knowledge they were not.

Q. Have you looked into that?

A. I looked into it some time ago.

Q. What method did you pursue to ascertain that fact?
4510 A. Well, I was unable to find any that were. Since I have been here they have always been the property of the Des Moines Gas Company.

Q. How was it under Colonel Pratt?

A. It was the same way under Colonel Pratt.

Q. You are sure about that?

A. I am sure to this extent, that I remember talking that ques-

tion over with Colonel Pratt when I came here, and I took that statement from him and I found nothing different on the books.

The MASTER: Did anyone ever claim to own their services?

A. No, sir.

Q. Now, about the oil, Mr. Haines, where is your oil shipped from, most of it?

A. I will have to get the vouchers to find out.

Q. You can tell in a general way?

A. It may either come from Sugar Creek or Whiting.

Q. It comes from one or the other of these two places?

A. Yes, I think that is optional with the shipper as long as he complies with the specifications as to the quality of the oil.

The MASTER: There is a pipe line to Chicago?

A. Yes, sir; there is a pipe line from Kansas City to Baltimore, and Oklahoma to Baltimore.

Q. Mr. Haines, did you bring in that check book?

A. I have the check book here which is marked Defendant's Exhibit 56.

Q. Have you got Defendant's Exhibit 55 there?

A. No. (The Exhibit is produced by Mr. Curran.)

Q. Mr. Haines, do you have more than one station meter?

A. In Des Moines?

Q. Yes.

4511 A. Yes, sir; we have three.

Q. Are they all set out in your inventory, all that you have?

A. If you can show me the inventory, I can tell.

Q. It is Exhibit 15.

A. (Witness refers to inventory). The station meters of the Des Moines Gas Company are shown in Complainant's Exhibit 15, on page 41. One 8′ by 8′ Goodwin meter with Hinman drum, 10 inch connections; one 8′ by 7′ 6″ American meter with Hinman drum, installed in 1905.

Q. When was the other one installed?

A. The date is not shown on this page. And on page 120 of the same exhibit, one 14′ by 14′ station meter, Hinman drum, built by the American Meter Company, installed in 1909.

Q. Now that fixes the time when two of them were installed; when was the other one installed—it was before 1905?

A. It was before 1905, yes sir.

The MASTER: It was here when you came here?

A. Yes, sir; two of them were here when I came; only one was put in since I came.

The MASTER: The last one was installed in 1905?

A. In 1909. One in 1905 and one prior to 1905.

Mr. BYERS: The defendants at this time offer in evidence Exhibit 56, which was offered yesterday, but we would like to have the Exhibit number marked on the book itself. It is on the back of one of the stub checks. (Exhibit No. 56 is accordingly marked on the cover of the book.)

The defendants also offer in evidence that part of the record found on pages 184 and 185 of Defendant's Exhibit 27 which refers to the contract with W. H. Brereton and which has been
4512 identified by the witness Haines.

The defendants offer in evidence Defendant's Exhibit 48, produced and identified by the witness Haines and purports to be a statement of an account of Mr. A. B. Cummins with the United Gas Improvement Company and paid by the Des Moines Gas Company.

The defendants also offer in evidence Defendant's Exhibit 49, a similar account, gone over by the witness Haines, covering certain expenses of F. C. Morgan.

The defendants also offer in evidence Exhibit 50, a similar account covering the expenses of D. D. Rinehart.

Also Exhibit 51, a somewhat similar account, covering notary fees and affidavits.

Also Defendant's Exhibit 53, a similar account, covering the expenses of J. S. Harrison.

Also Defendant's Exhibit 54, a similar account covering the expenses of J. S. Harrison, all of them identified by the witness Haines and all read into the record.

Also offer in evidence Defendant's Exhibit 55 which is a letter from Mr. Haines to R. C. James and a letter from James to Haines, and a book entry or journal entry covering the sale of $81,000.00 bonds as testified to by the witness, which Exhibit is as follows:

4513 DEFENDANT'S EXHIBIT 55.

830-1-N.

September 22, 1910.
Entry.

OCTOBER 5, —0.

Mr. R. C. James, for Lewis Lillie, Treas., Philadelphia, Pa.

DEAR SIR: I beg to acknowledge receipt of your letter of above date, enclosing entry covering sale of $81,000.00 par of Company's First Mortgage Five Per Cent Twenty Year Gold Bond-, which has been entered as of September 15, 1910.

Yours very truly,

—— ——, *Manager.*

830-1-N.

SEPTEMBER 29th, 1910.

Mr. Jansen Haines, Manager Des Moines Gas Company, Des Moines, Iowa.

DEAR SIR: I send you herewith entry covering sale of $81,000.00 par of this Company's First Mortgage Five Per Cent Twenty Year Gold Bonds.

Very truly yours,

R. C. JAMES.
J. H. S.,
For Lewis Lillie, Treasurer.

J. E. 9-15-10.
I. E. M.
(Enclosure.)

4514 Des Moines Gas Company.

Journal Entry.

SEPTEMBER 15, 1910.

Sundries.

Sundries:		
Treasurer	77,107.50	
Property Purchased	4,050.00	
Treasury Bonds		81,000.00
Accrued Interest on Bonds		157.50

For $81,000 par of this Company's First Mortgage Five Cent Twenty Year Gold Bonds, Nos. 1017 to 1097, both inclusive, of $1,000 each, with March 1st, 1911, and all subsequent coupons attached, sold by the Treasurer this date for cash at 95 and accrued interest (September 1st 1910 to September 15, 1910, or 14 days @ 5% equals $157.50.)

The defendants also offer and read in evidence the Defendant's Exhibit 57, being a statement produced by Mr. Haines showing the book entry covering cancellation of $75,000 preferred stock contracts as follows:

4515 DEFENDANT'S EXHIBIT No. 57.

10-2-11.

Des Moines Gas Company, Des Moines, Iowa, to the United Gas Improvement Company.

Order No. —.
Date.
1911.

Sept. 15.	For amount paid pursuant to resolution adopted by Board of Directors August 28, 1911, on surrender for cancellation of preferred stock contracts, 18,2482% of $411,000. or	$75,000.00
	Interest from September 1, 1911, to September 15, 1911, on $75,000 at 6%.....	175.00
		$75,175.00

Paid by Check. Dated Sep. 15, 1911. No. 91.

Approved:
—— ——.
Correct:
—— ——, *President.*
—— ——, *Ass't Treas.*

Payment Approved:
Correct:
—— ——, *Purchasing Agent.*
J.B., *Treasurer.*

Received Sept. 15, 1911, from Des Moines Gas Company, Seventy-five Thousand, one hundred, seventy-five & XX Dollars in full for above bill.
$75,175.00.

UNITED GAS IMPROVEMENT CO.
JAMES BALL, *Ass't Treasurer.*

Defendants also offer and read into the record Exhibit 58, a similar book entry or statement for book entry covering the item of interest on $411,000 preferred stock contracts, amount $12,330.00, as follows:

4516 DEFENDANT'S EXHIBIT No. 58.

10-2-11.

Des Moines Gas Company, Des Moines, Iowa, to United Gas Improvement Co., Broad & Arch Sts., Phila., Pa.

Account.

Order Co.

Date. 1911.		
Sept. 15.	Amount to pay six (6) months' interest to Sept. 1, 1911, on Preferred Stock Contracts of the Des Moines Gas Co., at the rate of six (6) per cent per annum...	$411,000.00
	$411,000.00 @ 6%.....	$12,330.00

Paid by Check, Dated Sep. 15, 1911, No. 90.

Accrued Int. on Preferred Stock Contracts.

Approved:
R. B. J.

Correct:
—— ——, *President.*
—— ——, *Ass't Treas.*

Correct:
—— ——, *Purchasing Agent.*

Payment Approved:
J. B., *Ass't Treasurer.*

Received Sept. 15, 1911, from Des Moines Gas Company, Twelve Thousand Three Hundred and Thirty xx Dollars in Full for above bill.
$12,330.00.

THE UNITED GAS IMPROVEMENT CO.
JAMES BALL, *Ass't Treasurer.*

4517 Defendants further offer in evidence Defendants' Exhibit 59, produced by the witness Haines as an analysis of the account with the United Gas Improvement Company from March 1, 1906, to December 31, 1910.

Q. Mr. Haines, there is one matter I thought I wouldn't say anything about, but I believe I would like to have it cleared up, if there is any way to clear it up, on your own account as well as mine. There is an exhibit here, a tax statement of 1911. I want to call

your attention Mr. Haines to this statement that you have already stated was a correct statement of the situation of the property and one that you signed and swore to in March this year. I want to call your attention to that statement of net earnings for last year and ask you if that is not wrong.

A. I don't understand your question in regard to the situation of the property.

Q. I am simply identifying the paper.

A. You mean defendants' Exhibit 47?

Q. Yes.

A. I think not.

Q. Last year would be 1910?

A. Yes, sir.

Q. You say $66,560.28 was the net earnings of the company last year?

A. Yes, sir.

Q. You paid a government tax on twice that amount, didn't you, and you knew you had, and knew you were liable to, when you made that statement, didn't you?

A. The government tax report and this statement are made up entirely different.

Q. Different in what way?

A. Well, they will show on their face, General.

4518 Q. I want you to explain that item and I call it to your attention on your own account, not on mine.

A. You mean you want me to testify on my own behalf?

Q. I want whatever explanation you have to make to that item.

A. Well, I would say my understanding of the method in which this statement is to be arrived at according to the statute under which this statement is made, these are the net earnings which are called for in that statute.

Q. What net earnings are they: what net earnings did you think they were?

A. I don't think I could reproduce these figures without referring back to the books.

Q. You may take on that task; we would like to have you refer to the figures and present them here so that we can see just how you got at them?

A. Of course in this statement the question of construction of net earnings is the one that I referred to and this figure is produced from our books.

Q. You may at your leisure dig up the figures and bring them in to show how you got at it. You may take the witness.

Cross-examination by Judge GEO. H. CARR:

Q. In your direct examination by General Byers, quite frequent reference was made to a paper entitled, the United Gas Improvement Company Synopsis of Transactions Prepared by the Defendants' Witness Sangster. Now it appears that paper was turned over to complainant to be copied and in some way it has been mislaid. I show you a paper marked Complainant's Exhibit 69, Mr. Haines——

Mr. BYERS: We do not question but what it is correct.

4519 Judge CARR: I want to lay the foundation to put this in because I think the examination by you is not fully intelligent.

It is admitted that Complainant's Exhibit 69 is a correct copy of the statement made up by Mr. Sangster.

Complainant offers in evidence as a part of the cross examination of Mr. Haines Complainant's Exhibit 69.

The MASTER: Does that amount of the tax statement correspond with Complainant's Exhibit 23, on page 22?

A. Yes, sir.

The WITNESS: Then it won't be necessary for me to make up that statement. I did not recollect that it was contained in Exhibit 23.

Mr. BYERS: Is that the way you got at it or was Exhibit 23 made from your statement?

The WITNESS: This is the gross revenue—net income as appeared on the Company's books for the years ended September 30, 1908, 1909, 1910 and December 31, 1910.

Mr. BYERS: I want you to furnish your own figures, the way you arrived at it at the time you gave it to the assessor.

Judge CARR:

Mr. Haines, I will call your attention to Exhibit 18 and I want to ask you a few questions with regard to it. Will you turn to the first letter in point of time of that correspondence, that is under what date?

A. Under date of August 1st, 1910.

Q. It purports to be a letter to you written by Mr. Rollin Norris?

A. Yes.

Q. I don't know whether you have fully explained who Mr. Norris is? I wish you would do so to avoid any doubt about

4520 it.

A. Mr. Rollin Norris is an engineer, a graduate of Stephens Institute of Technology who has devoted his entire time to the construction, operation and investigation of gas works and gas business for about twenty-three years, or practically since he left Stephens Institute of Technology.

Q. What is his connection with the United Gas Improvement Company?

A. He is the representative of the head of the engineering department of the United Gas Improvement Company, Mr. Walton Clark, and has under him a number of assistants who are engineers and who are employed in assisting him in analyzing the design and construction and operation of gas works all over the United States, and in tabulating the results and costs and the records obtained from various sources throughout the United States, Canada and Europe; and he has also under him a large clerical force who collect and tabulate the results of construction, operation and design and cost; he also has a research department which collects all the literature and information available and assembles it and catalogs it

and arranges it, so as to be available for use. This department is independent of the general engineering department, has separate employés, but works with it. He also has a laboratory department for chemical tests and analysis. He also has under his direction experimental plants at two points for experimenting and testing various results of oils fuel, etc. I would say this research department in addition examines the design and construction of all patents that are issued, analyzes the processes that are patented, keeps in touch with them, with their application to the gas business. These engineers who assist Mr. Norris in his work are frequently detailed to special duty at various plants, in some cases in which the United Gas Improvement Company is financially interested and in
4521 many others in which it has no financial interest, and when so detailed their time and expenses is charged to the company for whom they render services. This general service of the engineering department is part of the service for which the compensation of $2500 a year is paid to Mr. Clark by the Des Moines Gas Company.

The MASTER: Who is Mr. Clark?

A. Mr. Walton Clark is the head of this engineering department in the United Gas Improvement Company and he is one of the Vice Presidents in the United Gas Improvement Company, and one of the Vice Presidents of the Des Moines Gas Company, and as a Vice President of the Des Moines Gas Company he is paid a salary of $2500 a year by the Des Moines Gas Company which salary goes to the United Gas Improvement Company to pay in part for this service of an engineering nature which is rendered by the United Gas Improvement Company to the Des Moines Gas Company.

The MASTER: This Rollin Norris work in addition is taken out of it?

A. Rollin Norris furnished some of the services for which that payment is made. Rollin Norris has no salary from the Des Moines Gas Company, but the head of the engineering department under Mr. Walton Clark.

The MASTER: What I want to know, is that amount paid to Rollin Norris taken out of Clark's pay?

A. The Des Moines Gas Company makes no payment to Mr. Norris except for the traveling expenses which he incurs making a trip to Des Moines.

Q. In other words, do we understand the services rendered by Mr. Norris are compensated for in the salary paid Mr. Walton Clark?

A. Yes, sir.

4522 Q. And now is that also true as to the services rendered by Mr. Norris' assistants?

A. That is true, absolutely true, in regard to his assistants when engaged in work for the Des Moines Gas Company in Philadelphia in tabulating these results, making these designs, equipment and planning for our future extensions and such work as that. He has a corps of three or four, I think five men, who immediately report to him and no charge is made for their time to the Des Moines Gas Company when they are working for the Des Moines Gas Company.

It is a part of the services they render and in which compensation is paid to Mr. Clark as head of that department. There are other men in that department whose services and time are both paid for, if they are delegated to come to Des Moines to do that work; but for the work which they do in Philadelphia no compensation is paid other than the compensation paid Mr. Clark. So that the items of traveling expenses are merely for the expenses when they actually have to come to Des Moines, and for these other subordinate men who simply com here on a detail while actually in Des Moines.

Q. Mr. Haines, you have stated in some detail the nature of the duties performed by Mr. Norris and his equipment for such work. What personal knowledge have you and what is the source of your personal knowledge?

A. I was for some years one of his assistants and directly under his direction and supervision and in that way I became thoroughly familiar, as a part of his organization, with the duties that were required of the engineers which he has in his department.

The MASTER: These services are they charged as construction and extension or to operation?

A. It depends on what work they are here for. They
4523 classify their own time and expense, depending on what work they actually are engaged in.

The MASTER: When they are in Des Moines for the purpose of extending mains and engineering for that, how is that charged?

A. They would charge that to extension of mains, if it was a 4 inch or 8 inch, depends on what size of mains they were doing specific work on.

The MASTER: Would they charge it to construction or operation?

A. They would charge to construction if they are here on construction work.

Q. Now this $2,500 which is paid to Mr. Clark is one of the items that goes to make up the $10,000 about which you have been interrogated by General Byers?

Objected to on part of defendants as not cross examination.

A. It is.

Q. In the letter of August 1, 1910, written you by Mr. Norris, reference is made to a blank copy for your annual estimate; was that included or enclosed in that letter?

A. Yes, sir.

Q. Is that in the files of the correspondence?

A. That is in the file of the correspondence attached to Exhibit 18.

Q. Now, Mr. Haines, upon the receipt of this letter, I wish you would tell the Master in a general way what you did in respect to complying with the request for your annual estimate; tell him in a general way how you went about it and what you did?

A. Well, I took this form and myself and Mr. Vincent went over the subject and collected the data called for in this form and prepared the figures submitted in this form.

The MASTER: This exhibit 18 shows how that is done in a
4524 general way?

A. Yes, sir; in a general way.

Q. Who is Mr. Vincent—I don't know but the record shows that?

A. The engineer of the Des Moines Gas Company.

Q. What do you say as to whether he is a qualified and competent gas engineer?

A. Well, he is a graduate from the University of Pennsylvania, Mechanical Engineering Department, and he has had about ten or fifteen years' experience in the gas business.

Mr. BYERS: We concede his competency too.

Q. What did he have to do in aiding you in the preparation of this annual estimate, if anything?

A. Well, we discussed the figures; we were both familiar with the machinery and appliances of the Des Moines Gas Company, and we together made an inspection of them, discussed the requirements and necessities for the future, and he aided me in his advice and computations.

Q. Can you tell us about how long a time you spent in the work of preparing this estimate in collaboration with Mr. Vincent?

A. Well, this estimate is made up from data and from these conferences held during the year, when some of this work, some requirement rather, future requirement of the Company becomes apparent, and some memorandum is made of it, or some note made of it, and then when this form was received, those notes and memoranda are gone over, collected and put into shape to submit to the Board through Mr. Norris.

Q. I think there is in the file some led pencil memoranda, is there not?

A. Yes, there are some pencil figures and computations. It generally takes about thirty days to get these figures compiled
4525 and in shape to make this estimate after the form is received.

Q. Who made up that pencil memoranda?

A. Mr. Vincent.

Q. Was that used in your conference with him or conferences?

A. Yes, sir; the form which Mr. Norris sent and the letter asks the question: What pressure mains will you probably need, give list and approximate cost. Some of this pencil memoranda made by Mr. Vincent are an analysis of the pressure conditions that have developed during the year and which we analyze in order to develop the districts which have to be supplied with large mains, which we call pressure mains, and these various pressures are figured out to show what size main will be required and what a given main will supply, so that we will have some accurate information as to the size of the main required to complete the distribution system, and relieve these low pressure areas.

Q. What I wanted to get at, Mr. Haines, I don't know but what you have answered it in part, perhaps fully, is to what extent you went over the subject with the Des Moines Gas Company's engineer, what care and thoroughness, before making out your estimate.

A. Well, each item was gone over with care, and data sketches were made by the engineer of the various things that required either free hand or carefully drawn sketches. Each item is taken up in

detail and the estimated value from an operating standpoint is taken into consideration with what information we have attained.

Q. You yourself, the record shows, are a gas engineer?

A. Yes, sir.

Q. If any point of difference arose between you and Mr. Vincent as to the requirements of the Company, did you take those
4526 matters up with him and discuss them and settle them?

A. Yes.

Q. Before making your final report?

A. Yes, sir. Of course my field in the application of the gas business is limited largely to Des Moines. For that reason the engineering problems are taken up and discussed with the engineers in Mr. Norris' department, who has the opportunity for broadening information in comparing the results with the various cities in the country.

Q. Now having made up this estimate in the manner you have stated and with the care you have stated, you transmitted it in what letter?

A. I transmitted it in detail in the letter dated August 29, 1910. I think the letter was written on that day and was held for some further information and was not mailed I believe until September 1st.

Q. Now do you know what was done with the report, what attention was given it, how it was handled, when it was received by Mr. Norris, and if you do, I wish you would state in a general way just how the estimate was handled in Philadelphia?

A. When the estimate was received by Mr. Norris, it would be gone over, read over and discussed by Mr. Norris and his immediate assi-tants. Each item in the estimate would be taken up and compared with the figures which Mr. Norris and his men had collected from other plants, through their travel and experience and study of the subject, and if some of the items that I requested in my annual estimate were not deemed necessary for Des Moines by Mr. Norris and his assistants, they would correspond with me further about it, or one of his assistants would come out to Des Moines and visit the property on the ground and make his own personal
4527 investigation and study of the subject and discuss with me further the pros and cons of the economy to be secured by the installation of some machine or something of that sort, and then he would report to Mr. Norris the result of his investigations, and Mr. Norris would make his recommendation to the board based on the conclusions that we had arrived at.

Q. Now, you said that Mr. Norris would first make his report to Mr. Clark?

A. He would take my annual estimate—after these matters were adjusted between his department and myself, then he would write a letter to Mr. Clark, vice president of the Des Moines Gas Company, which I think is shown here in the letter of date December 15, 1910, and make his recommendations to the board through Mr. Clark in that way.

Q. As I understand it then, before taking the matter up with Mr. Clark be with his assistants in his department would go over the

matter of your estimates with care and where points of difference existed between you and Mr. Norris with regard to the matter, he would sometimes take it up with you by sometimes sending out persons to look over the matter on the ground and make an investigation?

A. Yes, or come himself.

Q. Do you know in a general way how much time Mr. Norris in his department put on these annual estimates before making his report to Mr. Clark?

A. Well, from the time he received mine, which would probably be the 2nd or 3rd of September, until this letter was written December 15th.

Q. Now when the report was made to Mr. Clark by Mr. Norris, which as I understand you, would express his views on the
4528 subject, having arrived at that in the way you have stated, what would be the next step in the matter?

A. Mr. Clark would present them to the board of directors of the Des Moines Gas Company; they would take up each expenditure in detail, and the report in detail and discuss it, and if the board agreed with Mr. Clark in his recommendations, they would authorize me to make the expenditure.

Q. Let me ask in that connection, whether you know whether Mr. Clark and Mr. Norris would have a conference over Mr. Norris' report to him, or whether Mr. Clark would accept it?

A. Presumably they would confer more or less before it was done. They would have opportunity; their offices are close together.

At this time an adjournment was taken until 1:30 P. M.

4529 1:30 P. M., TUESDAY, *October* 3, 1911.

JANSEN HAINES continued on cross examination by Hon. George H. Carr, testified as follows:

Q. You have been asked by General Byers concerning the issue or the certification of certain bonds of the Des Moines Gas Company and the sale by the treasurer and the application of the proceeds. Now for the purpose of getting that matter clearly before the court I call your attention to the provisions of the mortgage of the Des Moines Gas Company already in evidence and which authorizes the issue of $1,500,000 of bonds and after making certain deductions from that amount in paragraph 3 in article 1, the mortgage provides as follows: "The balance being $815,000 at par of said bonds shall be retained by the trustee and shall be certified and delivered from time to time by the trustee and shall be used by the gas company only for the purpose of making additions to or extensions or betterments of its plants or acquiring other plants or properties real or personal. The trustee will not deliver any of the bonds in this subdivision three referred to except upon resolution of the board of directors of the gas company calling for such delivery and stating that the bonds then called for are required for such addition, extensions betterments, or acquisitions as aforesaid and also stating that said bonds or the proceeds thereof are to be used for one or more of said

purposes and a certified copy of such resolution under seal of the gas company shall be conclusive evidence to the trustee of the truth of the matters therein set forth and shall constitute full and sufficient authority to the trustee to certify and deliver said bonds in the
4530 amount stated therein to be so required and the trustee shall thereupon certify and deliver said amount of bonds to or upon the order in writing of the president or vice president of the gas company. Now I wish you would turn to defendant's exhibit No. 27 being stockholders' and directors' minutes No. 1, to the directors' meeting under August 15, 1906, found on page- 68 to 70 of the record and state whether or not that is the first action taken by the directors authorizing the certification of any porion of this $815,000 of bonds?

A. That is the first action of the board as indicated in the directors' meeting held August 15, 1906, shown on page 68 and headed betterment statement.

Q. You say that is the first action taken?

A. That is the first action taken, yes.

Judge CARR: At this time complainant offers and reads in evidence——

Mr. BYERS: Objected to as a meter repetition, already read in the record, at least been offered twice.

Judge CARR (continuing): From the record of the board of directors' meeting of the Des Moines Gas Company under date of August 15, 1906, the following portion thereof. Betterment statement. The president submitted a statement prepared by the treasurer showing that the company had expended in making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal from March 1, 1905, to June 30, 1906 the sum of $58,730.77 and submitted a statement showing the various items comprising this sum which statement upon being read was ordered to be spread upon the minutes and is as follows: "Expenditures made for additions to or extensions of betterments
4531 of the plants of the Des Moines Gas Company or for acquiring other plants or property real or personal March 1, 1906, to June 30, 1906. Extensions and improvements at works $757.64. Street lamp extensions $607.92; extensions of street mains $38,627.33, Meters $11,877.92, services $6,790.65 total $58,730.77. Certification of $58,000 of bonds. The president thereupon stated that it was proper to request the commercial trust Company Trustee under the company's first mortgage dated March 1, 1906 to certify and deliver to the company bonds equal to the amount of the above sum of $58,730.77. Whereupon upon motion duly seconded the following preamble and resolution- were unanimously adopted. Whereas, the Des Moines Gas Company has expended from March 1, 1906, to June 30, 1906, the sum of $58,730.77 for the purpose of making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal and whereas it is desired that the commercial trust com- trustee under the company's first mortgage dated March 1, 1906, be requested to certify $58,000 at par of the first mortgage five per cent 20 year gold bonds of the

company secured by said mortgage and deliver the same to or upon the order in writing of the president of the company, said bonds being equal in amount to said expenditures of the company as above set forth and for which *which* bonds have not heretofore been issued, leaving, however, a balance of $730.77 on account of which amount the company may hereafter request the trustee to certify and issue bonds, the same not being done at the present time as said bonds are of the denomination of $1,000 each and the company does not desire bonds in fractional amounts of $1,000 should be issued. Now
4532 therefore be it resolved that the Commercial Trust Company, trustee, under the first mortgage of the Des Moines Gas Company dated March 1, 1905, be and it is hereby requested to certify $58,000 at par of the first mortgage five per cent 20 year gold bonds of the company and deliver the same to or upon the order in writing of the president of the company to be used by the company only for the purposes of making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal as set forth, and be it further resolved that the secretary of the company be and is hereby authorized and instructed to prepare a certified copy of these preambles and resolutions for presentation to the trustees. Sale of $58,000 bonds. On motion duly seconded and unanimously adopted it was resolved that the treasurer be and he is hereby authorized and directed to sell or dispose of on such terms and conditions and at such time as you shall deem it best for the interests of the company the $58,000 of the first mortgage five per cent 20 year gold bonds of the company the certification and issue of which bonds provision has been made at this meeting and to apply the proceeds thereof to the discharge of any of this company's liabilities. On motion the meeting adjourned.

Q. Mr. Haines, do you know or can you state when this $58,000 of bonds was sold? In giving your answer include in the answer the source of information and if in writing read it into the record.

A. I find in defendant's exhibit 56 the treasurer's check book opposite check No. 19, the following entry. 6-7-07. Deposit sale $100,000 bonds at 90, $90,000 interest three months five per cent $1,250, total deposit, $91,250.

Q. I note that there is a sale of a $100,000 par value of
4533 bonds. Will you turn to the records of the board of directors in dedendant's exhibit 27 and state whether you find therein any authorization prior to June 1, 1907, for any further issue of bonds than the $58,000 to which you have already referred?

Objected to as a mere repetition having already been gone over.

A. I find on page 87 of defendant's exhibit 27, the following authorization acted on at the meeting of the directors under date of March 20th, 1907, which reads as follows:

Betterment statement. The vice president submitted statement prepared by the treasurer showing that the company had expended in making additions to or extensions or betterments of its plants or acquiring other plants or property, real or personal from March 1, 1906, to December 31, 1906, the sum of $129,282.11 and sub-

mitted a statement showing the various items comprising this sum, which statement was read and ordered spread upon the minutes and is as follows: Expenditures made for additions to extensions, or betterments of plants of the Des Moines Gas Company or for acquiring other plants or property, real or personal from March 1, 1906, to December 31, 1906.

Extensions and improvements at works	$4,644.30
Street Lamp extensions	1,511.59
Extension of street mains	84,209.66
Meters	24,674.84
Services	14,241.72
Total	129,282.11

Less amount of bonds heretofore issued on account of same $58,000. Balance of amount for which bonds could be issued at par $71,282.11. On page 88 of Exhibit 27 certification of $71,000 of bonds.

4534 The president thereupon stated that it was proper to request the Commercial Trust Company, trustee under the company's first mortgage dated March 1, 1906, to certify and deliver to the company bonds equal to the amount of the above balance of $71,282.11. Whereupon on motion duly seconded the following preambles and resolutions were unanimously adopted.

Whereas the Des Moines Gas Company has expended from March 1, 1900, to December 31, 1906, the sum of $129,282.11 for the purpose of making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal and

Whereas, commercial Trust Company, trustee under the company's first mortgage dated March 1, 1906, has heretofore certified and delivered to the company on account of the above expenditure bonds of the par value of fifty eight thousand dollars ($58,000) and whereas, it is desired that the Commercial Trustee, under the company's first mortgage dated March 1, 1906, be requested to certify Seventy one thousand dollars ($71,000) at par of the first mortgage five per cent twenty year gold bonds of the company secured by said mortgage and deliver the same to or upon the order in writing of the president of the company said bonds being equal in amount to said balance of expenditures of the company as above set forth and for which bonds have not heretofore been issued leaving, however, a balance $282.11 on account of which the company may hereafter request the trustee to certify and issue bonds the same not being done at the present time as said bonds are of the denomination of $1,000 each and the company does not desire that bonds in fractional amounts of $10,000 should be issued.

Now therefore be it resolved that Commercial Trust Com-

4535 pany trustee, under the first mortgage of the Des Moines Gas Company dated March 1, 1906, be and is hereby requested to certify Seventy one Thousand dollars ($71,000) at par of the first mortgage five per cent twenty year gold bonds of the company, and deliver the same to, or upon the order in writing of the president

of the company to be used by the company, only for the purposes of making additions to or extensions or betterments of its plants or acquiring other plants or property real or personal as above set forth.

Further resolved that the secretary of the company be and he is hereby authorized and instructed to prepare a certified copy of these preambles and resolutions for presentation to the trustee.

Selling Seventy one Thousand Dollars bonds. On motion duly seconded and unanimously adopted it was resolved that the treasurer be and he is hereby authorized and directed to sell and dispose of upon such terms and conditions and at such time as he shall deem it best for the interests of the company the $71 000 of the first mortgage five per cent 20 year gold bonds of the company, the certification and issue of which bonds provision has been made at this meeting and to apply the proceeds thereof on the discharge of any of this company's liabilities. On motion the meeting adiourned.

Q. Can you tell us what was done with the proceeds of the sale of that $100,000 of bonds which had been certified under these two authorizations of the board of directors and which were disposed of on the first of June 1907. Before you answer that question I understand your statements of the $129,000 of bonds which have been called for by these two resolutions and certified, $100,000 was sold leaving $29,000 in the hands of the treasurer. That is

4536 correct is it?

Objected to as not cross examination, leading immaterial and a mere repetition.

A. As shown by defendant's exhibit 56 there was sold June 1, 1909, $100,000 of these bonds which with the discount and adding interest netted the Des Moines Gas Company $9,250.

Q. Now the question is what was done with that money by the treasurer?

Objected to unless the witness claims to know of his own knowledge, not the best evidence of what was done with it.

A. The money which the treasurer received as is shown in his check book Exhibit 56, which appears to be properly kept in the usual method of keeping check book entries, appear- to have been made consecutively and in order, was deposited to the account of the treasurer in the First National Bank of Philadelphia under date of June 1, 1907.

Q. What became of that money, let me call your attention to the stub of check 20.

COURT: Let me make a suggestion to you. This record shows all these things were paid for before the bonds were issued.

Judge CARR: It is just for the purpose of explaining these funds. I think if you will just have a little patience with us, I think this matter is material and if we do not go through it a wrong impression may be created as to how the proceeds of these bonds were used.

Mr. BYERS: This is what we claim and the purpose we had in introducing this testimony was to show that the money actually received for these bonds, a large portion of it was used to retire the

preferred stock contracts, the property improvements and additions
referred to in the authorization having been made before this
4537 and paid for out of the earnings and our purpose in intro-
ducing this record was to show just how much money had gone to retire preferred stock contracts, principal and interest, in order to determine just how much money had been taken out of this business for improvements and retiring these preferred stock contracts.

Judge CARR: That is just what we want to show, show it is not true as General Byers states it, that the proceeds of these bonds went to pay off these preferred stock contracts. We want to show the real transaction that the proceeds of the bonds went to reimburse the treasurer on account of the funds that had been thus used. If I understand the record you offered the stub book in evidence.

Mr. BYERS: I offered everything that I could get hold of that would make it clear what was done with it.

Judge CARR: You offered the record book as a whole.

Mr. BYERS: I offered that as a whole for the express purpose of getting at the transaction.

COURT: You might refer to each of these records and I will note it so we will know where to refer to them. I would like to know the date of the sale and what the discount was.

Q. Aside from what is in the record, the next matter I think that pertains to this was covered by the last question, check 20, have you referred to it?

A. Yes, sir.

Q. Just what does that show?

A. That shows the payment to the United Gas Improvement Company of $89,840.97 marked demand notes $87,635.47 and interest to 6-1-07 at 6 per cent, $2,205.50, total, $89,840.97. That payment was made subsequent to the first sale of bonds or at the sale
of the first bonds, the bonds sold June 1, 1907, and the
4538 treasurer retired the demand notes for $87,635.47 on June
1, 1907. In other words on the same day on which the bonds were sold and the money received and deposited from the sale of them the treasurer paid off and canceled a demand note and interest amounting to $89,840.87.

Q. Do you know what those notes were given for?

A. Those notes were given for advances by the United Gas Improvement Company on account of construction, borrowed money, money which was borrowed from the U. G. I.

Q. If you will, turn to page 107 under date of September 18, 1907, of the minute book, you will find the next transaction and give the Master the reference to that and amount of bonds authorized by the meeting.

A. On page 107 of this exhibit 27 the betterment statement shows that $167,476.38 had been expended for additions, betterments, etc., recited from March 1, 1906, to June 30, 1907, and the statement shows that the amount of bonds heretofore issued on account of same was $129,000 leaving balance of amount for which bonds may be issued at par of $38,476.38. $38,000 of bonds were

certified and the Commercial Trust Company delivered to the company bonds equal to the amount of $38,000 leaving a balance of $476.38 to apply on future betterment statements for the further issue of bonds so that they could be issued in multiples of a thousand.

Q. That left that $29,000 already in the hands of the treasurer and $38,000, left $67,000 then in his hands.

A. Then on page 109 the sale of the $38,000 of bonds was authorized that is the treasurer, was authorized to make the sale and that $38,000 with the $29,000 before made $67,000 which the
4539 treasurer after that meeting of September 18th had and had the authority to sell.

Q. Now turn to page 122 of the regular meeting of the board of directors under date February 18, 1908, and state in the same manner what that is?

Q. On page 122, in defendant's Exhibit 27, under date of February 19, 1908, a betterment statement was presented, prepared by the treasurer and presented to the board.

COURT: You mean it as shown by Exhibit 23.

A. As shown by plaintiff's exhibit 23 that bette-ment statement shows betterments to the amount of $221,680.41 had been made from March 1, 1906 to December 31, 1907, and that the amount of bonds heretofore issued on account of the same was $167,000 leaving a balance of $54,680.41 for which bonds might be issued at par. Then follows certification of $54,000 worth of bonds by the trustee and order to the treasurer to sell $54,000 worth of bonds leaving a balance of $680.41 to apply on future issues of bonds under this mortgage.

Q. Now right there can you call the Master's attention to the place where the record of these bonds or a part of them being sold?

A. On defendant's Exhibit 56 I find opposite check No. 40 under date of June 1, 1908, deposit proceeds sale $121,000 worth of par bonds at 90 $108,900 interest 3-1 to 6-1 at 5 per cent $1,512.50. The total received by the treasurer for the sale of this $120,000 bonds deposited to his account as treasurer in the First National Bank was $110,412.51.

Q. Now if you will, turn to directors' meeting under May 20, 1908, page 135 for the next authorization and state briefly what that is.

A. On defendant's Exhibit 27, beginning on page 135 in
4540 the minutes of directors' meeting held May 20, 1908, I find a sale of $121,000 worth of treasury bonds authorized by the board.

Q. What was the betterment statement at that time?

A. There was no better- statement presented at that meeting of the board.

Q. Now turn to page 145 under date August 10, 1908, you will find the next directors' meeting authorizing a certification of bonds.

A. On page 145 of defendant's exhibit 27 a directors' meeting under date August 19, 1908, a better- statement was presented showing betterments had been made from March 1, 1906, to June 30,

1908, of $239,052.42, amount of bonds heretofore issued in account of same $221,000 leaving a balance of $18,053.42 for which bonds may be issued at par. Then on page 146 of the same exhibit follows the minute of the certification of $18,000 worth of bonds. No authority to sell at that meeting.

Q. Now turn to directors' meeting of date February 10, 1909, beginning on page 157 and state what you find there?

A. On page 157 of defendant's Exhibit 27, is shown in the minutes of the directors' meeting February 10, 1909, a better- statement showing that betterments from March 1, 1906, to December 31, 1908, had been made to the amount of $267,330.85, less amount of bonds heretofore issued on account of same, $239,000 leaving *baln* balance for which bonds may be issued at par $28,330.85. Then follows on page 158 certification of $28,000 worth of bonds leaving balance of $330.85 to be applied and on page 159 a minute of the authorization of the treasurer to sell at 90 and accrued interest $46,000 of these bonds being $18,000 par value of bonds now held in the company's treasury and $28,000 par value of bonds for the certification of which provision has been made at this meeting.

4541 Q. If you will, take your check book now and find the entry on the back of the stub opposite check No. 46 under date March 15, 1909, and state what that shows?

A. On defendant's exhibit 56 opposite check No. 46 will be found the entry under date March 15, 1909, deposit proceeds of sale of $46,000 par 5 per cent bonds $41,489.44.

Q. Sold at what?

A. Does not show in this entry, but it was in accordance with the authorization for the sale of these bonds contained on page 159 of defendant's exhibit 27, these bonds were sold at 90.

Q. On the same day do you find reference there in the check book to the payment of $103,800?

A. On defend-nt Exhibit 56 the stub of check 47 and 48 shows as follows, check 47 dated March 15, 1909, the United Gas Improvement amount to pay off preferred stock contracts, amounting to $103,800 or 1038 shares at $100 par, $83,000 for that check and check No. 48 amount to pay balance of preferred stock contracts $20,800 and interest, amount of check No. 48 including $20,800 of preferred stock contracts and interest amount of $41,560.

Q. Now if you will take minute book and refer to directors' meeting on page 185 recording the directors' meeting under date of October 20, 1909, and tell us what that shows?

A. On page 185 defendant's exhibit 27 minutes of the directors' meeting held October 20, 1909, there was a betterment statement and on page 186 this betterment statement shows that from March 1, 1906 to September 30, 1909, there had been expended $331,182.03, less amount of bonds heretofore issued on account of same, $267,000 balance of amount for which bonds may be issued at par $64,182.03. Then follows certification of the bonds and on page 187 the minutes contain the authorization to the treasurer to sell at 95 and

4542 accrued interest, $64,000 of the company's first mortgage bonds for the certification of which provision has been made at this meeting.

Q. Now if you will turn to the check book opposite check 52 under date October 25, and see if you will find any record there of the sale of that amount of bonds?

Q. On October 25, 1909, is shown in defendant's Exhibit 56 opposite check No. 52 the following item: Deposit proceeds sale of $64,000 bonds at 95, $60,800 interest 9-1 to 10-25, one month 24 days at five *mer* cent $480. Total $61,280 which is shown as received by the treasurer for the sale of these bonds and deposited to his account as treasurer in the First National Bank in Philadelphia. There is a further note in this giving the number of the bonds, No. 953 to 1016 inclusive.

Q. Under the same date do you find on the check book an entry of payments made?

A. The stub of check No. 52, defendant's exhibit 56, under date October 25, 1909, the following entry was made. United Gas Improvement Company amount paid pursuant to resolution by board of directors 1-20-09 on surrender for cancellation of preferred stock contracts 19.4 per cent of total outstanding amount thereof ($588,200) $114,110.80; interest from 9-1 to 1-25 1909, at 6 per cent $1,027. Total amount of this check so paid appears from the entry $115,137.80.

Q. Now take the minute book and refer to a directors' meeting of February 28, 1910, page 201 to 203 inclusive and state what that shows.

A. Page 201 defendant's exhibit 27 in the minutes of a directors' meeting held March 28, 1910, the following betterment statement appears which was presented to the board and acted upon.
4543 This betterment statement shows that from March 1, 1906 to December 31, 1909, there had been expended $263,567.07 less amount of bonds heretofore issued on account of same $331,000 balance of amount for which bonds may be issued at par $32,567.07. Then follows certification of $32,000 worth of bonds and no authority for sale on that date I believe.

Q. Now turn to directors' meeting August 15, 1910, page 217 to 221 inclusive and state what that shows?

A. On page 217 defendant's exhibit 27 in the minutes of the directors' meeting under date of August 15, 1910, appears a betterment statement showing that $412,704.51 had been expended for betterments less amount of bonds heretofore issued on account of same $263,000, balance for which bonds may be issued at par $49,704.50. Then follows on page 218 certification of $49,000 worth of bonds and on page 219 the treasurer is authorized to sell at 95 and accrued interest $81,000 first mortgage bonds being $32,000 par value of bonds now held in the company's treasury and $49,000 par value of bonds for the certification of which provision has been made at this meeting.

Q. Now if you will turn to the entry on the back of the stub in the check book opposite check 67 under date September 15, 1910, and state what that shows.

A. On defendant's exhibit 56 opposite check No. 67 under date 9-15-10 is shown the entry deposit sale of $81,000 par bonds at 95

$76,950, Nos. 1017 to 1-97 inclusive accrued interest 9-1 to 9-15 fourteen days five per cent, $157.50. The total now of deposit as shown by this entry going to the treasury of the Des Moines Gas Company in the First National Bank of Philadelphia $177,107.50.

Q. On the same date check No. 70, the stub of check No.
4544 70, what does that show?

A. That stub of check No. 70, defendant's exhibit 56, under date September 15, 1910, the following entry is made: United Gas Improvement Company amount paid pursuant to resolution adopted by board 8-15-10 on surrender for cancel of preferred stock contracts 13.307453 per cent of total amount outstanding $474,089.20 equals $63,089.20. Interest 9-1 to 9-15-10 at 6 per cent $147.21. The amount of the check so paid as shown by this entry is $63,236.41.

Q. You were asked by General Byers with respect to printing. I wish you would explain to the Master just how the matter of printing is handled, how it is done and where you got it done. The matter was only partially gone into in your testimony in chief, blanks, letterheads and things of that kind.

Mr. BYERS: I don't care anything about it as I stated at the time.

Judge CARR: I don't know as it is material at all but I don't want the record to show only part of a situation of that kind.

Q. I want to show just exactly Mr. Haines the facts in regard to the printing that is done for the Des Moines Gas Company, I wish you would explain that fully?

A. The necessary blanks, forms, letterheads and so on that have to be printed for the use of the Des Moines Gas Company are ordered by me from the purchasing agent Mr. Pearson who purchases them for the Des Moines Gas Company wherever he can buy them cheapest whether in Philadelphia or elsewhere and he keeps in touch with me in regard to the printing cost and a good deal of printing can be done in Des Moines as cheaply as it can be done elsewhere, but not all and unless it is necessary to have forms printed in a hurry I communicate with him, obtain the best price which
4545 I can obtain and give him my price and we decide on the purchase of the printing where it can be done most cheaply.

Q. Right there, you said give him your price, what did you mean by that?

A. I mean give him the price which I can obtain in Des Moines from the printing firms in Des Moines and as happened on several occasions Mr. Pearson has ordered printing in Des Moines for the account of and in the service of other companies, not the Des Moines Gas Co. In other words he has purchased printing in Des Moines for other plants on account of the fact a good deal can be done here cheaper than can be done elsewhere.

Q. Let me ask you whether it would be true to say that the printing which you use, that is the supplies which you use, letter heads, envelopes, blanks, etc., stationary might be divided into two classes, one which is printed specially for the Des Moines Gas Company having the name of the Des Moines Gas Company and another class

of blanks which are general in form and can be used by the Des Moines Gas Company or any other like institution, can you make such general classification in your stationary?

A. That is true. I think I have some of those blanks here. I had quite a number of them collected, I think they are in the next room.

Q. Now as to the class of printing which is done specially for the Des Moines Gas Company where is the larger portion of that done if you can give us an idea whether locally or in Philadelphia.

A. Well it would be hard for me to tell what *what* the proportion is. The gas bills which amount to nearly $200,000 a year are printed in Buffalo, New York. A good deal of our stationary used here by the Des Moines Gas Company in Des Moines is printed in Des Moines and some of the stationary which is used in Phila-
4546 delphia for the Des Moines Gas Company in the transactions of its officers there is printed in Philadelphia.

Q. What is the fact as to what governs you in the place where you secure this stationary that you have been talking about?

A. Just exactly the same influence governs in the purchase of stationary as gove-ns the purchase of anything else, simply buy where it can be bought the cheapest, quality considered.

Q. When you can buy it to better advantage locally, what is the fact as to where you buy?

A. I buy locally.

Q. When you can't buy to as good advantage locally what is the fact as to where you buy?

A. I buy wherever I can buy cheapest.

Q. Now as to class of supplies that you have spoken of as being general blanks, or blanks which are so printed that they can be used by the Des Moines Gas Company or by any other like institution, explain to the Master about those blanks, where you get them and why you get them from that source.

A. Well these general blanks are forms which are made up from the experience of the engineering staff or bookkeeping staff of the United Gas Improvement Company as being the best form to give a clear statement of the business and those forms are printed in large quantities and are carried in stock in the store room in Philadelphia of the United Gas Improvement Company and are issued to the Des Moines Gas Company upon order from me to the purchasing agent who purchases them from the United Gas Improvement Company the same as I would from any dealer in stationary except that he gets the items at the actual cost to the United Gas Improvement Company with all the discounts that they get taken off. In that way it simply saves the dealer's profit.

4547 Q. Do you know what was the amount of the purchases made by Mr. Pearson purchasing agent of the Des Moines Gas Company in the year 1910?

A. For the Des Moines Gas Company, his purchases amounted to a little over $250,000 for 1910. I have forgotten what the exact figures were, but it is between 250 and 251 I think.

Q. Referring now to your testimony with regard to the traveling auditors, General Byers asked you a question as to whether the men did not come out exactly the same way that the checking auditors of railroads and other corporations came out to check up their agents. What is the fact as to whether these men check up any particular department of the company or whether they make an audit of all the books?

A. I think I did not state quite as fully what I meant to state at that time, and that was that the audit which is made here includes the audit of all the books which are kept by the clerks in the office and records which are kept of the stock and the goods on hand, meters and the cash. The auditors make a complete audit of all of the books with respect to the entries, but they do not audit with respect to the classification of accounts that is to say they do not make changes in the classification, they simply audit to show that the items are correct. Now the questions of classification and the audit of these is made in Philadelphia by the reports which are sent in from me to the general auditor's department. The general auditor takes these reports and sees that the classificaiton is correct or takes up with me any change which should be made or any correction which should be made in classification and if it meets with my approval be makes that change. And these reports
4548 which he receives are checked as to correctness of reports as shown on my books by these auditors that come here to make the check. And in addition the auditors that come to Des Moines send out a slip which I have referred to and of which this is a copy, which is sent out to our customers filled in with the amount of their account as shown on our books charged to them.

Q. Do I understand that this is sent out to each consumer of gas?

A. To each person with whom we have an account charged whether it is for the sale of gas or for anything else so that they can compare it with their bills or with the account as they understand it and return it to us with their approval or disapproval. I say return it to us, I should say return it to the auditor. The auditor in sending it to them encloses a stamped envelope addressed to himself.

COURT: He makes a statement on this of the account of each consumer?

A. He sends one of these slips by mail to each consumer and on this slip is indicated the account open against that consumer. This is not a dun, simply a memorandum for the consumer or customer to compare with the bills which he has received and the account which is on our books so that if there is any difference the auditor will learn it and then he can go and interview the consumer and find out why that difference has occurred and compare it with our books.

COURT: That is quite an unusual precaution isn't it?

A. It is necessary because of the large number of accounts which we have that errors may creep in in the large number of figures that our clerks deal with. And when these audits are made of course these errors are adjusted and corrected. I think your honor this

is the usual method pursued by large companies that have
4549 their accounts regularly audited by an accounting firm.

Q. It is true also is it not that many persons have to do with these accounts and what goes into the account that is I mean many clerks?

A. Yes, sir.

Q. Has to go through a good many hands.

A. Yes, goes through the hands of meter readers and ledger clerks and the cashiers.

Q. This becomes a check on everybody that has to do with that part of the business?

A. Yes, after the audit is completed our books will show that any errors have been corrected at that time. There are not very many errors but there are some that would tend to annoy the customers and make them think they were not being properly treated. This satisfies them naturally that *that* the business of the company is being properly conducted.

Q. Is complainant's exhibit No. 70 the paper to which you have referred, the blank?

A. Yes, sir.

Q. Two bills, Exhibits 53 and 54, were shown you by General Byers, being expense accounts as I remember or bills for expenses of these auditors and you were asked if all you knew about the accuracy of the items was what appeared on the face of these two exhibits. Now I wish you would tell the Master what you know about the accuracy of these bills or bills of a *l-ght* character.

Objected to as having all been gone over and a mere repetition.

A. I know that when the auditors come to Des Moines they report to me on their arrival, they are working in the office, I am familiar with the length of time that they are there and
4550 know the character of the men and about what they are paid and know that these bills are approximately correct and have sufficient information to believe that they are correct.

Q. You have knowledge as to what the amount of their expenses approximately would be while they are here?

A. I have. I of course have done this work myself sufficiently to know what would be a proper charge for these services and these expenses.

Q. I want to ask you in regard to this item and as to others of like character whether it is true as intimated in the questions asked you on these Exhibits that you simply took these bills and paid them without any investigation as to whether they are reasonable, proper and just charges against the Des Moines Gas Company or not?

A. No, I took these bills and approved them myself personally, and if I find in these bills or any other bills items which I do not understand or do not believe are proper I will refuse to pay the bill and return it for explanation and correction whether a bill from the United Gas Improvement Company or anyone else, there is no compulsion or requirement on my part to pay these bills unless I know them to be correct.

Q. Do you pay bills to the United Gas Improvement Company on any other basis or plan than you would pay a bill rendered by anybody else?

A. Absolutely none. They stand in the same position as any other firm or corporation furnishing material or supplies and services.

Q. You were asked with regard to the manner in which the treasurer kept his accounts with the Des Moines Gas Company and the manner which you kept your accounts with him. I made a note here, I don't know whether that was fully explained or
4551 not. If there is any further explanation you wish to make in regard to that I wish you would make it clear just how those accounts are kept.

A. On page 4439 Line 26, I note there is an error there, the record says this, he would charge himself with it when he makes these payments, that should read he would credit himself with it when he made these payments, speaking now of the treasurer. That is an obvious error.

Q. You were asked in that connection if I recollect correctly as to the books that are kept by the treasurer. Do you know of any books of account that are kept by the treasurer of the Des Moines Gas Company other than his bank book or pass book and the stub book or check book with the stubs filled out that has been exhibited here, do you know of any other books kept by him?

A. The treasurer keeps his check book which has been exhibited here defendant's exhibit 56 and a bank pass book for his treasurer's account, but as treasurer of the Des Moines Gas Company, he keeps a set of books which are an exact transcript of the books which we keep, that is the journal and ledger and those books are made from the reports or transcripts of the entries made on the books here so that he has before him at any time after the middle of the month a complete transcript of our books up to the first of the month.

COURT: Every month the middle of the month or twice a month you make a report?

A. These transcripts are copied at the middle of the month as of the 31st or 30th of the preceding month. That is we close the books the 30th of the month and make up these transcripts and they are sent to Philadelphia and are copied on to his books there.

COURT: He sends you a transcript also of the entries on his books that are made there that do not appear on your books until
4552 later you enter that on your book?

A. That is correct, yes. So that in that sense he has other books in Philadelphia but not in connection with his account as treasurer. On page 4439 of the record Line 16, I stated in answer to a question I have a duplicate of his record or duplicate of his check book or pass book. What I mean by that was that I have a duplicate of the entry on his record and a corresponding entry here on my books which would correspond with his check book or pass book. I do not as a matter of fact keep a copy of his check book and his pass book here, but I do keep copies of the entries here.

Q. General Byers asked you this, he spoke about when he sells

securities, referring now to the treasurer, when he sells securities and gets money for them, how do you find out just what money he has got and you answered he sends me the entries to put on the books. Then he asked you the question, he writes a letter with a statement showing just what securities have been sold and you answered yes. Now have you a letter of that character that you can produce showing how that is done?

A. That has been offered, been one of them offered in evidence, I have others if you wish them.

Q. You have referred to the amount of purchases for the Des Moines Gas Company done by Mr. Pearson as purchasing agent of the company. I want to ask you this question, do you know about what it would cost the Des Moines Gas Company to have a purchasing agent whose business of purchasing supplies for the company *can* being compensated for by the company, that is, if you had an agent who purchased supplies whose whole time was being paid for by the Des Moines Gas Company, or whose purchases were made for the Des Moines Gas Company on commission or
4553 any other basis can you state from your knowledge and experience about what the necessary expenditure would be to the Des Moines Gas Company in handling that?

Objected to as not cross examination and no foundation has been laid for the evidence as evidence in chief and no question was put to the witness with respect to it in direct examination. If counsel wants to make a case on that he ought to put on his own witnesses and not try to do it on cross examination.

COURT: I am inclined to think that objection is well taken.

Judge CARR: As the question is now asked I will make him my own witness for that purpose.

Mr. BYERS: Then the question is objected to as incompetent, immaterial and irrelevant, the witness is incompetent, being no foundation laid for testimony sought to be elicited by the question.

A. I should estimate that a purchasing department organized for the Des Moines Gas Company alone locally would cost very much in excess of $2,500. There are some firms or concerns who make it a business of acting as purchasing agent for large companies and these firms charge from two to two and a half per cent I believe on the bulk of the purchases as a commission for their services.

Defendants move to strike the answer as incompetent and a large part of it a voluntary statement, not responsive and the whole evidence immaterial and irrelevant.

Q. Have you before you a copy of Exhibit 59. Referring to this statement for the year ending February 28, 1907, I enquire for purpose of making it entirely clear if it is not already so as to the reason for the difference in the accounts with respect to certain individuals in which time and expense *is* charged for and other

individuals in which there is simply a charge for expense
4554 and wish you would state what the fact is as to why the difference in these charges by the United Gas Improvement Company for these services why in some cases time and expense *is* charged for and in others expense only.

A. The expenses only are charged where the head of a department in the discharge of a service to the Des Moines Gas Company is required to travel on that company's account, but the expense which he may incur on account of any other company or on account of the United Gas Improvement Company is not charged to the Des Moines Gas Company and his time is not charged to the Des Moines Gas Company whether he is in Des Moines or whether he is working in Philadelphia on the business of the Des Moines Gas Company, so that his services are furnished as a gratuity to the Des Moines Gas Company and are in part compensated for by the $10,000 in salaries paid to the United Gas Improvement Company at the present time.

Q. As I understand you prior to this salary allowance being made to which you have referred the services which were rendered by these men was a gratuity to the Des Moines Gas Company?

Mr. BYERS: By what men?

A. By the heads of the Departments.

Objected to as incompetent, immaterial in that form, these men don't mean anything.

Q. (Question read.)

A. Yes, prior to some time in 1909 there was no charge made for these serv-es of the heads of departments referred to in my previous answer.

Q. No compensation paid in any way by the Des Moines Gas Company. Do you remember the date when the salary provisions began?

A. On page 185 defendant's exhibit 27 the minutes of
4555 the directors' meeting held October 20, 1909, is the following minutes: Salaries officers. Approved payment of salaries to the following officers at the following rate per year, effective November 1, 1909. President $2,500; 2d vice president $1,800; treasurer $1,600 secretary $1,600; purchasing agent $2,500.

Q. You may turn to the analysis of the account in this Exhibit 59 for the year ending February 29, 1908, and take the first item cash advanced $15,815.76. Is that one item or is it made up of several items?

A. That item of $15,815.76 is made up of an item on page 210 journal No. 1 of the Des Moines Gas Company entered under date 4—30—07 cash advanced to treasurer $10,000. Cash book No. 1 folio 52, 5—31—07. Cash advanced to Company $5,000. Journal No. 1, folio 314 11—30—07, cash advanced to treasurer $815.76. Total $15,815.76.

Q. What were those advances for cash for?

A. The item of $10,000 folio 210 was borrowed on a demand note dated April 9—07. That was for money borrowed from the

United Gas Improvement Company to pay for some construction work, just what items would not show on this record of course, because the money was borrowed, we run out of money and had to have some money for construction work and simply borrowed it. On page 314 the $815.76 for amount to refund payment of October 1, in treasurer's office same having been paid by local office. That means that the treasurer did not have enough money at that time to make a payment and he borrowed money from the United Gas Improvement company for the Des Moines Gas Company's account.

Q. That accounts for $15,000 of it?

A. The $5,000 was money borrowed for construction account just the same as the $10,000 only it didn't go through the treasurer's account. My recollection is I made a draft on the treasurer
4556 for that amount of money, but I am not quite sure about that. That draft would go on Mr. Louis Lilley, treasurer United Gas Improvement Company for $5,000 to furnish funds for our construction work in Des Moines.

Q. Have you an analysis of the next item special fittings, material and inspection?

A. I have that item of $288.06 classified to the store room for special fittings, material and inspection as follows: For argand burner $4.38; nozzles $7.50; bray burners $78.00; bray burners $39.00 chimney tips and burners $8.18; bray burners $97.50; ten gallons of pentain $30.00 sight cocks $23.50. These items were purchased from the United Gas Improvement Company and they rendered bills to the Des Moines Gas Company for them, they came to Des Moines and were charged to the store room account and then were issued from the store room account as they were put up. The bray burners constituting the largest amount of this item are the tips which are used on fixtures and which are imported in very large quantities by the United Gas Improvement company because they are enabled to get better prices and better facilities for getting through the custom house and so on than the local company could do. The ten gallon- of pentain, pentain is a special hydrocarbon oil for standard candle power observation used in the photometer. The sight cocks are cocks which are placed in the generators and superheaters with a glass so that by opening a cock you can look through the glass and see what the heats in the superheaters and carburetors are, see how hot they are inside. They are called sight cocks.

Q. There is included in the total of this item a small amount that is not charged up or classified under storeroom account. What is that?

A. That is $6.22 which is classified to construction author-
4557 izations. That is simply a small expense, that is for a hydrometer which is an instrument used for measuring dew point of the gas in connection with the proof of temperature of the machine. It is a glass instrument.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

4558 Wednesday Forenoon Session.

OCTOBER 4, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Testimony on part of defendants resumed as follows:

JANSEN HAINES, continuing his cross examination, examined by Judge Geo. H. Carr, testified:

Q. Mr. Haines, when we adjourned last evening you were then giving an analysis of several of the items you bring into the totals of the classified account as contained in Exhibit 59. Without taking the time to go through all of these items, I ask you whether in response to the demand made upon you by General Byers, you have prepared data from which you can give, if desired, an analysis of each of these accounts showing what entries entered into each of these totals and the vouchers covering such items and if you can produce them if desired.

A. I have. I have prepared a complete analysis of each one of the accounts referred to in Exhibit 59, taking each amount as shown in Exhibit 59, showing how the amount given in Exhibit 59 is arrived at from our books, where it is entered on our books, where the voucher is to be found, and index to the voucher, so that the amounts may be traced back to each individual voucher, or the vouchers showing the amounts contained in each item.

Q. In the analysis you made of the account contained in Exhibit 59 for the year ending February 28, 1907, in answer to interrogatories put to you by General Byers, you stated, as I understand it, that for a portion of that year there were items in the account consisting of credits to the United Gas Improvement Company for money expended by them in the purchase of supplies and materials from other concerns than the United Gas Improvement Com-
4559 pany, owing to the shortage, this being done owing to the shortage of money by the Des Moines Gas Company, and that some time during that year that practice was abandoned, so that thereafter the only credits that appeared in the account on account of material and supplies furnished were credits to the United Gas Improvement Company for material and supplies furnished by it to the Des Moines Gas Company, and that in the cases where the supplies and materials were bought from other concerns, the accounts did not go into the U. G. I. accounts, but the materials and supplies were ordered direct and billed direct to the Des Moines Gas Company, and paid direct; now is that a fairly correct statement of the situation as you understand it?

Objected to on part of defendants as not proper cross examination and not a correct statement of the record, immaterial and not the best evidence.

A. From March 1, 1906, to I believe November, 1906, the material which was purchased by the Des Moines Gas Company, or a

large part of it was paid for by the United Gas Improvement Company and after the bills or vouchers for the material had been approved by the manager of the Des Moines Gas Company and the payments so made were entered on the books of the Des Moines Gas Company as a credit to the United Gas Improvement Company. In other words the United Gas Improvement Company advanced the money of the bills of acceptance, the same as the current foreign practice.

The MASTER: That was up to November 1906?

A. Yes, sir. Now after November 1906, the Des Moines Gas Company ordered the material through its purchasing agent acting for the Des Moines Gas Company and the bills for the materials so ordered were rendered directly to the Des Moines Gas Com-
4560 pany and were paid upon approval of its manager out of the funds on deposit to the credit of the Des Moines Gas Company in Des Moines. Among those bills for material and supplies and services are bills which were rendered by the United Gas Improvement Company for materials and supplies and for services furnished by the United Gas Improvement Company to the Des Moines Gas Company. These bills were vouchers and approved and paid by the Des Moines Gas Company the same as other bills from other merchants or manufacturers.

Q. When subsequent to the period you have stated materials or supplies were purchased from other concerns, that is concerns other than the United Gas Improvement Company, if I understand you correctly, these accounts did not go into the account with the United Gas Improvement Company but were handled directly with the concern from which the purchase was made?

A. That is right.

Q. And that custom, I think you said, was inaugurated about the 1st of November, 1906?

A. Yes, it was in November, 1906.

Q. Now from that time on until the close of the period covered by this analysis or classification of the accounts, Exhibit 59, has that same practice obtained?

A. That same practice has obtained.

The MASTER: If I understand you correctly, you treated the United Gas Improvement Company in all matters where you purchased from them just the same as any other persons from whom you purchased?

A. That is correct.

Q. Was there anything further?

A. These sheets indicate by a decrease in the amount which
4561 is credited to the United Gas Improvement Company. After the first year that amount drops down.

Q. What was the total of the account ended with February 28, 1907?

A. That was $56,345.47, which included $46,000 worth of cash.

The MASTER: $46,000 worth of cash?

A. Yes, that cash was advanced for the payment of general corporate purposes of the Company in Des Moines.

The MASTER: In other words, you did not have the money on hand in Des Moines to meet your bills against the Company and consequently you had to borrow it, or they let you have it; is that right, the U. G. I. Company?

A. No, sir, not at that time.

Q. That is prior to November?

A. That is not quite correct. This money was advanced in addition to the credits which were given to the United Gas Improvement Company for the bills which they had paid for the account of the Des Moines Gas Company.

The MASTER: That is what I meant.

A. But that $46,000 was used to pay pay rolls and local bills for which the United Gas Improvement Company did not take credit, and were paid in Des Moines.

The MASTER: In other words, you got the money here and your account here and used it in your monthly and daily business?

A. Yes, sir.

Q. Now for the year ended February 28, 1908, I see the total account was $18,212.13. Was there any cash borrowed entering into that?

A. Yes. Out of that $18,000 nearly $16,000 was borrowed.

Q. The sum total of the other items are the difference between $15,000 and $18,212.

A. About $2,400.00 is the sum total of the difference.

4562 Q. Turning back to the year ended February 28, 1907, I notice the next largest item is for supplies, special fitings, material and inspection $7,494, while in the next year that item seems to have gone down to $294.28; is that accounted for, in part at least, by the change in the method of doing business you already explained?

A. Yes, sir. In 1908 and subsequent years, of course the United Gas Improvement Company only received credit for the material which is actually furnished from its own store room.

Q. Now for the next year, I notice the account had shrunk to $2,510.25; there is no cash borrowed in that?

A. There is no cash borrowed in that year.

Q. And the stationery and office supplies, that item had gone to $73.42?

A. I think that is the wrong figure. You mean special fittings material and inspection had fallen to $160?

Q. Oh, yes. The next year the total had gone to $7,458.42; was there any cash in that?

A. There is no cash in that.

Q. And the last year, ending December 31, 1910, the account had gone up to $27,256.60; there was considerable cash in that?

A. Out of that $27 thousand odd dollars there was $19,000 or a little over in cash borrowed.

Q. Did you prepare an analysis of that, Mr. Haines?

A. I have an analysis of each one of those years, showing a reference to each voucher which goes to make up the totals in these various items.

Q. Did you have a statement made up of these accounts showing an analysis with respect to the change?

A. I am not quite sure.

4563 Q. Well, we will pass that.

A. I have the analysis for the year 1907 with all the vouchers covering every item shown on Exhibit 59; also for 1908, 1909 and 1910, with the reference to the page in the general books of the Company in which these entries may be found.

The MASTER: The reports of the experts give these amounts, and unless there is some special matter to be called out by the other side, I don't think there is any necessity of going into this.

Judge CARR: No, General Byers didn't want that.

Mr. BYERS: I do not want to be brought into the record with a statement of what I wish to be brought in here.

The WITNESS: I understood you asked me for this analysis and I prepared it.

Judge CARR: I don't see why you should be offended; that is the reason why we brought this in.

Q. Now just one further question. In the account ending December 31, 1910, appeared an item opposite the name of J. B. Klumpp and Mr. Byers asked you something in regard to Mr. Klumpp; I wish you would state to the Master who Mr. Klumpp is and what is his connection if any with the United Gas Improvement Company?

Mr. BYERS: That was fully gone over and that question was asked Mr. Haines.

Judge CARR: Is there any reason why I can't ask the same question?

Mr. BYERS: Nothing, only it is padding the record with immaterial matter.

A. On page 4493 of the record I would like to correct both General Byers' question and the answer. The name is written J. B. Klumb and it should be Klumpp. The record shows it

4564 spelled wrong. Mr. Klumpp is a graduate of Stephens Institute of Technology, about 1894. He entered the employ of the United Gas Improvement Company about a year before I did, and I have known him intimately since my connection with the United Gas Improvement Company in 1896, having been assigned to work with him different times and different places. He has for many years been employed as an expert engineer by the United Gas Improvement Company; he has operated and constructed gas works while in their employ and has made a specialty in later years of investigations for the United Gas Improvement Company of properties in which they were contemplating taking an interest. He was appointed as one of the gas experts by the National Civic Federation to which Mr. Bemis referred in his testimony, to go abroad and

investigate the properties of the gas companies and the municipal gas works in England, and made a very extensive and exhaustive report on his investigations there which is contained in the report of the National Civic Federation. He has devoted some of his time to the investigation of patents and processes and of costs of the operation of gas works and of the cost of construction of gas works, and has prepared a great many reports, both for the United Gas Improvement Company, and for others, detailed as an employee of the United Gas Improvement Company at the request of other parties who contemplated taking an interest in properties under investigation. He has written a number of technical papers for the journals and various institutes. He prepared among other things, the notes on depreciation that were offered in evidence.

Mr. BYERS: The celebrated Exhibit 8?

A. The celebrated Exhibit 8.

Q. Is that a study on depreciation?

4565 A. Yes. He prepared that from his experience and knowledge of the subject contained in it. He was employed for some time in arranging and directing the work in making the inventory in Des Moines.

Q. One other question. I notice in the credit given the United Gas Improvement Company on account of Mr. Klumpp, there is no charge for time, but only for expenses; who does Mr. Klumpp represent, in whose department is he?

Objected to on part of defendants as having all been gone over by this witness.

A. He is the representative of Mr. Walton Clark, second vice president of the United Gas Improvement Company, and his title is Inspecting Engineer for that Company.

Redirect examination by Mr. BYERS:

Q. Mr. Haines, it was about two weeks ago, was it not, that I furnished you Mr. Sangster's memoranda covering these several accounts and asked you to have prepared and furnished to me an analysis of those accounts, was it not?

A. I think the record will show the date; I don't know the date; approximately that I suppose.

Q. In response to that after being requested for it again, you handed to me Exhibit 59, did you not?

A. I had Exhibit 59 prepared.

Q. Exhibit 59 is the one you have prepared for me, is it not?

A. Yes, sir.

Q. Now why is it Mr. Haines, that you persist in reading into the record and stating into the record, time and time again, repetitions of these papers and these exhibits?

4566 Objected to on part of complainant as a very improper question and one which is not true, to quote counsel's own words; it is a deliberate attempt to insult the witness.

Q. Isn't it because you are trying to carry out here, what you

said you would, make this case so expensive that the City would never pass any other similar ordinance?

A. Will you state where I said that and to whom?

Q. Didn't you say it?

A. I don't think I did.

Q. Didn't you say to a business associate in this town this case had already cost your Company $100,000 and that you expected it would cost $175,000 and that you expected to make it so expensive to the City that they wouldn't pass another ordinance of this kind?

Objected to on part of complainant as immaterial and improper.

A. I have no recollection. If I said it, I said it facetiously, because it is not true.

Q. Didn't you say it within ten days ago?

Complainant interposes same objection last made.

A. I have no recollection of it whatever.

Q. Any part of it?

A. I may have said the cost of this trial which was instigated by the City Council would probably amount to $100,000.00.

Q. Didn't you say it had already amounted to $100,000?

A. The books will show whether it has or not.

Q. Isn't it true now?

Objected to on part of complainant as immaterial and because this class of interrogatories have gone to the limit.

4567 Q. Didn't you, when that gentlemen asked you how you could justify any such expenditure as that, didn't you respond by saying to him that you could afford to do it, because if you did not do it, the next city council would probably pass an ordinance again lowering the price of gas?

Complainant interposes the same objection las- made.

A. I have no such recollection.

Q. Let me ask you another question, Mr. Haines. Didn't you say to this same gentleman, a business associate and friend, that you intended to make this case just as burdensome and continue it just as long as you could in order to teach city councils a lesson?

Complainant interposes the same objection as last made and because it is a mere repetition of the question already asked.

A. General, I don't think that is true in any sense of the word. I think that is an absolutely false interpretation of what I said.

Q. What did you say?

Same objection as last above made.

A. I don't recall the words I used. I certainly never used any such words as that, unless I am very much at fault in my recollection.

Q. Didn't you say to the same gentleman and to two other gentlemen that the 90 cent rate was not what bothered you——

Judge CARR: We interpose the same objection and submit to the

court that the question, if it is for the purpose of refreshing the recollection of the witness, or for the purpose of impeachment, or any other conceivable purpose, it ought to be more specific and the time and place should be stated as to where the alleged statement was made.

Question continued. But that you wanted to make this law-
4568 suit so expensive and so burdensome upon the city that there wouldn't be any further reduction?

Complainant interposes same objection last made.

A. No, I didn't say that.

Q. Do you say you didn't say that within two weeks?

A. No.

Q. Now in that same conversation you did say, didn't you, that the United Gas Improvement Company had nineteen of their best men in this case and they had been in the case for weeks and would cost at least $100,000?

Complainant interposes the same objection last made and the further objection that it assumes there was a conversation of that character inquired about.

Question withdrawn.

Q. You have already paid Mr. Baehr over $8,000.00 haven't you?

Objected to on part of complainant as being immaterial.

A. Mr. Baehr has been paid the regular rate of compensation which experts of that kind receive customarily, and when his bills were presented they were paid in the regular routine of business.

Q. Which amounts to what I have said?

Complainant interposes the same objection last made.

A. I have no recollection. The books will show; they are all entered in the regular form.

Q. Is this because you want to get the books into the record?

A. I answered your question to the best of my knowledge and belief. If you are not satisfied with my answer, I suggest you go to the books and find out.

Q. You referred to the Company's cash book, No. 1, yesterday, have you got that here?

The MASTER: General, I want to suggest to you that this
4569 witness is now your witness and of course you can not impeach him.

Mr. BYERS: I know; I am bound by whatever the witness says.

Judge CARR: I cannot conceive the possible purpose or how this in any waise is material as to what amount was paid to the experts.

The MASTER: I don't think so. It is competent evidence in my judgement. That they are employed by you and paid big prices, I am satisfied without any proof of it. I am satisfied also the city has paid good prices, and it is proper and competent evidence to show that each one is in the employ of the parties for whom they are testifying, and always when a witness is interested, biased or prejudiced

or has a feeling in the matter, especially when he testifies on matters of opinion.

Judge CARR: Isn't it true that it is proper cross examination of the witness for the purpose of testing him, and is it material matter that you may go into with collateral proof?

The MASTER: He may show it independent of that. At all events, it is evidence that is offered in this case; as to what weight it will receive and whether it is competent is another proposition.

Q. Now, Mr. Haines, to get back to Exhibit 59——

A. I have the cash book here you asked about.

Q. When you brought Exhibit 59 in the form it is in and delivered it to counsel for defendants, you intended counsel for the defendants to understand that was a correct analysis of the account and memoranda which was furnished to you two weeks ago, did you?

A. The memoranda which was furnished a few weeks ago was purely a compilation of figures which had no reference, could
4570 not be compared with our account because it was not properly classified.

Q. Just notice the question.

A. I am answering your question now. I have not finished my answer.

Q. Question repeated.

A. The account was not correct. It purported to be an analysis of the U. G. I. account with the Des Moines Gas Company and as it was not correct, not properly classified, it could not be adjusted to our books, and as I understood your request was for an analysis of this account. I furnished the analysis as shown in defendant's Exhibit 59.

Question repeated.

The MASTER: The question was did you intend it to be a correct analysis.

A. I intended Exhibit 59 to be a correct analysis of the account.

Q. Now, Mr. Haines, I went through carefully, as carefully as I know how, with you, of the first sheet of Exhibit 59 and all the items in the first column for the purpose, as I told you at the time, of getting at the method of keeping those accounts and the manner in which you did business with the U. G. I. and with their men, and then to save time, I put the general question to you as to whether or not the method was not continued, and the same general method was not continued, and the same general answers would be made if I went down through these sheets, and you, as I remember it, answered in the affirmative. Now Judge Carr this morning asks you with respect to a change in the method of doing business. That was brought out on my examination, as I remember, that after November, the first year, there was a change, but no change, was there, in the general method of crediting up to the U. G. I. upon statements from them, or other services of their men, or expenses of their men, there was no such change in that respect, was
4571 there?

A. Yes, sir; there was.

Q. Why didn't you tell me so when I examined you?

A. I have already described it.

Q. You say you have already described it?

A. I have.

Q. What change was there in the manner in which you treated the services of one of these secret inspectors, as you refer to them, after November 1906, from the way you did before 1906.

A. Will you tell me how I referred to them.

Q. You said they came here secretly and unbeknown to me and checked up the honesty of the local management; was there any change in the method of dealing with Mr. Harrison and his account?

A. Prior to November 1907, credit was taken on the books of the Des Moines Gas Company in favor of the United Gas Improvement Company for Mr. Harrison's time and expenses while employed in Des Moines in making an audit of the books of the Des Moines Gas Company. Subsequent to that time the United Gas Improvement Company furnished a bill for the services so rendered by Mr. Harrison, or the other auditors, and these bills were paid by the Des Moines Gas Company, by checks drawn on the Des Moines banks, the same as other accounts of merchants other than the United Gas Improvement Company.

Q. How does it come there are credits on your books to the United Gas Improvement Company for these men after 1907. Now I find here a credit to Mr. Harrison to the U. G. I. in the sheet, or analysis for the year ending December 31, 1909, credited to the U. G. I. for Mr Harrison $383.35. Now that is the same Mr. Harrison, is it not, for whose services a credit to the U. G. I. of $356.55 is found on the first sheet, the one I examined you about,

4572 under the heading year ended February 28, 1907?

A. Yes, sir.

Q. The same man?

A. Yes, sir.

Q. The same kind of services?

A. Yes, sir.

Q. And his services credited to the U. G. I. in the same way as it was in 1907?

A. No, not in the same way. This service in 1909 is simply credited on the account at the end of the month and paid at the end of the month, and prior to that it is carried as a continual credit.

Q. You mean prior to that time you didn't pay it promptly?

A. It is carried as an open account.

Q. But at the end of the month you paid the bill you owed the United Gas Improvement Company, whatever it was?

A. Just the same as any other merchant.

Q. That is all you mean by a change in the method?

A. Exactly.

Q. Your counsel has referred to the cash as it appears in this Exhibit 59, I think some each year; $46,000 on the first sheet of Exhibit 59, and $15,000 on the next sheet?

A. Yes.

Q. And nothing on the third sheet?
A. Nothing on the next sheet.
Q. And nothing on the fourth sheet.
A. No.
Q. And $19,033.80 on the last sheet?
A. Yes.
Q. Now that represents money, as I understood you before, that the United Gas Improvement Company had advanced to
4573 the local company in cash for use of the local Company in the business here?
A. Cash which the United Gas Improvement Company advanced to the Des Moines Gas Company, yes sir.
Q. Now every dollar of cash that the United Gas Improvement Company furnished to the Des Moines Gas Company for use in the business here in Des Moines, was paid back with interest at 6% was it not?
A. I have forgotten really, General, whether there is any owing now.
Q. Up to December 31, 1910?
A. I would have to look at the books to tell you. Your own bookkeepers should be able to answer that better than I can, because they have been over that more recently with that in view. But we can refer to the books and show you whether that is true or not.
Q. Let me put it this way: This sheet goes up to December 31, 1910, and shows on here during that year you had $19,033.80; that money has either been paid back or else the United Gas Improvement Company holds the note of the Des Moines Gas Company for the money?
A. I think that would be correct. It has either been paid back or else it hasn't.
Q. Or else it has a note drawing six per cent interest?
A. I think that is correct, General; I wouldn't swear to the correctness of your statement unless I saw the books.
Q. So that whenever the United Gas Improvement Company advanced money to pay a bill as you suggested yesterday to Judge Carr, and gave your Company or this local plant the benefit of the discount, the United Gas Improvement Company would get either the Des Moines Gas Company at the end of the month, if they didn't have the money, drawing six per cent interest, or would get six per cent interest on the open account.
4574 A. In a sense that is correct. Of course the United Gas Improvement Company would give us credit for one per cent on ten days and charge us six per cent per annum on a note; that would mean a saving to us of possibly 15 or 20 per cent.
Judge CARR: You will notice on the first page you see credits cash paid back $28,744.78 in bills payable.
Mr. BYERS: Which means notes.
Q. It is correct now, that is all paid back or else the Company has a six per cent note?
A. All but the balance of $4,402.62 which would be paid in January of 1911.

Q. Then it is all paid back. Now that is true too of all these other credits, they were either paid at the end of the month or the U. G. I. was credited with interest on the balance, or a note was given drawing interest.

A. Well no, that is not exactly correct; it would only be correct prior to November 1907. From March 1st, to I think it was November 1st, 1907, the interest was charged on the open accounts and paid to the United Gas Improvement Company by the Des Moines Gas Company, or credit given for it for such interest on account of the United Gas Improvement Company for the amount of the bills for materials which the United Gas Improvement Company had paid for the account of the Des Moines Gas Company.

Q. Is it fair to sum this matter all up by saying, that during the first year, 1907, whenever the local plant did not have cash to take care of its bills, the United Gas Improvement Company of Philadelphia furnished the money and were given credit for it on the books and paid back with interest, and the same has been true during the entire period from March 1906 until December 31, 1910.

4575 A. There may be some truth in that statement; in a general way that has been the function of the United Gas Improvement Company; its relation to this Des Moines Gas Company to furnish the funds when they were necessary for the construction and development of the property, its operations in Des Moines. The necessity for these funds naturally would fluctuate from year to year and month to month.

Q. But Exhibit 59 shows all of that class of funds?

A. It shows the transactions as they show on our books.

Q. It shows all the money that was furnished in that way.

A. Well, it shows the transactions as shown on our books; I can't answer it any other way.

The MASTER: What he wants to know, whether it shows all?

A. Yes, it shows a correct analysis of all of this account.

Q. Now just a word or two more about these auditors. You did not cover these auditors in the same way yesterday as you did when I examined you about them, Mr. Harrison and Mr. Porter. Now which was correct that they notified you they were coming, or was your first statement that they came unbeknowns to you and came for the purpose of checking up the honesty of the local management, which statement is correct?

Objected to on part of complainant as a mere repetition and an attempt to pad the record, and containing the assumption that there is a conflict in the statements, which is contrary to the record.

A. There may have been a misunderstanding on your part. Let me answer the question by simply describing the system.

Q. You told me the other day, and I took your statement for it, when I was asking you about Mr. Harrison, you told me they did

4576 not come at your request, but the United Gas Improvement Company sent them here and that they came unbeknown to you and sent out these slips and have them returned to

them, and the purpose of their visit here was to check up the honesty of the local management; now that is correct, is it?

Complainant interposes same objection last above made.

A. I don't think your statement is a correct statement of what I testified to, but it is true to this extent; I have no previous notification of the time of the arrival of the auditor in Des Moines. In other words, he came here without any notification from me as to his arrival. I knew he would come, in a general way, sooner or later.

Q. You knew that was the method that the United Gas Improvement Company had in carrying on their business and checking up their properties that they were interested in?

A. I don't know that your statement is exactly correct.

Q. Make whatever explanation you want of it.

A. Well, I think I made the explanation.

Q. You stated yesterday, in answer to the Master's question, a question I think was asked you a couple of weeks ago and that was whether the treasurer at Philadelphia had a duplicate set of books, Journal and Ledger, and you say now that he has; you are correct about that?

A. I think I have been correct about that all through. It is probably due to a misunderstanding on your part as to exactly what he had.

Q. I just want to get what you got here now, that you say he has a duplicate of it. You stated the treasurer keeps a duplicate journal and ledger. Have you got the journal and ledger here that you say he has a duplicate of in Philadelphia?

A. You mean in the court room?

4577 Q. Yes.

A. The statement I meant to correct yesterday was that I have no copy, I do not keep a copy in Des Moines of his check book and pass book, which are the only books he keeps as treasurer of the Des Moines Gas Company in Philadelphia. But I have the journal and ledger here in Des Moines, and at the close of the month's business I send him a transcript of the entries made on these books and the entries go into two similar books which he keeps in Philadelphia, so that his accounts in Philadelphia correspond with the accounts we keep here.

Q. That is exactly what I wanted, and the reason I wanted it is to know whether the treasurer in Philadelphia can turn to his ledger at any time and ascertain the state of the cash account of the Des Moines Gas Company up to the time it is rendered?

A. Yes, up to the time at which the entries are closed at the end of the month. He would know within probably fifteen days or eighteen days what they had been on the first of the month.

Q. So that the treasurer of the Des Moines Gas Company who is also treasurer of the United Gas Improvement Company, could ascertain at any time from an examination of his ledger the exact state of the cash account of the Des Moines Gas Company within at least fifteen or twenty days of the time the entries are made here.

A. Certainly; as treasurer of the Des Moines Gas Company he would be the person to know and he would know.

Q. That is the reason I asked about the duplicate books.

The MASTER: That is not a duplicate of all the books of the Company, but a duplicate of those that pertain to the cash?

A. Only the books which refer to what we call the general books, which refer to the operation of the Company, he has no dupli-
4578 cate of course, of the consumers ledger or the records of meters or anything of that kind, which would be so bulky that we couldn't send the transcripts back and forth.

Q. He does have a duplicate journal and ledger, just such as you keep here?

A. Just what I have stated; what we call our general books.

Q. Now let me have the cash book No. 1 a minute. (Witness produces book.) The book you have handed me, Mr. Haines, is the cash book of the Des Moines Gas Company and contains a record of the cash transactions of the Company, beginning on the 1st day of March, 1906, and continuing down to the 31st day of December, 1910.

A. Yes, sir; I believe so.

(The book just described is marked Exhibit 60.)

The defendants in connection with the testimony of this witness offer in evidence all that part of Defendant's Exhibit 60, under the dates beginning March 1, 1906, to and including the entries covering December 31, 1910.

Objected to on part of the complainant as immaterial and as simply padding the record.

Q. Is there more than one ledger?

A. I think not, this ledger No. 1, I don't think there is another ledger than this.

The MASTER: There isn't more than one for that period, that covers the entire life of this Company?

A. That is my understanding, these two books cover the period.

The MASTER: That is the life of this company?

A. No, I am not correct in that either.

Q. Is there more than one ledger?

4579 A. I believe there are two, General.

Q. Covering the period from March 1, 1906, to December 31, 1910?

A. Yes.

Q. Two ledgers?

A. Yes.

Q. More than one journal?

A. There are three journals. There are two journals and a part of the third.

Q. The journals cover the items that appear in the ledger?

A. The items that appear in the ledger and cash book—I mean the ledger contains the items that appear in the journal and cash book.

Q. What are the three journals, what is the name of them?

A. Journal No. 1, journal No. 2, and pages up to and including page 184 on journal No. 3, covering the period from March 1, 1906, to December 31, 1910.

Q. Now just one word more and then I think I am through. You said Mr. Norris' time was paid for in a measure by the salary that is paid to Mr. Clark; that is not true, is it?

A. It is not true as you state it; I didn't so state it. A part of the service which is rendered by Mr. Norris and his assistants in the department which he represents is compensated for in part by the salary which is paid, $2,500 to Mr. Clark, and $10,000 to the officers of the Company, which goes to the United Gas Improvement Company.

Q. Did you know about that arrangement when it was made?

A. Yes.

Q. Why didn't you just credit up the United Gas Improvement Company with the $10,000 instead of having your books show what wasn't true?

4580 A. I don't know what you mean by our books show what isn't true?

Q. That these gentlemen are actually getting a salary?

A. Do the books show that they are actually using the money paid to them for their own personal use?

Q. Is that all the answer you want to make to that question?

A. I don't understand the question you put. In the first place you imply that the books are not true. I take exception to that statement.

Recross-examination by Judge CARR:

Q. I got the impression from your evidence in regard to a duplicate set of books, as it has been called, that you had prepared a transcript of the journal and a transcript of the ledger and sent that down to Philadelphia; now is that strictly correct?

A. We prepared a transcript of the journal; it wouldn't be necessary to prepare a transcript of the ledger, because the ledger accounts are all entered from the journal entries.

Q. Did you send a trial balance?

A. We send a trial balance of the ledger and a complete transcript of the journal entries.

Q. Now when that goes to Philadelphia the transcript of the journal is entered upon their ledger and then the balance there appearing compared with your trial balance?

A. That is correct. We could substitute the journal in Philadelphia for ours in Des Moines at any time without any error or interruption.

Q. The journal and ledger kept in Philadelphia is made up in the way you now state?

A. Yes. I of course don't mean to say we made a tran-

4581 script of the ledger, because that would be unnecessary; but we make a complete transcript of our books here and that is forcarded to Philadelphia and entered on the books which Mr. Lillie keeps there.

particular line of work for the United Gas Improvement Company do you do?

A. I have charge of the accountant end of the business for the United Gas Improvement Company; also the preparation of financial statements and statistical matter.

Q. Now as the head of the auditing department of the United Gas Improvement Company, what territory do you cover?

A. The Companies in which the United Gas Improvement Company is a shareholder.

Q. Can you give us a list of the companies?

A. They have been mentioned here several times during this hearing. It would only be going over the same matter again.

Q. Some of them have been mentioned. What I would like to have from you now, if you will give it to us, a list of the Gas Companies of which the United Gas Improvement Company owns substantially all the stock and which are covered by you and your department?

Objected to on part of complainant as irrelevant and immaterial, in so far as it goes into matters of companies outside of the Des Moines Company.

4585 A. If you will kindly let me have the book you were reading these companies from the other day I would be glad to read them off for you.

Q. You furnished the material that is in that Manual of Moody's, didn't you?

Mr. GUERNSEY: You will note he did not ask for companies in which the United Gas Improvement Company is interested as a shareholder.

Q. I now hand you the Manual referred to and I wish you would give me the names and locations of the gas companies in which the United Gas Improvement Company owns substantially all the stock, and the companies that are under your supervision, or rather under your department.

Complainant interposes same objection, and also objects to the latter part of the question as to "under your department", because it is indefinite and uncertain. We do not know what is meant by the word "under" and do not believe the witness does.

A. I could read the names of the companies and their location as far as they are under my supervision.

Q. Give me the names of the companies and the towns.

Complainant interposes same objection last made.

Mr. GUERNSEY: Those companies in which the U. G. I. owns substantially all the stock?

Mr. BYERS: Yes.

A. Allentown Gas Co., Allentown, Pa. Burlington Gas Light Co., Burlington, Iowa. Chester Co. Gas Co., Westchester, Pa. Connecticut Railway & Lighting Co., New Haven, Conn. Consumers Gas Co., Reading, Pa. Dauphin County Gas Co., Steelton, Pa. Des

Moines Gas Co., Des Moines, Iowa. Equitable Illuminating
4586 Gas Light Co., Philadelphia, Pa. Essex & Hudson Gas Co., Newark, N. J. Fullton County Gas & Electric Co., Gloversville, N. Y. Harrisburg Gas Co., Harrisburg, Pa. Hudson County Gas Co., Jersey City, N. J. Kansas City Gas Co., Kansas City, Mo. Merion & Radnor Gas & Electric Co., Ardmore, Pa. New Gas Light Co., Janesville, Wis. Omah- Gas Co., Omaha, Neb. Paterson & Passaic Gas & Electric Co., Paterson, N. J. Pensacola Gas Co., Pensacola, Fla. St. Augustine Gas & Electric Light Co., St. Augustine, Fla. Savannah Gas Co., Savannah, Ga. Sioux City Gas & Electric Co., Sioux City, Iowa. Sioux Falls Gas Co., Sioux Falls, S. D. South Bend & Mishawaka Gas Co., South Bend, Ind. Syracuse Lighting Co., Syracuse, N. Y. Vicksburg Gas Co., Vicksburg, Miss. Wyandotte County Gas Co., Kansas City, Kans. That about covers the list generally.

Q. How about the Concord Light & Power Co.—are they a gas company?

A. Yes, but the United Gas Improvement Company haven't a majority of the stock.

Q. And the Georgia Railway & Electric Co.?

A. The same thing.

Q. How about Minneapolis?

A. The same thing.

Q. They only have a part of the stock in that?

A. They have not a controlling interest in it.

Q. The Charleston Consolidated Railway and Lighting Co., Charleston South Carolina?

A. That is not in this list.

Q. Don't they own it now?

A. Yes, they own a majority of the stock.

Q. And the Conshohocken Gas Co., in Pennsylvania, do they own substantially all the stock?

4587 A. Yes, sir.

Q. And the Northern Indiana Gas & Electric Co.?

A. The same thing is true there; they own a majority of the stock.

Q. Substantially all of it?

A. No, I wouldn't say substantially all of it; they own the majority of it.

Q. There isn't more than two or three hundred dollars anybody else owns?

A. Yes, sir; considerably more than that.

Q. Have you looked it up recently?

A. Yes.

Q. But they own a majority of it?

A. They own a majority of the stock.

Q. How about the Northern Liberties Gas Company?

A. I don't think they own any of the stock.

Q. Do they lease it?

A. Yes.

Q. They operate the plant?

A. Yes.
Q. And the Peoples Gas Light Company of Manchester?
A. The same thing is true there.
Q. They operate that but don't own it?
A. Yes.
Q. The same is true with the Philadelphia Gas Works?
A. Yes, sir; it is owned by the City of Philadelphia.
Q. And the Public Service corporation of Newark, New Jersey?
A. They are minority stockholders in that corporation.
Q. The Syracuse Lighting Company?
A. That is what I gave you.

Q. Now, as I understand you, you have a thoroughly
4588 organized department for the purpose of auditing the books and accounts of all these concerns that you named?

A. Yes, sir.
Q. You have under you a number of competent gentlemen who travel about to these different places auditing the books of these several companies, just as they have here in Des Moines?
A. Yes, sir.
Q. Mr. Harrison is in your force?
A. Yes, sir.
Q. And Mr. Porter?
A. Yes, sir.
Q. And these other gentlemen whose names have been read off of Exhibit 59 as auditors?
A. That is right.
Q. And I suppose you also audit the general books of the U. G. I. itself?
A. Yes, sir.
Q. So that you are familiar with the books and records of the U. G. I.?
A. I am.
Q. What does the manager of the Sioux City Company, what salary does he get?

Objected to on part of complainant as being incompetent, irrelevant and immaterial, having no bearing on the issue in controversy here.

A. I do not pretend to carry the transaction of the United Gas Improvement Company in my head. If I could, it would not be necessary to have so large a force.
Q. Nor such an expensive force?

A. I wouldn't say expensive force.
4589 Q. You say you don't know what his salary is?
A. No, I do not.

Q. Do you know what salary the manager of the Burlington Company gets?

Complainant interposes the same objection.

A. I do not.
Q. Now how many of these companies that you have named Mr.

Curran, are dealt with by the United Gas Improvement Company in the same way that the Des Moines Gas Company is dealt with of a business character?

Complainant interposes the same objection, and further it is incompetent, calling for a conclusion and comparison.

A. I don't know exactly what you mean by dealt with.
Q. I mean whether the business operations the United Gas Improvement Company carries on with them is any different.
A. The general system is carried out with all the companies.
Q. That general system has been in vogue for a good many years?

Complainant interposes the same objection.

A. Yes.
Q. How many years have you been with the Company?
A. Twenty-two years.
Q. And that system has been carried on all that time in a general way?

Complainant interposes the same objection.

A. I could hardly answer that for the reason, although I have been with the company twenty two years, I have not been with them as comptroller.
Q. Anyway, it has been carried on for the last ten years in the same way?

Complainant interposes the same objection.

4590 A. I would say yes, in a general way.
Q. Now, of course, the United Gas Improvement Company keeps an account with all these different companies on their general books?

Complainant interposes the same objection.

A. Yes, sir.
Q. Did you furnish the statement that appears in Moody's Manual from which you read the names of these companies?
A. I did not.
Q. Was it furnished from your office?
A. I should imagine it was furnished from the office of the United Gas Improvement Company. I cannot recall just who prepared that statement.
Q. Well the statement is correct in its general make-up, isn't it?

Objected to on part of complainant for the reason that it does not appear that the witness prepared it or examined it or knows anything about it.

Mr. BYERS: Mr. Douthirt informs me it is furnished from his office.

The defendants at this time offer in evidence that part of the volume identified by the witness and designated The Moody Manual Service of 1910, found on pages 2276, 2277, 2278, 2279, 2280, 2281,

2282, 2283 and that part of page 2284 that includes a description and some financial statistics with reference to the Wyandotte County Gas Company of Kansas under the general head United Gas Improvement Company, Capital Stock and Dividends, Net Earnings And Dividends, Years Ending Dec. 31. Income Account, Years Ended Dec. 31, and which gives a list of the several companies, the volume being for the *the* year 1910 and the same is now
4591 read into the record in part as follows:

Complainant objects to this extract from the Manual of Railroads and Corporation Securities 1910, called on the back the Moody Manual Service 1910, Roger W. Babson, Contributing Editor, to each part thereof as irrelevant and immaterial, because each of these statements relates to the business and transactions of the United Gas Improvement Company, and neither of them relate to the business or transactions of the Des Moines Gas Company. It is further objected to as incompetent, because not something that is given out by or authorized by the Des Moines Gas Company, the complainant, and obviously containing very many facts which that company does not give out and as to which it has no knowledge and over which it has no control.

Mr. BYERS: It reads in part as follows:

United Gas Improvement Company (The).

Organized June 1, 1882, under "Manufacturing Act," of Pa.; reorganized May 8, 1885, under an old special charter, with power to construct and maintain or manage any work, and furnish all needful material, labor, implements, instruments and fixtures of any kind, with full power and authority to hold and own securities of any form either as collateral or otherwise and to dispose of same. Charter perpetual, and was originally issued to Union Contract Co. The Company's business is the building, purchasing, leasing and operating gas works and electric plants.

Capital Stock and Dividends.

Authorized, $55,520,700; outstanding May 1, 1910, $55,476,900;
par, $50. Stockholders voted Feb. 9, 1910 to increase
4592 the capital stock from $50,473,350 to $55,520,700, for the purpose of paying on March 1, 1910, a special stock dividend of 10% to holders of record Feb. 15, 1910. Such dividend was evidenced by non-interest bearing scrip, exchangeable at its par value for capital stock at par, if presented for exchange in lots of $50 or multiples thereof, on or before June 30, 1910. Scrip presented for exchange into stock (1) on or before March 31, 1910, participated in the dividend paid in April; (2) scrip presented after March 31, 1910, and on or before June 30, 1910, participated in the July dividend; (3) if not presented on or before June 30, 1910, scrip is redeemable only in cash at its face value, without interest.

Stock dealt in on Philadelphia stock exchange. Transfer office,

Broad and Arch Streets, Philadelphia. Registrar of stock: Fidelity Trust Co., Philadelphia.

Dividends have been paid at the rate of 8% per annum since 1888; payments quarterly, Jan. 15. In Jan., 1896, an extra dividend of 15% was paid in convertible scrip and 10% extra in the same form (see above) on March 1, 1910.

Net earnings and dividends, years ending December 31, 1904 to 1909. Net earnings, 1909, $6,656,109. Dividends, $3,790,371. Sinking fund $692,500. Balance surplus year 1909, $2,173,237.

Income Account Years Ended December 31.

Income from Leased Works and Investments 1909, $7,398,698. Other income $250,537. Total income for 1909, $7,649,235. Salaries and Traveling Expenses 1909, $476,077. Taxes and Miscellaneous Expenses 1909, $517,049. Dividends for 1909, $3,790,-
371.
4593 Sinking Funds 1909, $692,500.
Undivided Profits 1909, $2,173,237.

General Balance Sheet December 31.

Assets 1909. Investments in gas, electric, street railway, Welsbach and other companies at cost price, $66,234,939.
Uncompleted construction contracts, $77,572.
Real Estate, Philadelphia, $1,008,051.
Cash $5,041,498.
Accounts and Bills Receivable, $481,261.
Coupons and Guar. Divs. (accrued, not due) $816,358.
Store Room Material $110,880.
Sinking Fund Securities $962,000.
Total $74,732,559.
Liabilities 1909.
Capital Stock, $50,460,800.
Taxes accrued but not due, $309,500.
Due Co.'s in which we are shareholders $293,860.
Sundry Creditors $57,982.
Undivided Profits (see contra) $23,610,417.
Total, $74,732,559.

Officers: Thomas Dolan, Pres.; Samuel T. Bodine, V. P. & Gen. Mgr.; Randal Morgan, 2d V. P. & Gen. Counsel; Walton Clark, 3d V. P.; Lewis Lillie, 4th V. P. & Treas.; W. F. Douthirt, Sec. Philadelphia."

Q. Now, Mr. Curran, in this general balance sheet for 1909 are sinking fund securities $962,000; do you know what is covered by that item?

Objected to on part of complainant as irrelevant, immaterial, wholly foreign to this controversy; it is a matter that cannot in any

way affect the merits of this controversy one way or the other,
4594 a matter which the witness is under no obligation whatever to answer so far as we are concerned.

Mr. BYERS: Tell him not to answer.

Mr. GUERNSEY: Yes sir; I advise him not to answer.

Q. Can you tell me anything about that item?

Complainant interposes the same objection. If we have to figure out every item in the books of the U. G. I. Company, we want to have the court say so first.

A. I will answer by stating that the fund mentioned there has no bearing whatsoever on the Des Moines Gas Company.

The MASTER: You can tell in a general way what they are.

A. I really do not know in detail. I could tell you in a general way. I think that refers to the investment in the Philadelphia Gas Works property; that is not owned by the United Gas Improvement Company, but states the investment the company has made there.

Q. The term says, sinking fund securities; is it your understanding that item represents securities purchased by the United Gas Improvement Company with sinking fund balances?

Complainant interposes the same objection. Of course the only reason for the objection is this: we are criticised for going into immaterial matters. If they are gone into on one side, we necessarily have to go into them and follow them up.

The MASTER: I just wanted to know whether they were entering into depreciation and if any part of it belonged to the Des Moines Gas Company.

Mr. GUERNSEY: That is proper of course, if any part of it went into the Des Moines Gas Company.

4595 Mr. BYERS: I suppose you have no objection to our asking a question that we can ask properly.

Mr. GUERNSEY: I have no objection to any germane question.

A. I believe I answered that had no bearing whatsoever on the Des Moines situation. The Philadelphia Gas Works is owned by the City of Philadelphia. The United Gas Improvement Company leases it, and at the termination of the lease the property is turned over to the city, together with all the extensions and improvements made during the period of the lease. So in order to take care of the investment of the United Gas Improvement Company it is necessary to set up a sinking fund, and the amount that is mentioned in that balance sheet practically covers that transaction.

The MASTER: There is no part of that sinking fund belongs to or is in any way related to the Des Moines Gas Company?

A. Not one dollar.

Q. It is your judgment, is it not, that item represents a depreciation reserve that had been set aside in the operation of the Philadelphia Gas Company and invested in securities?

A. There isn't any depreciation about it, General.

Q. I can't quite understand how it would get in as securities?

A. You might call it depreciation; it is far from being depreciation. The Company some day is going to lose. They are naturally making a profit in the sale of gas and they are setting aside a portion of the profits to take care of the investment that some day they will lose.

Q. Another item, due companies in which we are shareholders $293,860. In a general way what is that item?

A. I could hardly go any further than what it states there. It is due companies. You find on the other end amounts receiv-
4596 able from companies.

Q. It is the general account kept between the United Gas Improvement Company and these companies you have named in this method of doing business that has been in vogue for ten or twelve years at least?

A. Practically so.

Q. The gas plant at Philadelphia is operated by the United Gas Improvement Company?

Mr. GUERNSEY: I think if we are going into this we ought to object to this as not the best evidence. I think there is a written contract that shows just what the relation of the parties are. Our objection to it is simply on the ground that it is immaterial. We want to make the objection now so that if we shall later go into these immaterial matters, it will be understood we are forced into them.

The MASTER: I do not understand that matters pertaining to the United Gas Improvement Company relating to other companies have anything to do with this. This is competent if it in any way affects the Des Moines Company.

Mr. BYERS: That and one thing further. I do not want to be misunderstood in the record, but I have this thing further in view, and that is, to show the general plan and method of doing business between the U. G. I. and all these companies as far as it applies to the way they do here.

The MASTER: That I understand you have already shown.

Q. Now, Mr. Curran, you have audited the books of the Des Moines Gas Company on numerous occasions?

A. Yes, sir.

Q. And the books of the Sioux City Company?

A. I have.

4597 Q. And the books of the Burlington Company?

A. I have.

Q. You have in your office records from which you could readily tell or furnish to me a list of the salaried officers of these companies, couldn't you?

A. I suppose I could, but I question whether it would be necessary for me to do so or not.

Q. You could do it readily and promptly?

A. I could.

Q. Perhaps you could tell me without referring to any record whether the United Gas Improvement Company has any of its

officers on the pay roll of the Sioux City and Burlington Gas Companies?

A. My recollection is they are the salaried officers.

Q. Do you know who they are?

A. I think they are practically the same as the officers of the Des Moines Gas Company.

Q. And drawing salaries from the Sioux City and Burlington companies?

A. I believe so.

Q. The same list that appears here in Des Moines?

A. Practically the same list.

Q. Do you know when that practice began?

A. No. I can't recall the date now.

Q. I wish you would furnish us, Mr. Curran, if you will, before the trial is over, a statement or list of the officers of the gas company at Sioux City that is controlled by the U. G. I. and Burlington, Harrisburg, Pa., those three, and Omaha, Neb.

Objected to on the part of Complainant as irrelevant, immaterial and incompetent. If we are required to go into this matter, we shall also be brought into the collateral matters which that would
4598 involve, if this is to be taken as material evidence, and would have to go into the testimony as to each one of these officers, as to the duties performed and the results attained, and all the other factors that go into the reasonableness of the salaries paid. We do not think this is competent or proper evidence, and we advise the witness not to answer.

Q. You have the list I gave you and understand what I would like to have you furnish?

A. I have the list, yes.

Q. I would like the salaries of the managing officers, not the ordinary employés, but the officers.

Cross-examination.

By N. T. GUERNSEY, Esq.:

Q. Mr. Curran, you were asked at the commencement of this examination to give a list of all of the companies in which the United Gas Improvement Company owned substantially all the stock; now, if I understand you correctly, you gave a list of all the companies in which it owned a mere majority of the stock and did not distinguish between substantially all, and the majority in the first part of the list that you gave here?

A. There may have been some in that; not having the stock record before me, I am unable to state correctly.

Q. Substantially all is a rather indefinite term; I suppose you couldn't give the per cent of stock which the U. G. I. Company owns in any of the companies that you named?

A. No, I would be unable to give that.

Q. So that it would stand somewhere between majority and substantially all?

A. Yes.

Redirect examination.

By Gen. BYERS:

4599 Q. In that list that you gave does the U. G. I. receive from each of those companies in the form of salary, money the same it does here in Des Moines?

A. I cannot recall, General; in a large number, yes.

Q. You said you did not have before you the stock book; that wouldn't help you any if you had it, would it; the stock book don't always show who has the stock?

A. It shows the stock as of record.

Q. But don't show who owns it?

A. I wouldn't be in a position to know other than what the books show.

Q. You don't mean that?

A. It would be beyond my duty to investigate each holding.

The MASTER: You mean the book that contains the list of stock of those several companies?

A. Yes.

Q. You mean U. G. I. list of stock—what you thought you meant in your answer to Mr. Guernsey, that you did not have the stock book before you, I thought you meant the stock book of each of those companies.

A. The same would hold true, General, the stock book of the individual companies or the stock book of the United Gas Improvement Company.

Q. The Des Moines Gas Company for instance, do they have a stock book or register here?

A. No, it is hardly necessary here. As has been testified to, the United Gas Improvement Company hold all the stock. So it wouldn't be necessary to have the stock book.

Q. What you meant was, when you referred to the stock book, was the register of the U. G. I. which would show what stock it owned?

4600 A. Yes.

Q. In all these companies you have named, in addition to receiving the money in the form of salaries through its officers, they also have a running account for materials and fixtures and services of the men in your departement, engineers and all that sort of thing?

A. As you will notice on the balance sheet you read, store room supplies, that represents principally stationery and special fittings that the company buy in large quantities. Then the local companies may requisition for supplies, for instance, some manufacturing report, one pad would do for a year; it could cost the company here through the United Gas Improvement Company about 25 cents, whereas if that same stationery was purchased locally it would probably cost ten dollars; in that way there is quite a saving made.

Q. To all the companies?

A. To all the companies; there isn't any profit made in the supplies.

Q. I notice *on* another item of four hundred odd thousand dollars in that balance sheet for 1909, I think for salaries; that don't just mean salaries of the officers at Philadelphia, does it?

Objected to on part of complainant as irrelevant, and immaterial to this controversy; further because it assumes a fact which as a matter of fact is incorrect.

Q. The item referred to is in the income account, for the year 1909, $476,077; does that item cover and show what the U. G. I. has received from these numerous companies in the way of salaries and expenses of traveling auditors?

Objected to on part of complainant as irrelevant and immaterial to any matter in controversy in this case. I would suggest that you hand that statement to the witness so that he can see
4601 just what that item is you are asking about.

A. I am afraid you are misinterpreting this. You are speaking of it as an income; it is just the reverse. The income account would represent the revenue and operating expenses.

Q. The income account has something to do with what is pouring in, doesn't it?

A. The amount that you refer to there is an expense item, not an income item.

Q. You mean it is what they paid for salaries?

Complainant interposes the same objection last made.

A. Paid out.

Q. Paid out for salaries?

A. Not for salaries alone.

Q. Salaries and traveling expenses?

A. The officers are in the minority in the Philadelphia office. The Philadelphia office is a large organization and the expenses there, you might determine, would represent the operating expenses of the company.

At this time an adjournment was taken until 1:30 P. M.

4602 1:30 P. M., WEDNESDAY, *October* 4, 1911.

G. W. CURRAN continued on direct examination by Hon. H. W. Byers, testified as follows:

Q. I had identified and offered into the record this morning certain pages of the book called Moody's Manual and for the purpose of identification and convenience hereafter I desire to have the pages marked as defendant's exhibit 61. We will have the pages copied and tacked together as Exhibit 61. I think the last question Mr. Curran was to ask you to furnish me certain information with respect to Sioux City, Omaha, Burlington and Harrisburg and with that I will excuse you for the time being.

Cross-examination by N. T. GUERNSEY, Esq.

Q. Your attention was called to the item of salaries and traveling expenses in a part of this book that has been referred to as Exhibit

61. I wish you would state whether this covers the salaries and traveling expenses of all of the employés of the U. G. I. Company directly employed by that company in Philadelphia leaving out the Philadelphia gas works which is run as a separate proposition as I understand?

A. The transactions of the company *are* listed on the exhibit 61 relates solely to the United Gas Improvement Company, have nothing to do with the expenses other than that company. There are some 300 employés in the United Gas Improvement Company proper in the Philadelphia office so that the salaries include salaries of all and what other expenses there may be. In other words it is part of the operating system.

4603 Mr. BYERS: I want to have marked those three journals and the ledger. Journal No. 1 of the Des Moines Gas Company may be marked defendant's exhibit No. 62. Journal No. 2 may be marked defendant's exhibit No. 63. Journal No. 3, marked defendant's exhibit 64 and includes pages from page 1 to 184 inclusive.

Defendant's Exhibit 65 ledger No. 1 of the Des Moines Gas Company March 1, 1906, to February 28, 1908. Defendant's Exhibit No. 66 Ledger No. 2 of Des Moines Gas Company March 1, 1908, to December 31, 1910.

Mr. BYERS: Defendants in this connection offer in evidence defendant's exhibits 62, 63, 64, 65 and 66.

Mr. BRENNAN: The defendants now offer and read in evidence from the statement and brief for the complainants filed in the case of the Capital City Gas Light Company against the city of Des Moines in the circuit court of the United States in and for the southern district of Iowa, central division the following, commencing at the bottom of page 20 thereof.

Mr. GUERNSEY: This is all objected to as incompetent because the case referred to was disposed of and the brief in question was filed by the complainant in that case prior to the organization of this company and was not and could not have been filed by this company and could not bind it in any way in this case.

Mr. BRENNAN: The offer reads as follows:

We recur now to the first inquiry suggested, which relates to the capital upon which the complainant is entitled to a return. Without attempting to particularize to the extent that was necessary upon the oral hearing, we submit a synopsis of the facts as they appear in the showing.

The complainant was organized in 1875. We have laid before the court with absolute frankness the whole history of the
4604 compane. It appears in the testimony of Lewis Lilley and Edward G. Pratt, and especially in the exhibits attacjed to the affidavits of Mr. Pratt, the manager of the company. Statement 1 Exhibit C, attached to the affidavit of Mr. Pratt, Exhibits in detail the entire property of the gas company, and shows the amount of the investment, beginning January 26, 1878, and continuing to December 31, 1895. It was begun in 1878 because it was not thought

necessary to enlarge the record by covering the previous period. It shows an aggregate investment on the 31st of December, 1894, of $681,646.04. This exhibit includes the investment of the company in the stock of the Capital City Electric Light Company, amounting to $39,271, the stock of the Iowa electric and *con*-Construction company, $252.17 and $172,096.94, bonds issued in payment for rights acquired under letters patent. While as a matter of business, it became necessary for the gas company to acquire the ownership of the stock of an electric light company, we recognize that there may be difference of opinion with respect to our right to include the stock in our investment upon which interest should be paid by the operation of the gas plant. We defer the consideration of that question to a later period in our argument. The same observation may be made with regard to the small investment in the stock of the Iowa Electric & Construction Company, which is a company ancillary to the gas business. Deducting the amount represented by the stocks of these two companies, there remains an investment of $642,022.65. With the exception of the $172,096.94, represented by bonds issued for patent rights, this sum is the aggregate of the construction account *account*; that is to say, the actual
4605 present value of the tangible property of the company employed in its business. It is possible that some criticism will be made of the issuance of these bonds. We have no doubt of the propriety of including them in ascertaining the investment, but in order to put the facts before the court we have considered the case from every standpoint, and the court will find in a subsequent statement of the same exhibit, the inventory of the company's property, excluding the stock in the electric companies and the bonds. This inventory aggregates $466,532.93. It probably should be remarked that the item real estate $8,916, represents, not the present value of the real estate, but what was paid for it many years ago, by the company. Otherwise it is an exhibit of the present actual value of the tangi-le property. It appears from another part of the affidavit of Mr. Pratt that the outstanding capital stock is $300,000 and the outstanding bonds, $200,000.

We recapitulate in four tables, which show the investment of the company upon the several hypothes*is* to which we have called attention.

Mr. BRENNAN: The defendants now offer and read the third table referred to in the statement.

Mr. GUERNSEY: Same objection and the further objection that this testimony is not competent to prove the present actual value of the property now used by the complainant company and we make that objection to the entire offer of this document.

Investment, excluding the stock in electric companies and bonds issued for patent rights $466,532.93.

Mr. BRENNAN: The defendants also offer in evidence and read into the record the following commencing at page 23 of the statement and brief for the complainant filed in said action above mentioned.

4606 Same objections.

We have first the affidavit and oral testimony of Edward G. Cowdery. Mr. Cowdery has been for twenty years engaged in the manufacture and distribution of gas, and is now the general manager of the Milwaukee Gas Co. Milwaukee is a large city, and is mentioned in every dissertation upon the subject of cheap gas as an instance that gas can be furnished for $1.00 per thousand. Mr. Cowdery has no connection with or relation to the complainant. His natural tendencies lead him into opposition to the United Gas Improvement Company, the owner of the capital stock of the complainant. He is a recognized authority in the United States upon all questions connected with the construction or operation of gas plants. The courts, therefore, ought to receive what he says as the evidence of one qualified to speak, and having no motive — speak anything save the truth. He came to Des Moines and spent several days in a close and analytical examination of our plant, and among other things he attaches to his affidavit an inventory of our plant as it now exists. This inventory, with the exception of one or two items which he points out in his affidavit, was made independently of any information received from the company, and he declares as follows:

Deponent has been further requested to state what it would cost to reproduce the existing plant now in operation in the city of Des Moines. In his opinion it would cost more to reproduce it than the amount of the investment account as claimed by the Capital City Gas Light Company, for the reason that there are buildings and other appliances serving their full purpose which would cost largely more to reproduce than their present cash value; and he has, therefore, carefully inventoried the said plant, and applying to the plant the prices now prevailing for material and construction, but
4607 depreciating a portion of the plant by reason of long use, he states to the court that the present cash value of the said plant, including street mains and miscellaneous parts of the system necessary to its use, is $454,414.35. This amount is properly divisible into three parts as follows:

Present cash value of works	$226,601.00
Present cash value of mains	153,863.35
Present cash value of miscellaneous construction	73,950.00
Total	**$454,414.35**

He attaches an itemized statement of said values hereto, marks, the same Exhibit "C" and makes it a part hereof.

Grand Rapids, Michigan, is another city very often mentioned as an instance of cheap gas. It is a city of 85,000 inhabitants. The company is not in any — connected with the complainant, and its manager, Mr. Harry D. Walbridge, is wholly independent of any influence that can be supposed to emanate from Des Moines or Philadelphia. He did not visit Des Moines, but he examined the inventory attached to the affidavit of Mr. Cowdery and thereupon he says:

Deponent further says that he has examined a blue print of the gas works of the Capital City Gas Light Company, located in the city of Des Moines, Iowa, and has examined the inventory of said gas

plant and gas mains and miscellaneous construction as contained in Exhibit C attached to the affidavit of Edward G. Cowdery. That he has been informed by Edward G. Pratt, the manager of said Capital City Gas Light Company, with respect to mains, and generally with respect to the extent of mains laid under paved streets. That from the information so received he is able to form an opinion regarding

4608 the cost of reproducing the said plant of the Capital City Gas Light Company, including its works mains and miscellaneous construction; and upon the hypothesis that the information heretofore recited as received by him from the said several sources set out is true, he is of the opinion that it would cost to reproduce the said plant and equipment at the present time not less than $450,000.

Mr. Walbridge has been engaged in the business fourteen years, is of high repute, and therefore his opinion, or rather his computation, is entitled to very great weight.

Toledo is another city enjoying the advantages of cheap gas, and we have the affidavit of Charles Faben, Jr., the manager of the gas company there. He also is entirely disinterested, neither he nor his company having any relation whatever to the complainant or with the United Gas Improvement Company. After reciting the sources of the information concerning the plant of our company, none of which will be impeached in any particular, he says:

Upon the hypothesis that the information heretofore set out and received by him from the several sources above named is true, it is his opinion that it would cost to reproduce the said plant and equipment at the present time between $450,000 and $460,000.

Columbus, Ohio, is also a city of cheap gas, and Mr. Irvin Butterworth is the vice president and general manager of the Columbus Company. Mr. Butterworth is entirely disassociated from any corporation or person having an interest in the issues of this controversy. He examined the plant of the gas works in Des Moines, and the inventory attached to the affidavit of Mr. Cowdery, and having thus become acquainted with our property, and knowing from his own experience, exactly what it cost to construct such a plant, says:

4609 That from the information so received he is able to form an opinion regarding the cost of reproducing the said plant of the Capital City Gas Light Company, including its works, mains, and miscellaneous construction, and upon the hypothesis that the information heretofore recited as received by him from the said several sources heretofore set out is true, he is of the opinion that it would cost to reproduce the said plant and equipment at the present time not less than $455,000.

We have also the affidavit of Byron D. Chollar, who has been engaged as a gas engineer and in the construction and operation of gas plants for thirty two years, and is now engineer of the Laclede Gas Light Company. He is likewise without any interest either in the controversy or in the persons or corporations involved in it. He says:

That from the information so received he is able to form an opinion regarding the cost of reproducing the said plant of the Capital City Gas Light Company, including its works, mains and miscellaneous construction; and upon the hypothesis that the informa-

tion so received is true, he is of the opinion that it would cost to reproduce the said plant and equipment at the present time not less than $460,000.

We present also the affidavit and oral testimony of George H. Harper, the superintendent of the Altoona Gas Company. Mr. Harper has been engaged in the business for 21 years. He is disinterested, and he says:

From these several sources of information he is able to form a substantially accurate opinion with respect to the cost of reproducing at the present time the said plant of the complainant company; and he thereupon says to the court, that upon the hypothesis that the information so received by him from the several sources above
4610 named is substantially accurate, it is his opinion that it would cost now to reproduce the said gas works of the complainant company with its mains, its miscellaneous construction and equipment from $450,000 to $460,000.

Upon his examination before the court and after a personal inspection of the plant he offered an itemized statement which upon the basis of $32,500 for land aggregated $472,770. We present also the affidavit and oral testimony of Captain William Henry White, of New York, probably the most accomplished gas engineer of the United States; A man whose knowledge of the subject is both comprehensive and intimate; a man who has been for many years engaged in doing nothing but installing gas plants and advising the various companies with which he is connected. He is not only not interested in the complainant, nor in the United Gas Improvement Company, but he is an active competitor of the latter and hence occupies a peculiarly independent position. He says

That he has thus familiarized himself with the length and size of the street mains in use by said company, and the portion thereof which lie under paved streets. That the information so received is sufficient to enable him to form an opinion with respect to the cost of reproducing said gas plant, with its mains and miscellaneous construction, at the present time; and thereupon he says to the court that upon the hypothesis that the information thus received by him is substantially accurate, it is his opinion that it would cost at this time to reproduce the said plant and its equipment not less than $450,000.

After giving the affidavit he came to Des Moines and examined the plant and upon his oral examination submitted a detailed statement showing, with land at $32,500, a present value of $474,031.05.

We have presented, further, the testimony of W. A. Stead-
4611 man, delivered in the former suit between the gas company and the city. Mr. Steadman was at that time manager of the gas works in St. Louis and had been engaged in the business for thirty years. His estimate of the cost of reproduction, exclusive of the land upon which the works are situated was $404,000. This estimate was on the basis of the plant as it existed in 1891. The additions made since then appear in the exhibits attached to the affidavit of Mr. Pratt. Adding these and allowing $32,500 for land the aggregate is $479,749.29. Mr. Stedman was likewise then and is now without any interest in or connection with the controversy.

Thus far our evidence has come from witnesses entirely disconnected with the company. We have, however, the testimony of Walton Clark, now the general superintendent of the United Gas Improvement Company, who has had twenty years' experience in the construction and operation of gas plants, and who has been the supervising engineer of the Des Moines works, who says that it would cost to reproduce the plant at the present time and at the present prices $440,275; to which, if we add $32,500 for the real estate the aggregate is $472,774.

We have also the testimony of Mr. E. G. Pratt, the manager of the Capital City Gas Light Company, whose knowledge of the subject is more intimate than that of any other witness, and who, having had twenty years of actual work in the operation and construction of gas plants, is well qualified to advise the court. Mr. Pratt says that it would cost at the present time to reproduce the plant, allowing $32,500 for real estate, $483,756.06.

Mr. BRENNAN: The defendant- offers and reads into the evidence from the statement and brief of the complainant in the case
4612 above re- the following commencing at the bottom of page 32 thereof.

Same objections.

We therefore leave this branch of the case, confidently believing that the court will find, first, that the actual investment of the company in physical, tangible property, used for the production and distribution of gas, is $466,532.93, and that this property is in as good condition at the present time as it is possible to keep it with ordinary repairs; second, that the investment of the company in patent rights is $172,096.94 represented by bonds issued by the company in 1889; third, that the present value or cost of reproducing the physical property of the company as now used in its business would be not less than $460,000.

In order that the court may see at a glance our testimony in this regard, we tabulate the conclusions of our several witnesses as to the cost of reproduction, with land estimated at $32,500.

Edward G. Cowdery	$440,914.35
Harry D. Walbridge	436,500.00
Charles R. Faben, Jr.	446,500.00
Irvin Butterworth	441,500.00
Byron E. Chollar	446,500.00
George H. Harper	472,770.00
William Henry White	474,031.05
W. A. Stedman	479,749.29
Walton Clark	472,774.00
E. G. Pratt	483,756.06

4613 ANDREW SANGSTER recalled on the part of the defendant and examined in chief by Hon. H. W. Byers, testified as follows:

Q. Mr. Sangster, since you were on the stand some days ago I will ask you if you have made up the tabulations that you were

asked at that time to make showing comparative statements of the cost per thousand feet of manufacturing and distributing gas for the present year up to say, the 1st of August 1911, in comparison with the year ending December 31, 1910.

A. I have made up a statement for the eight months to August 31, 1911.

Q. Do you have that statement with you.

A. I have.

Q. You may examine defendants' exhibit No. 67 and state whether that is the tabulation you refer to covering the months you have stated.

A. That is the statement I referred to.

Q. Now you may state whether you prepared a tabulation or statement covering the same period showing additions to plant of the gas plant?

A. I did.

Q. You may examine Exhibit 68 and state whether that is the tabulation you refer *yo*?

A. That is it.

Q. You may state whether or not you have prepared a statement or tabulation showing sales of gas by years ending with February in each year for five years, beginning with the end of February 1906?

A. Yes, I have prepared a statement showing sales, that is
4614 gas account over five years ending February 28, 1911.

Q. It shows ea*f*h year beginning with the end of February 1906?

A. It does.

Q. You may examine Exhibit No. 59 and state whether that is the statement or tabulation you have just referred to showing the sales for the years mentioned?

A. That is the statement.

Q. Exhibit No. 67 Mr. Sangster entitled Des Moines Gas Company, comparative statement cost per thousand cubic feet of manufacturing and distributing gas eight months to August 31, 1911, and year ending December 31, 1910, you may state whether the computations and figures that appear on that exhibit were taken from the complainant's books, the Des Moines Gas Company's books by you.

A. The figures stated in the first column, that is estimated expense are taken from the company's ledger.

Q. That is true all the way through is it?

A. Yes, sir.

Q. And of course the other figures are your own computations are they?

A. Yes, sir; but I should explain in connection with expense as shown I prepared a memorandum showing where I group certain accounts as appear on the ledger making up one or two of the items in that first column.

Q. Explain those please?

A. Under the heading manufacturing, the item repairs works, $4,185.96 is made up as follows. Amount as per ledger, $3,720.98.

There is a separate account in the ledger headed repairs linings amounting to $464.98. I have added in that item making a total of $4,185.96. The item repairs mains, amounting to
4615 $4,407.89, is made up as follows: Amount as per ledger $3,768.88. I have separate repair accounts shown in the ledger repairs mains authorization 598, $361.97. Repairs mains authorization 601, $88.85. Authorization No. 602 repairs mains $67.85. No. 606 $81.38. No. 581 $14.33. No. 576 $24.63. Total addition $639.01.

Q. Right at that point let me ask you these items that you read as being taken from authorizations were items not yet carried to the ledger. They are items on the ledger but not carried into the repairs mains account, they are standing separately in the ledger.

COURT: You put them into repairs.

A. I simply added them here into repairs mains. That makes up the total $4,407.89.

Q. Now is there any other lumping or adding in that first column?

A. Under the head of commercial expense there is an item expense office $9,006.76.

Q. What about it?

A. The amount as per the ledger is $8,972.76 to which I have added an item appearing in the account furniture $34 making up a total of $9,006.76.

Q. Is there any other added?

A. Under head of new business there is an item gas appliances showing a total credit of $2,749.58. There is no such account entitled gas appliances in the 1911 ledger and for the purpose of comparison I have grouped what appears to me to be the accounts which were formerly included under the head of gas appliances in the previous years so far as I can judge. These are as follows: Gas ranges, credit balance $3,720.36. Circulating water heaters
4616 credit $857.84. Special appliances credit $916.14. Connecting new ranges debit balance $1,540.86. Connecting new water heaters debit $782.09. Connecting new special appliances debit $754.11. Connecting consumers' appliances credit $175.78. Company's appliance repairs debit $276.45. Fixtures credit of $432.97. Total debits $3,353.51 and total credits $6,103.09 making net credit of $2,749.58, the amount appearing under that first column. Under the same group of accounts new business there is an item house fitting expense with credit $586.37. I think the same explanation applies there as in the gas company's appliances there is no house fitting account on the 1911 ledger as was previously and I have taken what I thought would be accounts which would compare with that. Now any others?

A. Save the house fitting expense that is made up of house piping credit $228.28 incandescent burner repairs credit $396.56 incandescent burner maintenance, debit of $38.47. Two credits given are $624.84 and the debit of $38.47 deducted makes a net credit of $586.37, the amount appearing in that first column. The last thing uncollectible bills appearing under general expense amount-

ing to $1,964.40 is made up of two items, amount as per ledger $1,708.60 to which I have added account uncollectible sundry sales bills, $255.80, making up the sum of $1,964.40 appearing under that first column. I think that covers all these items.

COURT: These in red on the third page of the exhibit are to be deducted?

A. The deductions yes. I should explain in a general way that these computations do not include the reate regulation expense charged on the books for the eight months amounting to $47,131.16, expressly excludes that ite-, and in addition the item appear-
4617 ing as taxes general, $19,291.87 includes the federal tax for the year 1910, that is applicable to the year 1910, amounting to $1,287.37 paid in 1911.

COURT: Let me understand now the charge for rate regulation is not included.

A. No, sir.

COURT: The charge, however for salaries is?

A. Yes, the proportion of the $10,000 for the period is. You will find that under the last item, under general expense. I have made no adjustment whatever of the book figures.

Q. At the bottom of this Exhibit 67 I notice total gas manufacturing during period to August 31, 1911, that is for an eight months' period ending August 31, 1911?

A. That is so.

Mr. BYERS: Defendants offer and read into the records defendant's Exhibit No. 67.

Mr. GUERNSEY: I would rather wait until we have had a chance to examine this to see whether we care to make any objection to it.

Q. Defendant's exhibit No. 68, statement of additions to plant and property, January 1, to August 31, 1911, what do you have to say as to whether that statement was made up from the books of the company?

A. That statement is made up from the books of the company, yes, without adjustment.

Mr. BYERS: Defendants offer in evidence defendant's exhibit No. 68.

Mr. GUERNSEY: I would like to have an opportunity to examine that and make objections if any after examining it. That statement of course does not include additions to what the company calls stable, that has now been included under construction ac-
4618 count or plant account.

Q. Defendant's exhibit No. 69 showing gas sales for twelve months to February 28th in each year beginning with the last of February 1906 and ending with February 1907, on down to February 28, 1911, was that statement made up from the books of the company without any changes?

A. That statement was made up from the figures in Mr. Hall's report which were taken from the books details of which will be found under schedule 2 down to December 31, 1910, and as regards

January and February 1911, in the body of the report, I can't give you the page, but the figures will be found there.

Q. There was no tabulation was there anywhere either in Mr. Hall's report or any other report so far as you know of that carried out the sales for these particular dates or years made up in that way beginning with the end of February 1906?

A. Down to February 28, 1909, the figures are just as shown in that report.

Q. But they are not carried on to 1911?

A. No, sir.

Q. Defendant's exhibit 69 does carry them on to February 28, 1911?

A. Exactly.

Mr. BYERS: Defendants offer in evidence defendant's exhibit No. 69.

Mr. GUERNSEY: As to that exhibit also I would rather wait until I have seen the exhibit and have a chance to examine it before making any objections we may desire to make.

Q. Now Mr. Sangster have you examined the books with respect to the amount paid to the several experts in this case?

A. Yes, sir.

Q. And will you state what your tables shows, or what you found?

Objected to as irrelevant and immaterial because the ques-
4619 tion as to reasonableness of that amount is not one of the issues in this case and the fact that the experts were paid is of course something that is a matter of common knowledge.

Q. Who do you mean to include?

Q. Well take Mr. Baehr for instance.

A. Down to August 31, 1911, the items appearing as W. A. Baehr on account of services rate regulation work amount to $8,180.

Q. And Mr. Lea?

A. Henry I. Lea, services $6,796. That is down to August 31, 1911. There have been subsequent payments.

Q. You are giving it down to August 31st?

A. Yes.

Q. You say there have been subsequent payments?

A. In certain cases.

Q. Now Mr. Randolph?

A. W. W. Randolph account services rendered in case of Des Moines Gas Company vs. City of Des Moines, $5,000.

Q. His was $5,000 even?

A. Yes, sir.

Q. Mr. HAGENAH: W. J. Hagenah for services auditing accounts, report and expenses two items to July 1, and for the month of July together amount to $1,546.00.

Q. And what was the total that you found charged up to rate expenses up to August 31st?

A. $47,131.60. That is included in that item.

Q. In a general way, what was the rest made up of aside from these four experts?

A. Accounts incurred locally and charges made by the United Gas Improvement Company.

4620 Q. How much was the amount credited to the United Gas Improvement company in this case as you remember?

A. I could not say off hand, but I could easily get the figure. You will find it under rate regulation account, the separate debits to the United Gas Improvement Company. There are also a few charges under the head of accounts payable.

Q. What are those?

A. They don't amount to much. I don't remember and haven't the figures beside me here, but they are charges for photographs, prints and such like.

Q. You can put that in with the item you were going to get for me showing the amount that the U. G. I. has been credited with in this case?

Mr. Byers: Exhibit No. 70 is presented as a substitute for the memoranda that you furnished to me in lead pencil and which was furnished to Mr. Haines or somebody to make up a copy and has been misplaced. I wish you would look over Exhibit No. 70 and state whether that is a copy of that memorandum?

A. Yes, as far as I can make out that is.

Mr. Byers: Defendant at this time offers in evidence to be considered in connection with defendant's Exhibit No. 59 defendant's exhibit No. 70.

Complainant objects to defendant's exhibit No. 70 simply on the ground it is irrelevant and immaterial to any matter in issue in this case.

Cross-examination by N. T. Guernsey, Esq.

Q. You gave the amount paid to Mr. Bawhr. Did that purport to be for services or services and expenses?

4621 A. I have not looked up the vouchers, it may be for both.

Q. You simply took the figures off the ledger.

A. Off the book which is called accounts payable book.

Q. Then you don't know at what rate Mr. Baehr charged for his services?

A. I do not, no sir.

Q. And was there anything about the account to indicate to you that it was unreasonable or improper in any way?

A. None whatever.

Q. The account which you found had been paid to Mr. Lea you obtained in the same way did you?

A. Yes, sir.

Q. So that you don't know what that includes?

A. No, sir; I can't say how much if any of the total covers expense.

Q. Well all you can say is that the books show that there was an

account rendered of an amount payable to Mr. Lea for that account.

A. For that amount yes.

Q. And what it was for the books that you examined did not show?

A. The books did not no, but I examined one or two of the vouchers.

Q. Whose vouchers, you said you did not examine the Baehr vouchers?

A. Well I meant all of the vouchers.

Q. You examined one or two of them?

A. Yes, over each.

Q. That is the extent of your information as to what was covered by the account?

A. Yes, sir.

Q. Then as to Mr. Lea's account you know nothing that
4622 would suggest any impropriety in it or anything irregular or extraordinary in it, is that right?

A. Yes, that is right.

Q. The same thing is true as to Mr. Randolph's account is it not?

A. Same is true.

Q. The same thing is true as to Mr. Hagenah's account?

A. Yes, sir.

Q. And the balance of this aggregate that you said went into this rate regulation expense was made up of a small amount of local accounts and credits to the U. G. I. Company?

A. I didn't say small amount.

Q. What was the amount of the local accounts, I infer from what you said or the questions that it was a small amount?

A. No, I said accounts incurred locally, for instance the charge I think somewhere about $800 for printing the booklet or pamphlet showing the correspondence between the manager and Mr. MacVicar.

Mr. BRENNAN: Defendant's exhibit 44, that is the pamphlet you are talking about.

Mr. GUERNSEY: The one that had Mr. Haines' picture in?

A. I think that is the one, includes charges of that nature.

Q. What other charges were there of that nature?

A. Accounts rendered by the Hotel Chamberlain I think.

Q. That is the expense of witnesses and people that had been here aiding in connection with this hearing.

A. Yes, sir.

COURT: That is the book you refer to, Exhibit 44?

A. That is it, yes.

Q. Did the local accounts run to a large amount?

4623 A. I could not say as to that Mr. Guernsey.

Q. You have no idea as to how much they run to?

A. No, I didn't make any jotting as to that.

Q. Did you find in this whole system this whole amount of $46,000 or $47,000 that you have referred to any item that seemed to you to be an improper item?

A. The only analysis I made of that account was as to the amounts paid these several experts.

Q. In order to do that you had to go through the account and in order to say it was rate regulation you had to find out what the items were for didn't you?

A. They were all under the head of rate regulation.

Q. Well didn't you find out what the items were for?

A. Which items do you refer to?

Q. Items going to make up the aggregate of the 46 or 47 thousand dollars, which was it?

A. $47,000.

Q. $47,431.16. Now you found out in examining this account what the items were that made up that $47,131.16 didn't you.

A. No, sir; I examined that account for the sole purpose of finding out what was paid to these several experts. I noticed other items in passing of course, but I didn't make any note of them.

Q. Well adopting the praseology that we have heard here so often, did you find anything that indicated any impropriety in any item of this kind?

A. No, sir; I did not.

Q. Now then this account which amounts to $47,131.16 is not brought down to date is it?

A. Not to this date. It is the amount standing as a debit
4624 of that account August 31, 1911.

Q. It didn't include anything on account of attorneys' fees for instance or counsel fees, things of that kind does it?

A. Yes, it does.

Q. How much?

A. I remember one item of $1500.

Q. That is all it includes on that account?

A. That is the only one I know of, I can't say.

Q. So that this amount is not and cannot be accepted as anything like the aggregate expense of this suit to the Des Moines Gas Company can it?

A. Oh no.

Q. But on the other hand it is obvious from an examination of this account that the expenses will run very much higher than that because on its face the account shows it does not include all the expenses, that is true isn't it?

A. Yes, it does not show all.

Q. So you went far enough to be satisfied that the actual expenses of the company will be very much more than this amount that you have stated.

A. Well I have just answered I say that it will be.

Q. So that somewhere in these operating expenses here, in the expense of transacting this business, there is going to be an amount that is very much in excess of $47,000 that we have got to take care of that we have not taken care of yet in any statement you have prepared or any part of it?

A. We show in no part of——

Q. I didn't ask you about any part of it. I asked you whether in this item of expense incomplete and with many items not covered at

all running over $47,131.16 that must be taken care of some-
4625 time and somewhere in the expense of doing this business. That is a fact isn't it?

A. It does not form part of the ordinary expenses, but has to be taken care of certainly.

Mr. GUERNSEY: Now with reference to these exhibits I would like to defer cross examination until tomorrow morning, I have not had opportunity to look at them.

Redirect examination by Hon. H. W. BYERS:

Q. Mr. Guernsey asked you if you found any impropriety in any of these charges. You found it rather a rich field didn't you?

Objected to as argumentative and calling for a conclusion on that account.

Mr. BYERS: Well I don't care much about it. But in the meantime between now and morning, Mr. Guernsey asked you about this account, hotel bills, etc., and I wish you would prepare a statement of the account so you could have it here in the morning.

A. That means full details of this account?

Mr. BYERS: Full details of the $47,000 account and run it up to this date. That will be all now.

Witness excused.

4626 JAMES R. HANNA being recalled for further cross examination by Hon. GEORGE H. CARR, testified as follows:

Q. Have you those documents that I called for the other day?

A. Insofar as I found them yes.

Q. Just state what you have?

A. There were two different lines of papers you asked me for, one was the data I had at the time of the passage of the ordinance in the council and I have that here so far as it was preserved.

Q. You have handed to the reporter and had identified as complainant's exhibit 71 the bundle of papers to which you just referred?

A. Yes, sir. The second thing you asked me for was a letter of my own asking for a report from Mr. Marks and Mr. Marks' reply thereto. I found my letter of February 11, in which there is a paragraph or some sentence in paragraph referring to such a report.

Q. Hand it to the reporter and have it identified please.

A. I didn't discover in my papers or on file with the city clerk that report if such report was actually made in -riting. It had already been made verbally and you seemed to have an idea that I had such a written report, and I thought perhaps I had but I don't find that I have.

Q. The paper the reporter has marked Exhibit No. 72 is the letter written by you to Prof. Marks to which you have just referred.

A. Yes, sir.

Q. I notice Mr. Hanna in this letter or copy of letter which was

written by you to Prof. William D. Marks Park Row Build-
4627 ing New York City under date February 11, 1911, the following "I suppose you have mailed me a statement advising the proper action as to regulation of rates in our gas situa-ion but for some reason it has miscarried and I have not received it. I very much want this statement from you as a basis for our proposed action". Now didn't you get a response from Prof. Marks to this letter?

A. I can't recall, I suppose perhaps I may have but I can't recall that I did and in looking over my files I do not find any letter immediately following this in response apparently to these questions at all or find a letter in the files of the city clerk's office where I thought I might possible have filed it, but I do not find it there.

Q. Well would you say that you received such a letter but that you can't locate it, or do you say you don't know whether you received it or not?

A. I will have to say I don't know whether I received it or not. I may have received it and I may not, I could not tell you positively whether I did or not.

Q. I called your attention the other day to an article published in the Register and Leader under the date of February 21, 1911, which, as you will observe, is a few days following the letter which you wrote to Prof. Marks.

A. Yes, sir.

Q. In this published article I find the following in quotations, the article beginning with this quotation: "In fixing 90 cents per thousand for Des Moines gas you appear to me to have dealt liberally with the gas company not following the general downward trend of gas prices in an extreme or inconsiderate manner." Then follows "The foregoing is an extract from a letter from
4628 Prof. William D. Marks of New York City received by Mayor James R. Hanna, yesterday afternoon." Do you know, or can you account for such an article as that except upon the basis that you received such a letter and that an extract was taken from it by the reporter for the Register and Leader?

A. No, sir; I suppose there must have been such a letter.

Q. It also contains the following: "Prof. Marks further says in his letter 'I have never had an opportunity to appraise the Des Moines Gas works or to audit its books. Whatever may be my opinion as to the proper price of 18 candle power gas, is based only on general knowledge of similar cases and therefore is necessarily not specific or based on exact knowledge of your locality.'" And in another paragraph the further quotation "Four or five cities in Massachusetts averaging about the same population, 100,000, supplied by your gas company, have voluntarily fixed an average price of about 91 cents actual receipts per thousand. Lowell, Massachusetts has announced its intention of fixing the price of 16 candle power gas at seventy five cents. Minneapolis has gas at 85 cents to citizens and a special rate of 65 cents for city use." That is the end of the quotation. Then the article concludes as follows: "Prof. Marks states in his opinion the actual cost of gas in Des Moines

should be between 82 and 89 1/2 cents including profit or dividend on liberal investment at 7-1/2 per cent. Can you account for such article as that except upon the basis that you received such a letter and the reporter saw the letter or it was shown to the reporter by you and these quotations taken from it?

A. I could give you a very plausible account of another way that might have been I suppose, but I do not have much doubt
4629 there was such a letter that said about that thing.

Q. Aren't you satisfied now upon reflection that there was such a letter sent you by Prof. Marks?

A. I have never doubted that there may have been such a letter. When I was on the stand the other day I believed I had such a letter, but I found I did not have it.

Q. You say you never doubted there may have been such a letter. Isn't it your recollection that Prof. Marks in response to this letter which you have produced and which you mailed to him at New York, did from New York write you a letter covering this subject?

A. I could not answer you positively yes to that for this reason that this letter I expected to get was simply the written statement of the report which he had verbally given before he left the city and in trying to call back to memory I am not certain when I am giving the thought of that verbal report and when I should be giving the same thought from that letter if there was such a letter. I suppose there was such a letter but don't know positively.

Q. I call your attention also to an article published on the same date, that is February 21, 1911, in the Tribune as follows: "Prof. William D. Marks of New York City retained by the city as its adviser in the controversy over the 90 cent gas ordinance has sent his report to Mayor James R. Hanna. Accompanying the report was a bill for $471.46, of this amount $350 is for professional services and opinions and the remaining $121.46 being for traveling expenses. Prof. Marks was in Des Moines seven days, charging for his services at the rate of $50 per day." Now comes a quotation "I have not had an opportunity to appraise the Des Moines Gas works or to audit its books states Prof. Marks in his
4630 report, whatever may be my opinion as to the proper price of 18 candle power gas is based only on general knowledge of similar cases and therefore is necessarily not specific or based upon exact knowledge of your locality. I want to call your attention as we go along to the fact that the language used is exactly the same as that quoted in the other article in the Register and Leader. Then follows in this article "Prof. Marks states he believes Mayor Hanna has dealt liberally with the gas company in fixing a rate at 90 cents and has not followed the general downward trend in gas prices in an extreme or inconsiderate manner." In connection with that I call your attention to Exhibit No. 73 which is a copy of a bill presented by Mr. Marks certified to by the city clerk which contains the following: "For professional service and opinion in the matter of a fair and reasonable price for gas" then follows "February 1, 2, 3, 4, 5, 6, seven days at $50 per day $350, traveling expenses" then follows an itemized statement and then the total

$471.46, evidently the bill referred to in the article from which I have read. Now I ask you if that does not satisfy you that such a letter was written to you by Prof. Marks?

A. No more than I have already been satisfied. This is under date *date* of February 9. Just a few days before February 9, he gave us this verbal opinion to which I have referred. That might of course refer to that or it might refer to this written opinion which was the same thing only that the favorable action had been taken.

Q. He uses the word opinion there in the plural doesn't he, opinions?

4631 A. That is the way it is here, yes.

Q. Take it all in all are you not willing to state that it is your recollection after thinking the matter over that Prof. Marks did in February between the date of your letter to him namely, February 11, and the time that this article was published namely February 21, wrote you from New York a letter and report upon this subject?

A. I would say at the best that it is my impression that I received such a letter, I could not say honestly that it is my recollection that I did.

Q. You have said that you could not find such a letter?

A. Yes, sir.

Q. What search have you made for the letter?

A. Well I keep a file, have a file of these letters and other matters in connection with the gas negotiations in my own desk and then my secretary has a file of certain other communications with reference to the gas and then also I file certain papers that seemed pertinent in the office of the city clerk so as to have them in a public record and I examined these three files to see whether I had this report and I was unable to find it in any one of these places.

Q. I assume you don't know of any other place where you think the letter might be found than those you have named?

A. The only other place that I could think of is that sometimes the legal department and myself would look over papers together and it might be possible that if I had received such a letter I left it at their office, and while speaking here this occurred to my mind that the reporter might have carried it away promising to return it and never did return it.

Q. That would satisfy you there was such a letter if that

4632 happened?

A. If he returned it yes.

Q Well if he carried it away?

A. Yes.

Q. If you received a letter from Prof. Marks you of course read it carefully?

A. Yes, sir.

Q. Don't you remember under date of February 27, 1911, writing a communication to the members of the city council transmitting this report or letter? To refresh your recollection let me put the question in this form: Do you not remember under date of

February 27, 1911, transmitting to the members of the city council the communication report or letter whatever you please to call it that you received from Prof. Marks in a communication which read as follows: "Des Moines, Iowa, February 27, 1911. Members of City Council, city. Gentlemen: I am submitting herewith Prof. Marks' report. It will be noticed that this report was not made until February 17 and that it did not get to me until about three or four days later. I had already submitted to the gas company the proposition suggested in our formal conference at the Cahmberlain with Prof. Marks and had been refused, the company coming back with a proposition accepting all our concessions and offering a 95 cent rate in return. Our attorneys have also found it impossible under the Des Moines plan to institute mandamus proceedings in our state courts to compel the company to accept any rate we might propose hence the passing of a new ordinance had to be abandoned for all these reasons it will be noted Prof. Marks makes his report in defense of the ordinance already passed. The city attorneys say also
4633 that our proposed compromise having been in writing can just as well be introduced in evidence as the ordinance itself could so we stand a double chance of sustaining the rate already made or if not then sustaining the rate proposed in our compromise ordinance. I had asked Prof. Marks some questions on the street railway question and the paragraph referring to power house was in response to that request. Respectfully, James R. Hanna, Mayor."

A. Yes, I recollect that.

Q. You recall writing that letter do you?

A. Yes.

Q. Now you will note that this letter of yours to the city council transmits or submits with it Prof. Marks' report and this was under date of February 27th after you received this letter and his report under date of February 17th, I think, it is stated in here it will be noted that this report was not made until February 17th. Now doesn't that confirm the impression you already have that you had that report from Prof. Marks?

A. Yes, sir.

Q. And that it was written to you from New York under date February 17th?

A. Yes, sir.

Q. You now recall having received it do you not?

A. I recall that I have such a report yes, now from this letter.

Q. Now I will ask you again upon receipt of that report and before you transmitted it to the council some ten days later you undoubtedly read it carefully and became perfectly familiar with its contents did you not?

A. Well I underoubtedly read it carefully, but it was the same thing that had already been given to me in a verbal report so there was nothing new in it.

4634 Q. Now I will call your attention to the paper which the reporter has marked complainant's Exhibit No. 74 and will ask you to read that over carefully and then state if you will whether

that is not a copy and a correct copy of the letter to which reference has been made.

A. Yes, sir.

Q. That is a correct copy of the letter?

A. That is about it.

Judge CARR: At this time the complainant offers in evidence complainant's Exhibit No. 74 which reads as follows: New York, N. Y. February 17, 1911. Hon. James R. Hanna, Mayor of Des Moines, Iowa. My dear Mr. Hanna: Referring to your esteemed favor of 11th current which has followed me to Westport, I would say that as I have had no opportunity to appraise the Des Moines Gas works or to audit their books, whatever might be my opinion as to a proper price of 18 C. P. gas is based only on general knowledge of similar cases and therefore is necessarily not specific or based on exact knowledge of your locality. In fixing 90 cents per M. for Des Moines gas you appear to me to have dealt liberally with your gas company, not following the general downward trend of gas prices in an extreme or inconsiderate manner. Four or five cities in Massachusetts averaging about the same population, 100,000, supplied by your gas company have voluntarily fixed an average price of about 91 cents actual receipts per M. Lowell, Massachusetts has announced its intention of fixing the price of 16 C. P. gas at 75 cents. Minneapolis has gas at 85 cents to citizens and a special rate of 65 cents for city use. Speaking generally I should estimate the probable cost of gas in Des Moines as follows: Cost of gas 18 C. P. at consumer's meter 45 to $0.50 royalty .02. 4635 0.52 investment per M. at 7½ per cent 30 cents or $5.00 per M. sold at 7½ per cent 37½. Fair and liberal price 0.89½ leaving margin to come and go on of from 7½ to 12½ cents per M. sales. All of this, however, unless acceded to by the gas company requires verification by means of the audit of books and appraisement of works to have any value except as you may value my experience and fairness of judgment. Regarding the street railway power house I would say that I found about 4,500 horse power capacity there as I guessed so all of my rough figures suggested to you appear to be fair estimates. I must, however, add that in matters involving such large investments as these do and affecting the welfare of so great a community as Des Moines any opinion by any person however experienced and trustworthy are only for general guides and not for final conclusions, such opinions are only suggestions and not conclusive and must not be accepted as final without verification. With kindest regards to all, most truly yours, William D. Marks.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

4636 Thursday Forenoon Session.

OCTOBER 5, 1911—at 9:30 a. m.

Counsel for the respective parties all present.
Testimony on part of Defendants resumed as follows:

Mayor JAMES R. HANNA, continuing his cross examination, examined by Judge Geo. H. Carr, testified:

Judge CARR: From Complainant's Exhibit 71, the complainant now offers and reads in evidence all except the two printed ordinances contained in the bundle of correspondence, the papers offered being as follows:

A letter addressed to Honorable James R. Hanna, signed by A. D. Meeds, of Minneapolis, Minnesota, dated January 21, 1910, which letter is as follows:

"Office of A. D. Meeds, Inspector of Gas, City of Minneapolis, Minnesota.

JANUARY 20, 1910.

Honorable James R. Hanna, Mayor, Des Moines, Iowa.

DEAR SIR: In answer to your letter of January 18th, I would say that the Gas Company here makes a mixture of carburetted water gas and coal gas, usually the proportion is about 2/3 water gas and 1/3 coal gas, I understand.

You are right about the water gas, as it is practically impossible to make a water gas of high heating value and at the same time of low candle power. In order to get the heat units up they have to add oil to enrich it, and this will then bring up the candle power. Water gas alone has a low heating power and also a low candle power. Coal gas alone has a much higher heating value
4637 and also a low candle power.

When the new ordinance was made it was considered advisable to establish for the candle power as well as the heating value, because in this way we knew we could control to a certain extent the kind of gas made. We have had more or less complaint on account of the quality of the gas, due largely, I think, to the low Candle Power.

Any further information required I will be glad to furnish.

Very truly yours,

A. D. MEEDS,
Inspector of Gas."

A letter written by James R. Hanna to Gas Inspector or Mayor of Ft. Wayne, Ind., under date of October 27, 1910, said letter containing answers to questions propounded by Mayor Hanna and written in the letter itself, which answers are included in the offer, said letter and answers reading as follows:

"Des Moines Department of Public Affairs, James R. Hanna, Mayor.
Superintendent.

OCT. 27, 1910.

Gas Inspector or Mayor, Ft. Wayne, Ind.

DEAR SIR: Will you not kindly send me the ordinance or rules which set forth the requirements in your city regarding gas, as follows:

1. As to candle power of gas. 18.
2. As to the heat units. 550.
3. As to the pressure. Not less 2½ inches Water Pres.
4. As to the impurities. —.
5. What variations from the standards are allowed? —.
6. What is the price of gas to consumers? 90 cents 1st
4638 5 yrs. & 85 2nd 5 yrs. 85¢ during first 5 yrs. of gas consumption—2,000,000 per mo. Minimum of 50 cent per mo. including meter.
7. What is the price to the city? —.
8. What is the number of consumers per mile of main? —.
9. What is the total number of consumers? —.
10. What special advantages or disadvantages has your city for the manufacturing of gas, such as the price of coal, crude oil, etc.? We have no special advantages the nearest coal fields being about 200 miles away. No crude oil well near.

The information which I am seeking is very important to us in Des Moines just now and I shall be greatly obliged to you if you can send it to me.

Very truly yours,

JAS. R. HANNA, *Mayor.*

Fur further information I would respectfully refer you to S. E. Mulholland, President of the Indiana Lighting Co., Fort Wayne, Ind."

A letter to the Gas Inspector or Mayor of Duluth, under date October 27, 1910, signed by James R. Hanna, said letter containing answers to questions pronounced by Mayor Hanna and written in the letter itself, which answers are included in the offer, said letter and answers reading as follows:

OCT. 27, 1910.

"Gas Inspector or Mayor, Duluth, Minn.

DEAR SIR: Will you kindly send me the ordinance or rules which set forth the requirements in your city regarding gas, as follows:

1. As to candle power of gas. 16.
2. As to the heat units. 600.
3. As to the pressure. Whatever is required by the city.
We are carrying at the business center of the City 5 inches
4639 4. As to the impurities. Are extracted by the Company
5. What variations from the standards are allowed? Must never fall below 550 B. T. U.
6. What is the price of gas to consumers? 75 cents net.

7. What is the price to the city? If city's consumption meant it is the same price.

8. What is the number of consumers per mile of main? 703.

9. What is the total number of consumers? 6325.

10. What special advantages or disadvantages has your city for the manufacturing of gas, such as the price of coal, crude oil, etc? It has none.

The information which I am seeking is very important to us in Des Moines just now and I shall be greatly obliged for it.

Very truly yours,

JAMES R. HANNA, *Mayor.*

Answered by
L. W. CASE, *Manager.*

The City of Duluth purchases its gas from the Zenith Furnace Co. at 40¢ per 1000 feet at the consumers' meters. This is estimated to be the actual cost to the City in manufacturing the gas itself."

A letter to the Gas Inspector or Mayor of Kansas City, Mo., under date of October 27, 1910, signed by James R. Hanna, Mayor, said letter containing answers to questions propounded by Mayor Hanna and written in the letter itself, which answers are included in the offer, said letter and answers reading as follows:

4640 OCT. 27, 1910.

"Gas Inspector or Mayor, Kansas City, Mo.

DEAR SIR: Will you kindly send me the ordinance or rules which set forth the requirements in your city regarding gas, as follows?

1. As to candle power of gas. Natural gas as it comes from the earth about 950 B. T.

2. As to the heat units. Units per cu. foot.

3. As to the pressure. Must maintain not less than 5 inches and if over 13 inches water pressure—regulators must be installed.

4. As to impurities. Must be natural gas as it comes from the earth.

5. What variations from the standards are allowed. —.

6. What is the price of gas to consumers? 25¢ per M cu. feet.

7. What is the price to the city? 25¢ per M cu. feet for Heating Purposes and free for lighting public buildings.

8. What is the number of consumers per mile of main? Varies greatly.

9. What is the total number of consumers? Approximately 50,000.

10. What special advantages or disadvantages has your city for the manufacturing of gas, such as the price of coal, crude oil, etc.? Natural Gas from the Kansas fields.

The information which I am seeking is very important to us in Des Moines just now and I shall be greatly obliged to you if you can send it to me.

Very truly yours,

JAS. R. HANNA, *Mayor.*"

A letter written by James R. Hanna to Gas Inspector or Mayor of Omaha, Nebraska, under date of October 27, 1910, said letter containing answers to questions propounded by Mayor Hanna written in the letter itself, which answers are included in the offer, said letter and answers reading as follows:

4641 OCT. 27, 1910.

"Gas Inspector or Mayor, Omaha, Nebr.

DEAR SIR: Will you not kindly send me the ordinance or rules which set forth the requirements in your city regarding gas, as follows?

1. As to candle power of gas. 23 at works. 21.2 at City Hall.
2. As to the heat units. 600 B. T. U. net.
3. As to the pressure. Between 2 and 4½ inches.
4. As to the impurities. Ammonia $_1H_2$ S & G. See report pages 16 & 22.
5. What variations from the standards are allowed. —.
6. What is the price of gas to consumers? $1.15 per 1,000 cu. ft.
7. What is the price to the city? $1.00 per 1,000 cu. ft.
8. What is the number of consumers per mile of main? —.
9. What is the total number of consumers? 22,000.
10. What special advantages or disadvantages has your city for the manufacturing of gas, such as the price of coal, crude oil, etc.? None.

The information which I am seeking is very important to us in Des Moines just now and I shall be greatly obliged to you if you can send it to me.

Very truly yours,

JAMES R. HANNA, *Mayor.*"

A letter on the letterhead of Thomas Dies, Commissioner of Public Utilities, Grounds and Buildings, Memphis, Tenn., under date blank, signed by J. P. Monaghan, Inspector, which letter contains questions and answers as follows:

4642 "MEMPHIS, TENN., ——, 19—.

1. As to candle power of gas. 20½ Candle Power.
2. As to heat units. Don't test for heat.
3. As to pressure. 4 Inches Day.
4. As to the impurities. None.
5. What variations from the standar-s are allowed. 2 per cent.
6. What is the price of gas to consumers? $1.00 per 1,000 cubic feet.
7. What is the price to the city? Same.
8. What is the number of consumers per mile of main? Don't know.
9. What is the total number of consumers? 14 or 15,000.
10. What special advantages or disadvantages has you- city for the manufacturing of gas, such as the price of coal, crude oil, etc.? Answer. The facilities for delivering petroleum are excellent. It is transported from Beaumont, Texas by water to New Orleans, La., and

from that city to Memphis it is towed up the Mississippi river, then up the Wolf River, which empties into the Mississippi river at Memphis alongside of the Gas Works. Is then piped in to the works. The coke is delivered at the gas works, there being a railroad switch track into the yards.

Resp'y.,

J. P. MONAGHAN,
Gas Inspector."

A letter addressed to the Hon. H. H. Edgerton, Mayor, City of Rochester, Rochester, N. Y., signed by Jos. E. Putnam, Assistant Engineer, which letter reads as follows:

"ROCHESTER, N. Y., *November 1st,* 1910.

Hon. H. H. Edgerton, Mayor, City of Rochester, Rochester, N. Y.

4643 DEAR SIR: I beg to reply to the questions of Mayor Hanna, relative to the price of gas in the City of Rochester, as follows:

The candle power in Rochester as fixed by the New York State Law is 18 candle power for mixed, coal, and water gas. There are no specifications for heating value, but our gas averages somewhat over 600 B. T. U.'s gross. The pressure is not less than 1½ in. of water.

The maximum impurities allowed in 100 cu. ft. are not more that 5 grains of ammonia, 20 grains of sulphur, and only a trace of sulphuretted hydrogen.

The price of gas to consumers is 95¢ per 1,000 cu. ft., if paid before the 15th of each month; $1.05 if paid after the 15th. The price to the City is the same, except that for the small number of street lamps—a total of only 112,—which are open flame burners—we pay 8¢ per night on a lighting schedule of about 4,000 hours per year.

I am unable to ascertain the number of consumers per mile of main. The total number of consumers is about 50,000.

The special advantages which Rochester has in the manufacture of gas are—Anthracite coal is $3.95 per ton; gas coal $3.00 per ton; oil 2.8¢ per gallon, and all within 120 miles of coal and oil fields.

Very respectfully,

JOS. E. PUTNAAM,
Assistant Engineer."

A letter written by James R. Hanna to Gas Inspector or Mayor of Syracuse, N. Y., under date of October 27, 1910, said letter containing answers to questions propounded by Mayor Hanna and written in the letter itself, which answers are included in the offer, said letter and answers reading as follows:

4644 "OCT. 27, 1910.

Gas Inspector or Mayor, Syracuse, N. Y.

DEAR SIR: Will you kindly send me the ordinance or rules which set forth the requirements in your city regarding gas, as follows:

1. As to candle power of gas. For coal gas 16. Coal & Water Gas 18. Carburetted water gas 20. Coal & Water gas at present furnished.
2. As to heat units. No requirements.
3. As to the pressure. Min. 1½". Max. 3¾". One inch allowed to max. for every 100 ft. elevation above works.
4. As to the impurities. Must be free from sulphuretted hydrogen & not more than 10 grain-Ammonia nor 20-grain Sulphur to 100 cu. ft.
5. What variations from the standards are allowed? Penalty for low candle power enforced only on average of 3 tests not less than 24 hours apart.
6. What is the price of gas to consumers? 95 cents per M.
7. What is the price to the city? 95¢ per M.
8. What is the number of consumers per mile of main. 160.
9. What is the total number of consumers? 28,000.
10. What special advantages or disadvantages has your city for the manufacturing of gas, such as the price of coal, crude oil, etc. Boiler fuel $2.80 pr. ton.
Gas coal 3.50 " "

The information which I am seeking is very important to us in Des Moines just now and I shall be greatly obliged to you if you can send it to me.

Very truly yours,

JAS. P. HANNA, *Mayor.*

Mr. Blakeslee, please answer.
F.

H. J. BLAKESLEE,
Sup't Bureau Gas & Elec."

A letter To his Honor the Mayor of Des Moines, Iowa, under date of November 4, 1910, by Emil Seidel, Mayor of Milwaukee, as follows:

4645 "MILWAUKEE, *Nov.* 4, 1910.

To His Honor the Mayor, Des Moines, Ia.

DEAR SIR: Enclosed is a communication which contains the information you inquired for in yours' of recent date.

Very truly yours,

EMIL SEIDEL, *Mayor."*

A letter under date of November 4, 1910 to Emil Seidel, Mayor of Milwaukee, bearing no signature, which letter is as follows:

"NOVEMBER 4, 1910.

Hon. Emil Seidel, Mayor, City of Milwaukee, Wisconsin.

DEAR SIR: In compliance with the request of Mayor Hanna of Des Moines, Iowa, I beg to submit the following information:

First. Candle Power of Gas:

The Railroad Commission of this state has ruled that candle power

is of minor consideration and there is therefore no legal standard for candle power in the state at this time. The Milwaukee Gas Light Company is, however, furnishing gas of approximately 17 C. P.

Second. Heating Value:

The Commission's standard of heating value is as follows:
"The Company furnishing gas which, within a one mile radius from the distribution center, gives a monthly average total heating value of not less than 600 B. T. U.'s with a minimum which shall never fall below 550 B. T. U.'s may be considered as giving adequate service as far as the heating value of the gas is concerned."

For many years prior to the advent of the Railroad Com-
4646 mission this company has furnished a gas of from 630 to 650 B. T. U.'s. Since the inauguration of the Railroad Commission's standard we have fixed upon 640 B. T. U.'s as our standard, and the average heating value of the gas delivered to the City will approximate that figure.

Third. Pressure:

The Commission's rule in regard to pressure is as follows:
'Gas pressure as measured at meter inlets shall never be less than 1½ inches nor more than 6 inches water pressure; and the daily variation of pressure at the inlet of any one meter on the system shall never be greater than 100 per cent of the minimum pressure on such meter.'

Fourth and Fifth. Impurities:

The Commission's ruling as to impurities and variations allowed are as follows:
'In no case shall the gas contain more than 30 grains of sulphur per hundred cubic feet, and not more than a trace of sulphur as sulphuretted hydrogen.'

Sixth and Seventh. Prices of Gas:

The price at which gas is being sold by the Milwaukee Gas Light Company to both the city and private consumers is as follows:

First	10,000	cu.	ft	80¢	per	thousand	cu. ft.
Next	10,000	"	"	70¢	"	"	" "
Over	20,000	"	"	60¢	"	"	" "

For all gas used during any one month through any one meter, Gas is billed at a price of 10¢ higher than the above given prices with a discount of 10¢ per thousand for prompt payment of bills.

Eighth and Ninth. The number of consumers per mile of main is approximately 170. Our total number of consumers is approximately 72,000.

Tenth. There are no special advantages or disadvantages in sup-
plying gas in Milwaukee over other cities other than that
4647 accruing to the Company through its ability to obtain coal by boat rather than by cars.

Cities.	Candle power.	Heat units.
Syracuse, N. Y.....	Coal Gas..... 16 Coal and water.... 18 Carbureted " 20	No requirements.....
New York City.....	.....	.....
Rochester, N. Y.....	18 C. P. for mixed coal and water.	Some over 600 B. T. U.'s gross.
Omaha, Neb.....	23 at works. 21.2 city hall.	600 B. T. U. net.....
Ft. Wayne, Ind.....	18 C. P.....	550 .....
Duluth, Minn.....	16 C. P.....	600 .....
Memphis, Tenn.....	20½ C. P.....	No test .....
Kansas City, Mo.....	Natural	950 .....
Milwaukee, Wis.....	17 C. P.....	640 B. T. U.....
Des Moines, Iowa.....	22	.....

COMPLAINANT'S EXHIBIT 71–A.

Heat units.	Pressure.	Impurities.			Price of gas.		No. consumers.	
		Am.	Sulp.	S. H.	Consumers.	City.	Per mile of main.	Total.
quirements.....	Min. 1½" Max. 3¾" 1" allowed to max. for every 100 ft. elevation above w'ks.	10 gr.	20 gr.	None.	95¢	95¢	160 ..... Boiler fuel..... 2.80 Gas coal 3.50	28,000
.....	.....	.....	.....	.....	80¢.			
over 600 B. T. U.'s ss.	Not less than 1½ in. water.	5 gr.	20 gr.	Trace.	1.05 with 10¢ discount.	8¢ per night for city l'ts 4,000 hrs. pr. yr.	Anthracite coal 3.95 per ton. Gas coal $3 per ton. Oil 28¢ per gallon.....	50,000
. T. U. net.....	Between 2 and 4½ inches.	.....	.....	.....	1.15	1.00	.....	22,000
.....	Not less than 2½ in. water.	.....	.....	.....	90¢ 1st 5 yrs. 85¢ 2nd yr.			
.....	Whatever required by city. 5 inches at center of city.	.....	.....	.....	75¢	Same 75¢	703	6,325
st	4 inches day.....	.....	None.	.....	1.00	1.00	Don't Know.....	14 or 15,000
.....	5 inches at least.....	Must be natural gas as it comes from the earth.			25¢	25¢ heating. Free for lighting public bldgs.	Varies greatly	50,000
. T. U.....	1½" — 6".....	.....	30 gr.	Trace.	80¢ per M for 1st 10,000 cu. ft. 70¢ next. 60¢ over 20,000 cu. ft.	Ditto	170	72,000
.....	.....	.....			90¢	90¢	.....	19,500
								187 mi.

Min. 125 to mi.

I enclose herewith copy of Rules and Regulations of the Railroad Commission pertaining to gas and electric companies; also a copy of our pamphlet gotten out by this company three years ago, giving prices charged for gas in the leading cities of this country.

Trusting this will give you the information desired, I am,

Yours truly,

——— ———,

Vice Pres't & General Manager.

Enclosure.

Cross examination of the witness Hanna resumed as follows:

Q. Mr. Hanna, will you examine the paper now shown you, being one of the file of papers which you produced and which has been marked Complainant's Exhibit 71, and state what that is?

A. This is a tabulation from certain of these cities, most of the cities, based on the reports that these cities made, together with a few notes as to the city of Des Moines.

Q. This is the data or tabulation that you spoke of as having on your desk when the ordinance in question was under consideration?

A. Yes.

Q. This Complainant's Exhibit 71-A is the tabulation of the data that you had obtained from these letters which you have previously stated you had on your desk at the time this ordinance was under consideration by the council, and is the information you furnished the council at that time, as you heretofore testified?

A. I don't think I testified that I furnished it to the council necessarily, except certain things I might have said, quoting from it.

4648 Complainant offers and reads into the record Complainant's Exhibit 71-A, as follows:

(Here follows Complainant's Exhibit 71-A, marked page 4648½.)

Judge CARR: For the sake of keeping clearness in the record, complainant states that of the papers contained in the bundle of papers produced by Mayor Hanna and which have been marked Exhibit 71, complainant does not offer or read in evidence the first paper, being a printed copy of an ordinance apparently of the city of Minneapolis, marked "Passed February 23, 1910," the title of the ordinace being as follows: "Waiving and surrendering the privileges by the City of Minneapolis of its right *an* option to purchase, described and set forth and declared in Sections 9 and 10 of that certain ordinance passed on the 21st day of February A. D. 1870, by the common council of the city of Minneapolis and approved on the 24th day of February, 1870, entitled an ordinance granting to certain persons the right to manufacture and sell gas in the city of Minneapolis and legalize and confirm to the extent of the rights and privileges set forth therein by Chapter 301 of the special laws of the State of Minnesota for the year 1879, and prescribing the considerations given by the Minneapolis Gas Light Company for such waiver and surrender by said city."

The complainant does not offer or read in evidence the printed booklet contained in said bundle of papers which is entitled "An Ordinance providing for the appointment of an inspector of gas and defining the duties of such officer, and providing for the inspection of gas and gas meters, prescribing rules and regulations for the pressure, manufacture measurement, quality and distribution of gas supplied to the consumer, and for the enforcement thereof, and prescribing penalties for the violation of such rules and regulations passed by the city council of the city of Minneapolis, Minne-
4650 sota, March 24, 1910, for the reason that the printed paper and printed book referred to are not material to any issue in the case, and to offer and read them in evidence would be an unnecessary encumbering of the record.

Q. Mr. Hanna, I wish you would refer to this tabulated data you said you had before the council and from which you gave your information and which is marked Complainant's Exhibit 71-A, and state what tabulated information you have here with regard to the number of consumers per mile of main, concerning which you spoke when you was on the stand before, and to which you attached some importance?

A. Of the city of Des Moines, I had at that time general information that there were about 19,500 service connections or consumers, and there were about 182 or 187—I seem to have two figures—of miles of main, and dividing 19,500 by this figure, I get 107 consumers.

Q. 107 consumers per mile of main?

A. Yes.

Q. What did you get by the other figures?

A. I have not made the division, but I suppose it would be somewhere three or four less than that perhaps.

Q. Then you ascertained in that way that there are in Des Moines, or were at the time, in December, 107 consumers per mile of main in Des Moines?

A. Yes.

Q. Now what other information in the way of consumers per mile of main does your data show?

A. I have a note here, in Minneapolis it is about 125.

Q. What else?

4651 A. These are the only ones I have worked out in detail.

Q. Now in your tabulation, haven't you got something with regard to Syracuse on the subject?

A. Yes, sir.

Q. What is contained in the column next to the last column, what are those figures intended to show?

A. The number of consumers per mile of main.

Q. Opposite the city of Syracuse you have 160, have you not?

A. Yes, sir.

Q. And that shows according to your data, and the information you then had, 160 consumers in Syracuse per mile of main?

A. That is the figure there, yes sir.

Q. Down at the bottom you have a figure, 170, in the same column opposite the city of Milwaukee?

A. Yes, sir.

Q. And that shows, according to this data, the number of consumers per mile of main in Milwaukee, does it not?

A. I think so. I have not verified it by the letter. This is made up by my Secretary, and I presume it is correct.

Q. I wish you would check that up with the letters, if you will, and see that that is accurate.

A. Yes, sir; they are correct.

Q. Have you verified the statement with regard to Syracuse and Milwaukee?

A. Yes, sir.

Q. And the statement contained in that tabulation, Exhibit 71-A, is correct as shown by the letters?

A. Yes.

Q. I think there is one other figure in that column, is there not, the figure 703 opposite the city of Duluth, Minnesota; is that

4652 the number of consumers per mile of main in the city of Duluth, according to your information?

A. According to the letter, yes.

Q. Did you verify that?

A. Yes, sir.

Q. That is correct according to the information which you have received?

A. Yes, sir.

Q. You found that in the city of Des Moines the number of consumers per mile of main was 107?

A. Yes, sir.

Q. Will you state how far apart those consumers were; that is, what would be the average of the distances, in other words, divide 107 into the number of feet in a mile, 5280 feet?

A. About 49 feet, I should judge.

Q. And that means that in Des Moines there is on an average a consumer every 49 feet, does it?

A. Yes, sir; that is what I said.

Q. Now Syracuse, which has 160 consumers per mile of main, will you please state about that, how close on an average the consumers are there?

Objected to on part of defendants as immaterial, and a mere matter of computation.

A. 33 feet.

Q. Now will you tell me about Duluth, how close the average distance of the consumers of Duluth is at 703 consumers per mile of main?

A. I have a notion that must be an error, being so different from the other cities. It would make slightly over seven feet.

Q. Do you mean in the city of Duluth there is on an average one consumer for every seven feet of main?

4653 A. If those figures are correct——

Q. Isn't it obvious they are not correct with regard to Duluth?

A. I would imagine they are not correct, because there is no other city I have any data on has anything like that.

Q. Did you make any test for relying on this information which you said you placed a good deal of reliance on, especially with respect to the consumers per mile of main, didn't you check that over before you accepted that figure?

A. That one in the case of Duluth I didn't pay very much attention to, as being so different from the others.

Q. It was the very strongest argument in favor of the idea you had in mind, to show a very large consumption per mile of main?

A. It showed a great many consumers per mile of main.

Q. Did you ever discover until now that that figure is obviously wrong?

A. I certainly had it just as obviously wrong then as I do now.

Q. Do you know how many miles of main the city of Duluth had if that figure is correct; did you divide the number of consumers per miles of main to see how many miles it had?

A. No, sir.

Q. I wish you would do that.

Mr. BRENNAN: I think that is unnecessary, because the witness says it was an abnormal condition.

Q. You show 6325 consumers; you can make that calculation in a moment?

A. Between nine and ten miles.

Q. It is about eight—which of course proves conclusively there is something wrong in those figures?

A. Yes, sir; I should think so.

Q. Did you call the council's attention to that and tell them they could not be relied upon at all?

4654 A. I don't think I mentioned that at all. I don't think I mentioned the miles of main or consumers.

Q. Had you prior to this time realized there was something

wrong with that figure, to show that they must be discarded as wholly unreliable?

A. I did not figure that out. I had read the different letters and had my secretary make the tabulation to use when the matter came up before the council.

Q. The Duluth letter contains this data, doesn't it?

A. Yes, sir.

Q. So the mistake was not the mistake of the tabulator of the data

A. No, sir.

Q. You evidently did not call your clerk's attention to that?

A. No, sir.

Q. And on this important matter to which you say you attach a good deal of importance, to the number of consumers per mile of main, of the three examples you give in this tabulated statement Duluth is one?

A. Of the three examples in the tabulation Duluth is one.

Q. Of course there is in the tabulation the city of Des Moines?

A. There is Des Moines and Minneapolis.

Q. Your idea was at the time you was considering this ordinance that the number of consumers per mile of main was an important matter to take into consideration?

A. Yes, sir, I thought so.

Q. And it follows, I assume, the more consumers per mile of main, the better for the company?

A. Yes, sir.

Q. You found according to your information as contained in this tabulation that in Syracuse, New York, they were charging
4655 95 cents for gas to the consumers and 95 cents to the city, and you found that they had 160 consumers per mile of main or one consumer every 33 feet on an average?

A. Yes, sir.

Q. Now you thought that justified a 90 cent rate in Des Moines, where there was only one consumer for every 49 feet?

A. I most assuredly did not.

Q. There was nothing in that information that led you to the conclusion that 90 cents was a reasonable rate for the city of Des Moines?

A. That particular phase of the information, no sir.

Q. That would go right the other way, wouldn't it?

A. Yes.

Q. Now you have Milwaukee left in these three instances, where you had data as to the number of consumers per mile of main, and concerning which you told us the other day you attached a great deal of importance, and upon which you placed a great deal of reliance, that is correct, isn't it?

A. I had also Minneapolis, which were four examples instead of three as you are assuming.

Q. Yes, that is right; I amend the question then in that way, I did not intend to mis-state it.

A. Yes, sir.

Redirect examination by Mr. BRENNAN:

Q. Mr. Mayor, as I understand it, the bundle of letters which were marked Complainant's Exhibit 71, are in part, at least, letters which you mailed to officer- of different cities in the United States and in which letters you propounded certain questions?

4656 A. Yes, sir.

Q. And those letters were returned to you, in some instances with the questions as propounded answered?

A. Yes, sir; or partly answered.

Q. In other words, all this correspondence and the papers you have produced in connection with Exhibit 71 were information which you were endeavoring to receive prior to the passage of the ordinance?

A. Yes, sir.

Q. And the other papers identified by you, namely, Exhibit 74, was a transaction subsequent to the passage of the ordinance in controversy, Exhibit 74, being a communication to the members of the City Council, and attaching to the same a letter from Professor William D. Marks?

A. Yes, sir.

Q. That I say was subsequent to the passage of the ordinance?

A. Yes, sir; that was two months after I gathered this data.

Q. Now one of the letters to which counsel has called your attention is one purporting to be signed by A. D. Meeds, inspector of gas of the City of Minneapolis?

A. Yes, sir.

Q. I notice attached to that letter is what purports to be an ordinance providing for the establishment or appointment of an inspector of gas and defining the duties of such officer?

A. Yes, sir.

Q. Did that ordinance accompany the letter to which I have called your attention?

A. I think not. I think I got that ordinance, perhaps when I was in Minneapolis personally; I may have gotten it when I wrote.

Q. Did you have this ordinance in your possession and have you studied its terms and provisions before the introduction of

4657 the ordinance in controversy before the city council?

A. Yes, sir; a good while before. I was in Minneapolis about the time that this matter was settled in that city and went into it pretty fully with several men there, including the gas inspector.

Q. Would you make the same answer with reference to the ordinance waiving and surrendering the privileges by the city of Minneapolis, its right and option to purchase certain property and fixing rates for gas in the city of Minneapolis?

A. Yes, sir; I got these ordinances, both of them, in either February or April of 1910.

The defendants offer the two ordinances referred to in evidence, for the reason that counsel for complainant has introduced certain of the correspondence and letters received by the Mayor in connec-

tion with his investigations of the gas situation in Des Moines, and in order that the record may be more complete with respect thereto the defendants now offer in evidence the ordinance not offered by the complainant in connection with their Exhibit 71, and which ordinance is now marked by the reporter as the Defendant's Exhibit 71-A and which reads as follows:

The complainant objects to the Defendant's Exhibit 71-A for the reason that it is immaterial and has no tendency to prove or disprove any issue of the matter in controversy in this case and as simply unnecessarily encumbering the record.

Said Defendant's Exhibit 71-A is as follows:

4658 DEFENDANT'S EXHIBIT 71-A.

An Ordinance

Waiving and surrendering the privilege by the City of Minneapolis of its right and option to purchase, described, set forth and declared in Sections 9 and 10 of that certain ordinance passed on the 21st day of February, A. D. 1870, by the Common Council of the City of Minneapolis, and approved on the 24th day of February, 1870, entitled, "An Ordinance granting to certain persons the right to manufacture and sell gas in the City of Minneapolis," and legalized and confirmed to the extent of the rights and privileges set forth therein by Chapter 301 of the special laws of the State of Minnesota for the year 1879, and prescribing the considerations given by the Minneapolis Gas Light Company for such waiver and surrender by said city.

Whearas, the Common Council of the City of Minneapolis, on the 21st day of February, 1870, passed an ordinance entitled, "An ordinance granting to certain persons the right to manufacture and sell gas in the City of Minneapolis," which said ordinance was approved on the 24th day of February, 1870; which said ordinance was thereafter assigned by the grantees therein to the Minneapolis Gas Light Company, which is now the owner thereof, and of all rights and privileges thereunder; and which said ordinance was by Chapter 301 of the Special Laws of the State of Minnesota for the year 1879, legalized and confirmed to the extent of the rights and privileges set forth therein; and,

Whereas, Sections 9 and 10 of said ordinance are as follows:

4659 "SEC. 9. That if, at the expiration of forty years, the said city shall desire to purchase said franchise, and said gas works, they shall have the privilege of doing so upon the following terms, namely: That said city may purchase the franchise pertaining to its territory and gas pipes, works, fixtures and other property pertaining to said business at the actual value of the same, the value to be fixed by three arbitrators, who are to be chosen as follows: One by said city, one by the owners of the franchise, and the third by the arbitrators thus chosen, and the arbitrament or award of

value by these three, or a majority of them, shall be the price at which said city may purchase said franchise and property. SEC. 10. That should the city decline to purchase at the valuation as aforesaid, then said rights, franchise and privileges are to continue twenty years longer to the said persons, their heirs, executors, administrators, and assigns, with the conditions hereinbefore in this ordinance stated;" and,

Whereas, the City Council of said city deems it for the best interest of said city to waive and relinquish its right, option, and privilege to purchase, specified and conferred in and by said Sections 9 and 10, above recited, should said company accept this ordinance, and agree in all respects to comply therewith in the manner prescribed in Section 15 thereof, Now, therefore,

The City Council of the City of Minneapolis do ordain as follows:

SECTION 1. Surrender of right to purchase. That the city, in consideration of the agreement of the Minneapolis Gas Light Company its successors and assigns, to comply with, abide by
4660 and keep and perform all of the terms, conditions and requirements of this ordinance, on its part to be complied with or performed as herein specified (which agreement is to be expressed as provided in Section 15 of this ordinance) hereby expressly waives and surrenders its right, privilege and option to make the purchase mentioned, set forth, declared, and provided for in and by Sections 9 and 10 of the ordinance entitled, "An ordinance granting to certain persons the right to manufacture and sell gas in the City of Minneapolis," passed by the Common Council of the city on the 21st day of February, 1870, and approved on the 24th day of the same month; provided that such waiver and surrender by the city shall at all times be subject to the provisions of Section 12 hereof; and provided also that nothing in this ordinance contained shall be taken or construed to impair the right or power of the city to acquire any or all of the property of the company by the condemnation thereof, in the exercise of the right of eminent domain conferred or granted by any statute of the State of Minnesota now or hereafter in force.

SECTION 2. Price of Gas. That the company shall on the first day of the month succeeding the acceptance of this ordinance put into effect a price of eighty-five (85) cents per thousand cubic feet of gas delivered to private consumers and a price to the city for gas supplied to city gas street lamps and to the buildings of the city, and of the various boards and departments thereof, of sixty-five (65) cents per thousand cubic feet, which price to private consumers and to the city shall not be increased until the rates and prices for gas shall be again fixed and determined as hereinafter provided.
4661 All *All* bills to private consumers may be rendered at a price which shall exceed by fifteen (15) cents per thousand cubic feet, the price herein specified or hereafter fixed and determined as provided in Section 3 of this ordinance; and upon all bills so rendered, which shall be paid to the company within ten (10) days after the rendition thereof, a discount shall be allowed of fifteen (15) cents per thousand cubic feet, so as to make the net price

when so paid the sum herein specified, or hereafter fixed and determined as aforesaid.

SECTION 3. Regulation of Rates. That at any time after the expiration of three years from and after the first day of the month succeeding the acceptance by the company of this ordinance, and at any time thereafter, but not oftener than once in five years, the City Council may, or if requested in writing by the company so to do, shall, by ordinance, fix and determine the rates to be charged by the company both to the city and to private consumers therein; which rates shall in each instance be so fixed and determined, subject to the provisions of Section 5 hereof, and independent of whether or not the laws now or hereafter in force give to the City Council the right, power or authority to so fix and determine the same. The company shall thereupon comply with such ordinance as to rates, subject only to the provisions of said Section 5, and furnish gas at rates not to exceed those so fixed until the same shall be again fixed and determined as herein provided. And the company shall also at all times, unless otherwise determined by the City Council, furnish gas to all consumers other than the city and its various boards and departments, at a uniform rate, and with-
4662 out any discrimination between them.

SECTION 4. Lighting of streets. That the City Council shall from time to time have the right, power and authority, if it so elect, independent of whether or not the laws now or hereafter in force grant such right, power or authority, but subject to the provisions of Section 5 thereof, by ordinance, to direct the company to equip the lamp posts used in the lighting of streets with gas with such lamps and other apparatus and appliances as shall by the City Council be deemed necessary or convenient therefor, and care for such lamp posts, lamps and such other apparatus and appliances, and also light and extinguish such lamps, all as the City Council shall require and direct, and all at such price per lamp per annum as shall be determined and fixed by the City Council. And the company shall at all times in all things comply with any and all reasonable requirements or directions of the City Council so made, subject only to the provisions of Section 5 hereof.

Provided, however, that should the city hereafter direct or require the company to equip the lamp posts used in the lighting of streets as herein specified, and the company so equip the same, and should the city thereafter for any reason discontinue the use of the equipment or any part thereof, so required to be furnished by the company, or itself undertake the care of such lamps and lamp posts and the lighting and extinguishing of such lamps or contract with or employ therefor some person or corporation other than the company, then and in that event the city shall purchase from the
4663 company all said equipment, then in serviceable condition, at the reasonable value thereof when so installed by the company (not exceeding the cost of the same thereto) less the fair value of its use while employed by it in the lighting of the streets; such value, if not agreed upon, to be determined by arbitration, as follows: The city shall select one arbitrator, and the company another

these two shall select a third; and the appraisal of said equipment made by the three so selected or by a majority of them, shall be the price to be paid to the company by the city for the same.

SECTION 5. Rates and prices to be reasonable. That the rates and prices which shall be fixed and determined by the City Council under and pursuant to the provisions of Section 3 of this ordinance, and the price for the use of the lamps and other apparatus and appliances and the service to be rendered and performed by the company pursuant to the last preceding section, shall always be just and reasonable, and shall not be so fixed as to fail to afford a fair and reasonable return upon the company's capital investment, nor until the company shall be given a hearing or an opportunity therefor before the City Council or a committee thereof as to the reasonableness of the same; and the reasonableness of all such rates and prices shall always be subject to review and correction in any action or proceeding which shall be instituted therefor by the company in any court having jurisdiction of the subject matter.

That the company's "capital investment," as that term is used in this ordinance, shall be and mean the fair and reasonable value of its plant as a going concern, having regard to its condition
4664 of repair and its adaptability and capacity for generating and furnishing gas. In determining such value, no value shall be placed on good will, or upon the unexpired term of any franchise, or on future profits based upon any unexpired term thereof; and in the determination of such value no regard shall be had to the company's capitalization, as represented by its outstanding stocks and bonds.

That the term "plant" as used in this ordinance, shall in every case be understood to mean all and every part of the property belonging to or under the control of the company, which is used in the exercise of any franchise belonging thereto, and which is within the limits of the city, and necessarily devoted to the generating and furnishing of gas to the city or the inhabitants thereof, including all lands and all rights therein, and all buildings, machinery and apparatus devoted to such service.

SECTION 6. Sale of stocks and bonds. That the company shall not hereafter at any time sell or otherwise dispose of any of its bonds or other obligations or any new issue of its corporate stock, except in good faith and at their fair value, nor unless the consideration for the same shall be actual cash and be paid into its treasury and thereupon appropriated to the making of betterments or extensions of its plant, or to the payment of its pre-existing bona fide bonds or obligations; provided, however, that nothing herein contained, shall be so construed as to prevent the company from increasing its capital stock, or from issuing new bonds or other obligations under existing mortgages or otherwise, at any time, wherewith to purchase, pay for, take up, exchange or replace any mortgage bonds heretofore or hereafter issued or sold by the
4665 company, in good faith, and at their fair value.

SECTION 7. Publicity. That the company shall, from and after the passage and acceptance of this ordinance, at all times

keep within the city, proper and accurate books of account, records and vouchers, which shall, at all times, show correctly and in detail, all its financial transactions, including all of its receipts and disbursements, and the particulars thereof, and all data needful for the preparation by competent accountants of the statements hereinafter provided for.

That the company shall, in the month of January of each and every year, commencing with the year 1911, prepare and file, under oath, with the Comptroller of the city the following, to-wit:

(*a*) A statement of all assets and liabilities of the company, constituting what is usually known as the balance sheet of accountants, including therein an accurate statement of all corporate stock and bonds of the company at the time outstanding; but not including therein any sum as the value of any franchise of the company in excess of the actual cost of the same; and also,

(*b*) A statement giving for the previous calendar year the gross receipts of the company from the sale of gas and of by-products and from all other sources of income, item by item; also all expenditures of the company during said year, including, item by item, all dividends and interest paid, the cost of all material entering into the manufacture of gas, all operating expenses, salaries, the cost of all repairs, improvements, betterments and extensions and of all property, real or personal, by it purchased; said state-
4666 ments to be so prepared as to show the net earnings of the company, during such calendar year, from its regular business and from all other sources.

That the company shall, at all times, permit any officer or other person designated by the City Council for that purpose, to inspect its plant and all of its other property, and shall, at all reasonable times, allow the City Comptroller of the City, or his deputy, or any accountant or expert selected by the city to inspect all the books, records and vouchers of the company and obtain therefrom any information or data which the City Council may, by resolution, require. And the City Council may, if it so elect, each and every year, commencing with the year 1911, employ one or more accountants, who, when so employed, shall be given by the company full and complete access to all of its said books, records and vouchers; and who shall prepare therefrom and file with the City Clerk within ninety days statements in the form designated in paragraphs "*a*" and "*b*" of this section.

That the company shall also, from time to time, furnish such other information regarding the property comprising its plant and business, and the conduct thereof, as the City Council may, by resolution, require. And all information furnished to the City Council by the company, under the provisions of this ordinance, shall be in writing and shall be certified to under oath by the president, secretary or other proper officer of the company.

SECTION 8. Right of purchase. That the city shall have the right at its option at the end of twenty (20) years succeeding the 24th day of February, 1910, to purchase the plant of the company by

paying therefor its value, which value shall be the com-
4667 pany's capital investment, determined as provided in Section 5 hereof. And in case the city and the company cannot agree upon such value, then the same shall be ascertained by appraisal in the manner following:

That the city through its City Council shall, at least thirty (30) days before the expiration of the term which the appraisal or purchase is to be made, select two appraisers, the company within thirty (30) days thereafter shall select two appraisers, and the four appraisers so selected, failing to agree within six months as to such value, shall, within thirty (30) days thereafter select a fifth disinterested appraiser. In case the company shall refuse or neglect to appoint two appraisers, or in case the four appraisers named by the city and the company cannot, within the time aforesaid, agree upon such value or upon the fifth appraiser, then the full bench of the district court of Hennepin county, State of Minnesota, or a majority of the judges thereof, may select the other appraiser or appraisers upon application either of the city or of the company. The appraisers so chosen shall forthwith proceed to determine and appraise such value as of the date of the expiration of the term for which the appraisal or purchase is proposed to be made. The decision of a majority of such appraisers shall be final and conclusive, and shall, as soon as made, be given in writing to the city and the company, who shall equally bear the expense of the appraisal proceeding.

That said appraisers may personally or by a person or persons designated by them, inspect the plant and all records, books of account, vouchers, bills, contracts, and documents of the company
for the purpose of fully informing themselves of such
4668 value.

That any vacancy or vacancies occurring at any time in said board of appraisers by death, resignation, disqualification or inability to act, may be filled within fifteen days, by the party or body making the original appointment, and, if not so filled, by the judges of said court, or a majority of them, upon the application of either the city or the company; provided, five days' previous notice in writing of such application shall have been given to the other party.

That nothing herein contained shall obligate the city to purchase said plant; but if the city shall elect to purchase the same, it shall make such election by ordinance adopted by the City Council within ninety (90) days after the price is so agreed upon, or the decision of the appraisers given as aforesaid. And the city shall have three years after the expiration of the term for which the appraisal shall be made, in which to pay the price so ascertained. If the city shall so elect to purchase, the company shall retain the possession of said plant, maintain the same in good condition and operate the same as herein specified, and be entitled to and receive the profits arising therefrom until the purchase price, ascertained as aforesaid, shall have been paid. But no addition, extension or enlargement of said plant shall be made after the city's election

to purchase the same and before payment therefor, without the consent of the City Council thereto and to the cost thereof, which cost shall be paid by the city in addition to the purchase price.

That such purchase, when consummated, shall terminate, or transfer to the city, any and every franchise, right and privilege the company may have or claim under the ordinance men-
4669 tioned in the preamble hereto, or under the so-called "St. Anthony Ordinance," referred to in Section 10 hereof.

SECTION 9. Hours of labor and wages. That no person employed by the company, in manual labor, shall hereafter be required or permitted by it to labor more hours in any calendar day than shall be required or permitted by law upon work done under any contract, involving the employment of labor, made by or on behalf of the State of Minnesota. And all laborers employed by the company shall hereafter receive wages which shall be just and reasonable, and not less than shall be customarily paid for labor of like character, and requiring like skill or experience.

SECTION 10. St. Anthony Ordinance. That any valuation that may for any purpose hereafter be made of the company's plant or property shall not include any sum as the value of any right, privilege or franchise in terms conferred by that certain ordinance entitled "An ordinance granting to certain persons the right to manufacture, furnish and sell gas in the city of St. Anthony, Minnesota," in form passed by the City Council of the City of St. Anthony on the 5th day of December, 1871, and approved on the same day, which ordinance was in form amended as to certain of its provisions, on the 8th day of April, 1872. And the company by the acceptance of this ordinance and its agreement to comply therewith, as provided in Section 15 hereof, shall surrender, relinquish and release any and every right, privilege or franchise mentioned or in terms granted in or by said ordinance so adopted by the City Council of St. Anthony and so amended as aforesaid, as far as the same, or any thereof, extend or purport to extend, beyond or after the 24th day of February, 1930.

4670 SECTION 11. Consolidation forbidden. That the company shall not at any time hereafter sell, convey or transfer any right, franchise or privilege granted or conferred in or by the ordinance mentioned in the preamble hereto and in Section 1 hereof, or any interest therein, or its plant and property, or any part thereof, to any person, copartnership or corporation, now or hereafter operating or interested in any electric or power plant, within the city, or furnishing light, heat or power in any form to the city or the inhabitants thereof. And the company shall not at any time hereafter purchase or acquire any interest in the franchise or property of, or directly or indirectly consolidate or divide its plant or business or the earnings thereof with any such person, co-partnership or corporation, by means of a pool or holding company or in any other manner or form whatsoever.

SECTION 12. Effect of company's non-compliance. That in case the company at any time hereafter violates any condition, requirement or stipulation of this ordinance, on its part to be complied

with or performed, either by failing, neglecting or refusing to do what is herein required, or in the doing of that which is herein forbidden, it shall in such case forfeit and pay to the city as a penalty therefor the sum of fifty (50) dollars, which, if not paid, may be enforced and collected by the city from the company, by an action at law in any court having jurisdiction thereof. That in addition to such penalty, so to be incurred as aforesaid, whenever and as often as the company shall continue any such violation of this ordinance without, in good faith, remedying the same by the doing or by the correction of the act, the nonperformance or doing of which shall have constituted such *such* violation
4671 thereof, for the period of thirty (30) days after written notice of the same shall be given to the company by the city, thereupon the waiver and relinquishment by the city, specified in Section 1 hereof, shall be annulled, and the city's option, right and privilege to demand an appraisal and to purchase, set forth and declared in Section- 9 and 10 recited in the preamble hereto, shall at once revive and remain operative and in full force for two (2) years thereafter; provided, however, that any such annul/ment of said waiver and relinquishment, or any such revival of such option, right and privilege, shall not in any event, even though the city does not purchase, continue or extend any franchise which the company may have beyond the 24th day of February, 1930. Provided, further, that said relinquishment and waiver shall not be annulled or said option, right or privilege be revived or become operative as aforesaid, until the city council, after a hearing or an opportunity therefor shall be given the company before the city council or a committee thereof, shall determine that such violation of this ordinance by the company shall have occurred, and shall by reason thereof declare the annul/ment of such waiver and relinquishment and the revival of such option, right and privilege; and provided, also, that such determination and declaration by the city council shall always be subject to review and correction in any action or proceeding which shall be instituted therefor by the company in any court having jurisdiction of the subject matter.

SECTION 13. Other ordinances unaffected. That the passage of this ordinance and its acceptance by the company shall in no respect repeal or affect the validity of any provision of the
4672 ordinance mentioned in the preamble hereto, not inconsistent or in conflict with the terms hereof, or of any existing or future ordinance adopted by the City Council relating to the inspection of gas or gas meters, or prescribing rules or regulations for the manufacture, measurement, sale, pressure, quality or distribution of gas supplied by the company.

SECTION 14. Definitions. That in this ordinance, and in the various sections and parts thereof, the terms "city", "Company," "city Council", and "city clerk" shall be understood, taken and construed to refer respectively to the City of Minneapolis, the Minneapolis Gas Light Company, its successors and assigns, the City Council of said city, and the City Clerk thereof; and the word "streets" shall include avenues, alleys, public squares, parks and park-ways, within the limits of the city.

SECTION 15. Acceptance. That this ordinance shall be null and void unless the company shall within ten (10) days from the publication thereof, file with the City Clerk a written acceptance of the same and an agreement on its part signed and acknowledged in its behalf by its president (or in his absence by its vice-president) and secretary, to comply with, abide by, keep and perform all the terms, conditions and requirements herein contained upon its part to be complied with or performed.

SECTION 16. That this ordinance shall take effect and be in force from and after its publication and its acceptance by the company as hereinbefore provided.

Passed Feb. 23rd, 1910.

4673 The defendants in the same connection and for the same purpose now offer and read in evidence the ordinance not offered by the complainant in connection with its Exhibit 71, which is an ordinance providing for the appointment of an inspector of gas and defining the duties of such officer in the city of Minneapolis, which said ordinance is now marked by the reporter as Defendants' Exhibit 71-B.

To this offer of Defendants' Exhibit 71-B the complainant makes the same objection as last above, and to both of said exhibits adds the further objection that they are incompetent and not the best evidence, in no wise identified, and therefore incompetent.

Said Defendants' Exhibit 71-B is as follows:

4674 DEFENDANTS' EXHIBIT 71-B.

An Ordinance.

Providing for the appointment of an Inspector of Gas and defining the duties of such officer, providing for the inspection of gas and gas meters, prescribing rules and regulations for the pressure, manufacture, measurement, quality and distribution of gas supplied to consumers, and for the enforcement thereof, and prescribing penalties for the violation of such rules and regulations.

Passed by the City Council of the City of Minneapolis, Minn., March 24th, 1910.

An Ordinance.

Providing for the appointment of an Inspector of Gas and defining the duties of such officer, providing for the inspection of gas and gas meters, prescribing rules and regulations for the pressure, manufacture, measurement, quality and distribution of gas supplied to consumers, and for the enforcement thereof, and prescribing penalties for the violation of such rules and regulations.

The City Council of the City of Minneapolis do ordain as follows:

SECTION 1. Definitions. That in this ordinance and the various sections and parts thereof the words "city" and "company" shall be understood, taken and construed to refer respectively to the City of

Minneapolis and the Minneapolis Gas Light Company, the
4675 word "streets" shall include avenues, alleys, public squares, parks and parkways within the limits of said city; and the words " Mayor," "City Clerk," "City Treasurer," "City Engineer," "Inspector" and "City Council," shall be understood, taken and construed to refer respectively to the Mayor, the City Clerk, the City Treasurer, the City Engineer, the Gas Inspector, and the City Council of said city.

SECTION 2. Appointment of Inspector. That the City Council shall, at the time specified in Chapter 3 of the City Charter for the appointment of other city officers appoint as Inspector a suitable person recommended to the City Council in the manner hereinafter provided, as one competent to test gas meters and the quality, purity, pressure and illuminating and heating power of gas. What the head of the department of chemistry, and the head of the department of physics of the Minnesota State University and the principal of the Minneapolis Central High School shall constitute a board for the examination of all persons desiring to apply for such position of Inspector. Said board shall, when seasonably requested to do so by any person desiring to take such examination fix a time when it will examine applicants for said position, which time, unless the City Council shall otherwise direct, shall be in the month of December of each even numbered year; and it shall notify the City Clerk of the time so fixed at least two (2) weeks prior thereto. The City Clerk shall, within one week prior to the time so fixed, publish in the official paper of the city a notice of the meeting of said board and the purpose thereof. At the time so fixed, and at such time or times thereafter as said board may by adjournment determine, it shall examine applicants in such manner as it shall deem
4676 necessary, respecting their competency to test the quality, purity, pressure and illuminating and heating power of gas and the correctness of gas meters. After such examination, said board shall forthwith, and during the month when it shall so convene, certify to the City Council the names of such persons as said board shall deem fully competent to make such tests. And only persons whose names are so certified shall be eligible to be appointed Inspector; provided, however, that any person who shall have previously held the office of Inspector may be appointed to said office without such certificate from said examining board; and provided, also, that a person who has once passed a satisfactory examination before said board, and whose competency has been so certified to by it, shall be subsequently eligible for appointment to the office of inspector without again being examined thereby.

That each member of said board of examiners, as hereby constituted, shall be paid by the city the sum of twenty-five (25) dollars for his services as examiner of applicants for said position.

SECTION 3. Deputies and Assistants. That the Inspector may, by and with the consent and approval of the City Council, appoint one or more deputy inspectors, each of whom shall be competent to make any and all of the tests, herein provided for, which he shall be re-

quired or directed to make. Each said deputy so appointed shall have the power, under the direction of the Inspector, to perform any duty which he shall be competent to perform and which the Inspector is herein or hereby required to do. And the Inspector and each of his deputies, shall take and file an oath of office, as other city officers are required to do, and shall respectively execute to
4677 the city and file with its City Clerk a bond, the Inspector in the sum of one thousand dollars, and each of his deputies in the sum of five hundred dollars, with such conditions as the City Council shall prescribe or approve.

That the Inspector may also, by and with the approval of the City Council, appoint one or more assistants (who need not necessarily be competent to make the tests herein provided for) who shall under his direction supervise the installation of gas and gasoline lamps used in the lighting of streets; see to it that the equipment thereof complies with the requirements of the City Council and that the same are lighted and extinguished in accordance with the schedule prescribed therefor; and also assist the Inspector in the auditing of bills for street lighting, as the same are from time to time presented, and the performance of such other duties as the Inspector may prescribe or direct.

SECTION 4. Maps, Card Catalogues and Blue Prints. That maps of all its existing system of mains and service connections shall, within six (6) months from the passage of this ordinance, be made or completed by and at the expense of the company as follows: (*a*) Sectional maps, each drawn to a scale of one hundred feet (100 feet) to the inch, upon sheets twenty inches (20 inches) in width by thirty inches (30 inches) in length, showing the location and size of all mains in its system and all services from mains to houses or other connections (in so far as the same are known to the company) and designating all such mains and services, so that, by scale measurement, the distance of each main from the boundary line of the street, and of each service from the nearest line of the nearest intersecting street, may as accurately as possible be
4678 ascertained and determined. (*b*). A general map of the whole city divided into four rectangular sections cornering at or near the old City Hall, drawn to a scale of four hundred feet (400 feet) to the inch, showing by proper signs the location and sizes of all mains, all district governors and all booster or high pressure mains, but not the details of intersection or house connection or services, which map shall be supplemented from time to time by new maps so as to show all new extensions, district governors and booster or high pressure mains, as the same shall hereafter be laid or installed by the company.

That the company shall at its own expense, within six months from the passage of this ordinance, prepare and deliver a complete set of blue prints of all said sectional and general maps, to the Inspector and City Engineer, respectively, and thereafter make such additions to, or changes in, said blue prints that the same will at the end of each year then correspond with said maps as the same

shall be from time to time added to or enlarged; all of which blue prints shall be kept and retained by said Inspector and City Engineer, as a part of the records and files belonging to their respective offices. And the company shall also at its own expense, and as soon hereafter as may be practicable (in any event within nine months after the passage of this ordinance) prepare and deliver to the City Engineer a true and correct copy of all of its card catalogues, giving every detail and the measurements locating all its services and mains, which shall at all times be kept up to date for the use of the City Engineer and be placed and kept in his office, as a part of the records and files belonging thereto.

SECTION 5. Laying of Mains and Services. That the company shall at the request of any person about to become a con-
4679 sumer of gas, in front or at the side of whose premises a main shall exist, without cost to him, connect such main to said premises by the usual service connection. That the company shall also upon the order of the City Council, free from all cost to the city or its citizens, extend its mains in such streets as may be designated, which shall have been previously graded, and in such streets, though ungraded, where the grade shall have been established, and the contour of the ground on an average, figured along the entire length of the proposed extension and over the full width of the roadway, shall be not more than six inches above or below the established grade. Provided that in every such case at least one consumer on an average for every one hundred and thirty-three (133) feet of the extension ordered, shall first in writing agree to take gas from the Company, for a period of not less than one year at the then established rates, or that the estimated annual sales of gas derived from the extension ordered will yield at least twenty per cent (20 per cent) of the total cost thereof. And provided also that the company may after obtaining proper permits and locations therefor from the City Engineer enlarge, replace, extend or improve its system of mains or services in excess of the above mentioned requirements to such extent as it shall deem necessary for the improvement or expansion of its business or the regulation of gas pressure.

That the location of new mains in the street shall conform as nearly as may be to the existing system of the company, and shall in all cases be established by the City Engineer, without whose duly signed permit, designating the location, no main or house connection shall be laid. And all mains hereafter laid or replaced by the company shall be cast iron mains and shall be not less than
4680 six inches inside diameter, unless the City Engineer and the Inspector shall jointly, after careful examination in each instance and for a special reason deemed by them to be sufficient, grant a special permit for a smaller size of wrought iron main or for a steel main more than thirty (30) inches in diameter. And the company shall also, so far as practicable, place all gas mains hereafter installed or laid, all services therefrom and all services from existing mains, at such depth below the surface of the ground as will prevent any deterioration from frost or cold in the quality or flowage of the gas supplied therefrom.

That whenever any street is hereafter paved or re-paved (not intending to include ordinary grading or macadamizing of streets) the company shall remove therefrom all mains less than six (6) inches in diameter, replace therein cast iron mains six (6) inches or more in diameter (unless the City Council shall, by resolution, in special instances for reasons deemed to be sufficient, otherwise provide) and shall also examine and renew all defective services, and also add services for such prospective consumers as may be obtained by a careful canvass of the locality.

That if at any time it shall be necessary to change the position of any main or service of the company to permit the city to lay, make or change street grades, pavements, sewers, water mains or other city structures, or city work of any kind, such changes in mains or services shall be made by the company at its own expense according to the instructions of the City Engineer.

That all digg-ng of ditches, laying of mains and other operations required for gas distribution, shall be done at the risk of
4681 the company, which shall assume the entire risk of all accidents and hold the city harmless from all cost or damage occasioned thereby; and it shall, if so directed by the City Council, file such bond as may be required to indemnify the city against all damage or other suits resulting therefrom.

That before the company shall interfere with, remove, or alter any pavement, sewer, sewer inlet, or other city structure, it shall deposit with the City Treasurer a sum sufficient to repair, replace, or re-erect the same in the manner required of electric and conduit companies. And the company shall also, when so directed by the City Engineer replace all material excavated from the streets in the laying of its mains or conditions, in such manner as he shall direct; and shall also, if so directed by the City Engineer, during the time intervening between its removal and replacing of street paving of a permanent nature, temporarily plank the space from which the paving has been removed, in such manner as to insure a reasonably smooth street surface across or along the same.

SECTION 6. Meters and Meter Testing. That the company shall, upon the request of any consumer not in arrears with respect to the payment of any gas bill due to the company, install for his use a prepayment meter, otherwise called a "quarter meter," of not more than twenty light capacity, in lieu of the meter in common use which is read monthly; and whenever any such prepayment meter is removed, the consumer shall be refunded such part of any deposit, therein previously made, which shall not have been exhausted.

That the Inspector shall, on or prior to the first day of January, nineteen hundred and eleven (1911), provide and thereafter main-
tain at the city's expense a suitable place (to be known as
4682 the meter inspection room) for the purpose of testing therein all meters complained of by consumers of gas and all other meters used by the company for the measurement thereof. And the company shall be entitled to have a representative present in said room at all times while any meter is being tested, proved or sealed therein, and be entitled also at all reasonable times to test and prove

the accuracy of any appliance used in the testing of meters and the methods used in the testing thereof.

That when a consumer shall make complaint concerning the accuracy of his meter and pay to the Inspector a fee of one dollar, the Inspector shall give notice of such complaint to the company, which shall thereupon, in the presence of the Inspector at such time as he shall designate, remove said meter from the premises of the consumer to the meter inspection room, and shall also at the same time install, in place of the one so removed, another meter duly tested, proved and sealed. The Inspector, at the time of such removal of any meter, shall securely paste thereon a slip of paper containing his signature, the date of such removal and a description of the premises from which the meter is removed. The meter so removed shall, unless another time be agreed upon, be tested at 9 o'clock a. m. of the succeeding day (omitting Sundays and holidays) at which time a representative of the company and also the consumer may be present. And if upon being tested the meter so complained of be found inaccurate or defective upon any of the tests herein provided for, the one dollar ($1.00) paid by the complainant shall be returned to him, and the company shall in his stead pay one dollar ($1.00) to the City Treasurer, as herein provided.

And whenever any meter upon being tested, as in this para-
4683 graph provided, shall be found to measure qual-ities more than 2 per cent in excess of the standard measurement of gas, the consumer from whose premises such meter shall have been removed shall be entitled to receive from the company a rebate or return of a sum equal to the percentage of such excess of all moneys paid by the consumer to the company and measured by such meter from the time it had been installed or previously tested until the time of such retesting thereof, not exceeding, however, a period of six months.

That the company shall not after said inspection room shall have been so provided install any gas meter in the premises of any consumer which shall not have been, subsequent to the prior use of the same, tested, proved and sealed by the Inspector, as herein provided. And the company shall not thereafter use any such gas meter within said city more than three (3) years after it shall have been tested, proved and sealed, or retested, re-proved and re-sealed by the Inspector, in accordance with the provisions hereof; provided, however, that the company may continue the use of each of its meters now installed and in service unless complaint thereof be made, or unless found to be defective, until the same shall be tested by the Inspector, as herein provided.

That from and after the time when the inspection room shall be provided and maintained by the Inspector, as aforesaid, the company shall detach and remove thereto to be tested, proved and sealed by the Inspector as herein provided, its meters now or then in service as follows, to-wit: At least one thousand (1,000) thereof each and every month, and all of the same prior to the first day of April, nineteen hundred and thirteen (1913); said meters to be

so removed and delivered to the Inspector respectively in
4684 the order in which the same have been tested, or retested by the company; another meter duly tested proved and sealed being installed in the place of each one so removed. And (except as hereinbefore specified, in case of a meter complained of by a consumer) for each such meter which shall be thus proved, tested and sealed by the Inspector, the company shall pay to the City Treasurer the sum of twenty-five (25) cents as specified herein.

That the Inspector shall carefully protect and guard all meters which come into his possession for inspection, and shall tightly cork all such meters during the time the same are in his custody and not being tested. And the Inspector in the testing of each meter shall subject the same to three tests: first, one which proves accurately its registration by means of the standard prover in ordinary use; second, one which proves the steadiness of the light, and the freedom of the meter from leakage; and, third, one which proves that the meter registers small quantities of gas. If under the first test, any meter shall be found to register quantities incorrectly to an extent exceeding two per cent (2 per cent); or if under the second test, the meter is found to leak, or if any noticeable fluctuation in the light is observed; or if, under the third test, the meter fails to register small quantities of gas consumed, the meter shall be turned over to the company for read*ad*justment and the same shall not be again used until the defect is remedied, the meter again tested, found to be correct and duly sealed. But every meter shall be considered correct as to the first test when duly certified and sealed which shall register quantities varying not more than two (2) percentum from the standard measure of gas. That the
4685 Inspector shall have a card made which he shall attach to each meter tested by him and upon such card shall be given the data connected with the testing of the meter and the time of the testing. If the meter be found to be correct and be so certified by the Inspector, he shall seal the same by a suitable device. And no person other than the Inspector or his deputy shall unseal any such meter or deface, alter, or remove any card so attached thereto by him, or place thereon any card or writing purporting to be the certificate of the Inspector.

That the Inspector shall also number consecutively each and all meters by him listed upon the said card attached hereto, and shall enter in a book kept as a part of the records of his office the number of each meter so tested, the date of the testing thereof, the manufacturer's name and number and the company's number if the same appear thereon.

That the Inspector shall upon the first day of each month file in the office of the City Clerk a certified statement, showing the sum due from the company to the city for the testing of meters upon the complaint of consumers, or otherwise, during the previous calendar month; and the company shall within five (5) days thereafter pay to the city treasurer the sum due from it to the city for such testing of meters during such previous month. And all money received by the Inspector upon complaint of any consumer, when it is deter-

mined that his meter is not inaccurate or defective by any of the tests herein prescribed, shall forthwith be paid to the City Treasurer by the Inspector.

4686 SECTION 7. Testing Stations. That the City shall at its own expense, as soon as practicable, provide and maintain at least two testing stations (hereinafter called the testing stations) which shall be more than one mile apart, and each of which shall be at or near a center of gas consumption, and not less than one mile, nor more than one and one-half miles, measured in a direct line, from any manufacturing plant of the company.

That the city shall also at its own expense provide and maintain in each of said testing stations such calorimeters, photometers, pressure gauges and other supplies and apparatus as shall be necessary to determine the pressure, purity, candle power and heating value of the gas supplied by the company, and in the making of any other tests that may from time to time be deemed necessary or desirable by the Inspector.

That all of the equipment and supplies so to be provided and maintained by the city and so to be used in the making of tests, shall be of the standard types and qualities, and such as are generally used for such purposes, and shall be tested for accuracy from time to time, so that the tests made hereunder shall be as accurate and fair as is reasonably possible.

That the company shall run a pipe to each testing station (and if so demanded by the Inspector, a new pipe to the existing City Hall Station) from the gas main nearest thereto, all under the supervision of the Inspector, and in such manner as he shall approve; or, if this be not done by the company, the Inspector is authorized to put in the service himself at the cost of the company. And each pipe so run to any testing station shall be free from all gas cocks or other obstructions which might interfere with, or in any way

4687 affect, the proper flow or quality of gas.

That until the city shall provide, maintain and equip testing stations, as herein provided, all tests except as to pressure shall be made at the testing station now located at the City Hall (herein called the City Hall Station). Until such time the provisions of this ordinance as to the averages at separate stations shall be disregarded and the tests and the averages of tests as made at the City Hall Station, as to all matters except pressure, shall be considered the tests and the average of the tests to be made at said testing stations so to be provided, maintained and equipped by the city.

That in case of any dispute between the city or its inspector on the one side and the company on the other, as to the methods or apparatus employed in the testing of pressure, purity, candle power or heating value of the gas supplied by the company, the latest notification of the Gas Referees covering Metropolis Gas, London, England, at the time obtainable, when not inconsistent with the express provisions of this ordinance, shall prevail and be conclusive as to such matters upon all concerned. And if any technical matter arise and be in dispute, not covered by this ordinance or by such notification, an arbitration board, as between the city and the company, may

be provided upon the demand of either the company or city as follows: The city shall select one expert and the company shall select another; these two selecting a third to be jointly paid by the city and the company; and the decision of these three or a majority of them upon the matter so in dispute shall be final and conclusive, as to such technical matter, for the period of one year thereafter.

4688 SECTION 8. Methods of Testing—General Provisions. That all tests herein provided for shall be made by the Inspector or his deputy; and the company may, if it so desires, have a representative present at any of the usual or stated tests herein mentioned. All tests of candle or heating power, regularly required, shall be made between nine o'clock a. m. and five o'clock p. m., unless such time be for any reason changed by the Inspector, in which event he shall give the company reasonable notice in advance of the change of time. And the volume of all gas used upon such tests shall be corrected to a standard temperature of sixty (60) degrees Fahrenheit and to a standard barometric pressure of thirty (30) inches of mercury. But the Inspector may, if he deem it advisable, make tests of the pressure, purity, candle power and heating value of gas at as many places (including the works of the company) as he may select without notifying the company thereof, such tests to be in addition to the usual tests made at the regular testing stations; but the same shall not be used by the Inspector in the making out of the daily or monthly averages herein provided for.

That the Inspector shall keep a full and complete record of all tests by him made, which shall at all reasonable times be open to the inspection of the company, and shall make monthly reports thereof to the City Council. He shall moreover, each day post in a public place in the testing stations or City Hall, the results of any and all tests upon which the gas is found not to comply with the requirements of this ordinance.

4689 That whenever upon any test made of gas for the purpose of ascertaining its purity, candle power or heating value, as herein provided, it shall be found in any such respect not to comply with the requirements of this ordinance, the Inspector shall forthwith and within twenty-four hours thereafter (not including Sundays or holidays) deliver at the office of the company a notice in writing specifying such defect; and he shall thereupon make similar tests on each and every day thereafter, except Sundays and holidays (advising the company in like manner as to the result thereof), until the gas shall be found to be free from such defect.

That whenever the Inspector is required by this ordinance to deliver any notice or other paper at the office of the company, Mayor or City Clerk, he may do so by a deputy or other messenger; and that the company shall at all times, during the usual office hours, have some representative in its office who shall receive such notice or paper so delivered and acknowledge in writing the time of the receipt thereof.

SECTION 9. Impurities in Gas. That tested as provided herein the gas supplied by the company shall not at any time contain more than four (4) grains of ammonia in any one hundred (100) cubic feet thereof; nor shall the gas, so tested, at any time between the first day of April and the first day of October in any year contain more than twenty (20) grains of total sulphur in any one hundred (100) cubic feet of the same, or at any other time more than thirty (30) grains of total sulphur in any one hundred (100) cubic feet thereof. And the gas supplied by the company shall at all times be wholly free from sulphuretted hydrogen, as determined by the particular test herein specified.

That the Inspector shall test the gas supplied by the com-
4690 pany to determine the quantity of total sulphur and ammonia therein at least once in each week, and to determine the presence of sulphuretted hydrogen therein on each one of at least twenty (20) days of each calendar month, using for that purpose in each instance the tests prescribed therefor in the notification of the Gas Referees covering Metropolis Gas, London, England, published in the year 1909, or such other test as may be agreed upon by the company and the inspector and which as applied to total sulphur and ammonia will give accurate results. And whenever and as often as the test prescribed for sulphuretted hydrogen shall show the presence thereof in the gas, or the test prescribed for total sulphur and ammonia, respectively, shall show the presence thereof in excess of the quantity herein prescribed, he shall as to each test wherein the gas fails to comply with the requirements herein make a like test on each and every day thereafter (except on Sundays and holidays) until the test shall show that the gas complies, in the particulars involved therein, with the requirements of this section.

SECTION 10. Candle Power of Gas. That the gas supplied by the company, tested as provided in this section, shall be of at least eighteen (18) candle power; that is, of such quality that the gas when burned at the rate of five cubic feet per hour, under standard conditions of temperature and barometric pressure, in any ordinary lava tip or open flame burner in common use, giving the full candle power of the gas, shall give a light as measured by any standard barphotometer in common use, of not less than eighteen (18) standard candles—it being understood that a standard ca-dle is the unit of light prescribed and maintained by the United States Bureau of Stand-
ards, known as the International candle, which is equal to one
4691 Pentane candle, one Bougie decimale, one American candle, 1.11 Hefner units, or 0.104 Carcel units.

That the Inspector shall test the candle power of the gas upon at least twenty (20) separate days of each month in the making of such tests he may use Pentane lamps, previously standardized by the United States Bureau of Standards or such other suitable burner or apparatus agreed upon between the Inspector and the company as will measure the correct candle power of the gas, as herein defined.

That the Inspector shall make two (2) separate and distinct tests on each day when tests are made to determine such candle power, at an interval of not less than four (4) hours, at the City Hall Station

or testing stations, and the average of the tests so made shall be deemed to represent the candle power of the gas on the day of such tests.

SECTION 11. Heating Power of Gas. That the gas supplied by the company, tested at the City Hall Station or testing stations as provided herein, shall give a monthly average gross heating value of not less than six hundred (600) British thermal units per cubic foot of gas; and that the daily average gross heating value of the gas supplied by the company, tested at any such station, shall not on any day be less than five hundred and fifty (550) British thermal units.

That the gas shall be tested for the purpose of determining its heating value twice each day, at an interval of not less than four (4) hours, upon at least twenty (20) days during each and every month, at the City Hall Station or testing stations.

That the average of each of the two tests at the City Hall station or at the testing stations (hereafter called the daily average
4692 at the stations) shall be deemed to represent the gross heating value of the gas on the day of such tests; and that the daily average so ascertained, for each and every day of the month upon which said tests shall have been made, shall be again averaged and the result (hereinafter called the monthly average at the stations) shall be deemed to represent the gross heating value of the gas during the then current calendar month.

That the Inspector shall after the computation of any monthly or daily average of the heating value of gas, so ascertained forthwith, and within twenty-four (24) hours, deliver a statement thereof at the company's office, so it may know the averages thus obtained, and also file a statement of such monthly average in the office of the City Clerk.

SECTION 12. Pressure of Gas. That the company shall proceed forthwith to repair, reinforce and re-equip its present system of distribution and regulation and equalize the same, so that its system shall as soon as possible be in all respects adequate to meet as to pressure of gas, the requirements hereinafter set forth, within the time hereinafter specified, and in any event on or prior to January first, nineteen hundred and twelve (1912). And to that end, the company shall, within two (2) years after this ordinance shall become effective, construct and thereafter maintain a gas holder, at some suitable place within the city upon the east side of the Mississippi River of such capacity as will adequately supply the demand for gas in that locality, and maintain the pressure thereof within the limits herein prescribed. And the company shall also hereafter maintain, extend and improve its distributing system, with due
4693 regard to the fact that it is the intention of the city (hereby expressed) to require the company on and after January first, 1913, without the use of house governors, to maintain a pressure of gas as uniform as may be, that will never be less than two (2) inches nor more than four (4) inches of water pressure in any of its mains on the level of the water in the gas works holder, or elsewhere except as the same may be due to the elevation of the main above such level.

That on and after the first day of July, nineteen hundred and

ten (1910) the pressure of gas supplied by the company, tested at any point where the unobstructed service pipe enters the building of the consumer, shall never be less than two (2) inches nor more than six (6) inches of water pressure, and that the variation of pressure upon any day of any such point shall never be greater than one hundred per cent (100 per cent) of the minimum pressure upon the same day and at the same point. Provided, however, that the company may prior to January first, nineteen hundred twelve (1912) install a house governor at the place where the gas enters the consumer's premises upon filing in each instance with the Inspector a written declaration of its purpose to install the same, together with a description of the premises in which it is to be placed, which declaration shall be kept by the Inspector as a part of the records and files of his office; provided also that the company may, after January first, nineteen hundred and twelve (1912) install any such house governor upon obtaining from the Inspector a special permit therefor, as hereinafter provided. The company shall whenever any such house governor is removed, forthwith file written notice of such removal with the Inspector, and shall on the first day of each
4694 and every month file in the office of the City Clerk its certified statement showing the aggregate number of such house governors then in use by the company. But the company shall not, after the first day of January, nineteen hundred and twelve (1912) continue the use of any house governor previously installed, and shall not thereafter install, maintain or use any such governor, except at such place and for such period of time only as the Inspector shall, after careful examination in each instance and for some special reason, deemed by him to be sufficient, by his duly signed permit, allow. And whenever any such special permit shall be granted, a duplicate copy thereof shall be kept and preserved by the Inspector as a part of the records and files of his office.

That from and after the passage of this ordinance the Inspector shall at least once each month, if he so determines, without notifying the company, make a general test of the maximum and minimum pressure of gas supplied by the company at any hour or at all the hours of one whole day; and the Inspector shall also obtain and keep a continuous record of gas pressure daily at not less than ten (10) points within the district furnished with gas, by means of recording gauges, so distributed as to cover as nearly as possible the whole distribution system of the company, the supply of gas to said recording gauges being taken from unobstructed service pipes direct from the mains. The Inspector may also, in like manner, at any time prior to January 1st, 1912, without notice to the company, determine at as many points as he may deem advisable, the gas pressure in any street main, or in any service pipe at the inlet and outlet of the meter of any consumer.

4695 And it shall be the duty of the Inspector and City Engineer during the years nineteen hundred and ten (1910) and nineteen hundred and eleven (1911) by reference to the record of gas pressure so obtained, and their knowledge of the work being done by the company to restore and perfect its distribution system,

to make monthly joint or separate reports concerning the same to the City Council and to suggest and recommend such additions, alterations, or enlargements therein as will in their opinion correct any defect in gas pressure deemed by them or either of them to then exist therein.

That if at any time, between the first day of July, nineteen hundred and ten (1910) and the first day of January, nineteen hundred and twelve (1912) the pressure of the gas supplied by the company to any consumer shall fail to comply with the requirements of this section, and the consumer complain thereof to the company, it shall, if the defect be due to local conditions, within seventy-two (72) hours thereafter, and if due to other conditions, within a reasonable time thereafter, remedy the defective pressure, so that the pressure will comply with such requirements; and if necessary to remedy the same the company shall at its own expense install and maintain a house governor at the point where the gas enters the consumer's premises, first filing with the Inspector a notice of its intention to install the same, as hereinbefore provided. And should any such consumer, after the company has undertaken to remedy any such defect in pressure, pursuant to the requirements of this paragraph, be of the opinion that the same has not been corrected, as herein required, and give to the Inspector no-
4696 tice thereof, the Inspector shall forthwith test the pressure of gas supplied to the consumer's premises by the use of recording or visual gauges and furnish to the consumer and the company, respectively, a written statement of the results thereof. And the company shall also, on each and every Monday between July 1st, 1910, and January 1st, 1912, file with the Inspector its certified statement showing the number of such complaints made within the previous calendar week, together with the respective names and residences of the complainants, and the respective points at which the pressure is so complained of.

That on and after the first day of January, nineteen hundred and twelve (1912) the Inspector, if he deems it proper, may, and in case improper pressure as herein defined be complained of shall, test the pressure of gas in the service or house pipe at the inlet or outlet of any consumer's meter by means of a recording or visual gauge; and if it be thus found that the pressure at any such point does not comply with the requirements of this ordinance, due allowance being made for meter friction, the Inspector shall within twenty-four hours thereafter deliver at the company's office a notice in writing of the defect; and the company shall, if the defect be due to imperfect conditions in the service pipe or in any governor placed by the company therein, remedy such defect within forty-eight (48) hours thereafter, or if due to any other cause, remedy such defect within a reasonable time thereafter. And the company shall, upon remedying such defect as aforesaid, forthwith and within twenty-four hours notify the Inspector that the defect has been corrected, so he may ascertain if the pressure then complies with this ordinance.

4697 SECTION 13. Meter deposits, disconnections and gas bills. That the deposit required of any customer of gas as security for payment therefor shall not exceed the probable amount of his one month's consumption thereof. And the company shall pay interest at the rate of six per cent per annum on every such deposit heretofore or hereafter made for the purpose aforesaid, if the sum exceeds one dollar, ($1.00), such interest to be paid semi-annually.

That forty-eight (48) hours' notice in writing shall be given the company by a consumer before he shall quit the premises where he shall have been supplied with gas; and in default of such notice the consumer so quitting shall be liable to pay the company for any gas supplied to said premises before the time for the next reading of the meter therein.

That in addition to the usual form of gas bills made out by the company there shall be printed upon the face thereon in bold type the following words: "Discount allowed for deficiency in gross heating value;" and the amount of the discount, if any there be, to the consumer pursuant to the provisions of this ordinance shall be inserted after such words and be deducted from the amount of the bill.

SECTION 14. Discount for heating deficiency. That should the monthly average gross heating value of the gas at the City Hall Station or testing stations (determined according to Section 11 hereof) at any time fall below six hundred (600) British Thermal Units, every consumer of gas within the city during the month when the deficiency shall occur shall be entitled to and shall receive pro rata discount upon his gas bill therefor. The per centage
4698 of such discount shall be ascertained by dividing the number of British Thermal Units of such average monthly deficiency at the City Hall or testing stations by the standard of thermal units specified therefor by said Section 11, which per centage shall be used by the company in computing the discount of its bills for the month, which discount shall be deducted from the gas bill for the succeeding month or be paid to the consumer in cash.

That the Inspector shall deliver at the office of the City Clerk and the Mayor respectively, and also deliver at the office of the company, a copy of his computation of the discount in the monthly bills, for each month in which a discount therefrom shall be made pursuant hereto, on or before the 5th day of the succeeding month, and also post a copy thereof in the usual place selected by him for that purpose, certifying therein that the average of heating value as determined at the City Hall Station or testing stations, is the average of at least twenty (20) tests made two in each day upon separate days during said month, wherein the deficiency shall occur.

SECTION 15. Penalties. The company shall be subject to and pay a fine of one hundred dollars ($100) whenever and as often as it shall violate this ordinance and be convicted thereof in the Municipal Court of the City of Minneapolis in each of the following cases, viz: (*a*) In case it shall fail for any three successive days after January first, nineteen hundred and twelve (1912) to correct

within a reasonable time any defect in the pressure of gas (as prescribed in Section 12 hereof) not due to improper conditions in the service pipe or the governor connected by the company thereto;

(*b*) In case of any deficiency for any three successive days
4699 in the candle power of the gas prescribed by Section 10 of this ordinance; (*c*) in case of the presence in the gas for any three successive days of sulphuretted hydrogen according to the test prescribed by Section 9 hereof; (*d*) in case of the presence in the gas for any three successive days of sulphur other than sulphuretted hydrogen, in excess of the quantity prescribed in said Section 9; (*e*) in case of the presence in the gas for any three successive days of ammonia in excess of the quantity prescribed in said Section 9; (*f*) in case of the company's failure for any three successive days to furnish gas the average daily gross heating value of which at the City Hall Station or testing stations shall not be at least five hundred and fifty (550) British Thermal Units as prescribed in Section 11 hereof. Provided, however, that before the company shall in any such case be or become subject to any such fine, the Inspector shall, upon the discovery of the specified defect in the pressure or quality of the gas, by the test hereinbefore provided for the detection thereof, forthwith and within twenty-four (24) hours thereafter (not including Sundays or holidays) deliver at the office of the company, a notice in writing specifying such defect and deliver a like notice at the office of the Mayor and City Clerk respectively; and shall, if upon the succeeding day he finds the same defect, again give notice thereof in like manner, and shall on the third succeeding day if he finds the same defect forthwith and within twenty-four (24) hours thereafter give notice thereof by means of an affidavit, stating the three days' defect, duly verified before an officer authorized to administer oaths, delivered at the office of the company, and by like affidavit delivered at the office of the Mayor and City Clerk respectively.

4700 That if the company shall violate this ordinance by not delivering to the City Engineer and Inspector, respectively, blue-prints of the maps of its mains and services and a copy of its card catalogue in the form prescribed by Section 4 hereof, within the time or times prescribed in said section, or by failure to supplement, add to or enlarge the same as therein provided, it shall, upon conviction thereof in said Municipal Court, be subject to and pay a fine of one hundred dollars ($100), and for each day's additional delay in so delivering the same thereafter shall, upon conviction thereof in said court, be subject to and pay a further and additional fine of fifty dollars ($50).

That whenever and as often as the company shall on or after the first day of January, nineteen hundred and twelve (1912), violate this ordinance by failing to correct any defect in pressure of gas due to any improper condition of the service pipe or any governor connected by the company therewith, within seventy-two (72) hours after notice of such defect, as hereinbefore provided, it shall upon conviction thereof in said Municipal Court be subject to and pay a

fine of ten dollars ($10) and for each additional seventy-two (72) hours' delay in correcting such defect, it shall upon conviction thereof in said court be subject to and pay a further and additional fine of ten dollars ($10).

That whenever and as often as the company shall at any time on or between the first day of July, nineteen hundred and ten (1910) and the first day of January, nineteen hundred and twelve (1912) violate this ordinance by failing to remedy any defect in *in*
4701 pressure of gas upon the complaint of any consumer, as required by Section 12 of this ordinance, it shall upon conviction thereof in said Municipal Court be subject to and pay a fine of ten dollars ($10); and for each additional seventy-two (72) hours' delay in remedying such defect, as required by said section, the company shall upon conviction thereof in said court be subject to and pay a further and additional fine of ten dollars ($10).

That whenever and as often as the company shall at any time violate this ordinance, in the laying or replacing of any main which shall not be a cast iron main or shall be less than six inches inside diameter, without the consent of the City Council or without having previously obtained a special permit therefor from the City Engineer and Inspector, as provided in Section 5 hereof, the company shall upon conviction thereof in said Municipal Court be subject to and pay a fine of one hundred (100) dollars. And upon any such violation of this ordinance each and every officer, agent and servant of the company and every other person concerned therein, or who shall directly or indirectly participate in such violation thereof shall, upon conviction thereof before said Municipal Court, be punished therefor by a fine of one hundred (100) dollars, or by imprisonment for a term not exceeding ninety (90) days.

That whenever and as often as the company shall violate this ordinance by failing, neglecting or refusing to lay any service or main when required or ordered to do so pursuant to the provisions of Section 5 hereof, it shall upon conviction thereof in said Municipal Court be subject to and pay a fine not exceeding one hundred
4702 (100) dollars, and for each day's additional delay in laying such service or main, the company shall upon conviction thereof in said court be subject to and pay a further and additional fine not exceeding fifty dollars.

That whenever and as often as any person other than the Inspector or his deputy shall unseal any meter, or deface, alter or remove any card or paper attached thereto or pasted thereon by the Inspector, or place thereon or attach thereto any card or writing purporting to be the certificate of the Inspector, he shall upon conviction thereof in said Municipal Court be punished by a fine of twenty-five dollars *for* by imprisonment for a term not exceeding twenty-five (25) days.

That whenever and as often as the company shall make, deliver or transmit to any consumer a gas bill contrary to the requirements of Section 13 hereof, or fail to deduct from any gas bill rendered to a consumer, or to pay to the consumer in cash, the full amount of any discount determined and computed, as provided in Section 14 hereof, which may become due to such consumer as therein provided, the

company shall upon conviction thereof in said Municipal Court be subject to and pay a fine not exceeding the sum of ten dollars ($10).

And whenever and as often as the company, at any time hereafter, shall violate any provisions of this ordinance, on its part to be complied with or performed, in any respect or particular not hereinbefore in this section specified, either by failing, neglecting or refusing to do that which is herein in this ordinance required, or in the doing of that which is herein in this ordinance forbidden, it shall
4703 upon conviction of such violation thereof in said Municipal Court be subject to and pay a fine not exceeding the sum of one hundred (100) dollars.

SECTION 16. Repeal. That all ordinances of the city and parts thereof contravening or inconsistent with the terms of this ordinance are hereby repealed.

SECTION 17. Time of becoming effective. That this ordinance shall take effect and be in force from and after its passage and publication.

Passed March 24th, 1910.

PLATT B. WALKER,
Vice President of the Council and President pro tem.

Approved March 31st, 1910.

J. C. HAYNES, *Mayor.*

Attest:
HENRY N. KNOTT,
City Clerk.

4704 Q. Now, Mr. Mayor, referring to complainant's Exhibit 74, a copy of which I show you, to which your attention was called by counsel for complainant, I will ask you if that document, or the original, or a copy of the same was at any time to your knowledge filed with the City Clerk, or in any manner so that it would reach the city counsel in an official way?

A. No, sir; I did not file it with the council.

Q. Now, I notice that it has reference to, that is it bears a date subsequent to the passage of the ordinance in controversy, and I wish you would explain to the Master just how it was and what your purpose was in addressing such a communication to the members of the council at a time which related subsequent to the passage of the ordinance, and why you did not file or cause the same to be filed in the office of the city clerk to become a regular official document in the records and archives of the city?

Objected to on part of complaina-t as immaterial, in so far as it calls for the construction of the documents, or either of them. It is simply incompetent as calling for the mere conclusion and opinion of the witness. The letter of Professor Hanna to the council was only called to his attention for the purpose of leading up to Mr. Marks' letter.

A. I had undertaken to try to see if we could not settle the controversy without getting into litigation over it.

Complainant moves to strike the statement of the witness as immaterial and incompetent to any issue in the case.

Judge CARR: The record may show that that matter was not introduced but was only referred to for the purpose of calling
4705 Mr. Hanna's attention to the fact that he had received a report from Mr. Marks and had received a letter which had been offered in evidence.

Mr. BRENNAN: We want to make up the record for the purpose of making a motion to strike the whole business from the record.

Judge CARR: As a matter of fact I think the record will show that letter was not offered in evidence but was read to Mr. Hanna for the purpose of refreshing his recollection with regard to the letter received from Mr. Marks.

Q. Now, Mr. Mayor, you say that you had been endeavoring to effect some sort of a settlement between the parties with respect to this controversy, and had you had some negotiations prior to the time you wrote this letter to the members of the council, with any of the officers of the gas company?

Objected to on the part of complainant as immaterial and incompetent, because no interviews, conversations or communications and attempt to settle the pending controversy would be competent or admissible for any purpose.

A. Yes.

Q. Why did you not file this document in the office of the city clerk?

Complainant interposes the same objection last made.

A. There were several reasons. We had agreed that we would not make these attempts at negotiations for settlement public, and perhaps other reasons than that. I wished to communicate directly with the members of the council instead of making a public document of it.

Complainant moves to strike the answer for the same reasons as given in the objections to the question.

4706 Q. And it was to respect that agreement that you did not file this in the office of the clerk and make it public?

Complainant interposes the same objection.

A. At least in part.

Q. And the report you received from Professor Marks, attached to Exhibit 74 and introduced in evidence in this case by the complainant, you may tell the Master whether that letter was requested by you from Professor Marks to enable you to carry on these negotiations with the Gas Company?

Complainant interposes the same objection.

A. Yes, sir; Mr. Marks had already made a verbal report along these lines.

Q. To whom had he made that report?

A. To myself, other members of the council and the members of

the legal department. I wished to have that report in writing, so that I might be justified for anything we might do.

Q. Well, state to the Master what the fact is as to whether it was to be used by you in further negotiation looking to the settlement of the controversy?

Complainant interposes the same objection.

A. Yes, sir; it was to be as a scientific basis for what I had already proffered the Company from my standpoint as a city officer as a basis of settlement.

Q. And it was in no sense a report as a public document?

Complainant interposes same objection, and further it is leading.

A. No, sir.

Mr. BRENNAN: At this time the defendants move to strike and expunge from the record all of the cross examination of this witness with respect to the letter addressed by the witness as Mayor
4707 of the City of Des Moines to the members of the City Council under date of February 27, 1911, together with the letter or report of Professor William D. Marks, attached thereto, for the reason that it now appears from the testimony of the witness that the letter above referred to, together with the report of William D. Marks were used by the witness in connection with negotiations being conducted between himself and officers of Des Moines Gas Company, the complainant in this case, with the understanding and agreement that such negotiations would not be made public and that said letter attached to Exhibit 74 was not in fact filed with the City Council as a public document, nor in the office of the city clerk, and therefore said documents are entirely privileged, and incompetent, irrelevant and immaterial for any purpose in this case.

The MASTER: I think that objection is well taken, because this comes after the ordinance was passed and could not affect any action at the time of the ordinance. In so far as it was to refresh the memory of this witness it would be competent.

Judge CARR: As to his letter to the council, as I have already said, that letter has not been offered in evidence by us, but the Marks letter which is included in the motion to strike is a very material document from our point of view and cannot be objected to on the ground that the counsel states in the motion.

The MASTER: Let me make this suggestion on that proposition: It is an unsworn statement to which Mr. Marks' attention was not called.

Mr. GUERNSEY: I beg you- pardon, he was asked about this
4708 letter on cross examination.

The MASTER: If it was used for that purpose, it might be competent as bearing on his credibility as a witness. That is all it could be under any circumstances. But a letter of that kind at the time of the cross examination should be produced and the witness see it.

Mr. GUERNSEY: He was asked about it and the counsel for the city were asked to produce it at that time.

The MASTER: Yes, I recollect about it. I wanted simply now to have you understand how I viewed it.

Mr. BRENNAN: To the objections I have already dictated into the record we want to add the further objection, for the reason that the matters and things set forth in the letters and communications forming a part of Exhibit 74, related to a time subsequent to the passage of the ordinance in controversy and subsequent to the commencement of this action. And to the end that the record may be made complete with respect to such matter counsel for defendants desire to further interrogate the witness with respect to two additional letters bearing upon the same transaction, and in so doing expressly disavow any intention of violating the agreement entered into between the parties, but only for the purpose of having the record made complete, inasmuch as counsel for complainant have introduced a part of the record relating to said transaction.

The MASTER: So far as the letter of Professor Marks is concerned, the Master now expresses no opinion as to its admissibility as bearing upon the credibility of Mr. Marks as a witness.

Mr. GUERNSEY: The only thing we are concerned in here
4709 is this letter written by Professor Marks. The other letter was merely to refresh the witness' recollection. As I understand this rule of privilege, it protects what the parties disclose to each other for the purpose of bringing about a settlement. The reason for the rule is to encourage these negotiations. It does not appear here in the record and it is not true as a matter of fact that this letter was ever disclosed by Mayor Hanna to the Gas Company in connection with the negotiations at any time, so that it could not possibly come within that rule. He is not testifying and I am sure he will not testify he ever disclosed that letter to the Gas Company at any time. The matter of privilege does not go beyond protecting what he has disclosed in connection with the negotiations in order to further them.

The MASTER: Mr. Hanna's letter would not be competent evidence. It might as against him individually.

Judge CARR: This Marks letter as to that I understand the *the* master has expressed no opinion.

The MASTER: Yes, but on the other matter I have expressed an opinion.

Judge CARR: I want to call your honor's attention to the other matter; it was not offered in evidence at all. It was read over to Mr. Hanna and he was interrogated in regard to it, but it was not offered in evidence.

Mr. BYERS: Exhibit 74 was offered in evidence.

Judge CARR: I beg your pardon, but it was not.

Q. Mr. Mayor, I show you a letter bearing date February 7, 1911, which the reporter has marked Defendant's Exhibit 72, and addressed to Mr. Jansen Haines, manager of the Des Moines Gas Company, Des Moines, Iowa, and I will ask you if that is a true
4710 copy of a letter which you mailed to Mr. Haines at or about the date which the letter bears?

A. Yes, sir; this is a copy of the letter which I addressed to Mr. Haines.

Q. Is that a true and correct carbon copy of the original letter which you mailed to him?

A. Yes, sir, I think so.

Q. I wish you would examine a letter under date of February 14, 1911, addressed to Hon. James R. Hanna, Mayor of the City of Des Moines, Iowa, and marked as Defendants' Exhibit 73 in this case and state if that is a letter which you received from Mr. Jansen Haines, Manager of the Des Moines Gas Company, complainant in this case?

A. Yes, sir; this is the letter which I received in reply.

Q. Do you remember just when it was that you requested of Professor Marks the information which you secured from him in Complainant's Exhibit 74?

A. I had asked for it along about the date Mr. Marks left the city, near the 1st of February, and then I requested it in a letter of about February 11th, I think.

Q. Well now prior to the time that you wrote the letter marked Defendants' Exhibit 72, under date of February 7, 1911, you may tell the Master what the fact is as to whether you had carried on some negotiations with the officers of the Des Moines Gas Company or with their counsel?

Objected to on part of complainant as immaterial and incompetent and incompetent because it relates to a matter of attempted adjustment or compromise in a pending — and is for that reason incompetent.

A. I had conducted negotiations with Mr. Haines person-
4711 ally, and later with Mr. Haines and counsel.

Q. Now I ask you again what purpose you had in securing from Professor Marks the information that you requested of him at that particular time and which was given you as shown by Complainant's Exhibit 74?

Complainant interposes the same objection last made.

A. I had been proceeding upon my own information in the earlier negotiations and wished to have some more scientific confirmation of my own opinion, and Mr. Marks was brought here to make the preliminary survey of the situation and give me and the council the result of such a preliminary investigation, to guide it.

Mr. BRENNAN: Now if the Master, please: There have been identified two letters which form a part of the negotiations described by the Mayor, and in order to make the record more complete with respect to complainant's Exhibit 74, are necessary to be introduced and read in evidence; but we have no desire to open up these negotiations contrary to the agreement between the parties, and will not offer Defendants' Exhibits 72 and 73 if counsel for complainant will agree to strike and expunge from this record the report of William D. Marks given to the Mayor of the City of Des Moines, and the Mayor's report, under the circumstances under which the same was submitted.

Judge CARR: Counsel for complainant will make no such agreement, and for the reasons heretofore fully stated.

Mr. BRENNAN: In view of the fact that counsel for complainant decline to withdraw Exhibit 74, or any part of the same, the defendants not offer and read in evidence Defendants' Exhibit- 72 and 73 for the purpose of furnishing the complete transaction, and which are as follows:

4712 Complainant objects to Exhibits 72 and 73 for the reasons stated in the last objection to the testimony of the witness.

Mr. BRENNAN: We would like to have the record show that the objection is not made on the ground that Exhibit 72 is offered in the form of a copy.

Judge CARR: It may be so understood.

The said Defendants' Exhibits 72 and 73 are respectively as follows:

4713 "DEFENDANTS' EXHIBIT 72." J. P. B.

"CITY OF DES MOINES,
DEPARTMENT OF PUBLIC AFFAIRS.
Feb. 7, 1911.

Mr. Jansen Haines, Manager, Des Moines Gas Company, Des Moines, Iowa.

DEAR SIR: Agreeably with your request for a proposition from me as to the nature of an ordi-ance which I would recommend to the council for passage in order to effect a settlement of the controversy existing between the City and the company with respect to gas rates, I have to say:—

1. I would recommend that the rate be fixed at ninety-two (92¢) for each one thousand cubic feet with a provision that all bills to consumers may be rendered at a price which shall exceed by ten cents (10¢) the price herein specified, and upon all bills so rendered which shall be paid to the company on or before the 15th day of the month following that in which the gas is furnished, a discount shall be allowed of ten cents (10¢) per thousand cubic feet so as to make the net price ninety-two cents (92¢).

2. A uniformity of rates to all consumers, but contracts for lower rates to large consumers, provided, that all such large consumers are placed on the same basis as to price and quantity.

3. The company have the right to charge and collect a minimum payment of fifty cents (50¢) per month on each meter installed, provided that if the gas bill at regular rates exceeds fifty cents (50¢) per month this minimum shall not be collected in addition thereto.

4714 4. The company to furnish gas of eighteen (18) candle power and of a thermal value averaging 600 (600) British thermal units per thousand cubic feet. This average to be computed each month from observations made on not less than twenty (20) separate days of the preceding month. The minimum thermal value permitted at any time to be not less than five hundred fifty (550) British Thermal units.

5. The company to pay two (2) per cent of the gross receipts to the city as a license or occupation tax for gas sold during each year.

6. A provision in the ordinance that the city does not in any manner recognize any franchise or other rights claimed by the company to use the streets, highways, avenues, alleys or public places for the purpose of laying or maintaining mains and pipes in supplying or distributing gas.

7. The rate herein fixed to continue for a period of five (5) years, at the end of which time, the same to be adjusted for the succeeding five (5) years on a basis equitable and just to both the city and the company. Whether this should be upon the basis of the amount of sales of gas or by arbitration, I have not fully determined, but it seems to me that we could work out some satisfactory plan.

I understand your pressure tests are quite satisfactory and the percentage of impurities reasonable, and I have no doubt we can adjust these matters without difficulty.

These suggestions are offered in the hope of effecting a settlement of the gas rate question for which we have been striving in our several conferences, and shall not be used for any other purpose whatsoever, and especially, shall have no connection with the litigation in event that the same are not acted upon, which is in accord-
4715 ance with our agreement.

Kindly let me have a reply not later than Thursday.

Yours very truly,

—— ——, *Mayor.*

"DEFENDANTS' EXHIBIT 73." J. P. B.

Office of Des Moines Gas Company.

Reply to letter of February 27, 1911.
Referring to rate for gas.

DES MOINES, IOWA, *February* 14, 1911.

Hon. James R. Hanna, Mayor, City of Des Moines, Iowa.

DEAR SIR: I beg to acknowledge your letter of the 7th inst. submitting a proposition for a settlement of the controversy existing between the city and the Gas Company in respect to gas rates. I regret that I have been unable to reply to your favor before to-day on account of an illness, which has confined me to the house for the last week.

In my communication to the City Council, addressed to the Superintendent of Streets and Public Improvements, under date of November 22, 1910, I submitted the facts and figures showing that our present rate of $1.00 was not compensatory and that, therefore, any reduction from this rate would not be fair or reasonable.

The more complete knowledge of the property and its value which I have obtained since that time from a detailed inventory, now approaching completion, and the valuation placed upon it by competent engineers, has demonstrated the correctness and fairness of the views which I expressed at that time.

Notwithstanding this fact, I have at all times felt so
4716 strongly the desire of an amicable settlement of the controversy that I very greatly appreciate your request for a conference and the opportunity for negotiations which you presented to me in our various interviews beginning early in January.

Because of this desire for an amicable settlement, I have given to the several concessions proposed by you the fullest consideration, and I am prepared to offer every concession on our part that I believe it is possible for the Company to make.

After fully considering the advantages to the company of the discount for prompt payment of bills, as stated in the latter part of paragraph one of your proposition, the minimum payment, as stated in paragraph three of your proposition, the deductions from our present standard, as stated in paragraph four of your proposition; and the saving to the company of the great cost of protracted litigation, I find they do not justify a reduction in the rate to 92 cents which you suggest in paragraph one of your letter and would, therefore, not be acceptable to the Company.

In my last interview with you on February 4, 1911, in response to your request for a definite proposition as to what I would be willing to recommend to the company, I made the following proposition, which I believe would be an acceptable basis for settlement, provided it is incorporated into an ordinance, satisfactory in terms, and provided it is adopted by the unanimous action of the Council:

1. A rate of 95 cents for five years from January 1, 1911, and 90 cents for the next five years.

2. An average of eighteen (18) candle power.

3. An average thermal value of six hundred (600) British thermal units, from October 1st to April 1st (the average candle power and thermal value to be computed each month from observations
4717 on not less than twenty (20) separate days of the preceding month); the minimum thermal value permitted at any time to be not less than five hundred fifty (550) British thermal units.

4. $1.00 minimum monthly bill for each meter.

5. All bills to consumers may be rendered at a price which may exceed by ten cents the price specified in No. 1 hereof, and upon all bills so rendered which shall be paid to the Company on or before the 15th day of the month following that in which the gas is consumed, a discount shall be allowed of 10 cents per thousand (1,000) cubic feet, so as to make the net price as shown in No. 1.

6. The Company to pay to the City two per cent (2%) of its gross receipts from the sale of gas, as has been done under the contract which expired January 1, 1911.

In giving to your proposition the consideration hereinbefore stated, and to do everything in my power to get together, I have concluded to accede to your proposition with respect to the minimum payment as expressed in paragraph 3 of your communication.

I have given to this subject the most painstaking consideration and am fully convinced that the concession in rate as contained in my proposition is all that it is possible for the Company to stand, and maintain its present standard of efficiency and service. It is the best, therefore, that I am able to recommend.

In proposing to recommend a ninety cent rate at the expiration of five years, I am showing my confidence in the growth and development of our city to an extent which will make it possible for the Company to then operate under a 90 cent rate.

Very respectfully yours,

JANSEN HAINES, *Manager*"

J. H.—E. D."

4718 Recross-examination by Judge CARR:

Q. Mayor Hanna, you have stated that the letter which you wrote to the members of the council and in which there was enclosed the letter and report from Professor Marks, Exhibit 74, was not filed in the clerk's office for the reason that there was some agreement to keep negotiations out of the newspapers, not to make them public, is that correct?

A. That was a reason at least, yes sir.

Q. Can you explain why it is then, Mr. Hanna, that in the newspaper articles to which your attention has already been called, namely, an article in the Register & Leader, published under date of February 21, 1911, and an article in the Tribune under the same date, full publicity of the Marks letter to you is given in large quotations or extensive quotations made from it, and the information given out that you had received such a letter, if you were to keep that under cover in compliance with some agreement made—I ask you if you can give any reason why such extensive publication in the public press was given of the letter?

A. I don't remember just what may be in that.

Q. You may examine and see. (Produces clippin-s.)

A. I don't believe there is any reference there to the negotiations for a compromise.

Q. I didn't ask you that, just note the question.

A. The question is rather complex. But we had engaged Mr. Marks to come here and make a report of the gas situation, and some justification for our ordinance, and I gave such publicity perhaps—I don't remember the incident—I gave such publicity to his report as would sustain us in having passed our ordinance
4719 before the first of January.

Q. Then you gave to the reporter the information which is found in these publications, did you not?

A. I don't recall; I suppose I did.

Q. And you showed them necessarily the Marks letter or report from which they have published extracts?

A. I don't suppose I did. I may have read certain parts to them or had the secretary do so, or sometimes one gives a reporter his confidence asking him not to publish certain things.

Q. But it is apparent from the reading of the article that the reporter did have before him the communication or some part of it, inasmuch as it appears he has accurately copied quite extensively from the letter?

Objected to on part of defendants as assuming that he had the original before him at the time of writing the article.

A. I have compared this closely to see and suspect I either read certain parts to him or may have shown him certain parts.

Q. Now you had in mind, as you say, an agreement with Mr. Haines that any talk you might have, and negotiations you might have, that this subject should not be made public, unless something come of it?

A. Yes, sir.

Q. Now, in giving out the information with regard to this Marks letter, you did not consider that you was violating your agreement with Mr. Haines at all?

A. Certainly not.

Q. Was it because you did not consider the communication from Marks as being involved in that agreement you had made with Mr. Haines, or as being in any wise connected with your nego-
4720 tiations with Mr. Haines?

A. Those parts of it at any rate, yes sir. I think I should not say just that. Certainly they did furnish me a basis for these negotiations. I did not think by giving them out I was violating or making public the fact they were the basis of the negotiations.

Q. That is because the Marks letter was not a matter that was involved directly in your negotiations with Mr. Haines; that is to say, it was not a matter you had communicated to Mr. Haines or was involved in any way with your confidential talk with Mr. Haines?

A. The letter was not, no; the subject matter of it was.

The complainant offers and reads in evidence the two newspaper clippings referred to, which are marked respectively Complainant's Exhibit 75 and 76.

The defendants interpose the same objections as were made to the offers of the report of William D. Marks and the letter of the Mayor to the members of the council known as Complainant's Exhibit 74, and now renew their offer and willingness to withdraw Exhibits 72 and 73 on the condition that the Complainant will expunge and strike from the record all testimony growing out of and connected in any manner with the negotiations between the parties looking for a settlement of the controversy.

The said Complainant's Exhibits 75 and 76 respectively read as follows:

4721 COMPLAINANT'S EXHIBIT 75.

J. P. B.

"Expert Thinks Offer Fair One.

Prof. William D. Marks Says 90 Cents Is Fair Rate for Gas Here.

Made Investigation.

Four Cities in the State of Massachusetts Where the Same Conditions Prevail Are Cited.

'In fixing 90 cents per thousand for Des Moines gas you appear to me to have dealt liberally with the gas company, not following the general downward trend of gas prices in an extreme or inconsiderate manner.'

The foregoing is an extract from a letter from Prof. William D. Marks of New York City, received by Mayor James R. Hanna yesterday afternoon. Prof. Marks who is recognized as one of the leading gas experts in the United States, came to Des Moines a short time ago to assist Mayor Hanna in bringing to an end the controversy between the city and the gas company over the 90 cent gas ordinance. Mayor Hanna submitted his proposition to the company and it was turned down. From the present outlook the difficulty will have to be settled by the courts.

Professor Marks further says in his letter: 'I have not had an opportunity to appraise the Des Moines Gas works or to audit its books; whatever may be my opinion as to the proper price of eighteen candle power gas is based only on general knowledge of similar cases and therefore is necessarily not specific or based on exact knowledge of your locality.

'Four or five cities in Massachusetts averaging about the same population, 100,000, supplied by your gas company have voluntarily fixed an average price of about 91 cents actual receipts per thousand.

Lowell, Mass., has announced its intention of fixing the price
4722 of sixteen candle power gas at 75 cents. Minneapolis has gas at 85 cents to the citizens and a special rate of 65 cents for city use.'

Professor Marks states, in his opinion, the actual cost of gas in Des Moines should be between 82 and 89½ cents, including profit or dividends on liberal investment at 7½ per cent."

COMPLAINANT'S EXHIBIT 76.

J. P. B.

"Gas Experts Cost Money. Prof. Marks Sends Bill for $50 per Day While in the City.

Prof. William D. Marks of New York City, retained by the City as its advisor in the controversy over the 90 cent gas ordinance, has sent his report to Mayor James R. Hanna. Accompanying the report was a bill for $471.46. Of this amount $350 is for professional services, the remaining $121.46 being for traveling expenses. Prof. Marks was in Des Moines seven days, charging for his services at the rate of $50 per day.

"I have not had an opportunity to appraise the Des Moines gas works or to audit its books," states Prof. Marks in his report. "Whatever may be my opinion as to the proper price of eighteen candle power gas is based only on general knowledge of similar cases and therefore is necessarily not specific or based on exact knowledge of your locality."

Prof. Marks states he believes Mayor Hanna has dealt liberally with the gas company in fixing the rate at 90 cents and by not following the general downward trend of gas prices in an extreme or inconsiderate manner."

4723 Redirect examination by Mr. BRENNAN:

Q. I show you Complainant's Exhibit 74 and I will ask you if you can advise the Master how that communication turned up in the hands of the complainant, the Des Moines Gas Company?

Objected to on part of complainant as immaterial.

A. No, sir; I don't know.

Q. Did you authorize anyone to deliver to them a copy of it?

Objected to on part of complainant as immaterial.

A. No, sir.

Q. You do not know from what source the complainant company or its officers or agents secured the document marked Complainant's Exhibit 74?

Objected to on part of complainant as immaterial.

A. No, sir; I don't know.

Excused.

E. N. SHERMAN, being duly sworn on part of defendants, examined in chief by Hon. H. W. Byers, testified:

Q. Mr. Sherman, you are one of the employés of the Des Moines Gas Company?

A. Yes, sir.

Q. A book keeper?

A. Chief clerk.

4724 Q. You are acquainted with the books of the Des Moines Gas Company and the manner in which they are kept?

A. Yes, sir.

Q. On page 74 of the inventory, Exhibit 15, under generator house, building No. 7, the building is described as having been erected in 1902, and extended in an easterly direction in 1909. Now I wish you would trace out for me and the Master just where in the books of the Des Moines Gas Company the entry showing the payment for the construction of that building can be found; just state in a general way how the account is made up; I have been unable to find this in any way from any memorandum we have?

A. Do you want all the items?

Q. I don't want all the items, if you can tell us in a general way, and what finally went to Mr. Brereton.

A. I can tell you the amount that want to Mr. Brereton; I haven't traced out anything else.

Q. He was the contractor?

A. Yes, sir; he was the contractor.

Q. Well, then that part of it?

A. We paid him on account of the generator house $4,000.00.

Q. Now that does not appear anywhere in the books in just that form, does it?

A. No, sir.

Q. So that to find that, what that money was paid for, it would be necessary to go through all the vouchers in detail?

A. Yes, sir.

Q. But it is carried in the general totals in the extension and improvement account?

A. Yes, sir.

4725 Q. So that a report made up from the books of the Des Moines Gas Company would include the cost of the building, but it would not appear as a separate item under buildings?

A. No, sir; not in any one place.

Q. Now you did find, however, that item of $4,000 appears on the books under several different heads, but is finally all charged into extensions and improvements?

A. Yes, sir.

Q. Now there is another one I want to inquire about in the same way and that is the meter house. Mr. Brereton built both of these as I understand it?

A. I think so.

Q. On page 116 of the inventory, Exhibit 15, under meter house building No. 14, building erected in the year 1909, under contract as I remembered it, by Mr. Brereton, can you tell us just how that item was carried into the books of the Des Moines Gas Company?

A. I can't show it in one or two items.

Q. It was carried in in the same way that the other was?

A. Yes.

Q. How much was paid Mr. Brereton?

A. $1,385.

Q. That $1,385 covered the cost of the building under Mr. Brereton's contract?

A. As far as I can tell you that is all that was paid him. I don't know whether he furnished all the material or we; that is all we paid him.

Q. Well, he did furnish everything?

A. I couldn't tell you.

Q. You don't know about that?

A. I don't know.

4726 Q. Now that building or extension won't show on the books anywhere as a separate item, so much for meter house; if they were to look through the book to find the building itself, they wouldn't find any such item?

A. They are all designated on the original books but not on the ledger.

Q. But finally the cost of such construction all goes into the account that you do carry, called extensions and improvements?

A. Station meter account, extension and improvement account.

Q. Is that true of apparatus as well as buildings, that it is finally just carried into the account of extensions and improvements and not carried separately as to each item?

A. I would have to look that up and see.

Q. But you know that is true as to the buildings?

A. Yes, sir.

Q. Now there is a pump house, for instance on page 112, the building was remodeled in 1909 and built in 1907, building No. 13. Now how can we find out from the books if we want to refer to the books that have been introduced here in evidence, just what that building cost?

A. You would have to make an analysis of the account; you can't do it in any other way.

Q. We would have to run clear back to the vouchers?

A. There are several sub-accounts.

Q. But they all appear somewhere in the ledger and journal?

A. Oh, yes.

Q. It would either be carried into account payable or extensions and improvements, or repairs, would it?

A. Yes, sir; but I couldn't say which one without going into it.

4727 Q. I do not ask you to do that. Our witnesses had some difficulty to trace out these items and I wanted to see if I could find out why it was they could not be found in the books. Now building No. 16, page 126 of the inventory, built in 1906, the boiler house, what do you have to say as to whether that could be found in the same way as the Brereton buildings?

A. I would be unable to answer anything definitely without looking it up.

Q. Just turn to the extension and improvement account there in 1906 in the ledger and see what it is?

A. I haven't the right ledger here.

Q. We will have to look that up anyway and we will pass that for the present.

Excused.

JANSEN HAINES, re-called for further direct examination, examined by Mr. Byers, testified:

Q. In the inventory, Mr. Haines, there is a set of five benches of sixes, coal gas, 300,000 feet capacity, was there more than one of those sets?

A. Your question is a little confusing.

Q. Did you have more than one such set?

A. There were five benches of six retorts each in a set; that is the term we use—14 inch by 23 inch by 9 feet, capacity 300,000 cubic feet daily installed in 1900.

Q. Is that correct, that date, installed in 1900?

A. I can't answer that, because they were installed before I came here.

4728 Q. It is the same set that has always been there?

A. This inventory refers to the same set that is there now?

Q. It is the same that was there before you came?

A. With the exception, when I came here there were six benches of sixes; one was removed.

Q. That was the same set that was there in 1895?

A. They were probably rebuilt during that period, but not during my time here.

Q. How long has it been since the company has been making coal gas?

A. I think I testified to that, the benches were shut down two months after I came here in 1903 and have not been operated since.

Q. Were they new at that time?

A. Oh, no.

Q. They were the ones that had been there a long time?

A. They had been there prior to my coming here. But the coal gas benches have to be renewed every two years.

The MASTER: They are the coal gas benches, etc., referred to by the engineers as obsolete?

Mr. BYERS: What I want to get at, we have figured in a set of these in the inventory of 1894 and 1895 and it is our notion this is the same thing.

A. I couldn't say as to that. I can't say of my own knowledge, but I should say in that period they must have been rebuilt. I do not think those coal benches would last that long.

Q. Of course the books would show if they were rebuilt?

A. Yes.

Q. Where would the charge appear in repairs or construction?

A. I would have to look that up.

Q. We are in the situation where we think that is the same

4729 set and they were not rebuilt and whatever has been done was charged into repairs, and we are going to take that position. I wish you would look it up so we can have it straightened out. Now about these buildings; how long would it take for your book keeper to make for us a statement showing the amount of money paid for the construction of these buildings that have been put up down there since you came here, in 1904? Our men have been unable to trace out the buildings themselves on account of the manner in which the

books were kept. They get the items, but they do not show whether it was buildings or what it was. For instance, take your station meter, instead of calling it meter house, it is run together, the cost of the meter and the cost of the construction of the building, and we have been unable to separate them.

A. I don't know that he could make an absolute separation of them.

Q. Just this morning I called Mr. Sherman's and Curran's attention to this matter, one was a meter house and one a generator house, built by Mr. Brereton. Now the books show $4,000 was paid Mr. Brereton, covering the entire cost of the building and material did it not?

A. I couldn't answer off-hand without going to the books. Of course I didn't make those charges.

Q. I have asked you a dozen times, I guess, that was exactly the amount of his contract, wasn't it?

A. It was paid in accordance with the amount that he agreed to.

Q. Now the other item does not quite agree with his contract price; that is the extension of the meter house. The boys gave me that as $1,385 this morning. My recollection is the contract was $1,527.00.

A. I don't recall, General.

Q. Anyhow he furnished the material, didn't he?

4730 A. He furnished the material.

Q. And the labor?

A. Of course that may not include the cost of the house; there are things charged to the house that may not be included in his work.

Q. What would things likely be?

A. I would prefer to look that up.

Q. We are going to stand on the two items of $4,000 and $1,385. If you want to make any correction, we would be glad to have you do it, but make it before the case is argued, because we expect to use these two sums.

If you will make a memorandum now I will give you what I would like to have your men figure out for us, and let the memoranda show just how we can find it: First, the oil tank No. 21. It is stated it was erected in 1902, 100,000 gallon capacity, and it is found on page 143 of the inventory.

And these five benches of sixes, 300,000 feet capacity. I would like to have a statement as to what the book cost of these were, and I want the books to show whether they were actually set and whether the item was charged to construction or repairs.

Now the building designated in the inventory as Complainant's Exhibit 15, building No. 6-*a*-*b* on page 59 of the inventory. I want the same thing as to that, that the boys gave me in respect to the meter house and generator house, the book cost of the building and additions that have been made to it as covered by the inventory there, and how we can trace it, if at all.

Now the boiler house extension on page 68 of the inventory and the building No. 8-*a* coal shed, on page 84 of the inventory. Building No. 13, on page 112, the oil pump house, built in 1907,

and remodeled in 1909. I want the book cost and the manner
4731 in which it is charged in the books, and the remodeling in 1909, what that cost, and where it is charged.

Building No. 15, page 121 of the inventory; in three divisions A, B and C; I would like to have the book cost of that, the account to which it is charged and the additions and the accounts to which they are charged.

Now Building No. 16, page 126 of the inventory; I want the same information about it as I have asked for the others.

Excused.

At this time an adjournment was taken until 1:30 P. M.

4732 1:30 P. M., THURSDAY, *October* 5, 1911.

EDWARD W. BEMIS, being recalled on the part of the defendants, and examined in chief by Hon. H. W. Byers, testified as follows:

Q. *Where* you were on the *state* before Mr. Guernsey asked you to check up a certain statement that he furnished you and also to check up one of your own. Have you complied with his request?

A. Yes, sir.

Q. And have you the tabulation with you that shows the checking and corrections if any?

A. Yes, sir.

Q. In both papers?

A. Yes.

Q. You may take the one Mr. Guernsey furnished you first and state as briefly as you can just what errors you find in it?

A. First, there were some minor errors that I do not consider important in the matter of sales and miles of main which were due merely to the fact that when it was over one half of a point in a decimal in some cases they took the next higher and in other cases did not, to be consistent I think they should. That did not amount to much. Then the number of meters for Cambridge, a slight error, 26,590 given and the report gives 26,560, that is a difference of thirty meters, that is not important. The next place the second line of criticism relates to current assets. I have written here my criticism of that, after I had written it it occurred to me that perhaps the criticism should be directed to the use of the word current assets, that I thought first the trouble was in another direction. If they had said other assets my criticism would still
4733 hold, but no- so fully. For example in Cambridge they include in current assets certain investments as I believe outside of the gas business of $30,631.54 and for new work in process of construction $4,776.88. The latter is more in the nature of permanent than current assets. If they are going to use the word other assets, that new construction should be in. But I say the outside investment should not be in in either case. With regard to Lawrence, the office building including $50,118.10 which would not ordinarily be called current assets, if they mean other assets it would be. There were small outside investments, don't amount to

anything, $98.10. Then as to Lawrence I show how I reached my figures of current assets which I will not need to go through.

Q. This memoranda which you produce here will furnish to Mr. Guernsey a complete answer to his suggestions as you check it up.

A. On page- 5 and 6 I would like to call attention to a point or two in regard to meters and services. Complainant's exhibit 65 was made up on the theory of unit cost of meters, services, mains and the Massachusetts assets and Marks' figures that he used were his figures of unit costs new. In applying these unit costs to Des Moines he depreciated the meters one third and services one half, mains not at all. If a similar depreciation were made with regard to the application to these Massachusetts plants it would change Exhibit 65 $1,610,043.00. The- as to real estate they left the real estate as it was in the Massachusetts assets. These assets of real etate averaged $548,000 a plant in Massachusetts. If they were applied to the Des Moines situation I think we should take either $100,000 or $200,000 as the average per plant. Then I
4734 have tabulated on what the result would be with these changes and it reduces the total by over $5,000,000. After these reductions are made from the total assets of $17,000,000 given in Exhibit 65 there remains only twelve million odd dollars of total assets or only $3.08 per thousand feet of sales instead of $4.46 as given in the company's exhibit. Even if for comparative purposes the land in each of the Massachusetts — be accepted at $200,000 claimed by the company in Des Moines the average would only be increased by 17 cents making $3.25. If all new work may have been classed as current assets and have been included, the difference would be only $462,761.90 or another 12 cents per thousand feet making $3.37 as compared with $4.46. Mr. Guernsey asked me to look over his figures and I would make these changes in any criticism of it.

Q. The paper you have handed me which the reporter has marked defendant's exhibit No. 74 contains your analysis and correction of the figures and tabulations that Mr. Guernsey asked you to check up on complainant's exhibit 65.

A. Yes.

Q. Now your own tabulation that he asked you to take up. You were asked to check up the tabulation on page 92 of this exhibit 43. Have you done that?

A. Yes.

Q. Will you state what corrections and changes if any you have made in response to that request?

A. These are the corrected figures. Some of the errors found were favorable to the company and some to the city, but one of the two points involved in the whole page to-wit, profits per thousanl feet of sales of Massachusetts companies as now found are slightly more favorable to the city than the original figures
4735 which were compiled in great haste merely for illustration. The other point the margin between the holder cost and the price was found to be a little more favorable to the company. The corrected table I give here. The two points that are involved are

profit from operation—this is for five years' grouping seven companies for the whole five years—profit over operation in Massachusetts being 27.1 cents and excess price above manufacturing cost being 53.79.

Q. The corrected page has been marked by the reporter defendant's Exhibit No. 75. In your cross examination Mr. Guernsey in referring to the overhead charges allowed by the Wisconsin Commission asked you if you did not know that the commission had chan*h*ed their allowance from 12 to 18 per cent. I wish you would state what the fact is about that no*q* if you know and have ascertained.

Objected to as secondary and not the best evidence, incompetent on that account.

A. I had at the time of my testimony in my room at the hotel a letter which I referred to in answering Mr. Guernsey and I now have it with me. It is a letter from Mr. Edwin Gruhl present acting statistician for the Commission, the position previously held by Mr. Hagenaugh as I understand it.

Q. What was the date of it?

A. August 18th 1911.

Q. What information, if any, did you get from that with respect to the matter that Mr. Guernsey asked you if you did not know about?

Same objection.

A. The statement is a sentence which I will read from the
4736 letter: "As regards overhead changes the commission originally allowed ten per cent for overhead charges, but within the last year and a half has increased this to 12 per cent especially in cases where the total appraisal item was unusually large. It has never exceeded 12 per cent."

Q. And what is the date of the letter?

Same objection.

A. August 16, 1911.

Q. You were also interrogated at considerable length about your allowance of .54 for claims and damages. Have you anything further to say about that?

A. Yes, sir. The damages and claims including legal expenses as reported by the Brooklyn Union——

Objected to as secondary, not the best evidence and incompetent.

A. (continued). — for the year 1908 as stated in the last published report of the public service commission of the first district which is Greater New York——

Q. Do you know what year that publication was?

A. It came out this spring, but it is dated 1909, and covers the statistics of 1908 for the consolidated gas .16 of a cent and for Brooklyn Union .10 of a cent. I have also in the entire state of

Wisconsin for the year ending June 30, 1909, shown in their last report of statistics.

Q. Published when?

A. That was published early this year.

Q. And what is the allowance?

A. It shows that the entire expenditure of all of the companies of Wisconsin for injuries and damages, insurance and law expense was .95 of a cent per thousand feet of sales. Comparing
4737 that with the Des Moines record where in my exhibit I allowed .54 of a cent for claims and took the record as shown for an average of five years, for law expense .12 of a cent and insurance part of which was for liability although I don't know how if it were all, of course it is not all for liability making 1.1 and without any insurance it was .66 of a cent for claims legal and some portion of the insurance might be added making it very much like the .95 of a cent in Wisconsin for all of the companies of the state.

Q. What do you have to say now with respect to your allowance?

Mr. GUERNSEY: Wait a minute before we get to that, I want to move to strike out all of the testimony of the witness as to the conclusions which he claims to have reached and matters which he claims to have taken from the reports of the New York Commission and reports of the Wisconsin Commission as secondardy and incompetent.

A. I have *went* over the tabulation. The only companies I was able to reach directly were in certified copies which I had for the last year ending June 30, 1910, for Boston, Lawrence, Lowell, Lynn, and Fall River and they show that the entire expense of these companies for liability insurance, claims and legal espense was .58 of a cent per thousand feet of sales. My report gave .54 of a cent for claims on the experience of the last five years for legal expenses .12 making .66 of a cent without any reference to how much might from the insurance be put into that for the liability insurance.

Complainant -oves to strike the ans-er of the witness for the reasons urged against the last preceding answer, also as argumentative.

Q. What do you have to say now Professor, resting your
4738 judgment upon the information that you had at the time that you prepared your report and upon your experience in cases of this kind and the information that you ha*fe* since obtained in the way that you have described you have obtained it, as to the reasonableness of the allo-ance that you made in your report for claims and damages as applied to the Des Moines Gas Company?

Objected to because the factors which the witness is asked to weigh are not the proper factors for the basis of an expert opinion which must be based upon experience, the question amounting to simply asking the witness to draw a conclusion from such partial information as he may have picked up about other companies and not asking him to state any expert opinion or any matter of fact.

A. All the information I have gathered since confirms the position I took in my report.

Q. I don't want it that way, I just want a plain answer as to the reasonableness of the allowance you made resting your judgment now upon your experience and upon the information that you have since gathered and in the way you gathered it.

Same objections.

A. I believe my figures were reasonable.

Q. You were asked about uncollectible bills. Anything further about that you *sace* to say?

A. Yes.

Q. Will you tell us.

A. At the time I testified I said I had at hand only data of the consolidated gas for 1905. I have since secured the same companies report for 1908 and also the Brooklyn Union for 1908. Those two companies have no penalty.

4739 Complainant objects to any testimony as to the contents of these reports as not matter of expert opinion as secondary and hearsay and further as not matter which could afford the basis of an expert opinion and could only be the basis of argument.

Q. Have you those reports here in Des Moines?

A. Yes.

Q. Well you may state what you have to say if anything now with respect to the allowance, if any, for uncollectible bills?

Same objection.

A. The allowance was reasonable.

Q. Now distribution and general expense and operations you were asked about all of these things. Have you made any further investigation with respect to the matter about which you testified in chief and on cross examination on these subjects?

A. Yes, sir.

Q. And have you reduced your conclusions to writing and tabulation and computation?

A. Yes, sir.

Q. I *eish* you would let me have whatever you have. Is the tabulation the reporter has now marked defendant's exhibit No. 76 the matter you have just referred to?

A. Yes, sir.

Q. Is there anything about Exhibit No. 76 that is not self explanatory?

A. I think not. The important point in the first page relates to the margin between manufacturing leakage and taxes on the one hand and prices on the other showing how much greater it is here than in the Massachusetts companies, but I have excluded as not comparable the manufacturing leakage and taxes, they hap-
4740 pen to be nearly a-ike, but it would not make any difference whether they were or not as the point of comparison relates to expenses and operations not directly connected with candle power the price of coal or oil or residuals. And the next page covers a com-

parison betseen the only purely water gas plant of the seven large companies of Massachusetts and the Des Moines company.

Q. That is confined to that single plant at Fall River.

A. Yes, and this relates to manufacturing expense. There again the important point is the expense aside from coal, oil and residuals which of course are liable to vary with local conditions.

Mr. BEYERS: Defendants at this time offer- and read- in evidence defendant's exhibits 74, 75, and 76.

Mr. GUERNSEY: Complainant objects to the portions of Exhibits 74 which do not relate to checking complainant's exhibit 65, but are arguments against the basis adopted in that exhibit as argumentative and incompetent on that account. As to Exhibit 75 we will interpose only the objections that were made to the report one page of which this exhibit purports to correct. The complainant objects to exhibit 76 as clearly incompetent, because merely a matter of argument, predicated upon a comparison of certain alleged conditions in Massachusetts with alleged conditions in Des Moines.

Cross-examination by N. T. GUERNSEY, Esq.:

Q. Just a word about damages and claims. Your .54 of a cent, you added to that .12 of a cent on account of legal expenses?

A. Yes.

Q. You assumed then that that legal expense was entirely on account of claims?

4741 A. No.

Q. Did you investigate to see?

A. No. I did not make the assumption either.

Q. You don't know then what proportion of that legal expense was on account of claims, on account of loss and damage and personal injury claims or things like that?

Q. So you don't know what proportion of it if any should be added to your .54 of a cent for the purpose of making comparisons which you have just been making?

A. No. In all these comparisons that is in one set of comparisons, not all, I added legal to the claims both in Des Moines and the other companies whatever the legal was.

Q. I don't want to ask you anything about these other companies. You also referred to insurance in the Des Moines company you said as to that part of it was doub-less for liability insurance.

A. Yes, I didn't say certain, positively.

Q. Have you investigated that matter at all?

A. No.

Q. So that you just assumed that for the benefit of your argument.

A. I assumed that it might be as a little of it was in the other companies.

Q. But you have absolutely no information on that subject?

A. No.

Q. Just assumed that for the benefit of your argument?

A. It didn't benefit my argument to assume it if I treated the other companies on the same basis.

Q. Now did your allowance for uncollectible bills compare with the average amount which the losses show the company has incurred on that account by its actual experience?

4742 A. In Des Moines?

Q. Yes.

A. I took .64 of a cent for the last five years experience in my report and used that.

Q. So that what you testify to now is that an allowance predicated upon a condition where there was a penalty if there was not prompt payment is a fair allowance where there is no such penalty imposed. In other words that that will not affect that question, that is the result of your testimony isn't it?

A. Well put in just that way to answer yes or no would not be quite fair to me.

Q. All right. Now come to your Exhibit 74, you were asked were you not as complainant's Exhibit 65 to check this and see whether it was accurate?

A. Yes, sir.

Q. And the inaccuracy you found were some differences in sales and miles of mains due to disregarded fractions?

A. I call those minor errors.

Q. I didn't ask you that. I said you found some errors of that kind?

A. Yes.

Q. Then you found an error of thirty meters at Cambridge?

A. Yes.

Q. And you found what would be a mistake if you cha-ged the obvious definition of current assets that was taken in making up Exhibit 65?

A. Some of my corrections——

Q. Now, just limit yourself to the question.

A. I can't answer it directly.

Q. All right just say so.

A. Yes or no will not answer the question.

4743 Q. I didn't criticise you for saying you can't answer, that that suits me entirely. Now by looking at the reports in connection with complainant's exhibit 65 it was perfectly obvious was it not what the complainant had included in Exhibit 65 in using current assets by checking out the figures?

A. I concluded so after I had tabulated the results.

Q. It was entirely obvious what the complainant had included?

A. What they must have included, yes.

Q. And taking current assets as meaning what the complainant obviously had intended to include, you found that they were accurately concluded here?

A. I can't say that I checked them all up, I found such an obvious error in the use even of the word other assets, that I did not check Lawrence complete to see whether I could by any way reach your figures or not.

Complainant moves to strike the answer as not responsive.

Q. Now see if you can't answer my question. Taking current assets in the sense in which the complainant had obviously used it, in comparing this exhibit 65, so far as your checking went you found that Exhibit 65 was correct except th-se items did you not?

A. No, I can't answer that yes or no directly.

Q. You can't say?

A. I can explain what I mean.

Q. You can't say that taking these current assets in the sense in which you have said it was obviously used here——

A. No, you misunderstood when I consented to that.

Q. Didn't you say a few moments ago taking this exhibit 65 with the report it was entirely clear that it was intended to include what it did include, that they had included in it?

A. No.

4744 Q. Didn't you as a matter of fact check up the figures to see whether that was a corect construction to put on current assets here?

A. Current assets I first thought meant what is ordinarily meant by current assets. Then I thought they meant and still thought today that they meant other gas assets. If you are going to use all other assets whether gas or not, if that is what you mean, then so far as I went it checked, but I didn't carry it through with checking on that basis.

Q. I didn't ask you that. I want you to state now and answer the question please whether when you came to compare these figures here at Cambdirge for instance which is first and you found the total there of $2,382,171.45 made up of four items which appear in the report and then find the item current assets and then the total finally as given in the report, do you mean to tell us that you did not understand that the words, current assets were used to designate assets than those that were designated in the first five items there?

A. Yes, and I thinght that was a mistake.

Q. You didn't understand it was so used?

A. I did after awhile. I didn't when I made out my report and I don't yet believe you did the think correctly on your theory.

Q. I didn't ask you whether we did it correctly or not. Now you find do you not if you look at the report for 1910 that the total assets given for Cambridge are $2,267,036.07 as they appear in complainant's exhibit 65.

A. Yes.

Q. You found the first five items which are items in this Exhibit 65 are the same as the first five items which are itemized in this report?

4745 A. Yes, if I understand your question.

Q. You found that the amount here given as current assets is the difference between the sum of these five items and the total as given in the report didn't you?

A. Yes.

Q. Now did you not after you had found that understand it was intended to include the difference between these five items and the aggregate?

A. I did except regarding Lawrence and Lynn companies where electricity was mixed in with it. At least Lawrence where I checked it out I didn't reach your figures at all.

Q. Of course you could not tell whether you reached our figures or not at Lawrence unless you knew what we were driving at could you?

Q. Well I have to assume you mean other gas assets when you say other assets.

Mr. GUERNSEY: I move to strike the answer as not responsive and would like to have the question read to the witness.

Q. (Question read).

A. No, all I could judge is what you said or wrote.

Q. Will you turn to page 60 of your report. Now I will read you from complainant's exhibit 65 the total amount of the assets which you say you understood were gas assets and I wish you would check it with the amount which you give on page 60 of your report as the amount of gas assets of Lawrence as shown by the Massachusetts report for 1910 and see whether it agrees as the amount given as total assets at Lawrence, $2,032,593. Does that check with what you give at page 60 of your report?

A. Yes.

Q. As its gas assets. Now did that include a large amount
4746 of electric assets?

A. I don't remember now.

Q. Didn't you just say a few moments ago that the error that was made in Lawrence was including a large amount of electric assets?

A. You will find that referred to in here.

Q. Didn't you state a few moments ago that the error that was made in complainant's exhibit 65 as to Lawrence, the serious error was we had included a lot of electric assets in addition to the gas assets?

A. I thought you had.

Q. Didn't you say so a few moments ago?

A. Yes, the record shows I suppose I did.

Q. Do you still say you are right about that?

A. I can't tell without I go over your figures and check them up.

Q. Haven't you any faith in your own figures, page 60 in your report?

A. That was a total of everything that they gave as assets if I remember right.

Q. Did you on page 60 put in as assets for Lawrence in its gas business assets which it was using in its electric light business?

A. I don't recall, I know I put in permanent investments, it don't follow either that is all I add they were not all gas assets, I discovered that.

Q. Do you still say we were wrong in this Exhibit 65 in including in our assets at Lawrence assets that did not pertain to the gas business?

A. You were wrong if you differed from my figures on that but I don't know just what your figures show.

4747 Q. I would like to have a definite answer.

A. I can't answer it without computation based on that basis.

Q. Turn to Lawrence and let's see.

A. The figures are all copied on pages 2 and 3 of my report.

Q. I am working on Exhibit 65. Turn to Lawrence. My first item Lawrence here is real estate $209,209.71. Please state whether you find that in the report of the Lawrence Gas Company for 1910 the Massachusetts reports with the word "gas" after it in parenthesis?

A. Yes.

Q. So we are correct so far are we?

A. Why yes.

Q. Now let's take the next item. The next item on complainant's exhibit 65 is $308,367.86, machinery and manufacturing appliances. I wish you would check that with the report you have in your hand and tell us whether that checks with the item there and whether the word gas is after that?

A. That is right.

Q. We are right so far. Mains and services $621,416.21.

A. Yes.

Q. Does that check?

A. Yes.

Q. That is gas is it?

A. Yes.

Q. The next item at Lawrence $144,087.96. Does that check, that is meters, does that check with the report?

A. As here, I have not your report before me.

Q. You have the Massachusetts report?

A. Yes.

Q. That is what I want to check with.

4748 A. Yes.

Q. So as to those four items that there are there we check with the report and we are correct?

A. Oh yes.

Q. How did you get your total of $2,032,503 as the total amount of invesment in gas in Lawrence?

A. I don't remember now. You will find how I got it in this report from pages two and four.

Q. You don't get it at pages two and four do you on Exhibit 74, you get it page 60 of exhibit 43 don't you?

A. By using my figures pages two and four this exhibit you will get my computation here gas assets.

Q. That don't answer my question. Let me see if I can't help you a little. I notice here an item of $63,967.70 as cash on hand. Where does that appear in your page 2 as to the Lawrence Company?

A. It appears in connection with the tabulation on page 4. You see I took certain assets I could recognize as gas assets and others I could recognize as electric, found what proportion one was to the other and applied that on page 4 to the other assets which included the cash on hand and notes receivable, insurance office furniture, sundry accounts due the company.

Q. The result is that by just as much as your exhibit 74 disagrees with Exhibit 65 it disagrees with your figures on page 60 of Exhibit 43 does it not?

A. I don't know.

Q. Isn't that an inevitable inference from the fact that we have the same total on complainant's' exhibit 65 $2,032,593 for Lawrence investment as you have on page 60 of Exhibit 43 for the same thing?

A. Can I look at your Exhibit a minute?

4749 Q. Certainly.

A. There is a difference between the way I work this with this complete analysis and that of about $30,000 in a little over two million. I mean in Exhibit 74 giving the company at Lawrence about $30,000 more gas assets than it was entitled to.

Q. (Question read.)

A. If I understand the question I would say yes.

Q. What is the total amount of gas assets at Lawrence which you give on defendant's exhibit 74 and which you say varies only $30,00- from your figures given at page 60 on your Exhibit 43, and which you say varies with our figures about $500,000?

A. Well I was using current assets in a sense you used the term, that I thought you used it.

Q. Please answer my question, what is the total amount of gas assets at Lawrence shown on your Exhibit 74 which you said a few moments ago varied but $30,000 from the amount of these shown on page 60 of Exhibit 43.

A. $2,003,861.11.

Q. That is the amount of gas assets shown at Lawrence by your exhibit 74 is it?

A. Yes.

Q. Where does that appear?

A. On page 2 at the bottom of the page the $1,893,945.44 of recognizable gas assets, adding to that the apportioned assets on page 4 of $109,916.67 that makes a total of $2,003,862.11.

Q. And you state that our figure of current assets at Lawrence which is obtained by deducting the five items we have referred to which are there lumped as four from $2,032,593 is shown by your Exhibit 74, did you not to be nearly $500,000 too large?

A. I understood your use of the word current assets——

4750 Q. Please answer the question.

(Question read.)

A. Yes.

Q. Now then upon your present statement of what Exhibit 74

shows as the gas assets at Lawrence, what should your figure on page 1 of Exhibit 74 opposite Lawrence $262,695.46 be?

A. The other assets would then be $720.680.48.

Q. Now is that right or isn't it?

A. I believe it is.

Q. Then give me that again so I can put it in here on 74 instead of $262,000?

A. You have to change your word also from current assets to other $720,680.48.

Q. How does that difference of $30,000 between us arise?

A. I can show the full statement of how I got it now as on page 2, 3 and 4.

Q. Lowell is another one where you make a big difference there. I wish you would compare the total gas assets as given by complainant's Exhibit 65 at Lowell *aiwht* the gas assets given at Lowell at peg- 60 of your report, Exhibit 43. While you are looking at that page just check each one of these, you will find I think that the total assets checks in each instance on page 60 of your report, check all of them and let's see while we are at that page and we will have that out of the way.

A. They all check.

Q. So that we have not any electric assets in any one of them unless you also had them in at page 60 in Exhibit 43?

A. Yes, the real explanation as I stated to you the latter part of the testimony and report was through them using current assets and putting in as I had general investment.

Q. No, but you are getting away from the question. I was
4751 not talking about that. I was talking about your claim a little while ago we had claimed a lot of electric assets?

A. Well I thought you had at the time.

Q. It turns out you are mistaken doesn't it?

A. Yes.

Q. Now then to go back, in each oje of these companies we have the same amount of gas assets that you had and in none of them is there any error in these first five items as shown by the report of the Massachusetts commission is there?

A. Only that possibly—I don't remember whether that includes any of these little minor errors, if so they don't amount to anything.

Q. Might be a difference of fractions or something like that?

A. Yes.

Q. So if there is any error in these current assets in the sense in which we have used it in this complainant's exhibit 65, it is an error in subtraction or addition?

A. Yes.

Q. A mere error in computation, in other words?

A. That is right.

Q. The rest of your exhibit 74 is not devoted to checking this Exhibit 65 is it?

A. No.

Q. But it is an endeavor to meet the argument by stating different basis that might be adopted in making up the figures.

A. That ought to be adopted, yes.
Q. That in your judgment ought to be adopted?
A. Yes.
Q. In making up the figures.
4752 A. Yes.
Q. And of course that is a mere matter of argument because you didn't understand Exhibit 65 was made up on such basis as you suggest here did you?
A. I thought it was intended——
Q. Don't tell me what was intended, did you understand it was made up on the basis you suggest here in Exhibit 74?
A. I can't answer that exactly, I don't know just what you did intend to show.
Q. This defendants' exhibit 75 was made up by whom?
A. All of this I made up myself.
Q. This is not made up in the same way in which page 92 of Exhibit 43 was made up is it?
A. I never have looked up my original figures on that.
Q. How did you make up defendants' exhibit 75 then?
A. I took all the items of the company's statement in the profit and loss account, manufacturing account, added them up and checked them, they all balanced to a cent. There was one error in one of the Massachusetts figures, a few dollars, a figure 8 where it should have been one I discovered.
Q. You didn't attempt then to reconcile page 92 with the reports?
A. No.
Q. You just abandoned that?
A. Yes. Did the work all over again.
Q. Now take your depreciation, there is a transposition of figures there, should not that be $554,472.78 instead of $545,472.78?
A. If so, it was done in typewriting. I had it right when I handed it in.
Q. How can we find out?
A. Well I have my original figures probably in my grip here, I will look and see. The depreciation in my original table is
4753 $545,472.78.
Q. We have the figures here, have you the figures by years so we can check that? We have the first year, $164,414.54.
A. I have $154,414.54. I know how that came about. In one of the cities where depreciation was given as $20,000 one year on the plant, that was if I recall right a case of gas and electric and I took half of it as gas and half of it as electric on that that is depreciated one half of the $20,000 item?
Q. Which city was it do you know?
A. Cambridge had $20,000 that year and Lawrence $20,000.
Q. Do you know which it was?
A. No, these figures farther back I have now with me.
Q. Cambridge has no electric?
A. No.
Q. So it must be Lawrence?

A. I should think so.

Q. There was no way of knowing so far as you know how much of that was charged to one and how much the other?

A. No, in my judgment I simply took half.

Q. What was the relative investments?

A. There was a difference in favor—gas was rather larger, on the other hand depreciation is considered a little more rapid with electric.

Q. I asked you what the relative investments were?

A. I have forgotten now, I looked it up at the time. I believe gas was a little larger. I had to use some percentage and I believed half was about right.

Q. These items of depreciation that you take here in defendants' exhibit 75 are the same items we went over in detail in connection with your original examination?

4754 A. Yes.

Q. So it is unnecessary to go over them again. How did you get your profits from operation here?

A. By adding the figure given, I will take an illustration here if you wish take the last report and turn to Cambridge as the first city in the list, the balance to profit and loss was what I took in every case. There were some small profits afterwards in the profit and loss account which I separately estimated there. They aggregated for all the companies for all the years, I think I have that figure before me $37,613.63. That is the income from other sources that I refer to now, income from other sources that aggregates $37,613.00.

Q. Did you deduct that from the profits or not?

A. No, that was added to the profits and these other items of income I ignored as I was quite confident that they did not come from the operation of gas works.

Q. You took the entire balance to profit and loss each time and put it into your profits from operation?

A. That is right, that is the way I got that and then I checked it by adding all those other columns.

Q. And that included anything from all sources of course?

A. Not from other sources.

Q. How can your aggregate balance of your profit and loss account fail to include all items of income?

A. This was only balance from operation, had nothing to do with any profits from other sources.

Q. Take Cambridge for instance, and the balance there is $191,111.21.

A. Yes, that is what I took.

Q. That you are confident includes nothing but profits from the sale of gas.

A. I so interpreted it, I so believed it.

4755 Q. Where did you get what you call price?

A. By adding all the items called income from sale of gas such as in Cambridge that last year $588,574.89, that is an illustration. Added all such items for all seven companies for all five years and divided it by the sales in feet.

Q. Are these the same seven companies you referred to originally in Exhibit 43?

A. Yes.

Q. That price does not check exactly with our figures.

A. I can give it to you by years if you want to, I haven't further detail with me.

Q. Give it to us by years if you will?

A. 1906, $2,673,990.37. 1907, $2,890,958.65. 1908, $3,064,-173.68. 1909, $3,161,688.94. 1910, $3,398,280.99. Total, $15,-189,092.63. All these check to a penny, I checked them all up.

Q. We have done the same thing and we don't agree on any year so I would like to go a little more into detail into the basis and see if I can find out what the difference is. Take Cambridge again will you in 1910, and let me know just what items you took.

A. What is known as income from sale of gas.

Q. What page?

A. Given here in Roman letters as XXIX. Income from sale of gas.

Q. You went the same way through these other companies?

A. Yes.

Q. One thing I don't understand on defendant's exhibit 76 on the last line of the page you have average 2,292,034,290 which is identical with the total immedoately above it. That is the average of what?

A. It is only one company and at the right is seven com-
4756 panies so I had to divide the total of seven by seven to get the average for one and of course divided by one in the other case. I put it in merely for symmetry as it were.

Q. There was one thing I do want to ask you here. None of these Massachusetts companies furnish gas of the same candle power as the Des Moines company furnishes?

A. A little lower, two or three candles lower. Some of them more and some less.

Q. Which are less than two or three candles?

A. I have not looked it up particularly, I know they average seventeen to nineteen.

Q. Nineteen would be three candles lower?

A. Yes.

Q. Which ones are two or three?

A. They are all given in this report and I have not looked it up, the data in this particular as I exclude manufacturing cost from consideration. I will look it up if you wish me to.

Q. Turn to page 197 I think you will find it all there in one page.

A. Average candle power Cambridge, 18.28. Fall River, 20.44. Lawrence 18.20; Lowell, 18.31; Lynn 18.11; Springfield 16.52; Worcester, 18.38.

Q. Give us Boston while you are about it while you have the page there?

A. 18.10. This table I have read is tests by the state gas inspector.

Q. I wish you would look at Complainant's exhibit 77 which is a verified copy of the audit of the Boston company, turn over to the

last page and give us the total cost of gas to that company excluding interest, depreciation and reserves per thousand cubic feet sold, that is total operating cost?

4757 A. 49.14 cents.

Q. That was one of the companies that you refer to quite frequently in your testimony was it not?

A. Not in my table where I made comparisons of prices and costs.

Q. No, but quite frequently in your testimony and talked about 80 cent gas there?

A. I think I only referred to Boston once and that was in the matter or leakage.

Q. Will you just for the moment take 63.34 cents which Mr. Hall's report shows is the average for the last five years operating cost here and find out what the difference is between this 49.14 in Boston?

A. Subtracting the difference is 14.20.

Q. Boston is about 18 candle power against our 22, so that upon your testimony we would have to add three cents more on account of lower candle power wouldn't we?

A. This is how much did you say?

Q. Twenty two, about four candle power. That would be under your testimony three cents, wouldn't it?

A. Four candle power would be a little under three cents, say two and a half or two and three quarters.

Q. But didn't you testify three cents?

A. I don't recall it very distinctly?

Q. I recall it very distinctly.

A. It is a high estimate.

Q. Take three cents if you please, that gives up 17.20.

A. Yes.

Q. You would have to add that to the 80 cents in Boston to get conditions comparable to conditions here? That is would have to take into account these differences in our manufacturing

4758 costs and in candle power.

A. So many conditions are different in Boston I would not compare it, not attempt to.

Q. You would have to add that to your 80 cents in Boston to get something that would be comparable to conditions here. You would have to add the difference due to the difference in candle power and difference in operating cost including manufacture.

A. I cannot answer that for the moment. I am looking for the average price the average price in Boston to which you should add on your theory 17.20, it is not 80 cents at all, but a figure considerably lower because the average price in Boston on account of certain sales made to other companies at a much lower price 50 cents or less makes a great difference so the whole thing is out of comparison here. I am looking for that figure, but it is not in here.

Q. I don't think it is in there, and I don't thin- you would properly compare them, but I don't care to discuss that with you. If you add 17.20 to 80 cents you get 97.20.

A. Of course that is a mere matter of arithmetic.

Q. What I wish to illustrate is that it is not safe to make com-

parisons based on prices without taking these other things into account is it?

A. Of course not. I have not tried to.

Q. So the mere fact you may sell gas at $1.15 in Omaha and 80 cents in Boston does not indicate one dollar or ninety cents here?

A. It is a starting point for the study and any conclusion you can get there.

Q. You must take these other factors into account and must have them all before you for comparison?

A. I believe you should have more than the question of
4759 price.

Mr. GUERNSEY: We off- this complainant's exhibit No. 77.

Objected to as immaterial, incompetent, no proper foundation laid for its introduction and not the best evidence.

Q. In connection with your cross examination your attention was called to certain places where you have testified that low rates would yield a more than fair return and you said on page 4354 in most of these places it has been proven by reductions since. And you said referring to the same matter on page 4355 I probably did as the gas experts always testify to the contrary and generally found to be wrong by subsequent results and on the same page I don't remember any companies nor in any case in which the experts on the other side were not found to be wrong by subsequent results. Of course I have not the reports of all these companies, but I presume you have or have kept track of them or else you would not have said that?

A. Yes, there are two or three where the courts are still holding up the reduction.

Q. What I want to know is whether these statements were based upon the reports of the profits of these companies under reduced rates?

A. Yes.

Q. Have you seen the last report of the consolidated company in New York?

A. Yes, that is the last report not to the stockholders, seen the last one printed by the public service commission.

Q. You know then do you not that the company's earnings from its gas business in 1910, were equivalent to only about 4.1 per cent on the property devoted to that business?

A. After allowing a fictitious amount of ten cents for contingencies which the supreme court *through* out.

Q. You are familiar with the report of the company?

4760 A. Yes. That is I have read it over. I don't remember much of it now. I remember that item was in it.

Q. You know that that is what the report shows the net earnings of that company were out of its gas business?

A. No, I don't remember the exact percentage, I remember the ten cent item but I don't remember the exact percentage of return.

Q. Let me call your attention to page 2, of the report submitted to the annual meeting January 2, 1911, to this language making the total earnings from the gas company's business for the year 1910,

$3,046,448.56 equivalent to about 4.10 per cent on the value of the tangible and intangible property employed in the manufacture and distribution of the gas sold by the company. You had that in mind when you testified that the rates had resulted in demonstrating that you were right in your claim that they would afford more than a fair return?

A. I had in mind not this no, but their reports analyzed by the public service commission. This I had not seen in this form.

Q. Now then just a word about that ten cents that you say was kicked out by the court. My question referred to the earning for the year 1910. Now will you tell us just where the court kicked that out in the statement relating to these earnings?

A. It did not relate to 1910. It did I think in January 1908, when it made its decision regarding the reasonable price for gas it refused to consider that ten cent item.

Q. What court do you refer to?

A. First Judge Huff, affirmed later by the United States Supreme Court.

Q. We shall find what there is in support of this statement either in the opinion of Judge Huff reported in the Federal reporter or in the opinion of the Supreme Court of the United States?

4761 A. Yes sir.

Q. You have no knowledge as to how that item was treated in the statement of the earnings to which I called your attention have you?

A. I know it was incouded in their report to the commission, but this report I have never seen. I know nothing about this report.

Q. That ten cent item was to cover both depreciation and contingencies was it not?

A. Yes.

Witness excused.

4762 ANDREW SANGSTER recalled on the part of the defendant in chief by Hon. H. W. Byers, testified as follows:

Q. You were requested to furnish the details of the expenses of this law suit up to this time. Have you prepared that?

A. Yes, sir; prepared a detailed statement showing the items making up the total of $47,131.16.

Q. In a general way what are the totals, just the summary?

A. The charges made by the United Gas Improvement Company and which were passed up to their credit in the ledger amount to $11,714.54. The other accounts may be grouped under accounts payable. Those are — follows: United Gas Improvement Company $140.10. Court costs, $453.60. W. A. Baehr, $8,180. Henry I. Lea, $6,796. W. W. Randolph $5,000. W. J. Hagenaugh, $1,546. N. T. Guernsey, $1,500. Hotel Chamberlain $4,436.20. J. G. White & Company $224.50. Store room and sundries $15.70. General items which have not been classified under heads, $7,124.52. Total accounts payable, $35,416.62 which with the credit to the United Gas Improvement Company referred to amount to $47,131.16.

Q. And that covers the items that you were inquired about yestereay?
A. Yes.
Q. And you have the details?
A. The details are shown on pages 1 to 10 of this statement.
Q. The statement that is marked by the reporter defendant's Exhibit 77 and consists of eleven sheets?
A. Yes, sir.

Mr. BYERS: Defendants offer- defendant's Exhibit No. 77 in evidence.

4763 Cross-examination by N. T. GUERNSEY, Esq.:

Q. This defendant's exhibit 77 contains only the expense to and including August 31, 1911, and nothing thereafter?
A. Nothing thereafter.

Witness excused.

Mr. BYERS: I am not absolutely sure, I have not checked up all these exhibits and there may have been some identified as we went along that have not been formally offered.
COURT: If you have overlooked any you can offer them at any time.
Mr. BYERS: We rest with that.

Defendants rest-.

4764 Friday Forenoon Session.

OCTOBER 6, 1911, at 9:30 a. m.

Counsel for the respective parties all present.

Complainant's Rebuttal.

ALBERT E. HOLLINGSWORTH, being first duly sworn on part of complainant, in rebuttal, examined in chief by W. L. Read, Esq., testified:

Q. Where is your residence?
A. 4322 Kingman Avenue, Des Moines.
Q. How long have you lived in Des Moines?
A. About thirty years.
Q. What is your business?
A. I am in the coal business.
Q. How long have you been in the coal business?
A. Twenty years.
Q. Are you in the retail or wholesale coal business?
A. Wholesale and mining.
Q. What is the name of the company with which you are connected?
A. Empire Coal Company.
Q. And its business is what?

A. Wholesaling.
Q. Where is the Company located—where is it principal place of business?
A. In Des Moines.
Q. How long has that Company been in operation and existence?
A. Since 1900.
4765 Q. Prior to that you were operating with other companies?
A. Yes, sir.
Q. And have been in the wholesale coal business and operating?
A. Yes, sir.
Q. Are you familiar in a general way with the range of prices of coal for the last ten or fifteen years?
A. I am.
Q. I wish to inquire, Mr. Hollingsworth, what has been the tendency in prices of coal, particularly steam coal, whether the tendency has been upward or downward during that period?

Objected to on part of defendants as being immaterial and not rebuttal, not the best evidence.

A. It has been very materially upward.
Q. Have you in mind any prices that would illustrate the matter? For instance, we go back five years; what was the range of prices then for steam coal?

Defendants interpose- the same objection last made.

A. $1.20 minimum to $1.25 maximum.
Q. Per ton?
A. Per ton.
Q. What is the range of prices at this time?
A. $1.45 to $1.50.
Q. How about last year?

Defendants interpose- the same objection last made.

A. Last year was approximately the same as this year; the year before was a raise; the year before was less than this year.
Q. Going back now say ten, twelve or fifteen years, what were the prices for steam coal?
A. About seventy-five cents.
Q. Since that time has or has not the range been upward?

4766 Defendants interpose- the same objection last made.

A. There has been an upward movement all the time.
Q. What do you say as to the supply of steam coal, generally speaking?
A. For nine months in the year there is a shortage.
Q. Owing to what?
A. The demand is greater than the production.
Q. And owing—any particular circumstance that creates that condition?
A. The use of steam coal is increasing all the time in greater proportion than the use of lump coal.
Q. And steal coal is what?

A. Steam coal is the screenings taken out of the lump coal.

Q. You said for nine months of the year there is a shortage; what about the other period?

A. About half of that time, or a month and a half it is about equal; in the fall for a month and a half, beginning approximately from the 15th of July to the 1st of August, for a month to a month and a half there is a temporary surplus, owing to the fact that the increase in the consumption of lump coal begins quicker than that of the fine coal. I might say it is impossible to store this fine coal in Iowa.

Q. Why?

A. It will fire.

Q. How, if at all, is the supplt of steam coal affected by strike conditions?

Objected to on part of defendants as being immaterial and incompetent.

A. There isn't any when there is a strike.

Q. You say it is impossible to store it for any length of time?

A. Yes, sir.

4767 Q. Strikes have been known in the coal business?

A. Yes, sir.

Q. Mr. Hollingsworth, from your experience and knowledge of the coal business, what is your opinion as to the future course of prices of steam coal?

Objected to on part of defendants as incompetent, immaterial, not proper rebuttal and no proper foundation laid for any such testimony.

A. It will increase all the time.

Q. Recurring to the subject of strikes, the agreement between the operators and miners in this state is made every two years is it not?

A. Yes, sir.

Q. What has been the experience of operators as to whether difficulties are encountered every two years in coming to an adjustment?

A. There is always a suspension of operation. It varies; no one can tell how long it will last.

Q. It varies over what period?

A. The shortest period I recall is two weeks; from that up to six weeks in this state.

Cross-examination by Mr. R. O. BRENNAN:

Q. Mr. Hollingsworth what is the firm with which you are connected?

A. The Empire Coal Company.

Q. You are an officer in that company, are you?

A. Secretary and treasurer.

Q. Does the Empire Coal Company operate any coal mines in or about Des Moines?

A. No, sir.

4768 Q. They are jobbers in coal?

A. Yes, sir.

Q. Where do you buy your supplies?

A. Largely from the Empire Mining Company, one of our own organization.

Q. The Empire Coal Mining Company is engaged in mining coal?

A. Yes, sir.

Q. In the state of Iowa?

A. Yes, sir.

Q. In what part of the state?

A. In Marion County.

Q. Near what town?

A. Everest.

Q. How many mines do they operate?

A. Two.

Q. Both in Marion County?

A. Yes, sir.

Q. Do you buy coal outside of the coal you buy from this firm?

A. We do.

Q. From local dealers?

A. Some.

Q. And where do you buy the most of the coal which you do not purchase from the Marion County mines?

A. There is such a little amount of that, it is scattered around here and there.

Q. How many coal mines are there in Polk County in operation?

A. About twelve, operating on the railroads. The local wagon mines I have not included.

Q. There are some of those are there not?

A. Yes, sir.

Q. Some in the immediate vicinity of Des Moines?

4769 A. In the corporate limits; their output is very small.

Q. Could you give the Master a notion as to the daily average output of the coal mines in this county?

A. Probably 3,000 tons.

Q. Lump coal?

A. Yes, sir.

Q. 3,000 tons of lump coal, and from the lump coal as it is screened, what kind of coal do you get for the market, in addition to the lump coal?

A. The steam coal.

Q. That is what is sometimes called boiler fuel?

A. I never heard it designated that way; that is what it is used for.

Q. Used for boiler fuel?

A. Yes, sir.

Q. About how much steam coal is there produced on an average?

A. About 25%.

The MASTER: Is that true of the Polk County mines?

A. Yes, sir.

Q. Is steam coal shipped into Des Moines?

A. A very great deal.

Q. From what sources is it received?

A. From our mines and from the mines around Albia, the mines at Colfax, some from High Bridge, occasionally, and some from Madrid.

Q. Any from Centerville?

A. No, sir.

Q. Well it is all within about how many miles of Des Moines?

A. Sixty-four is the maximum, as far as I know.

Q. Sixty-four miles?

A. Yes, sir.

4770 Q. What is the minimum outside of the corporate limits?

A. You mean the minimum distance?

Q. The minimum distance outside of the corporate limits.

A. The minimum distance is the five miles' rate.

Q. Where do you get the steam coal within the five mile rate?

A. The Keystone Mine, I believe is the only one that takes a five mile rate, a small mine out on the Milwaukee with a daily production of perhaps 100 tons a day.

Q. 100 tons of lump coal?

A. Yes, sir.

Q. Now you say that the tendency is upward in the price of coal?

A. Yes, sir.

Q. That is true of lump coal as well as the other coal?

A. More particularly of the screened coal, but it is true on both.

Q. There is a working agreement between the operators and miners in existence at this time, is there not?

A. Yes, sir.

Q. When will that agreement terminate?

A. On April 1, 1912.

Q. It has been the custom for some time past to enter into these working agreements every two years?

A. Yes, sir.

Q. The mines have been in full operation all season, have they not?

A. No, sir.

Q. They have not?

A. No, sir.

Q. When have they shut down?

A. About half of the time for the last six months.

Q. What was that due to?

A. Because they couldn't sell their lump coal.

4771 Q. There wasn't any market for it?

A. For the lump coal.

Q. Well, did they have any screened coal during the summer?
A. Whenever they loaded lump, they screened it.
Q. The lump coal is what operators pay the miners for, and the screenings is what you sell as steam coal?
A. That all depends on whether they are paying the miner on a screen coal basis or mine run basis.
Q. How do they usually base it; what does the contract call for?
A. It calls for both.
Q. Different mines have different contracts in that respect?
A. No, sir; the same contracts cover them with different conditions at the mines.
Q. Well, now what was the price of steam coal on the year 1906?
A. The minimum was $1.20 and the maximum was $1.25; understand that is f. o. b. Des Moines.
Q. $1.20 and $1.25?
A. Yes, sir; per ton of 2,000 pounds.
Q. F. o. b. Des Moines?
A. Yes, sir.
Q. Where would the car be delivered?
A. To wherever it was used within the switching limits.
Q. Suppose it was used at the works of the Des Moines Gas Company, you had a car of steam coal for the gas works?
A. It would be delivered on their track, where they desired to unload it.
Q. At $1.20 or $1.25 in the year 1906?
A. Yes, sir.
Q. At the siding at the Gas works?
A. Yes, sir.
4772 Q. That would cover all transfer charges?
A. Yes, sir.
Q. Loading and unloading?
A. No, sir; that is f. o. b. cars.
Q. That would include the loading, would it not?
A. Yes, sir.
Q. And delivery at the siding at the gas works at this price?
A. Yes, sir.
Q. Now in 1907, what was the range of prices for steam coal?
A. I think there was an increase that year.
Q. Do you remember how much?
A. Not without looking at our record.
Q. What makes you think there was an increase in 1907?
A. My recollection is an agreement expired the 1st of April, 1906, and there is always an increase when an agreement expires, because either the price of mining is raised, or conditions change which increase the cost of production.
Q. Every two years there has been an increase in the price of coal?
A. There is brought about one of those two things, either an increase in the cost of mining or an increase on account of the working conditions.
Q. How much do you think it increased in 1907 over 1906?
A. My recollection is our prices were raised about ten cents.

Q. Ten cents on the ton?
A. Yes, sir.
Q. So you think then it ranged from $1.30 to $1.35?
A. Yes, sir.
Q. That would be your judgment at this time?
A. Yes, sir.
4773 Q. Now in 1908, what was the price of steam coal in Des Moines?
A. I don't believe there was any raise in 1908.
Q. You think it remained about $1.30 to $1.35 a ton?
A. Yes, sir.
Q. What is your recollection as to the year 1909?
A. There was a raise of approximately ten cents a ton.
Q. Did that rise continue throughout the year 1909, or was there any reduction made?
A. It is continuing in effect yet; it is still in effect.
Q. That was the new working agreement entered into in April 1909?
A. That is my recollection.
Q. So that your recollection is that the price of steam coal in Des Moines was from $1.40 to $1.45 per ton then?
A. It was higher than that. From $1.45 to $1.50. I can give it to you by going to my books, the exact day this rise took effect.
Q. I understood you to say the 1907 price of steam coal was from $1.30 to $1.35 and in 1908 no change was noted?
A. There was a fifteen cent raise the last time approximately.
Q. That would be in 1909?
A. Yes.
Q. That would be then from $1.45 to $1.55?
A. To $1.50.
Q. That is the price that now prevails?
A. Yes, sir. You understand this *si* on contract business, to extend through the year. Those are the prices I have referred to.
Q. That suggests to my mind this question: Have you a contract with the Des Moines Gas Company?
A. I do not.
Q. Did you have in the past a contract with the Des Moines Gas Company.
A. I have.
4774 Q. During what years did you furnish to the Des Moines Gas Company coal under contract?
A. In 1905 and 1906, as I recall it.
Q. 1905 and 1906; any other year?
A. Not under contract. We furnished it to them from time to time.
Q. The Des Moines Gas Company is a customer of yours at this time?
A. They are not. Our contract was with the Capital City Gas Company in 1905 and 1906.
Q. The Capital City Gas Light Company went out of existence presumably in 1906. Now did you supply the Des Moines Gas Company coal in 1906 after its organization?

A. We had a contract with them that covered two years. My recollection is it covered the years 1905 and 1906. It did not begin right on the first of the year; it may have been partly in 1904; it may have been partly in 1907; it was a period of two years.

Q. Well, you furnished coal to the Des Moines Gas Company after the month of March 1906?

A. Yes, sir.

Q. And you did not renew the contract with the company you say?

A. No, sir.

Q. You have had no written contract with the company since 1906?

A. Covering a short period only.

Q. When was that?

A. The late winter and early spring of 1911.

Q. That was this last winter and spring?

A. Yes, sir. And during the year 1910, I think it was, we furnished them perhaps fifty cars of mine run at a very handsome price; it was coal they had to put in storage to cover the suspension period.

4775 Q. When was the suspension period?

A. From April 1910 to the latter part of May 1910.

Q. The mines were suspended for a period of about 30 days?

A. My recollection is it covered exactly six weeks, from the 1st of April to the 15th of May.

Q. There was no strike in existence at that time, was there?

A. No, we do not like the word strike; we use the word suspension.

Q. In other words, Mr. Hollingsworth, you have these working agreements with the employés and they run for two years?

A. From one to two years. There has been one or two agreements that only run a year.

Q. Well, now, as the month of April 1910 approached, of course the parties were carrying on their negotiations looking to a renewal of the agreeemnt, wasn't that the fact.

A. These negotiations never get anywhere until after the mines shut down.

Q. They were meeting jointly?

A. Yes, sir.

Q. During the pendency of the negotiations between the respective parties the mines were not in operation?

A. They were in operation up to the 1st of April; from that time on they were not.

Q. That was due to negotiations that were being carried on between the parties looking to the entering into a new agreement?

A. After the 1st of April, yes sir.

Q. But there was not what we term a strike, men quitting on account of some dissatisfaction with respect to the operation of the mine or wages or anything of that kind, but it was due entirely to this working, agreement, desiring a renewal of the contract on terms that would be satisfactory?

4776 A. Negotiating for a new contract, yes sir.

Q. General Byers suggests that it was not an arbitration?

A. It did not get to that point.

Q. Well then it is safe to say, Mr. Hollingsworth, there has not been what is termed a real strike in Des Moines for a number of years?

A. There are local strikes all the time.

Q. I mean affecting the operators and miners?

A. As far as our conditions are concerned, the operation of mines, it don't make any difference whether you call it a strike or what; the mines do not operate. The only difference between this condition and a strike is that pending these negotiations the miners furnish us sufficient men to keep the water out of our mines. If there was a strike they would not furnish those men.

Q. Well that is quite a help to the mine operators?

A. I don't know. Sometimes I think it would be better to have the mines fill up with water.

Q. Won't you answer the question. There has been a number of years since what has been and what is ordinarily termed a general strike?

A. Yes, sir.

Q. About how many years has that been?

A. I don't remember how long since there was a general strike.

Q. Can you approximate it; fifteen years or twenty years?

A. As far as I remember there has never been a time when there was a strike in all the mines around Des Moines at the same time.

Q. Now how long have you been operating coal mines under these working agreements, to your knowledge?

A. My recollection is the first joint agreement was made somewheres from 1900 to 1902.

4777 Q. There wasn't a strike at the time in 1900?

A. There wasn't any strike, further than these suspensions. It all amount- to the same thing. There have been local strikes in local mines. There is one in effect not at Excelsior. It is not uncommon to have the men go home and refuse to work from a day to a week.

Q. That is due to local conditions and to a construction of their contract sometimes?

A. Yes.

Q. The miners claiming the operators were violating their agreement in some instance which produced dissatisfaction?

A. They do not claim that so much. They claim they want this and that done and they have a very effective way of getting what they want.

Q. Every time they get what they want you succeed in boosting the *pri* price of coal a little to equalize matters?

A. We try to.

Q. Now about how much coal have you furnished to the Des Moines Gas Company within the past year?

A. Oh, as I recollent it, anywhere from 25 to 50 cars.

Q. 25 to 50 cars?
A. Yes.
Q. And that you say wasn't under any written contract?
A. The written contract covered the furnishing of that amount.
Q. Then you did have a contract covering a part of the year 1911. When did you last furnish the company coal under that contract?
A. I think perhaps it was in April or May.
Q. Of this year?
A. Yes.

Q. And has the contract terminated by its terms?
4778 A. No, sir.
Q. It is still in existence, is it?

A. The contract is in existence. The reason we quit furnishing the coal, we couldn't get steam coal.
Q. You have a contract at this time with the Des Moines Gas Company?
A. I don't remember without looking at it whether it has expired or not.
Q. Your recollection is it has not expired?
A. If it has not expired it will expire very very shortly.
Q. Do you remember at what price you were furnishing the Des Moines Gas Company steam coal under the contract?
A. I do.
Q. What is that price?
A. $1.50.
Q. Do you remember what you furnished them coal for in 1905 or 1906?
A. $1.25.
Q. Now you are sure there has been a steady rise in the price of steam coal covering the past five year- in the city of Des Moines?
A. Yes, sir; it has risen from the price I gave you to the present price. To give you the exact date, I couldn't do that without looking at my books.
Q. Would you be surprised if you knew that the Des Moines Gas Company, at any rate its fuel bill for boiler fuel was not as great as in former years, that it has declined?
A. I know nothing about that.
Q. That would surprise you, wouldn't it?
A. I would want to know all the conditions surrounding that.
Q. How?
A. I would want to know the reason why it declined.

Q. The last coal you furnished was furnished at $1.50 a
4779 ton and that was some time in April or May of this year.
A. As I recall it, yes sir.

Q. It is less than that now, isn't it?
A. On contract?
Q. Yes.
A. No, sir.
Q. Why do you say on contract?
A. Because on contract we arrive at what is a fair price for the year. If it is not on contract they may be able to buy coal at sev-

enty-five cents or a dollar now, but in the winter it may be two or three dollars and they may not get it at all.

Q. What is it today in Des Moines?

A. I would say today the cheapest coal could be bought for would run from $1.40 to $1.50; that is, picking up local cars that is not on contract basis. I want to be sure we understand one another.

Q. You buy steam coal then in the open market at these prices?

A. Yes, sir.

Q. Now the contracts which you had with the Des Moines Gas Company, was there a minimum amount fixed in the contract for which you were required to furnish it each year?

A. I don't remember how our contract read really on that feature.

Q. Did the company obligate itself to accept from you coal to a certain amount and do you remember what that minimum amount was?

A. My recollection is that the contract read the requirements.

Q. That is their requirements for steam coal and in case you were not able to furnish coal to the Des Moines Gas Company to the extent of its requirements, what provision was made to purchase coal elsewhere?

A. We have a clause in all of our contracts, among other
4780 things it says any cause beyond our control, we cannot furnish it, the contract is void during such time. When we cannot sell lump coal, that is a cause beyond our control.

Q. Do you know of any other firm in the city of Des Moines or elsewhere that sold to the Des Moines Gas Company steam coal?

A. I do not; I don't know where they buy.

Q. You have no knowledge on that subject?

A. I do not.

Q. So you are apprehensive, Mr. Hollingsworth, that after the agreement entered into in 1912 it will be necessary for the operators to advance the price of coal just a little?

A. There isn't any doubt of it in my mind.

Q. That is merely a conclusion on your part at this time; you are anticipating that the miners will make some stronger demands than they have in the past?

A. There isn't any question but they will make a demand.

Q. There isn't any question but what the operators will to the utmost of their ability resist the demand and get the very best bargain they can?

A. Yes.

Q. Are there any new mines being developed in the immediate vicinity of Des Moines at this time?

A. There is a little local mine south of Des Moines. So far as I know the balance of Polk County has been prospected and all the known coal developed.

Q. It has not been mined out entirely?

A. It is going very rapidly. Polk County's production in five years will decrease fifty per cent and keep on decreasing.

Q. You think they will not be able to have any strikes around here then?

4781 A. It don't make any difference if they do.

Q. It don't affect the price if they open up a half dozen new mines?

A. That undoubtedly would have a bearing on the situation.

Q. I say, if that condition should develop, whereby they would be able to open up several mines, that would have its effect on the retail price of coal?

A. Very little. The margin of profit now is as low as it can be and still operate.

Q. This mine out here on the Mott farm, is that in operation?

A. Yes, sir.

Q. Do you know what the daily output of that mine is in its strongest capacity?

A. I would say about two hundred to two hundred and fifty tons.

Q. There are a number of coal mines near Highland Park?

A. Two.

Q. Large mines?

A. Yes, sir.

Q. What is the daily output of those mines?

A. Their daily output a couple of years ago was very good; but they are on the decline now. I would say they were probably loading having a possible production of 500 to 600 tons each. Two years ago one of them would load a thousand tons.

Q. Take it in the northeast part of the city, north of the Fair Ground, there is a mine in operation out there?

A. There is the Glenwood mine, a wagon mine.

Q. Then there are some mines south of the Raccoon River?

A. Yes, sir.

Q. How many?

A. Two; the one I spoke about being developed, a local
4782 mine, and two others.

Q. So it is your notion if a half dozen mines would be opened in this county, it would not affect the price of coal materially?

A. Very little.

The MASTER: In other words, if I understand you right, the price of coal largely depends upon the working agreement between the miners and operators?

A. Yes, sir.

The MASTER: That fixes the entire business?

A. That fixes the cost of production.

The MASTER: How extensive is that agreement?

A. That agreement is made with all the mines in Iowa and Putman County, Missouri, known as District No. 13 of the Mine Workers of America.

Q. Mr. Hollingworth, how many mines in Polk County are paying the miners for the screened coal?

A. Any of those that are working on a mine run basis; I can't tell you that.

Q. What does the miner receive for the lump coal on a lump coal basis?

A. $1.00 a ton.
Q. On the mine run basis, what is it?
A. I think it is seventy-three cents.
Q. They do store steam coal in small quantities, don't they?
A. Not for any length of time.
Q. For what length of time is it safe to store steam coal?
A. That depends on the condition of the coal, whether it is wet or dry or hot or cold. In cold weather they can store from 30 to 60 days; in hot weather it will fire from 20 to 30 days.

Q. I understood you to say you had supplied the Des
4783 Moines Gas Company with sufficient steam coal to carry over this period?

A. Mine run.
Q. What do you mean by mine run?
A. Everything as it comes from the mine, lump and steam, before it is screened.
Q. The lump and nut?
A. And everything.
Q. Everything went right into the car as it came from the mine, and that was sold to the Des Moines Gas Company for how much a ton?
A. My recollection is $2.50 a ton.
Q. What was the ordinary lump coal selling for under contract?
A. That price was not under contract; that was strike coal, where we always get a higher price.
Q. You were getting the top notch price for that coal?
A. We were getting all we thought we could.
Q. The strike, as you call it, suspension, lasted about six weeks how long did the suspension last in 1908?
A. I think three weeks.
Q. And in 1906, do you recall how long the mines were suspended?
A. I do not.
Q. Or in 1904 or 1902?
A. I do not.
Q. Do you remember how much coal the Des Moines Gas Company purchased to tide it over the six weeks in the spring of 1910?
A. My recollection is they bought of me 50 cars. I do not know what they may have bought from anyone else.
Q. About how many tons to the car?
A. They will run from 30 to 50 tons.

Q. 30 to 50?
4784 A. Yes, sir.

Q. Do you know whether they purchased coal during that same period from other dealers in the city of Des Moines?
A. I do not.
Q. Well, that was an abnormal condition existing for those six weeks, isn't that true?
A. I would hardly term it abnormal; it comes with persistent regularity every year or two.

Q. But it may last a week and the mines may not be suspended even a week?

A. An industry has to supply itself for at least thirty days. If they do not there isn't any question but what the man that is responsible, if the strike only lasts a week or so, of course he is a smart man; if it lasts longer than that he will lose his job, and they will say that any fool ought to know better.

Q. We are assuming now that both sides are acting in good faith and they desire to renew their contracts on a proper basis. Now you say that it is customary to lay up a supply to run thirty days; the railroads make that practice and that is true of the mine operators as well; you try to have on hand a sufficient amount of coal, don't you?

A. We do not personally aim to have one pound of coal on track after six o'clock the 13th day of March; the customer has to carry his own burden.

Q. I do not believe that is a direct answer to the question. Question repeated?

A. I meant to convey the impression that we have no available coal out of the ground.

Q. Do I understand you to mean this, Mr. Hollingsworth: Assuming for instance that the 1st of April will be the day ap-
4785 pointed for the suspension of the mine, and that from and after the 1st day of April the mine has no coal on hand with which to supply the customers or perform contracts?

A. We do not.

Q. That your supply of coal is exhausted?

A. It is.

Q. Is that true as to the mines generally over the state?

A. Largely.

Q. What do you mean by largely.

A. I mean there may be a few isolated cases. That is the custom. On the other hand, some few people carry over a stock to speculate with, to get higher prices on.

Q. There is considerable of that done at that time?

A. I don't think considerable; that is done largely by the retail dealers.

Q. You have had no experience of that kind in Des Moines during the suspension of operations, that there was a fictitious price put on coal?

A. I do not know what you mean by fictitious price.

Q. You said some people would store up coal for the purpose of speculation?

A. It has been done in Des Moines.

Q. You say that is confined to the retail dealers?

A. Largely, yes sir.

Q. And the local mine operators, those without track connections, wagon mines.

Q. How many are there of these you say?

A. There are at the present time, I would say about five around Des Moines.

The MASTER: They are close to Des Moines?

4786 A. They are in Des Moines, in the corporate limits, but they are a good many miles from here; some of them I suppose are as high as five miles from here.

Q. Well, all the speculation then has been limited to the retail dealers or the local or wagon mines as you term them.

A. After the suspension; we will speculate before the suspension.

Q. What could steam coal have been purchased for in the open market in Des Moines say in the month of May 1911?

A. Personally I paid, if I recollect it, $1.60 a ton.

Q. $1.60?

A. Yes.

Q. And in the month of June, what was it worth?

A. Approximately the same.

Q. In September, was there any difference?

A. Yes, sir.

Q. What was the price in September?

A. I would say, $1.40.

Q. And that is the prevailing price at this time?

A. $1.40 to $1.50 yes sir.

Redirect examination by Mr. READ:

Q. What is the condition of the local supply, is it adequate to meet the demands of consumers who have to have a constant supply?

A. It is not.

Q. To what extent, Mr. Hollingsworth, has your firm or concern handled coal, how extensively is your business generally?

A. We have handled through our office in the past ten years from a thousand to fifteen hundred tons a day.

Q. How does that compare with the business of other dealers?

4787 A. I don't believe there is but one concern that handles any more.

Q. Referring to the coal supply in Polk County, have any mines shut down in the last few years?

A. Yes, sir.

Q. The Bloomfield closed down?

A. Yes, sir.

Q. Why?

A. It run out of coal, and other conditions got so they could not mine what they had left.

Q. Has there been a change in Polk County in that respect in respect to the coal supply and the number of coal mines in the last four or five or six years?

A. It has been about the same; but it will not be in the future.

Q. Why not?

Objected to on part of defendants as incompetent and not proper re-direct examination.

A. The supply of available coal is becoming exhausted and practically all the land in Polk County has been prospected.

Recross-examination by Mr. BRENNAN:

Q. Do you have in mind having furnished to the Des Moines Gas Company and mine run coal prior to the spring of 1910?

A. I do not.

Q. So far as you know, that was the only instance in which it was required or thought necessary to buy mine run coal?

A. So far as we were concerned that was the only year; we had a surplus available.

Q. So far as you know it was the only year in the history of the Des Moines Gas Company that it felt itself obliged to pur-
4788 chase what is called mine run coal?

A. I know nothing about it.

Q. At any rate you never furnished any mine run coal save and except in this one instance, this six weeks period, and that was to the extent of fifty to sixty cars?

A. I believe I said from 25 to 50.

Q. You said 50 to 60 tons to the car?

A. I said 30 to 50 tons to the car.

Q. Now as far as you know prior to 1910 there was no such suspension of work for such length of time as that persons who required boiler fuel could not obtain the same in the open market?

A. If they had not supplied themselves before the suspension they could not obtain any at all.

Q. As far as you now recall there was no case where it became necessary to buy mine run coal prior to 1910?

A. By anybody, do you mean?

Q. By the Gas Company or people generally.

A. We furnished it to others, yes. We never furnished the Gas Company. What they may have done, I don't know.

Q. Prior to 1910?

A. We furnished it to others, yes sir.

Q. Prior to the year 1910?

A. Yes, sir.

Q. Do you know why they bought mine run coal?

A. I do.

Q. How many did you furnish?

A. We furnished it to the Street Car Company and the Agar Packing Company.

Q. Was that in 1910?

A. You said prior to 1910.

4789 Q. Was it in 1910?

A. We furnished the Street Car Company in 1910. We did not furnish the Packing Company because we did not have a contract.

Q. When did you furnish the Street Railway Company mine run coal before that?

A. Every year there was a suspension.

Q. How many suspensions were there?

A. I should say about four. There was one time that this agreement was only for a year. I don't recall the exact time.

Q. Everything was closed down during that year, was it?

A. It was closed down from the 1st of April pending the settlement. It came every year that time, instead of every two years.

Q. You do not mean by that that the mines were suspended covering a period of one year?

A. I mean the working agreement only covered the period of a year instead of two years.

Q. I want you to state if you recall, Mr. Hollingsworth, the periods of time when the mines were suspended, growing out of the settlement of their working agreements?

A. They suspended a year ago last April.

Q. A year ago last April, 1910, that was for a period of six weeks?

A. Yes, sir.

Q. In 1908, what was the length of time of suspension?

A. Three weeks, I think.

Q. And in 1906, do you recall what length of time was ossupied in working out the agreement?

A. As far as I recall about two weeks.

Q. So there was a suspension of about two weeks; prior to that time, in 1904, how was it?

A. They averaged about two weeks prior to the one of
4790 three, and they are getting worse.

Q. Now during those periods of suspension was any coal being shipped into Des Moines from other states?

A. One year I think it was 1906, we shipped considerable mine run in here from Missouri and sold it for $4 a ton.

Q. During, say 1910, was coal being shipped in here?

A. The agreements all over the United States expire at the same time. This other time when we shipped coal in from Missouri the Missouri agreement did not expire that year until in September.

Q. At any rate, during that year the speculation was not limited to the local retailer or the wagon mines?

A. We got some that year; we happened to be mining that coal in Missouri that we sold for $4 a ton.

Excused.

J. A. PEARSON, being first duly sworn on part of complainant, in rebuttal, examined in chief by N. T. Guernsey, Esq., testified:

Q. Where do you reside?

A. Philadelphia, Pa.

Q. You are the purchasing agent for the Des Moines Gas Company and also for the U. G. I. Company?

A. Yes, sir.

4791 Q. How long have you been engaged in making purchases in connection with gas plants?

A. About twenty-three years.

Q. Now in the first place, you are the man who is supposed to get a salary of $2,500 a year from the Des Moines Gas Company as purchasing agent?

A. Yes, sir.

Q. That salary is turned over to the U. G. I. Company, is it not?

A. Yes, sir.

Q. Now, then, Mr. Pearson, your purchases—and I do not want to go into detail as to these matters that have been gone over thoroughly—your purchases for the Des Moines Gas Company include whatever you can purchase with more economy than the company can here?

Objected to on part of defendants as being leading.

A. Yes, sir.

Q. What is the practice, where purchases can be made with more economy by the Company, or more economically than you can do it?

A. They make it here.

Q. Where you make the purchases for the Company, that is, take your purchases like oil or coal, or things of that kind, that are for a considerable amount or cover a considerable period, at the present time, that is, take 1910 and thereafter, the contracts are made in the name of the Des Moines Gas Company, as I understand it?

A. Yes.

Q. Do you have anything to do with the payments under the contract?

A. No.

Q. There has been some testimony here, Mr. Pearson, as to the prices of oil, showing that in some instances small plants are buying oil at a lower price, apparently, than is paid here in Des
4792 Moines. I wish you would go into that fully and explain just what the situation is, and explain what your experience is in buying oil, and what the oil supply is, so as to explain fully to the Master the factors that bear on that question?

A. In the first place, the oil bought for Des Moines is bought under specifications, and which specifications has been adopted by the engineers, providing an oil that will give the best results in gas works practice. In the second place, with a Company using as much oil as Des Moines does, it is necessary to entrust that business to some concern which is reliable enough to insure always getting a supply. Now in the case of these small companies getting a lower price, that is probably due to the fact——

Objected to on part of defendants because, unless he knows, it is incompetent and a mere expression of opinion on the part of the witness on a subject that he has no right to express an opinion without any claim of knowledge or information about the local prices and the situation of the plant.

Q. Go on and state the factors that you know of bearing upon that question.

A. I do know from my own experience that there are a great number of oil companies in this part of the country who are able to take a contract for 100,000 gallons of oil a year, that will refuse to bid on a contract which involves—I think the Des Moines supply is something over 2,000,000 gallons a year—consequently when a concern like the Standard Oil Company is quoting a price for Des Moines, they know exactly from their knowledge of this small concern, exactly what competition they have to meet, where a company

is small they know the competition they have to meet will be a
4793 lot of little companies who cannot take care of that business. That shuts out the competition for the Des Moines oil all these small companies. The oil business is very curious in that respect. The larger the quantity of oil is apt to be, the higher price you will have to pay.

Q. Why is it necessary that a company have an assured supply of oil; what would be the result if you bought oil from one of these small companies and it couldn't furnish it?

A. One of two things would happen: we would have to go to a large company and pay an excessive price, or if we refused to do that the gas would go off the town and we couldn't make gas.

Q. I wish you would state where the oil for the Des Moines plant comes from?

A. It comes—I am not quite sure where it comes from now—it used to come from Whiting, Indiana. Whether it comes from Sugar Creek refinery around Kansas City, I don't know. It comes from one of these two refineries.

Q. Where does the oil that is refined at these refineries come from?

A. The Sugar Creek oil comes from either Kansas or Oklahoma. The Whiting oil comes from, I think most of it, from Ohio, Indiana and Illinois.

Q. How is the oil brought to the refineries?

A. Usually in pipe lines.

Q. And from these refineries to Des Moines, how is it transported?

A. In tank cars.

Q. With reference to the general oil situation, I wish you would tell the Master what has been the history of the development of the oil fields in the United States and what undeveloped territory there is, if any, now, that we may look to for an increase in supply?

A. The oil business started in Pennsylvania originally.
4794 Then the prospecting for oil gradually extended until it embraced Ohio, and then from there it went to West Virginia, and then to Indiana. Then to Texas. Then fields were discovered in Illinois, and somewhere about that time there were some fields discovered in Kentucky. After this, and the last fields, Kansas came in there somewhere, I can't remember the exact dates; and the last field was the Oklahoma fields. More oil is coming from there now than any part of what we call the mid-continental field, which is this field in the central west. The last one that was developed was the Caddo; that was a great disappointment to the oil men, because they expected to get a great deal of oil, and there was not as much oil as they anticipated.

The MASTER: Where is that?

A. That is in Oklahoma. The Texas field which was originally a very great field—the gusher that Captain Lucas discovered down there I think gave 200,000 gallons a day. That field is comparatively small now, so much so that the big Texas companies are depending for the majority of their oil on Oklahoma and Indian Territory. There is some oil in Wyoming. The California fields have been pretty well exploited. As I look at the situation, there are not many states left where oil is known. They certainly have definitely

determined, for instance, that there is no oil in New England, none in New York state, none in Delaware, and none in Florida. There are some prospects of oil in Louisiana, but nothing very much has come of it. There are some fields there but they are small. Unless they can find oil in states like Idaho or Montana or Washington, the known production is pretty well determined. Of course you can not say positively. As a matter of fact the oil stocks are less than they were two years ago. So that it looks as if somewhere in the
4795 future—I don't know how close—the oil prices would go up, because the production will not keep pace with the demand. Does that answer your question.

The defendants moves to strike the answer of the witness when he says it looks like the prices of oil will in the future go up, as being incompetent.

Q. There is one thing, I think you told me about as illustrating this tendency that I would like to ask you about to see if I am right. As I recall it, you told me on account of other uses that have been found for these products, the character of the oil which has been available at prices so that it could be used in the gas burners has been going down. I wish you would tell the court what the facts are about that and illustrate it if you will.

A. That phase of the oil business I spoke to Mr. Guernsey about is this: About 1892, or along in there, I was buying for the gas companies what was known as 70 degree naphtha, which was a very high class oil, rich and useful for gas making purposes. After a few years the 70 degree naphtha oil disappeared entirely from the gas business, because the development of other uses by the oil companies raised the price of that naphtha to about twelve cents a gallon, and we were then forced to take a lower grade of oil. That process has been going on until today the gas oil that is being supplied to gas companies is practically as low a quality of oil as it is possible for gas companies to get. That is the way in which the oil companies by refining and distilling into gasoline, naphtha, benzine, and all the oils they are selling to different lines of business, are paid more for that oil than gas companies can afford to pay.

4796 The MASTER: Is that because of the use of gasoline, automobiles, and so on ?

A. Gasoline engines, automobiles, motor boats and all kinds of uses. So that today if we find a competitor—I mean if some lines of business develop a use for gas oil and can pay more for it, the gas business will have to compete with that trade, and either pay the price or go to a still lower grade, and that lower grade will be the refuse; we cannot get any lower. That is the reason for the companies to go to some sort of a specification in order to determine something which would be adapted to the heats in the generators.

Q. You have talked about a gradual decrease for fifteen years in the quality of the oil which you have been buying for gas purposes. Has there during the same period been a corresponding decrease in the price you have been required to pay for the oil or not? You started with your 70 degree naphtha; I wish you would state whether

the price you have been required to pay has been commensurate with the quality of the oil or not during this period?

A. The price we are compelled to pay today is about a half a cent a gallon higher than we paid for 70 degree naphtha fifteen years ago; that is in general terms.

Q. You stated you have been buying oil in the gas business for twenty-three years. How long have you been buying oil for that business for the Des Moines Company and other companies located in this general locality?

A. My impression is I have bought all the oil for the Des Moines Company—strike that out please—My impression is when I came with the United Gas Improvement Company, that they were interested in the Des Moines Gas Company as a stockholder at
4797 that time; that is, twenty-three years. The other companies in the middle west, I don't remember the date; it has been for a good many years.

Q. I did not care for the dates. Have you, say for ten years, been buying oil for the Des Moines Company and other companies in this general locality?

A. Yes.

Q. Have you during the last ten years also bought gas oil for companies that are located in other parts of the United States, covering generally the territory between here and the Atlantic seaboard?

A. Yes.

Q. Is that still a part of your business now, to buy oil for some of these companies?

A. Yes.

Q. What in your judgment, if a contract were to be made today for oil for the Des Moines Gas Company, such oil as it is now receiving, would be a reasonable market value for oil, such as the Des Moines Gas Company uses, if you were purchasing today in the market as it is ordinarily purchased for such companies.

Objected to on the part of defendants as incompetent and immaterial, no proper foundation having been laid and it is not the best evidence.

A. I think the price would be about three cents.

Q. One more question, Mr. Pearson. You spoke of your purchases for the Des Moines Gas Company, what is the fact as to whether you have a number of assistants and whether they also help do this work?

A. That is true, sir.

4798 Cross examination by Hon. H. W. Byers:

Q. How long have you been with the U. G. I.?

A. Twenty-three years.

Q. What is the U. G. I. paying for oil under its present contract?

A. We have two contracts in Philadelphia, General. The price on one is 2.5 cents on the other 2.48.

Q. Do you mean two contracts running at the same time?

A. The Philadelphia Gas Works has a very large property. We have thought it wise to divide the oil business between two oil companies.

Q. What two companies have the contract?

A. The Gulf Refining Company is one and the Standard Oil Company.

Q. Has the Gulf Refining Company any relation to the Standard?

A. Entirely independent, as far as my knowledge goes.

Q. Where is it located?

A. Their main office is in Pittsburg. Their oil production is in Oklahoma and Indian Territory.

Q. What is the price of the Texas and Oklahoma Company?

A. 2.48 and the Standard 2.50.

Q. The 2.48 is delivered at Philadelphia?

A. In our tanks at Philadelphia. The oil is brought up by boats. is is piped down from the Indian Territory field to Port Arthur and there loaded into tank boats and taken to the station at Philadelphia and pumped directly from the barge into the tanks.

Q. Have you a copy of the U. G. I. contract with the Standard people with you?

A. No, sir.

Q. What is the other company?

A. The Gulf Refining Company.

4799 Q. When was that made with the Gulf Refining Company?

A. As near as I can remember it was about two years ago. It is a long term contract.

Q. How long a term?

A. About three years or three and a half years.

Q. What is the quantity they agree to furnish?

A. My impression is each one of those companies has about the same gas made at each plant. I think each are for 75 million gallon; 150 millon for the whole city.

Q. What other contracts did you make with the Standard people with these other companies at that time?

A. Do you want them all?

Q. Well you can specify a few of them.

A. Well the Standard Oil Company have the contract at Waterbury, Conn., the contract at Syracuse, N. Y., and the contract at Omaha, Neb., and Burlington, Iowa, and South Bend, Ind., Hammond, Ind., Charleston, South Carolina, St. Augustine, Fla., and Vicksburg, Miss. Is that enough?

Q. Yes, were they all made at the same time?

A. No, they are made at different intervals, as the agreements expire.

Q. Were the contracts that you made made at the same time that you made these contracts for the U. G. I. of Philadelphia?

A. No, I don't think they were. There may have been some of them.

Q. What is the contract price at Burlington?
A. 2.72.
Q. When do you say that was made?
A. That was made, my recollection is, on about the 1st of January this year.
Q. What was it under the contract before that?
4800 A. I don't remember.
Q. You made the contract, did you?
A. Oh, yes.
Q. You say you don't remember?
A. I have so many of them, it is impossible to carry them all.
Q. Was it higher or lower?
A. My impression is it was. I really don't remember.
Q. How long has the contract run that they had for 2.72?
A. I think it has for two or three years. I have been making them all for two or three years on account of the present low price of oil.
Q. It is at least two years?
A. Yes, sir.
Q. What is the price at Omaha?
A. 2.5.
Q. What company is that with?
A. With the Standard.
Q. Where do they ship their oil from?
A. I think that oil comes from Sugar Creek.
Q. Down at Kansas City?
A. Kansas City.
Q. What do you say the contract price is?
A. 2.5.
Q. Delivered at Omaha?
A. Yes, sir.
Q. When was that contract made?
A. That contract was made about the same time the Des Moines contract was made; I think some time in 1909, I think both that and the Des Moines contract expire in 1912.
Q. They are good yet until what time in 1912?
4801 A. We do not know exactly. There is a lump quantity of oil purchased. The Oil Company agree to furnish the oil from a certain date until all the oil is taken.
Q. Isn't this the fact about the Des Moines contract and the Omaha contract and all the others that they were made at the same time; that the contract was made by the Standard people to deliver a sum total of gallons of oil without respect to these different places and you divide it up yourself as to the amount to be shipped?
A. No, sir.
Q. How is the contract with respect to that?
A. Each contract is made separately. Bids are asked from oil companies. For instance, taking the Des Moines Gas Company as an illustration. We bought 7,590,000 gallons, as I remember the quantity. Bids were asked in the name of the Des Moines Company for that supply of oil.

Q. From whom?

A. From the Standard Oil Company, the National Refining Company, The Sun Company——

Q. Who is the National Refining Company?

A. An Oil Company in Cleveland, Ohio.

Q. It is the Standard Oil Company?

A. I think not, sir.

Q. They have a representative here in Des Moines, haven't they?

A. I don't know. At any rate, I have noticed that wherever the Standard Oil Company gets interested in a competitive oil company, we do not get any bids from them.

Q. You stated you asked bids from those people?

A. Yes.

Q. Did you get a bid from the Cleveland people?

4802 A. Yes.

Q. What was it?

A. The bid as I remember it was slightly higher than the Standard Oil Company, either 2.85 or 2.95.

Q. Are you sure about the rate?

A. I am positive it was higher.

Q. Do you know what company is furnishing oil down here at Knoxville in this state?

A. I don't know anything about the oil business in Iowa, outside of what I have to do with.

Q. What is the price at Sioux City?

A. Three cents.

Q. Who was that bought from?

A. The Standard Oil Company.

Q. At the same time the contract for Des Moines was made?

A. Approximately.

Q. At the same time the Omaha contract was made?

A. As I say, I don't know the exact dates; they all come up at different periods. I would like to finish my answer on the other.

Q. All right.

A. My method rather is to get bids in the name of the Des Moines Company from all the oil companies that I believe could furnish the supply of oil. After those bids are received I make a recommendation to the board of the Des Moines Company to accept the lowest price that I have received, setting forth the other bids that I have gotten, and that recommendation is approved by the board and I then make the contract with the successful bidder.

Q. Well, of course, you have the bids that you got when

4803 you asked for bids the last time for the Des Moines Company, from the several oil companies?

A. Yes, sir.

Q. I wish you would produce them here so that we can have them marked. You began by stating that the reason oil might be a little higher in Des Moines than in some of these smaller towns where a smaller quantity was used was, because the smaller companies could not compete or agree to furnish the amount that would be needed for so large a consumption as in Des Moines?

A. Yes, sir.

Q. And still you do ask them to bid?
A. I do not ask companies of the type I am talking about.
Q. The Cleveland company is rather a small concern?
A. Yes, it is small, but we have had one or two contracts with them and they carried them out very nicely without giving us any trouble.
Q. Do you remember the president's name of the Cleveland company?
A. The man I have always seen is a man by the name of Fretter; I don't know whether he is the president, I think he is secretary.
Q. What is the price being paid at Minneapolis?
A. I don't know, sir; I don't buy at Minneapolis.
Q. You don't make that?
A. No, sir.
Q. What is it at Allentown, Pa.?
A. We made that contract this year. My impression is that price is about 2.65 or 2.70?
A. I don't know accurately without looking at the record.
Q. What is it at Harrisburg?
4804 *Q. What is it at Harrisburg?*
A. It is about the same.
Q. At Kansas City?
A. Kansas City don't use any oil; it has natural gas.
Q. What is it at Sioux Falls, S. D.?
A. I don't remember that price exactly; something over three cents. 3.40 along there.
Q. What is it at Vicksburg?
A. Vicksburg price is in the neighborhood of 2.40.
Q. It is a little closer to the field?
A. Yes, sir.
Q. Do you make the contracts for Allentown?
A. Yes, sir.
Q. And Burlington?
A. Yes, sir.
Q. And for the Chester County Gas Company?
A. Yes, sir.
Q. The Connecticut Railway and Lighting Company?
A. I used to; I don't any more.
Q. The Consumers Gas Company?
A. Where is it?
Q. It is at Reading.
A. Yes.
Q. The Dauphin County Gas Company?
A. They don't use any oil; that is to say if they do it is taken out of the supply of one of the near by companies.
Q. The Essex and Hudson Gas Company of Newark, New Jersey?
A. The Essex and Hudson is a part public service corporation.
Q. You buy the oil?
A. Yes.
4805 Q. That concern is a publicly operated concern?
A. It is a part of the public service corporation.

Q. What price do they pay there?
A. 2.45.
Q. Delivered, of course?
A. Delivered in the tanks; that is boat delivery too.
Q. At the city?
A. At the works, yes sir.
Q. The Fulton County Gas and Electric Company?
A. Yes, sir.
Q. That is with a southern company?
A. That contract is with the Standard.
Q. From where do they ship the oil?
A. Either from Bayonne, New Jersey or from the refinery in Connecticut—I can't think of the name.
Q. The Harrisburg contract, what company is that in?
A. The Sun Company.
Q. Where is their oil?
A. Their oil comes from down in Texas or Oklohoma.
Q. What do you say it is delivered for?
A. I think the price I stated was either 2.65 or 2.70.
Q. Now you say you get a salary of $2500 from the Des Moines Company and that goes to the U. G. I. When did you first commence that practice?
A. I don't remember the exact date, General.
Q. You have been purchasing oil for the Des Moines Company for a good many years?
A. Yes, sir.
Q. And this practice of getting a $2500 salary has only been in vogue for a year and a half, has it not, commenced in 1909?
4806 A. I don't know the date.
Q. I suppose you don't know anything about why it was done, or the reason for it, or anything of that kind; but you do know vouchers came to you to be signed over.
A. I have a general understanding of the subject, and that is that the Des Moines Company pays the United Gas Improvement Company a certain amount of money every year for the services of the various men of which I am one, and the proportion that I get is, I presume just assigned to me in a general way.
Q. Was it your understanding that they had some kind of an agreement of that kind with the Des Moines Gas Company?
A. My understanding is they have it now.
Q. For how long, is it your understanding?
A. I don't remember when I first heard it.
Q. Was that understanding for a fixed sum, as you understood it?
A. I didn't know anything about it until I was told by the treasurer that these vouchers would come to me, and this was the portion that had been allotted to the purchasing department.
Q. I suppose when the first one of those vouchers came to you, you had some curiosity to know why the voucher was made out for you in that way and you inquired?
A. Mr. Lillie explained it to me at the time that this was money

being paid to the company for a portion of the services which the purchasing department was doing.

Q. How many of these companies do you get these vouchers from?

A. I don't know, sir; there are a good many.

Q. I suppose all of them?

A. Well, no; not all of them; a considerable number of them.

Q. You get it from Sioux City?

A. Yes.

4807 Q. You get it from this little plant at Burlington?

A. I don't remember about Burlington.

Q. Let me see, if we can find out how many; I would like to know how much income the Company has in that direction.

A. You can't find out from me because I don't know.

Q. Do you get it from Allentown?

A. I don't remember.

Q. You said you did from Burlington?

A. No, I didn't; I don't remember Burlington. I said Sioux City.

Q. From Omaha?

A. I don't remember about Omaha.

Q. The Chester County Gas Company?

A. No, I don't remember. I don't think I do from Chester.

Q. The Consumers' Gas Company?

A. No.

Q. Reading?

A. I don't think so.

Q. You have some idea how many of those things you have signed over every month?

A. I suppose there are probably fifteen, maybe.

Q. How many do you buy for all together?

A. I can't remember. Mr. Curran gave a list here the other day, I think, of 28 or 29.

Q. You buy for the list that he named the other day?

A. I don't remember whether that list included Minneapolis or not. I think in a general way that is true.

Q. The companies that he named?

A. Yes.

Q. Out of that 28 or more you think there are about fifteen that you draw this from?

4808 A. That is my recollection.

Q. Is the sum $2,500 in each instance?

A. No the amounts vary.

Q. What is the lowest amount?

A. I think the lowest amount is about $500 a year.

Q. Do you know what company that is?

A. No, sir; I don't remember.

Q. Do you recall the Sioux City amount?

A. No.

Q. Harrisburg?

A. No.

Q. Or Burlington?

A. I don't recall any of them.

Q. I suppose you pay little attention to that?

A. Well, I probably notice it. If I had signed the vouchers yesterday I could probably tell you. I happen to know the Des Moines one on account of this lawsuit.

Q. The fact that that is rather a live subject at this time makes you know that?

A. Yes, sir.

Q. In making your contracts with the oil companies you deal directly with the sales agents of the Standard and these other concerns?

A. Yes, sir.

Q. You have been dealing with them for years?

A. Yes, sir.

Q. Buying very large quantities of oil?

A. Yes, sir.

Q. In what other places besides Philadelphia does the U. G. I. in its own name now buy oil in its own name and have the shipment made to the outside company?

4809 A. We do not do that at all.

Q. As to none of them?

A. None of them.

Q. Did they ever do that way?

A. I don't remember whether they ever have or not. It has been so long since we have had any other method than the present one that I cannot remember.

Q. There was a different method in the earlier period?

A. I know there was in their purchases, Mr. Haines testified, but I cannot remember about the oil.

Q. If there was a different method you don't remember just when it was?

A. No, sir. The practice has been to make the contract and send a copy of the contract to the local manager and he orders his oil and takes care of the shipment.

Q. Will you give us the benefit of your judgment as to how much oil is covered by these yearly or two year contract- of yourself.

A. All of them?

Q. Yes.

A. Well, the amount is somewhere, about 70 million a year.

Q. You think that would cover all these companies?

A. I haven't looked it up for some time.

Q. What portion of that comes from the Standard?

A. Well, it varies from year to year. Sometimes the Standard Oil Company has fifty per cent; sometimes they have sixty per cent. There was one year when they only had one-third of the total.

Q. About what per cent have they now?

A. I should say they had about fifty per cent now.

Q. What company has the other fifty per cent?

4810 A. It is divided; the majority of the business is divided between the three large companies, the Sun Company, the

Gulf Refining Company and the Standard Oil. For instance, to give you an illustration: the public service business which amounts to about somewhere along about 15 million a year, is all with the Gulf Refining Company.

Q. I don't know just what you mean by that.

A. The public service corporation of New Jersey you asked about—the Essex and Hudson, that is one of the underlying companies.

Q. You have given me now your best judgment as to the quantity you buy?

A. The total quantity is somewhere around there.

Q. 70 million?

A. Yes, sir.

Q. Now this contract for the Des Moines Company, have you noticed a copy of it since you have been here?

A. No, sir.

Q. I think a copy of the contract has been introduced in evidence. There is nothing in the contract, is there, about the particular quality or kind of oil?

A. You mean as to specifications?

Q. Yes.

A. The only specification in there is the gravity.

Q. That is all that is in the contract?

A. Yes, but we have an understanding with the Standard Oil Company ourselves. They objected very strongly writing that specification in the contract. The reason of that was that the engineers of the company found some years back that the oil they were getting was not the best kind of oil adapted to the gas works, as I think I explained a while ago. So they kept on investigating and
4811 finally developed a specification which is a specification covering the distillation of the oil between two points, and we started in to make the oil companies give us oil under these specifications. The Standard Company did do it. But by and by the specifications died out. All the small companies commenced to write to the Standard Oil Company and wanted the oil according to our specifications. Then the manager of the department came to me and wanted to know if I had any objection to not putting that in, so that he could say that he was not furnishing it under specifications. I asked him what his reason was and he said they could afford to carry that kind of oil for our business where it was large, but they could not afford to do it for a company using 100,000 gallons a year.

Q. One thing further to straighten out a confusion in my mind. You say that the reason that a small plant might get oil cheaper than the Des Moines is because the small oil men cannot compete for these large quantities, and therefore you are a little at the mercy of the concerns that furnish large quantities. Now how do you just help out in that? You don't mean that the Standard Oil people will sell oil to you cheaper than to Mr. Haines?

A. Yes, I do.

Q. Why?

A. Because I am so large a purchaser.

Q. Then the large purchase does have something to do with the price?

A. In a general way it does.

The MASTER: I have forgotten what the price is for Des Moines.

A. 2.80.

4812 Re-direct examination by Mr. GUERNSEY:

Q. You said you made your contracts in Des Moines; I wish you would state whether in the other places mentioned, Burlington, Omaha, Allentown, Harrisburg, Vicksburg, they are made in the same way?

A. They are, yes sir.

Q. Do you know why you did get lower bids in Omaha than you got at Des Moines, can you explain that?

A. I can't explain it, no, unless it is a little nearer.

Q. But the contracts are all made in the same way without going into details in each one of them?

A. Yes, sir.

Q. You stated with reference to this Philadelphia oil that it was piped in Texas to the seaboard and then was carried in ship loads to Philadelphia and then unloaded there?

A. Yes.

Q. And are these pipe lines and steamer lines owned by the companies that furnish the oil?

A. Yes.

Q. So that they pay no freight to anyone on this oil?

A. No.

Re-cross examination by Mr. BYERS:

Q. It appears here in the record from Brown's Directory that Knoxville down here, forty or fifty miles east of Des Moines on the Rock Island road gets its oil for considerably less than Des Moines; Maquoketa, as I remember it, for about 2.50 and Oskaloosa for a lower amount. Now of course you don't know anything

4813 about the specifications that they have in their contract?

A. No, sir.

Q. Or the quality of oil they get?

A. No, sir.

Q. Nor the quantity?

A. Except in a general way; they wouldn't get as much as the larger cities.

Q. Can you give any reason why the plant at Sioux City should pay three cents for oil, when it is bought and furnished and delivered to these other towns I have mentioned for 2.50 and Des Moines 2.80?

A. The only reason I can give is the reason I have already given. I cannot tell, General; we go into the market for oil at Sioux City and we ask all the available oil companies, the main companies that we know of and we accept the lowest bid.

Q. Why do you deal with a concern that will sell you oil for 2.48 delivered in Philadelphia from the fields of Oklahoma and Texas and which charges for Des Moines 2.8 for the same oil?

A. Conditions are entirely different.

Q. Is the freight charge higher for Philadelphia than for Des Moines?

A. I don't know.

Q. Don't you make any inquiry into those things?

A. What would be the good of it. They own their own pipe lines and their own business, and there isn't any freight rate as there is here. The oil is always bought and always has been bought delivered. Of course the freight rates are available.

The MASTER: The Standard Oil brings it around itself?

A. The Standard Oil does, and the National Refining
4814 Company does and the Sun Company does. They make us a price of so much delivered in our tanks, all three of those companies.

Q. It is a fact, that for instance Harrisburg gets .25 to .35 per cent of a lower rate than Sioux City; does that have anythng to do with the rate of Sioux City; the fact that they sell it cheaper in some other places?

A. I don't think it has any bearing whatever. We have a little plant at Conshehocken and we buy that oil for 2.47.

Q. Where does it come from?

A. Somewhere around in that district—the oil comes from the Texas fields.

Q. Take Lincoln, Nebraska, can you think of any reason why oil should be higher at Lincoln, Nebraska, than it is at Knoxville east of here, shipped from the same field?

A. I don't know. I made an examination of these Nebraska prices. I notice that they were all higher than the Iowa prices.

Q. Is there some discrimination somewhere?

A. I can't tell you. I might ask myself the question why Omaha is 2.5 and Des Moines 2.80.

Q. I should think you would know all of that?

A. I can't tell. I invite bids; I can't make the oil companies——

Q. I should think if you were doing such a great kindness to the Des Moines consumer and the Des Moines Company through your relation with the U. G. I. you would not stand for that sort of a deal?

A. Well, I didn't know of those things at the time. I don't know of these sales until after they are made. I didn't know that Knox-
ville was getting a better price.

4815 Q. You must be a little bit behind in the oil business?

A. Not at all, sir. I have no means of knowing what the people of Iowa are paying for oil other than the companies we are interested in.

At this time an adjournment was taken until 1:30 P. M.

4816 1:30 P. M., FRIDAY, *October* 6, 1911.

J. A. PEARSON, being continued on cross examination by Hon. H. W. Byers, testified as follows:

Q. You said that you had a sort of a special understanding with the oil company on the side about certain specifications. Now does that agreement extend to keeping the price at which you get the oil from the public, keeping prices from the public?

A. The standard company you mean don't you?

Q. Yes.

A. The standard company have never placed any restrictions on us. Of course we try to respect their business as much as we can. In fact the prices given, you will notice of our figures are in the Brown directory.

Q. I was just going to ask if it was not, none of these concerns as far as I have been able to find controlled by the U. G. I., gives the price of oil?

A. That is the reason. We do it with all our purchasers, we do not talk about prices because we do not think it is fair to the company that gives them to us.

Q. They understand when they deal with you when you make these contracts that is the way you are conducting yourself with respect to the oil.

A. Yes. There is no understanding and there has never been any occasion for them to ask us to keep the prices quiet because we do it anyhow.

Q. I notice all these others publish it as stated in Brown's Directory?

Mr. GUERNSEY: Oh no, that is a mistake, not all the
4817 other towns, we called attention to towns in Iowa that did not state it.

Mr. BYERS: But not exclusive water gas?

Mr. GUERNSEY: Oh yes.

Mr. BYERS: I don't recall any.

Q. It is pretty generally shown.

A. The method Mr. Brown employs in that I think he sends out his letters when he gets his statistics ready for his directory and those companies that will give him information he publishes it and those that won't he just leaves it blank. We don't do it.

Q. Have you a copy of one of your contracts now with you?

A. I have not any contracts, no. I have those bids you asked for.

Q. Yes, I want those too. This Great Western Oil Company, where is it located?

A. Don't it give it there General? I have forgotten, isn't it Cleveland?

Q. Yes. Was that the Cleveland Oil Company you referred to?

A. That other Cleveland concern is in there. That is the one, the one you have in your hand. You will find the signature of the company at the bottom.

Q. That is the National Refining Company?

A. That is the Cleveland Company.

Q. You don't seem to have any from the Standard here?
A. I can't find the bid of the Standard.
Q. What is the name of that other company you said you got the oil from at Philadelphia that you had a contract with now?
A. That is the Gulf Refining Company.
Q. I don't find any of those here.
A. They don't quote for this territory.
Q. You didn't find the Standard bid?
A. I think the Standard bid must be made verbally. They are very close to us there in New York. There were three other
4818 bids asked for, one from the Chanute Refining Company, Chanute, Kansas, one from the Indian Refining Company, Cleveland, and one from the Leader Oil Company, which are all small companies and none of them big which is in line with what I said, most too large for them.
Q. You stated, if I remember your testimony correctly that you used to buy nap-tha.
A. Yes, sir.
Q. How long since you have been buying nap-tha and this class of oil?
A. I think I testified it was about fifteen years ago.
Q. Take say, the last seven years, what has been the tendency in the price of oil, the kind of oil you have been buying for use in these numerous plants?
A. Well it has varied a good deal.
Q. I mean generally?
A. It has been up and down up to within—well up until the latter part of 1908. Since then the price has been a good deal lower.
Q. The general tendency has been down for the last seven or eight years?
A. No, not for that period. The price in Des Moines——
Q. What was the price seven years ago?
A. That would be a guess on my part, but I should say it was about four cents.
Q. You ought to be able to make a pretty close guess if you don't do anything but buy oil?
A. I buy a great many things besides oil.
Q. You are purchasing agent, you keep close track of these things you say about seven cents?
A. No, not seven cents, four cents.
4819 Q. What was it sau three years ago?
A. Three years ago would be 1908. I think the price in 1908 was thre- cents.
Q. More than that wasn't it?
A. No, sir.
Q. You think you bought it for use here three years ago for three cents, 1908?
A. Yes.
Q. Now what was it for 1909?
A. For 1909 it came under this contract.

Q. Which is 2.8?
A. Yes.
Q. So these years under the contract it has been lower than formerly?
A. For these years yes. The 1908 price went over into 1909. This contract was made as of June 1, 1909, so that the 1908 contract was for part of the year, covered part of the year of 1908 and part of the year of 1909.
Q. You think your bid from the Standard folks was a verbal bid?
A. As I do not find it I draw that conclusion.
Q. With whom did you negotiate?
—. Mr. C. N. Higgins.
Q. Where is he located?
A. 26 Broadway New York.
Q. That is the headquarters of the Standard Enterprise?
A. Yes, sir.
Q. General offices of the Standard people?
A. That is my understanding, yes.
Q. How long have you been dealing with Mr. Higgins in the oil business?
A. Well I can't remember. I have only dealt with two
4820 men, the man who preceded him was a man by the name of William P. Howe.
Q. He is now dead?
A. He is dead and he was the first man I dealt with, he was made assistant treasurer of the Standard Oil Company and then Mr. Higgins tooks his place.
Q. Mr. Higgins, in addition to being sales agent is an officer of the Standard Company isn't he?
A. I don't think he is. I think he is simply the head of the sales department. I understand your word officer to mean executive officer. I don't think he is.
Q. I mean one of the directing officers?
A. I don't think he is, I think simply head of the sales department. He is an officer in a sense, just as I am an officer in a sense, but I am not an executive officer.
Q. You are not sure whether you have a written bid either at Philadelphia are you?
A. I am inclibed to think the bid was verbal or I think it would be with these papers.
Q. Is the same thing true of that other company—I can't keep the name of the company in mind?
A. The Gulf?
Q. Is that the Gulf Refining Company, that the name of it?
A. Yes.
Q. That does not seem to be here either?
A. Well they would not bid on Des Moines. I would not ask them to bid on Des Moines.
Q. Do you think you have the original bid from them for Philadelphia?
A. For Philadelphia, I don't know, I think the Philadelphia

contract is so large the oil men generally come to see me and
4821 talk prices with me and it very often happens, in two or three instances they will leave the price with me, we will discuss the matter and they will leave the price with me, put it down on a memorandum.

Q. Does the United Gas Improvement Company own its own tank cars for oil?

A. No. We have some tank cars but they are not used for oil.

Q. What are they used for?

A. They are used for handling by-products, tar and tar oils in Philadelphia which we sell to the neighboring manufacturing plants.

Q. Do they have a name on the cars?

A. Yes, they are marked U. G. I., I think 18 of them, one to 18.

Q. Don't have any for oil?

A. Oh, no, not used for oil at all.

Q. I misunderstood you, I understood you this morning to say this oil to Philadelphia was handled in tank cars.

A. No, in our tanks, the storage tanks.

Q. This pipe line that you talk about from Kansas and Oklahoma is that the pipe line that crosses the southeast corner of this state?

A. Well I don't know the exact location, but in a general way I should say that was it. As I understand it they have a pipe line from Kansas clear into New York, that is have pumping connections.

Q. Serve both the Standard and this Gulf Company?

A. No, the Gulf lines go to Port Arthur.

Q. The pipe line is owned by the Standard?

A. No, I think by the Gulf Line, not the Standard, the pipe line from Oklahoma to Port Arthur, Texas.

Q. I am speaking of this one down here?

4822 A. This one I think belongs to the Standard, but the Gulf Refining Company have not what may be termed a continental line. That is do not bring oils from the Texas fields to Philadelphia by pipe line, their method is by steamer.

Q. By boat and cars if necessary?

A. By boat and cars.

COURT: Steamer or sailing vessel?

A. Use what is called a tank steamer, regular steamer with large tanks underneath.

Q. Built on purpose to haul oil?

A. Built purposely for oil, yes. Here is a copy General that might interest you, copy of my request for the bids which shows the specifications for oil. That is for this Des Moines business.

COURT: How many gallons of oil do they use here?

A. Runs about two and a half millions a year I think.

Q. I suppose after you get in these bids then you make the best contract you can?

A. The bids are then presented to the board of the Des Moines Gas Company with my recommendations. Then the contract is signed.

COURT: In other words you don't have authority to deal without referring it to the Board?

A. Under our system I have authority to make all purchases myself of any concern that we buy goods from except where I bind the company for a period of time. All these have to be submitted to the board for approval so they can be recorded in the minutes.

Q. These bills are payable according to the bills monthly?

A. Monthly on the invoices of the preceding month.

Q. First of every month?

A. Yes, well it is generally about the 15th an average time.

Q. None of these of which you have furnished me copies
4823 here, none of these bids were accepted.

A. They were all too high as you will notice. In one of the cases the bid was reduced after the written bid was sent in. That was the bid of the Gas Oil Company. You will see a little note there on the pink sheet. Col. Pratt who used to be here, was president of that company and very anxious to get this business and came over to see me and I told him I thought his price, his bid too high and then he reduced it from 3.10 to 2.96 I think it is.

Q. Does this oil have a market price? Any of it?

A. You mean a quoted market price. No, sir. Nothing is quoted but crude petroleum.

Q. No such thing as market price on refined oil used for manufacturing gas?

A. No, sir.

Q. So the only guide you have is to get it just as low as you can?

A. Get the bids, yes, and buy as cheap as I can.

Q. Now just a word further, about that understanding you had with these people about the specifications. Is that just an agreement between you and Mr. Higgins?

A. Yes, an agreement between us. He wanted to be in position to say he didn't sell specification oil, that was about the amount of it.

Q. The reason he wanted to be in that position was so he would not have to cut his prices or make agreements that would be burdensome?

A. No, not his price, as I explained to you when we began specifications he agreed without any question, Mr. Howe did before him. We submitted specifications to Mr. Howe and asked him if there was anything in that specification he would object to. He said no he thought the refiners were fully able to prepare oil that way.
4824 Then shortly after that Mr. Higgins succeeded him, then as I said -while ago the specifications commenced to get out through the gas industry and small concerns buying 100,000 gallons went to Mr. Higgins and told him they wanted the same oil we were getting. He said he could not afford to carry 100,000. They shipped from refineries all over the country, might have a car of oil at Whiting or in Kansas City, but usually business in Iowa is shipped from Sugar Creek.

Q. The oil they would sell on your specifications would be a grade of oil better than you would ordinarily get?

A. In our judgment it would, yes.

Q. That is to say now if it was once advertised that you were buy-

ing a certain quality of oil at a certain price they would have to give the same price to everybody and the same kind of oil?

A. Yes.

Q. He didn't want to do that?

A. Yes.

COURT: Do they live up to it to your understanding?

A. Yes, sir. We have a method, your honor, Mr. Haines takes samples of the oil which comes in, then it is analyzed to show whether it conforms to these specifications and a copy of these analyses are sent to me. We keep them all in a book one sheet for each copy and if we find the oil is not conforming we take it up with Mr. Higgins.

COURT: Is this crude oil or refined?

A. It is a distillate from crude oil.

COURT: Not crude oil itself?

A. No, sir. Crude oil is oil just as it comes out of the ground originally, the ordinary crude petroleum.

Q. What is crude oil worth as you call it?

4825 A. It varies in every field in the country. Pennsylvania oil, for instance, which is the highest grade oil there is runs about, I have not looked up prices lately, is over a dollar a barrel and some oils down in Texas and Indian Territory that sell for 40 or 50 cents a barrel. We do not bet any Pennsylvania oil for the reason, as I explained to you awhile ago, it is too valuable for other things. Gas companies won't pay for it.

Q. I don't know as I got exactly the right understanding of your testimony, but there are grades of oil then used in the making of gas, that is some gas companies use a lower grade than others, is that right?

A. Well I presume that must be so, because of the attitude the Standard Oil Company took on this specification question.

Q. And they pay more for a lower grade than you do for a higher grade, that is your opinion?

A. I don't know whether they pay any more in cents per gallon, but I don't believe they get as good results with the oil they use as we do.

Q. Well but they do pay more per gallon don't they, is that your information about it?

A. Well according to this Brown's Directory that you spoke of this morning some of them pay less.

Q. But you don't know anything about the quality they are getting?

A. No, sir.

Q. But there are grades of oil that could be used for making gas, that is the point I want to be sure about?

A. Yes, sir.

Q. Do you know anything about the arrangement for the freight on this oil?

A. No, sir. The oil is always bought delivered.

4826 Q. Is that true from all these different companies?

A. I never have heard of an oil contract where the oil was bought at the point of shipment. I never made one. You can easily see that you get a better parallel of price if you are asking a

man in one place and another man some other place and another man some other place to quote because you bring them altogether at the point where you are going to use it. You get your bids in parallel.

Q. You don't know anything about what it cost the Standard people to put oil in here?

COURT: No one but these oil companies has facilities for shipping it have they?

A. No, sir; I don't think anybody else, never heard of anybody else, they all have their own tank cars.

COURT: Except where they ship by barrel?

A. Yes.

Q. Where is Sugar Creek?

A. Kansas City as I understand or near there. It is a big refinery that the Standard Oil Company built after the development of the Kansas field. They wanted to be near the source of supply. I understand they put pipe lines up through Kansas and brought the oil down there.

Q. Don't have any pipe lines up here?

A. Not that I know of.

Q. It is not piped in here?

A. I don't think so. I think the only pipe line in this section is the one that runs over to Whiting.

Redirect examination by N. T. GUERNSEY, Esq.:

Q. Are these papers marked complainant's Exhibits 78 to
4827 82 inclusive, the papers you produced and handed to General Byers just a few moments ago?

A. Yes, sir.

Q. I understood you to say Exhibit 78 is the request for bids you made?

A. Yes, sir.

Q. What do these names mean down the side here, for instance Sus, Standard and so on?

A. They are the names of the people whom I asked to bid on the oil.

Q. Exhibit 79 seems to be in the form of a contract. Please state whether or not that was the form in which this bid was submitted to you?

A. It was.

Q. Now there is one other thing here I see that Exhibit 80 is dated January 7, 1909, which is prior to the date of your invitation for bids. How do you explain that?

A. My recollection of that is, based on similar cases is that the Sun Company has a habit of writing me a letter and asking me when I will be in the market for oil and I give them a list such as they have quoted on there of points that are coming up say within the next six months and in this case the Sun Company have evidently quoted on them all at that time and I presume no doubt at the time the Des Moines business was ready to close I asked the Sun Company if they could make me any lower figures than this figure they gave

4828½

COPY

OFFICE OF PURCHASING AGENT

THE UNITED GAS IMPROVEMENT CO.

Sun 3.10 ✓

✓Standard 1 yr. 2.96 / 18 mo. 2.80 Verbal / Verbal 2.96 ✓

Gas Oil Co. ~~3.10~~

Chanute Ref. Co.

National Ref. Co. 2.85 ✓

Indian Ref. Co.

Great Western Oil Co. 3.40 ✓

Leader Oil Co.

Complainants Exhibit No 78

10/6/11

April 29, 1909.

Please quote me your best price per gallon, delivered in tank cars, f.o.b. DesMoines, Ia., on 2,200,000 gallons, 10% more or less, of Gas Oil, to be required during the contract period beginning June 1, 1909 and ending May 31, 1910; all to conform to the following specifications:-

3 yrs 6,600,000 option clause

85% to distill off between 400° and 700° Fahrenheit; said oil not to carry to exceed .5% of sulphur and not more than 2% of coke.

Bids to be in my hands not later than Thursday, May 6.

Yours truly,

J. A. Pearson,

Purchasing Agent.

me in January. I notice in here at the top is "would like Atlanta" that is a lead pencil memorandum and I infer from that these were the best prices and would like to have the Atlanta business when it came along, probably a telephone message.

Q. I notice in this Sun company bid that the first two
4828 items or bids ar- Burlington, Iowa, 2.86 cents and Des Moines, Iowa, 3.30 cents?

A. Yes.

A. A difference of 44 points. Is that illustrated of the difference of the prices in different places?

A. Between Burlington and Des Moines?

Q. I don't mean whether that is a fair difference between those two places, but simply whether that bid, different prices ar the two places approximately close together illustrates the fact tou get bids for different prices at different places?

A. Yes, there is nothing more variable or uncertain than these oil prices.

Mr. GUERNSEY: Complainant offers and reads in evidence complainant's Exhibit No. 78 as follows:

(Here follows photos, marked page 4828½.)

4829 COMPLAINANT'S EXHIBIT No. 78. 10/6/11.

Copy.

Office of Purchasing Agent The United Gas Improvement Co.

APRIL 29, 1909.

Sun	3.10	
1 yr.	2.96	
Standard—18 mo.	2.80	Verbal
		Verbal
Gas Oil Co. [3.10]*	2.96	
Chanute Ref. Co	....	
National Ref. Co	2.85	
Indian Ref. Co	....	
Great Western Oil Co	3.40	
Leader Oil Co	....	

*Erased in copy.

Please quote me your best price per gallon, delivered in tank cars, f. o. b. Des Moines, Ia., on 2,200,000 gallons, 10% more or less, of Gas Oil, to be required during the contract period beginning June 1, 1909 and ending May 31, 1910; oil to conform to the following specifications:—

3 yrs. 6,600,000 option clause.

85% to distill off between 400° and 700° Fahrenheit; said oil not to carry to exceed .5% of Sulphur and not more than 2% of coke.

Bids to be in my hands not later that Thursday, May 6.

Yours truly,

J. A. PEARSON,
Purchasing Agent.

4830 Comp-ainant offers and reads in evidence complainant's exhibit No. 79 as follows:

872.

Contract.

The U. G. I. Co.
Filed
Jun- 4, 1909
Office of the Third
Vice President.

Aggreement entered into this 3 day of May, 1909, by and between the Des Moines Gas Co., of Des Moines, Iowa, party of the first part, and the National Refining Company of Cleveland, Ohio, party of the second part;—

4830a

Complainants Exhibit No 79
10/6/11

872

CONTRACT.

AGREEMENT

Entered into this 3 day of May 190 9 by and between The DesMoines Gas Co., of DesMoines, Iowa, party of the first part, and THE NATIONAL REFINING COMPANY, of Cleveland, Ohio, party of the second part:—

delivered verbally

WHEREIN

The party of the first part hereby agrees to purchase of the party of the second part all the Gas Oil used in their plant located at DesMoines, Iowa, for the period of one year from the date of this agreement.

ESTIMATED

Amount of Gas Oil used by the party of the first part for said period of one year being maximum of gallons, and minimum of 2,200,000 gallons 10% more or less. gallons.

IN CONSIDERATION

Of the above agreement, the party of the second part hereby agrees to furnish to said party of the first part their requirements of Gas Oil for said period of one year as estimated above.

QUALITY

Of said Gas Oil to be firstclass: and

PRICE

To be 2 85/100 cents per gallon, in tank cars, less freight charges to Des Moines, Iowa.

TERMS

The terms of sale are Net cash payable first of the month covering previous month's sales.

THIS CLAUSE IF NOT DESIRED RULE OUT EACH LINE

~~The above price is based on the present market price of Ohio Crude Oil,~~ which is cents per barrel (42 gallons bulk at well constituting a barrel). For each and every reduction of 5 cents per barrel in the price of Crude Oil, above price to be reduced ⅛ cent per gallon, likewise for each and every advance of 5 cents per barrel in the price of Crude Oil, the above price on Oil to be advanced ⅛ cent per gallon. The market price on Crude Oil ~~governing at the time shipment is made from refinery of said party of the second part~~. IN EVIDENCE OF THE ABOVE MUTUAL AGREEMENT, we hereunto affix our respective signatures

THE NATIONAL REFINING COMPANY

Per Frank B Smith Sec'y

Wherein the party of the first part hereby agrees to purchase of the party of the second part all the Gas Oil used in their plant located at Des Moines, Iowa, for the period of one year from the date of this agreement.

Estimated amount of Gas Oil used by the party of the first part for said period of one year being maximum of — gallons and minimum of 2,200,000 gallons 10% more or less.

In consideration of the above agreement, the party of the second part hereby agrees to furnish to said party of the first part their requirements of Gas Oil for said period of one year as estimated above.

Quality of said Gas Oil to be first class; and

Price to be 2 85/100 cents per gallon, in tank cars, less freight charges to Des Moines, Iowa.

Terms: The terms of sale are net cash payable first of the month covering previous month's sales.

In evidence of the above mutual agreement, we hereunto affix our respective signatures.

——— ———,

——— ———,

NATIONAL REFINING COMPANY,
Per FRANK B. FRETTER, *Secy.*

(Here follows photo marked page 4830*a*.)

4831 Complainant offers and reads in evidence Complainant's Exhibit 80, as follows:

201.

Sun Company, Real Estate Trust Building.

PHILADELPHIA, *January 7th,* 1909.

T. U. G. I. Co.
Filed
Jun. 4 – 1909
Office of the Third
Vice President.

Would like Atlant.

Mr. J. A. Pearson, Pur. Agent United Gas Improvement Co., Broad and Arch Streets, Philadelphia.

DEAR SIR: I am pleased to quote you on crude oil (which is our Stoy crude) to be shipped from Stoy, Ills., the following rates:

Burlington, Iowa	2.86	cents
Des Moines, Iowa	3.30	"
Janesville, Wis.	2.92	"
Sioux City, Iowa	3.62	"
Sioux Falls, S. Dak.	3.69	"
South Bend, Ind.	2.80	"
Atlanta, Ga.	4.46	"

Yours truly,

____ ____,
President.

J. N. P. T.

(Here follows photo marked page 4831*a*.)

4831a

J. N. Pew
President
Arthur E. Pew
First Vice President

PRODUCER, REFINER, SHIPPER AND EXPORTER OF PETROLEUM AND ALL ITS PRODUCTS.

Sun Company

Real Estate Trust Building,
Philadelphia,

UNLESS OTHERWISE SPECIFIED QUOTATIONS ONLY GOOD FOR ACCEPTANCE BY RETURN MAIL. ALL CONTRACTS AND AGREEMENTS ARE CONTINGENT UPON STRIKES, ACCIDENTS AND OTHER OCCURRENCES BEYOND OUR CONTROL.

Cable Address
Sun Phila.
Codes Used: Western Union, Lieber's A.B.C. 4th Edition

The U. G. I. Co.
FILED
JUN 4 - 1909
OFFICE OF THE THIRD VICE PRESIDENT.

January 7th, 1909.

Mr. J. A. Pearson,

Pur. Agent: United Gas Improvement Co.,

Broad and Arch Streets, Philadelphia.

Dear Sir:

I am pleased to quote you on crude oil (which is our Stoy crude,) to be shipped from Stoy, Ills., the following rates:

✓	Burlington,	Iowa	-	2.86 cents
	Des Moines,	Iowa	-	3.30 "
✓	Janesville,	Wis.	-	2.92 "
	Sioux City,	Iowa	-	3.62 "
	Sioux Falls,	S. Dak	-	3.69 "
	South Bend,	Ind.	-	2.80 "
	Atlanta,	Ga.	-	4.46 "

Yours truly,

President.

JNP:T

4832 e

Complainant Exhibit No 81

1516

B W BROWNE, Pres't & Treas. ADDRESS ALL COMMUNICATIONS TO THE COMPANY. W. H. HEARLEY, Secretary

The Great Western Oil Co.

Refiners and Manufacturers of

Illuminating and Lubricating Oils.

CABLE ADDRESS "GREWESOIL" A B C CODE, 4TH EDITION.

BELL BROAD 60
CUY CENTRAL 89

OFFICE & WAREHOUSE, E. 37TH ST. S.E. & ERIE RAILROAD

REFINERIES: MARIETTA, O. RAYMILTON, PA.

SPECIALTIES: PALACELITE OIL, NAPHTHA & GASOLINE GREASES, WAX, Etc

Cleveland, Ohio, May 11, 1909.

FILED
JUN 7 - 1909
OFFICE OF THE THIRD VICE PRESIDENT
RECEIVED
MAY 14
OFFICE OF THE THIRD VICE PRESIDENT

Mr. J.A. Pearson, Pur. Agt.
New Gas Light Co.,
Philadelphia, Pa.

Declined 6/3/9

Dear Sir:-

Replying to your several letters of the 29th ult. we take pleasure in quoting you to day for a years contract . Prices subject to change without notice without notice until your contract is accepted by us as follows:

On Gas Oil per your specifications 85° to 62 Distill between 400° & 700° F.. Oil not to carry to exceed 5% sulphur and not more than 2% coke.

275,000	gallons for	Janesville, Wis.	4.02 per gall.
450,000	" "	Burlington, Iowa	3.40 " "
250,000	" "	Sioux Falls, S. Dakota.	4.02 " "
1,300,000 — 130,000	" "	" City, Iowa.	3.66 " "
2,200,000 220,000	" "	Des Moines, Iowa.	3.40 " "

All in tank cars, f.o.b. the above points. We hope that our figures are low enough to secure the business. and if favored with same will give prompt shipments.

Yours truly,

THE GREAT WESTERN OIL CO.

W. H. Hearley Secy.

HK.

Quotation

ALL QUOTATIONS SUBJECT TO CHANGE WITHOUT NOTICE

4832 Complainant offers and reads in evidence Complainant's Exhibit No. 81 as follows:

1516.

The Great Western Oil Co.

Received May 14 A. M., 1909. Purchasing Dep't.

CLEVELAND, OHIO, *May* 11, 1909.

The U. G. I. Co.
Filed
Jun- 7, 1909.
Office of Third
Vice-President.

Declined 6/3/9.

Mr. J. A. Pearson, Pur. Agt. New Gas Light Co., Philadelphia, Pa.

DEAR SIR: Replying to your several letters of the 29th ult. we take pleasure in quoting you to*fay* for a year's contract. Prices subject to change without notice *without notice* until your contract is accepted by us as follows:

On Gas Oil per your specifications 85 to Distill between 400 & 700 F. Oil not to carry to exceed 5% sulphur and not more than 2% coke.

	275,000	gallons	for Janesville, Wis...	4.02	per	gall.
	450,000	"	" Burlington, Iowa..	3.40	"	"
	250,000	"	" Sioux Falls, S. Dak.	4.02	"	"
1,300,000	130,000	"	" " City, Iowa...	3.66	"	"
2,200,000	220,000	"	" Des Moines, Iowa..	3.40	"	"

All in tank cars, f. o. b., the above points. We hope that our figures are low enough to secure the business, and if favored with same will give prompt shipments.

Yours truly,

THE GREAT WESTERN OIL CO.
M. T. HEARLEY, *Sec'y.*

H. K.
Quotation.

(Here follows photo. marked page 4832*a*.)

4833 Complainant offers and reads in evidence complainant's Exhibit No. 82 as follows:

988.

Gas Oil Company, 613 New York Life Building.

Received May 6, A. M., 1909. Purchasing Dep't.

CHICAGO, ILL., *May 5th*, 1909.

The U. G. I. Co.
Filed
Jun- 7, 1909.
Office of the Third
Vice-President.

E. T.
Declined 6/3/9.

Mr. J. A. Pearson, Purchasing Agent, Des Moines Gas Company, Philadelphia, Penn.

DEAR SIR: Complying with your request of April twenty-ninth, we are pleased to make you the following prices on gas oil as per your specifications:

2,200,000 gallons, 10% more or less, of refined gas oil to be used during contract period beginning June 26th, 1909, and ending June 25th, at 3.1¢ per gallon, f. o. b. Des Moines, Iowa.

Yours very truly,

GAS OIL COMPANY.
S. C. SHOFFEN, *Manager*.

(Here follows photo. marked page 4833*a*.)

4833a

Complainants Exhibit No 82
1916/11

988

TELEPHONE CENTRAL 6939

GAS OIL COMPANY

613 NEW YORK LIFE BUILDING
111 LA SALLE ST.

RECEIVED MAY 6 A.M. 1909

The U. C. L. Co.
FILED
JUN 7 - 1909
OFFICE OF THE THIRD VICE PRESIDENT

PURCHASING DEPT

WE PAY SPECIAL ATTENTION TO THE REQUIREMENTS OF GAS COMPANIES

CHICAGO, ILL., May 5th, 1909 190

E.J. Declined 6/3/9

Mr. J.A.Pearson, Purchasing Agent,
Des Moines Gas Company,
Philadelphia, Penn.

RECEIVED OFFICE OF THE THIRD VICE PRESIDENT
MAY - 6
1909

Dear Sir:-

Complying with your request of April twenty-ninth, we are pleased to make you the following prices on gas oil as per your specifications:

2,200,000 gallons, 10% more or less, of refined gas oli to be used during contract period beginning June 26th,1909 and ending June 25th,1910, at 3.1 ¢ per gallon, f.o.b. Des Moines Iowa.

Yours very truly,

GAS OIL COMPANY

Manager

4834 Recross-examination by Hon. H. W. Byers:

Q. Did you bring in that Sun bid, the bid from the Sun Company because you thought it was a fair comparison of the price of oil?

A. You mean today.

Q. Yes, in this case.

A. I found these papers in among my papers on the subject of Des Moines oil.

Q. You knew when you brought that in here that the Sun Company to get this oil here at all would have to ship it by boat probably and then by freight all the way from the Atlantic coast to Des Moines in order to compete with the Standard people who would ship it right up from Kansas City?

A. No, sir.

Q. How could the Sun Company get it here?

A. What I said about the Sun Company bringing oil up the Atlantic coast in tank steamers was correct. And in addition to that and this is what differentiates the Sun Company from the Gulf Company, the Gulf Company only have their oil in Texas, but the Sun Company have oil fields in Illinois and Ohio, which makes them available bidders for Des Moines.

Q. Is there any oil shipped here from Illinois by the Sun Company?

A. The contract of 1907 and 1908, was with the Sun Company for Illinois crude oil.

Q. But they are not shipping any oil from Illinois now are they?

A. I don't know, they are not shipping here.

Q. That is what you offered that for as a bid that you got in 1909 wasn't it?

A. Yes. At the time this contracts was made.

Witness excused.

Here the further hearing was adjourned until 9:30 A. M. Friday October 13, 1911.

4835 Friday Forenoon Session.

October 13, 1911—at 9.30 a. m.

Counsel for the respective parties all present.

Testimony on part of complainant, in rebuttal, resumed as follows:

W. J. Hagenah, re-called on part of complainant in rebuttal, examined by N. T. Guernsey, Esq., testified:

Q. Mr. Hagenah, have you recently made an examination of the records of the water department of the city of Buffalo showing what records that department has with reference to the cost of laying water mains in the streets of the city of Buffalo for the five years preceding 1907?

A. I have.

Q. Now this examination covered what years?

A. The years from 1902 to 1906, inclusive.

Q. You have a memorandum here, and I wish to ask you some questions with reference to that to illustrate the character of this examination. I see you have under 1902, under the column headed "Location Street"—now what does that column indicate?

A. The sheet shows a tabulation. The first column of the sheet shows the location on the street in which the particular construction work was undertaken. These are arranged in alphabetical order.

Q. Now in that column did you take every job of laying water pipe that was done by the Buffalo Water Department during that year, 1902?

A. I took all the work orders as shown on their pipe extension record, classified them according to the size of pipe, and
4836 eliminated from my calculation those particular jobs which showed extraordinary expenditures, such as a large amount of tunneling, going under extensive railroad yards or blasting, or construction expenditures in connection with reaching the proper depth of the mains about the Erie Canal and the harbor work.

Q. Then you took every job except those of the classes you have indicated that involved extraordinary and unusual expense?

A. Yes, sir; every work order appearing on their books except extraordinary jobs which are apparent from an examination of the record.

Q. Now, taking the first of these as an illustration, I find under "Location" Amber Street; that is the street where the pipe was laid?

A. Yes, sir; that indicated that a six inch main, according to this table was——

Q. No, that don't; I simply ask as to this column; that indicates simply the street?

A. Yes, sir.

Q. I want to take one column at a time. Now the next column shows the size of pipe?

A. Yes, sir.

Q. Now, taking Amber Street, that was what size?

A. Six inch.

Q. You get that from the books of the Buffalo Water Department?

A. Yes, Buffalo Water Works.

Q. The next column shows the total length of pipe laid?

A. Yes.

Q. Of how many feet?

4837 A. 605 feet.

Q. That you got from the books?

A. Yes, sir.

Q. Now you have two columns here that follow, the first being headed "Length Street Main" and the second "Length Pipe to Hydrant." Now take these columns and are they found from the books, or are they determined as a matter of computation?

A. They are determined as a matter of computation from the figure in the third column showing total length of pipe. The charge on the books of the Water Works shows the total pipe——

Objected to on part of defendants as being immaterial and not proper rebuttal.

(Answer continued)—shows the total length of pipe charged to that job. There are a number of hydrants attached to the main and since the main is laid somewhere between the curbs of the street and the hydrant is located in the curb, I deducted from the total length of pipe charged to the job the length of pipe which would reach from the main in the street to the hydrant. The books show the location of the pipe with respect to the distance from the curb or line where the hydrant was placed and I deducted from the total length of pipe the amount necessary to cover from the main to the hydrant for the number of hydrants placed.

Q. In that instance, what was the distance from the main to the curb line?

A. The distance was nine feet and there were two hydrants placed, so I deducted that amount from the length of pipe.

Q. What is the size of pipe running from the main to the hydrant as compared with the six inch main?

A. It appeared to be six inch pipe.

4838 Q. In that way you obtained your length of the street main, 587 feet, and your length of the pipe to the hydrant. What difference is there between water works construction and gas construction that led you to make this computation so as to take out the hydrants?

Defendants interpose the same objection and the further objection that the witness has not shown himself competent to testify.

Q. I will go back a little. Do you know whether in the laying of gas mains they have hydrants at the side of the streets and pipes running from the mains to the hydrants?

Defendants interpose the same objection.

A. They have not, and I made the deduction to secure the cost which would be reliable for the purpose of comparison.

Q. In other words, you deducted it because that was an item of expense appearing there that would not be incurred in laying gas mains?

A. Yes, sir; peculiar to the water industry.

Q. If you had left out any, of course your unit prices would have been higher?

A. It would show a greater cost for pipe.

Q. Now what was the next item of cost that you found on these books, or the first item of cost which you found—you have given us the total length of pipe and number of hydrants and the distances between the pipe and the curb which enabled you to get the length of the street main—what was the first item of cost you found on the books there?

A. The first item was the cost of pipe.

Q. The cost of the pipe itself?

A. Yes; and shows the total cost for the total amount of
4839 pipe charged to that particular job. Since I had apportioned the pipe length between that part representing the main and that part leading to the hydrant, I apportioned the total cost of the pipe on the same basis; that is, to secure the cost of pipe per foot, and charged to the street main proportion the cost of the proper length of the pipe, and equally to the hydrant proportion the cost of that part represented by the number of feet reaching from the main to the hydrant.

Q. Then under the *the* cost of pipe you have two sub-heads, one street main, and the other hydrants. As to each one of those jobs did you apportion that cost so as to get the actual cost of the street main without the expenses of running to the hydrant?

A. That was my intention in making the apportionment shown on this table.

Q. In this connection, can you tell us where the foundries are from which the Buffalo water pipe comes?

A. I made several inquiries in regard to that from different parties connected with the water service and in the legal department and was informed the pipe was purchased from the plants of the United States Iron Pipe Foundry located in the city of Buffalo.

Q. You learned there were these pipe foundries in the city there?

A. Yes, sir.

Q. Now what was the next item of cost shown by the books in this department in connection with this matter of pipe laying?

A. The cost of specials, charged to the extensions in each case.

Q. What did you do with reference to dividing that so as to eliminate the specials that were involved in the hydrant connections?

A. The cost of the specials, just like the cost of the pipe, appeared on the books in one single charge, although there were de-
4840 tailed items, they were all charged to the cost of the main. I examined the individual charges for specials and deducted from the total as shown by the column on the books those specials which were installed for use in connection with the hydrant. So that these two columns here show first the cost of the specials used in connection with what might be strictly the water works main, and second, the cost of specials which were incident to the hydrant service.

Q. Now did the books themselves, without going beyond them, distribute this cost of specials so that you could tell what amount was the cost of specials that were incident to the mains themselves, without going beyond the books.

A. They did not distribute the total, but they showed the individual charges on the books. I could generally tell from looking at the individual item appearing — the books as to whether the special in question pertained to the hydrant service or to the main, and in a number of instances where I was not clear, I inquired of members of the engineering department, so that this apportionment is my own work.

Q. It is then as to this job the amount of specials for the street main work and the amount for the hydrants?

A. It is as per my apportionment.

Q. The aggregate being the aggregate shown on the books?
A. Yes, sir.
Q. Here again, if you had simply taken what the books show, the result would have been to increase the unit cost per foot as you finally reached it?
A. Yes, sir.
Q. What was the next specific item of cost which appeared on the books of this water de-artment?
A. The cost of the valves charged to the job.
4841 Q. That was shown separately; you took that as to each particular job?
A. Yes, sir.
Q. Now what was the next item that was shown?
A. The cost of the hydrants which were purchased and installed in connection with this main extension.
Q. And this memorandum that you took shows that as to each one of those things?
A. Yes, sir, each extension is separately noted here.
Q. Then what was the next item shown by the books?
A. The cost of lead used in making the joints.
Q. That was shown as to each job?
A. Yes, sir; exactly as shown on the books.
Q. What was the next item?
A. The cost of gaskets.
Q. That was shown as to each job?
A. Yes, sir.
Q. What was the next item?
A. The cost of tile used.
Q. As to that there were some jobs which involved no expense on that account?
A. Yes, sir.
Q. Also some involved no valves or hydrants?
A. Yes, sir.
Q. And apparently some involving no gaskets?
A. Yes, sir.
Q. You took this cost of tile in your memorandum wherever that appeared on the books?
A. Yes, sir.
Q. Do you know why they used tile?
4842 A. It occurred to me that there might be some question as to how the cost of tile came into the cost of the main, and I made some inquiry about that. The tile cost is incurred through the water main disturbing some parts of the sewer system. In extending the water main they would possibly have to take off some corner of the sewer, and the tile used is charged to the cost of the water main extension.
The MASTER: That wouldn't have anything to do with laying mains?
A. Only as it occurs in connection with laying mains in large cities.

Q. It would be only an incidental expense involved in doing the work?

A. Yes, sir. It makes it more expensive in large cities than in virgin soil.

Q. The next heading is what?

A. The cost of pavement.

Q. That was a heading which appeared on the books there?

A. Yes, sir; there were two columns, one showing the square foot area of the pavement and the other the cost of the pavement.

Q. I see for the year 1902 there appears to be nothing in the square foot area?

A. Nothing was entered on the books. This form was taken from the books, with the exception of the portions I have referred to.

Q. I notice that on cost of pavement there only appears to be about five items in the aggregate of perhaps 25 or something like that.

A. Those were the only ones appearing on the books.

Q. Now what was the next item on the books?

A. The labor, charged to the extension in each case.

Q. And in this memorandum you have in each instance
4843 put down the labor charge as it appeared there.

A. As it appeared on the books, yes sir.

Q. I see for the year 1902, the column headed "Extra Labor"; that was a classification shown on the books there?

A. Yes, sir; that was a classification shown on the books, but there were no charges in that column for that year. The form is taken from the books.

Q. The next column is what?

A. The cost of coke.

Q. There again you got your item where?

A. That information is as shown by the books.

Q. The next column is what?

A. The cost of teaming.

Q. There again I suppose you took what the books show on that?

A. Yes, that is what the books show—only a few charges for teaming during that year.

Q. The next column is what?

A. This column shows the cost of blasting. There appears only one in connection with removing certain rock on one street.

Q. The final column is what?

A. There is a column for miscellaneous expenditures to which were charged some very small items, such as kerosene used in the lanterns which lighted the dirt piles at night; several lantern globes and minor items of that kind.

Q. Now you have here on this memorandum a column headed "Grand Total"; is that taken from the Buffalo books or is that a computation added by yourself?

A. That total is shown on the water works' books and is the sum total of all the items charged to that particular job and includes each of the two items representing the cost of the pipe
4844 and the cost of specials which I have apportioned between the mains and hydrants in each case.

Q. Referring further to this memorandum as to the year 1902, you run through one street there. Following this is like information obtained in the same way as to a number of other streets covering all the six inch pipe?

A. Yes, sir.

Q. Six inch pipe being put together?

A. Yes, sir; I tabulated the six inch pipe extension jobs on all the streets of Buffalo during the year 1902 on this same form.

Q. Then following that are the four inch pipe tabulated in the same way?

A. Yes, sir; there were five pipe extension jobs of four inch main laid during that year.

Q. Now, referring again to this memorandum, I see a note here which includes something; will you read that?

A. I found the note on the pipe extension record in connection with the cost of laying the six inch main on Jersey Street in 1902, which stated that they had included in the cost for pipe charged to this job the cost of 189 feet of screw pipe which was used under the river—some river in Buffalo, I don't know which—and included it in this case as it appeared on the books.

Q. Following each size pipe there are some totals here; are those taken from the books there?

A. No, sir; those footings were made in my office by my assistants, simply adding the total for each column to be carried forward in arriving at the weighted averages for the five year period.

Q. I see there is a memorandum here for six inch pipe calls for a trench two and a half feet wide and six feet deep?

A. That information was given me upon my inquiry as to
4845 the size of the trench. I was told that the trench for four inch and six inch pipe was made two and a half feet wide and six feet deep.

Q. To figure the number of cubic yards it was necessary to have both the width and depth of the trench?

Objected to on part of defendants as being immaterial, incompetent and not proper rebuttal.

A. Yes, sir.

Q. Now I note here is grade crossing construction work excluded; what does that refer to?

A. I found from the books for that year that the water works department had extended mains through the freight yards of some of the railroads which had incurred a considerable increase in expenditure, on account of tunneling work and planking, protecting the banks of the works. The unit costs were very much higher than any other job and I thought it would be unfair to include these extension jobs with others which are put in under normal conditions, because it would make the average unfair.

Q. Of course it would tend to increase and not decrease it?

A. Yes, sir.

Q. There is another note here—total cost less amount of cost of pipe from the rubber company; what does that mean?

A. That refers to a small adjustment which was made in correcting the pipe extension record with the store house record. There was a transfer of thirteen feet of pipe. I made the memorandum here as it appeared on thier books to get the necessary balance.

Q. Now there is another memorandum here—amount added to make total agree with Company's record—is that taken from their books or is it a memorandum of yours?

A. I found in totaling my tabulation and in comparing
4846 my total with their book total there was a slight discrepancy in the addition covering the cost of construction on Tillinghast Street for a six inch main. The difference was twenty-nine cents, and I added the figures that appeared on their books and found they had made a mistake in transferring the twenty-nine cents. So I added that twenty-nine cents to my figures so as to bring the total cost amounting to $849.78 so as to agree with the books.

Q. Does this memorandum to which we have been referring cover the details we have mentioned, so far as they appear on the books of the Buffalo Water Department as to each job done in the year 1902 as shown by the books of that department, except only the jobs you have mentioned where the cost was excessively high?

Objected to on part of defendants as incompetent, irrelevant, immaterial, not proper rebuttal.

A. It does.

Q. With reference to that same year, on the second page of this memorandum you have what figures?

A. I prepared in connection with the cost of laying the mains for each year a distribution of the pay rolls charged to the job in question. I found that it was a physical impossibility to distribute the pay rolls for all the jobs covering the five year period in anything like the amount of time at my disposal. So I carried my analysis through enough pay rolls each year to give me a figure which I felt approximated the average for the entire work. In some instances it covered one half of the total labor charges during the year, and in some instances about one third. But my analysis up to that point seemed to be carried far enough to give me an average which was practically stationary from that point on. If I had analyzed all of the pay rolls it would have taken me several weeks. I dis-
4847 tributed the pay roll for the different jobs according to the daily time sheets forwarded by the foreman on the job to the engineering department. Those foremen distributed the labor over the following classes: Foremen, calkers, carpenters, watchmen, leadboys, laborers, water boys, and showed the total for the services of this kind. I tabulated these from the time sheets, showing my total labor costs for the jobs, which we used to compute the labor cost in determining the cost of trenching and back filling. I inquired as to the wages and was given the schedule paid as shown in the time sheets, showing the wages paid to each class of service included in this distribution of the pay roll.

Q. And there follows here a memorandum showing that schedule of wages?

A. Yes, sir.

Q. Now here is a memorandum, I see—"exceeds pipe record $125.00" what is that?

A. I found from going over the foreman's pay roll that a labor charge in the cost of laying a six inch main on Hillery Place, exceeded the amount appearing on the ledger or pipe extension record, as they call it, by $125.00. There were throughout the five year period several instances of this kind and they covered labor costs which were incurred after the work had been completed, in most instances in connection with placing stone or dirt into a trench which had settled to bring that trench back to the street grade. That would occur sometimes as late as five or six months after the job was closed by the books of the company, but the pay roll showed that charge in that record, although not in the pipe record.

Q. You referred to the books of the company a moment ago; you mean the water works books kept by the city of Buffalo?

4848 A. That is an error. It is the municipal department records in the Bureau of Public Works. It is a municipal plant.

Q. Was there any classification or detail as to these items of cost shown by the books you have referred to, that is not set out on this memoranda?

A. No, sir; this is based upon the pipe extension record, one of the general books of the water department in which are entered the extensions of mains.

Mr. GUERNSEY: Is there any objection to our substituting typewritten copies for this memorandum referred to by the witness?

Mr. BYERS: No, it would — helpful to us to have a typewritten copy.

Mr. GUERNSEY: Then let the record show that for Complainant's Exhibit 83, pages 1 and 2, a typewritten copy may be substituted.

Q. Now, referring to the paper marked Complainant's Exhibit 84, pages 1 and 2, I will ask you whether that was made up in just exactly the same way as Complainant's Exhibit 83, which we have been discussing?

A. It was made up in the same way and represents the construction work for 1903.

Q. This memorandum marked Exhibit 83, pages 1 and 2, is the memorandum about which you have been testifying as to the 1902 construction work?

A. Yes, sir.

Q. As on the previous exhibit, the totals of Exhibit 84 are your own?

A. Yes, sir.

Q. There is a memorandum here $15,127.70 corrected to-

4849 tal, that refers to what?

A. I found a number of jobs in 1903, which when I added

them did not total exactly with their pipe extension record. The difference ranged from the matter of a few cents to three or four dollars. I could find nothing on the books which accounted for this discrepancy, except clerical errors in closing some of the records or in omitting to include the total details of the storage department. I included in my total items the items I took from the books without going to the storage records to see what items had been overlooked.

Q. In other words, you took the actual totals of the items as shown by the books?

A. Yes, sir.

Q. Now there is another memorandum I would like to have you explain—ten inch main involved six inch main cost Letchworth Street excluded, but cost 2.24 per foot—is that on the books or an explanatory note of yours?

A. That is my own note explaining why I excluded from last year's tabulation of construction work on that street. There had been charged on the ledger so many different sizes of pipe that it was impossible for me to determine the nature of the work. I found no one who could explain it in a satisfactory way. There was eight inch, ten inch, and six inch pipe and small pieces of four inch pipe, and it appeared to me a very complicated piece of work in that street, and I omitted it because the unit was so high that I could not satisfactorily distribute the items.

Q. If it covered various sizes in the one job, could you have worked out a unit cost?

A. No, sir; I could not.

4850 Q. So it would not have given the unit for either a four, six, eight or ten inch?

A. Oh, no.

Q. It would have been a composite unit?

A. Exactly.

Q. You say the cost per foot was 2.24, is that the cost on that composite job?

A Yes, sir.

Q. But you did not know the size?

A. No, there was different sizes of pine.

Q. There is another memorandum here of a 12 inch main on Carroll Street excluded, proportionments impossible. Explain that memorandum?

A. This job, as I recall it, was the construction of a fire main and incurred additional expenditures over what would be necessary in laying other mains. There was much special work here on account of the number of hydrants and the placing of the hydrants, and it was impossible for me to apportion the cost of the pipe and the cost of the specials so as to know just how much lineal pipe was laid and how much specials should be specially charged to that job. The unit cost was even higher than on the ten inch main, being 2.53 per square foot and I excluded it.

Q. In this year I see also a note—grade crossing construction work excluded—does that mean what it did with reference to the prior year?

A. Yes sir; I excluded all special work and very expensive, abnormal construction work in connection with grade crossing- and railroad crossings. I followed that method throughout the five year period.

4851 Q. This Exhibit 84 also has the distribution of the labor cost on the second page?

A. Yes, sir.

Q. Here is a memorandum over here—error of one dollar on original work orders?

A. Yes, sir; there was an error in the total. Some book keeper made a mistake of a dollar in adding a column of figures.

Q. Now referring to the paper marked Complainant's Exhibit 85, pages 1 and 2, I will ask you whether that contains the same information with reference to the construction work done by the Buffalo municipal water works plant in the year 1904?

A. It does.

Q. Tabulated in the same way?

A. Yes, sir.

Q. Now I see a note down here—amount added to make total agree with Company's total—who is the company?

A. I see my assistant got into the same habit I did. It should be Bureau of Public Works. There is an error there of fifty one cents, and we added that so as to agree with the book total.

Q. You have changed the word company there to Water Works?

A. Yes, sir; it should be Water Works.

Q. This exhibit is made up in the same manner as the preceding exhibits?

A. Yes, sir.

Q. I find another note here—Chelsea Street construction 929 feet six inch main, sewer trench omitted, cost 1.30 per foot; that is contract or piece work done that year and that is not included in your tabulation?

A. It is not.

Q. Why was it omitted?

4852 A. Because of the unusual conditions. There are some streets where the sewage department had laid a very elaborate sewage system and found it necessary to blast through a good deal of rock. This stone was put back into the trench in a loose way. The water works department laid its mains in the sewer trench and it was a very simple piece of work to make the extension. I did not understand the conditions fully and I inquired of the chief engineer, who told me the information I have just given and also advised, in order to arrive at a proper total that the work which they had performed in the sewer trenches should be omitted on account of the unusual conditions.

The defendants object to conversations between the witness and the engineer as being incompetent, hearsay and immaterial.

The MASTER: You did not include that at all?

A. No, sir; for the same reason I excluded the grade crossing work and work under the river and canal. The cost did not seem to be very much different that in the ordinary jobs, but the labor charges might be very much larger or less. The total would be fair but the individuals making up the total would not.

Q. You have erased that cost per foot there?

A. Yes, I had some notation there. I am not sure whether that represented this particular work or not. The amount I erased here is thirty cents. I did not suppose these would be offered in evidence; they are just as I took them from the water works department books and are my personal memorandum and really detract from the neatness of the sheet.

Q. In reading that memorandum I read it in and if there was a change made without my calling attention to it, it would not check out with the exhibit. These are the original work sheets
4853 you made up for your own information?

A. Yes, sir; just as I made them up in the office of the Water Bureau.

Q. There is another memorandum under Chelsea Street—Dewey Avenue?

A. The conditions there were identical with the wrok in Chelsea Street.

Q. That was another street where they had a great deal of expensive work?

A. The work was really done jointly, I assume, with the sewage department, because the transfers on the books indicated they had been very much benefited by the service from the sewage department.

Q. The second sheet contains the distribution of labor costs and a statement of wages?

A. Yes, sir.

Q. Now, referring to the paper marked Complainant's Exhibit 86, pages 1 and 2, is that a like memorandum covering the operations of the municipal water works in laying mains in Buffalo in 1905?

A. It is.

Q. Now I notice a memorandum here at the bottom of the page—Main Street construction 156 feet 4 inch main, sewer trench omitted; that was omitted for the same reason you omitted like constructions for the preceding year, because of abnormal conditions?

A. Yes, sir.

Q. And the memorandum, 6 inch main from pumping station omitted, unit costs appear excessive because of unusual conditions; that is the reason why they were omitted?

A. Yes, sir.

Q. Then there is a further memorandum or note—12 inch fire line construction excluded—why was that excluded?

A. For the same reason I excluded the other; the condi-
4854 tions were abnormal.

Q. And the cost excessively high or low?

A. Very high.

Q. On the second page there is the distribution of labor costs for this year?

A. Yes, sir.

Q. Now, referring to Complainant's Exhibit 87, pages 1 and 2, I will ask you whether that is a like memorandum made up by you for the year 1906?

A. It is.

Q. I see a note—construction orders showing excessive cost omitted—what was the character of this?

A. That is just a general statement which embraced construction work of the same character as I explained in the earlier years.

Q. It says, construction orders under 50 in length excluded; why are they excluded?

A. A short job of work is very much more expensive. The men stand around idle a good deal, material is not always accessible, conditions are not as favorable, and the costs per foot in these small jobs was very high, often necessitating the moving of a hydrant in only a fifty foot extension, making the cost per foot very high.

Q. Here is a further note—construction orders in which sewer trenches were omitted—which I suppose refers to such as you describe in the preceding years?

A. Yes, sir.

Q. The second page shows an analysis of the labor costs as in the other exhibits?

A. It does.

Mr. GUERNSEY: May we have a like agreement as to these
4855 exhibits, 84, 85, 86 and 87, that typewritten copies may be substituted for them.

Mr. BRENNAN: The same agreement may apply to these exhibits.

Q. Mr. Hagenah, have you tabulated the results of the figures which are shown on these exhibits 83 to 87 inclusive?

A. I have made a recapitulation sheet showing the results.

Q. Referring to this paper marked Complainant's Exhibit 88, headed recapitulation sheet, cost laying water mains Buffalo Water Works, 1902 to 1906, inclusive, as shown by pipes extension records, you have in the first column the year?

A. Yes, sir.

Q. Then in the next column the size of the pipe?

A. Yes ,sir.

Q. Then the third column indicates what?

A. The total length of pipe laid.

Q. Of each of those sizes?

A. Yes, sir.

Q. And the aggregate?

A. Yes, sir, and for each year.

Q. For instance, this would show how many feet of four inch pipe was laid in 1902?

A. 1270 feet.

Q. And the aggregate amount of four inch pipe laid in the five years?

A. 7799 feet.

Q. Then it would go on and show next the six inch pipe?

A. Yes, sir.
Q. And the total of that?
A. Yes, sir.
4856 Q. Then the eight inch and ten inch?
A. Yes, sir.
Q. I notice as to the eight inch and ten inch, you only have one year there.
A. There was very little pipe of that size laid, and in nearly every instance where it was laid conditions were abnormal, showing a very large increase in cost because of unusual conditions.
Q. Well, is this true, that the result of excluding those abnormally high costs was that there was no eight or ten inch pipe laid except in 1902, and taken into account in making up your figures?
A. Yes, sir; those were the only jobs of that size which I thought would be normal for arriving at an average.
Q. Then what follows the total length?
A. The next two columns show the apportionment of the feet of pipe shown in the preceding column, making the apportionment from the street main proportionate to that part which should be charged to the hydrant.
Q. Then the next column, cost of pipe, two sub-heads?
A. That shows the distribution cost of pipe based upon the feet of pipe charged to the main extension and to the hydrant apportioned.
Q. And the two columns under the head of cost of specials?
A. They show the distribution of the total cost of specials, showing the proportion to be charged to construction and the proportion chargeable to the hydrant.
Q. And then valves, that is self explanatory?
A. Yes.
Q. It is simply the totals from these exhibits 83 to 87 inclusive?
A. Yes, sir.
Q. And lead is the same thing?
4857 A. Yes, sir.
Q. Gasket the same thing?
A. Yes, sir.
Q. Tile the same thing?
A. Yes, sir.
Q. Pavement the same thing?
A. Yes, sir.
Q. Labor the same thing?
A. Yes, sir.
Q. Coke the same thing?
A. Yes, sir.
Q. Teaming?
A. Yes, sir.
Q. Blasting?
A. Yes, sir.
Q. Miscellaneous?
A. Yes, sir.
Q. So that this sheet is simply a recapitulation into totals of the

information that is shown by the preceding exhibits 83 to 87 inclusve?

A. Yes, sir.

Q. Now have you figured out some unit costs from these totals?

A. I have.

Q. And does the paper marked Complainant's Exhibit 89 show these costs as computed by you from the figures which you have been referring to this morning?

A. It does show that.

Q. In the first place, take the total—what is the unit cost per foot laying four inch mains as shown by the records of the city
4858 of Buffalo for the five years prior to 1907, excluding the excessively expensive jobs which you have mentioned?

A. Also excluding in connection with that the cost on account of the hydrant itself, the hydrant specials and the cost of the main pipe from the principal street main to the hydrant, shows an average cost of 76.7 cents per foot of four inch main.

Q. And under like conditions what was the cost shown for six inch main per foot during that period?

A. 99.2 cents per foot.

Q. And eight inch main during that period?

A. $1.52.7 per foot.

Q. And for ten inch main during that period?

A. $1.45.4 cents per foot.

Q. Now what was the average cost for trench and back filling during this same period and upon these same jobs?

Mr. BRENNAN: We want to interpose the objection to this question and all questions of this character, because they are incompetent, irrelevant, immaterial and not within the knowledge of the witness, and for the further reason that the witness has not shown himself competent to testify with reference thereto.

The MASTER: Let the objection apply to all of this testimony with the same force and effect as though repeated each time to each question.

A. The average cost of trenching and back filling for the five year period from 1902 to 1906 inclusive was 57 cents per cubic yard.

Q. How are these averages obtained, are they weighted or merely numerical averages?

A. No, this is a weighted average. The average for the different years is sometimes considerable less and sometimes very much higher than this. It was arrived at in this way: I distributed the
4859 pay roll as shown in the second sheet accompanying the exhibits showing the detailed costs, from which I determined the total amount of the labor as shown by the pay roll which was incurred in connection with the trench and back filling, and then I computed the cubic yards of dirt handled as shown by the length of the trench, depth and width, and for the five year period the weighted average was 57 cents per cubic yard.

The MASTER: How does it come that it costs more to put in an eight inch main than a ten inch?

A. That is undoubtedly due to an extraordinary condition, either making the one very expensive or the ten inch very reasonable. The averages are higher for the eight inch pipe, because there is only one job used in each case. It is really not the very best kind of an average. There should be more jobs; there were not enough instances that could be used to really make a proper average.

Q. Now, Mr. Hagenah, what if anything on account of overhead charges do these costs which you computed include?

A. They include no charges which are generally referred to as over head expenses. The city maintains in the board of public works and engineering department for the benefit of the water works department, the chief engineer and his assistants and the expenses of his department are carried from year to year as the operating expenses of the water department and are not charged to the extension work. There is no charge on the books for interest during construction, and being a municipal plant, there is no charge for taxes during construction. There appeared no allowances of any kind to cover casualties and whatever contingencies were encountered are included in the costs. There is no charge to the work for tools. The
4860 men engaged in the extension work are required under the terms of their employment to furnish their own shovels. They are provided by the city with picks to be used. These picks are carried in the storage account or warehouse of the water department and when issued to the men on construction work are charged to the job. When the work is completed and the men return their picks, the job is credited with the picks, so that the only item appearing in the cost for tools would be for tools actually consumed or broken and destroyed in use. There is no charge for the use of tools.

Q. Now referring again to this Exhibit 89, you have here the cost of pipe, specials, lead, coke, carting, miscellaneous and labor. Are there any other items going into the cost of the pipe in the ground that are items on the books of the Buffalo Water Works, so that they may be segregated in this way?

A. I found none; I know of no further detailed record.

Q. Is the cost of trenching there kept separate or is it necessary to work it out from the labor cost?

A. There is no record kept showing the cost of trenching, at least not during these years. The engineering department has made some computation covering the cost of trenching for the last two years, but not for the years 1902 to 1906 inclusive.

The complainant offers and reads in evidence Complainants Exhibit 83 to 89 inclusive.

The defendants object to the offer of each of said exhibits for the reason that the same are incompetent, irrelevant, immaterial, and for the further reason that the exhibits are based upon what purports to be copies of records or books of the Buffalo Water Works Department of the city of Buffalo, and that the facts and figures
4861 attempted to be disclosed are not within the personal knowledge of the witness, and because the witness has not shown

himself competent to testify with reference to the matters shown in the several exhibits and that the same is hearsay.

Said Complainant's Exhibits 83 to 89 inclusive are as follows:

4862 Q. You have explained that the tools furnished by the city were charged to the job and then credited to the job?

A. Yes, sir; that is, the picks and shovels are furnished by the men.

Q. I said the tools furnished by the city?

A. Yes.

Q. So that by this method of book keeping there is no expense on actual account of tools in the job?

A. Not appearing in the job costs.

Q. Now let me ask you a question or two to show how this Exhibit 89 is made up, if there is any question about it. For instance, we have got pipe laid, four inch, 7744 feet. What do you divide by that 7744 to get the cost of the pipe itself per foot, four inch pipe?

A. Those figures are shown in the preceding exhibit.

Q. Yes, but I wanted to point it out so that anybody could check it and make the figures himself.

A. The cost of the pipe shown in Exhibit 88 $2,054.82 representing the street main proportion, that is divided by the total number of feet of pipe laid in what is really the street main, and not the total amount of pipe charged to the job.

Q. That don't answer it very directly. My question was what would you divide by your 7744 total number of feet four inch pipe laid to get your .26?

A. You would divide the cost of the four inch pipe by the total number of feet of pipe.

Q. And the same way to get your specials, you would divide the cost of the specials on the four inch jobs by the number of feet of pipe laid in these jobs?

A. Yes, sir.

4863 Q. That indicates the method by which those details making up your total .767 are arrived at?

A. Yes, sir.

Cross-examination by R. O. BRENNAN, Esq.:

Q. When did you go to the city of Buffalo to secure this information?

A. I made two trips. I spent three days in Buffalo the last week in August.

Q. Can you give me the date of your first visit to Buffalo?

A. I haven't my memorandum book with me. If I had a calendar I could tell. I spent three days in the last week in August.

Q. Three days in the last week in August?

A. Yes, sir.

Q. At whose request did you go to Buffalo?

A. Mr. Guernsey's.

Q. Did any one accompany you?

A. Not my first trip. I think I can give you the exact date when

I was there now. I believe I left Chicago on the night of the 20th of August and spent the 21st, 22nd, and 23rd in the office of the Water Department. I was alone that trip.

Q. You left Chicago on August 20th?

A. Yes, sir.

Q. And spent the 21st, 22nd and 23rd in Buffalo?

A. I think those are the dates. If there was any possible error—I can get the exact date if it is necessary. I was there three days in the last part of August, leaving Chicago on Sunday night.

Q. You think it was the 21st, 22nd and 23rd of August that you spent in Buffalo in connection with this work?

A. It was either those three days or else the corresponding three days the following week, leaving Chicago on the night of
4864 Sunday the 27th.

Q. You left Chicago on the night of the 20th and what time did you get to Buffalo?

A. The train is due there at seven o'clock the next morning.

Q. How much time did you devote there on those three days?

A. All the time.

Q. How many hours for a day?

A. I think I would be safe in saying I averaged something over ten hours a day.

Q. That would be about thirty hours?

A. Yes, sir.

Q. On that trip?

A. Yes, sir.

Q. Did you have any assistants in Buffalo during these three days?

A. Not that trip.

Q. Just what books did you examine?

A. In connection with the other question I would like to say I spent three days more in connection with this work, during which time I had assistance.

Q. I want to limit it now to the first three days.

A. The first three days I was there I examined more particularly the records of the stores department.

Q. What was the name of the record you examined?

A. Pipe extension records and store's record.

Q. How many pipe extension records did you examine?

A. On the first trip I examined first 1906 and 1907, I believe, and then compared the cost for that period with 1909, 1910 and 1911. I had no information when I went away as to what time the court would again meet. I was of the impression it would meet the day after Labor Day, so I did not go into the earlier
4865 years on that trip.

Q. You examined on this first trip the pipe extension records for the years 1906 and 1907?

A. Yes.

Q. And also some storage records?

A. Yes, sir; the records of the storage department. I did my work in the office of the storage department.

Q. What records did you examine with reference to the store house account?

A. Well, it is the store's department record.

Q. How many for that year?

A. In one book, with some memoranda and secondary books showing details.

Q. Now this storage record is what kind of a book?

A. It just shows the detailed charges for the particular construction work and notes the credits for the material returned.

Q. How large a book is it?

A. I really don't know the dimensions.

Q. How many pages were in this book that you examined?

A. About three hundred pages, I should estimate, of which about sixty were devoted to the years that I covered.

Q. Did you check the requisitions covering that year?

A. I didn't examine the requisitions themselves; they were entered on the book.

Q. Did you examine authorizations by the council?

A. They had no authorizations there that I saw.

Q. Did you look for any?

A. I merely went to the record and saw the actual pipe laid.

Q. How much pipe was laid in the year 1906?

A. I could give you that from the annual report.

4866 Q. No from the examination you made at that time upon this first trip?

A. I would have to estimate that, Mr. Brennan, because the first trip was really in the nature of covering the field to see what material was available and the conditions under which I could obtain it.

Q. Well, taking the pipe extension records, how many books did you find in which you found entries covering matters of that kind?

A. One book.

Q. And about how many pages were contained in that book?

A. I think I told you about 300 pages.

Q. That was the storage record you told me about?

A. And the record of pipe extensions was contained in the storage department record with this exception, that they did not carry on their books the cost of labor in the job. They transmitted their stores record showing charges and credit for material and supplies to the chief bookkeeper who entered, merely copying those items upon his record and added to it the pay roll charge for labor in connection with that job.

Q. How many pages did the pipe extension record show for the year 1906, which you examined?

A. Well, I will frankly say I kept no record of the number of pages. I would estimate 60 or 70 pages.

Q. How many entries did you examine?

A. All of them.

Q. How many were there covering that period of 1906?

A. I don't remember. I couldn't tell you how many individual items; there were a good many.

Q. In the year 1907, how many entries did you examine covering that year?

4867 A. I don't know the number of entries. Some jobs were over a thousand feet and some jobs had only 150 feet.

Q. What was the general nature and character of the entries made in this record?

A. They were charges made on the information transmitted to the bookkeeping department from the stores department and engineer's department showing the distribution of the pay roll.

Q. Did it show in the year 1906 the number of feet of four inch main?

A. It was not summarized in the pipe extension record; the annual report summarized that.

Q. Are these exhibits which you have produced here based upon the annual report of this commission or are they based upon the facts disclosed by the books examined by you?

A. They are based upon the books.

Q. Can you tell from an examination of the records you examined for instance, how many feet of 8 inch pipe were laid in the year 1906?

A. I presume so.

Q. Can you tell us now?

A. I did not take that information with me. I can make it up from this second sheet.

Q. I wish you would tell us just what you did on that first trip, the first three days?

A. I made up an analysis of the cost of laying mains of the different sizes of pipe in the city for the years 1906 and 1907, and then not having time to go back over the full five year period, I took the years 1909, 1910 and the information for 1911, to compare results to see if there had been any material increase in cost. On my first visit I had to make an apportionment of the cost of the main

4868 pipe, the length of the pipe and specials, between the main proportion, and the hydrants.

Q. Did you check against the annual report?

A. No, sir; I did not check the accuracy of it.

Q. Did you make any comparison between your figures and the figures shown in the annual report?

A. The annual report does not show the detailed figures. It shows the length of pipe laid in feet. I compared the feet I covered and naturally had a good deal less, as I did not include the abnormal jobs.

Q. Did the records which you examined the first trip disclose all this detailed information?

A. Yes, they disclosed this information and in the last year showed a somewhat better condition than the earlier years.

Q. I mean covering the period of this report from 1902 to 1906?

A. I did not see the figures prior to 1906 on my first trip. That was merely an effort to see what information the books contained, the amount of work it would require to get the desired information,

and how long it would take me to get some general idea as to the condition disclosed by the books.

Q. You found the books very well kept?

A. They were. I should say these departments made a very creditable showing in the manner in which their records are kept. They are much better in recent years than they were ten years ago.

Q. You were endeavoring to ascertain the structural cost of water pipe laid in the city of Buffalo?

A. Yes, sir.

Q. As shown by the books of the water department of the city?

A. Yes, sir.

Q. That was your principal object in going there?

4869 A. I had no other object.

Q. You had no assistance at the first visit?

A. No, sir.

Q. When did you return to Buffalo?

A. On Wednesday night.

Q. In the month of August?

A. I think it was the last Wednesday in August. I think I can get you the exact date. I left Chicago on the night of Sunday the 27th and was in Buffalo the 28th, 29th and 30th of August. I left Buffalo at 8:30 on Wednesday night the 30th and was in Chicago Thursday morning.

Q. You made two trips to the city of Buffalo?

A. Yes, sir.

Q. Those two trips covered a period of six days?

A. All told for myself, yes sir.

Q. You completed all of this work so far as you were concerned, in Buffalo, on the 30th day of August?

A. I completed my first trip in Buffalo——

Q. I understood you to say you left Chicago the first trip on August 20th and arrived in Buffalo the 21st, and remained the 22nd and 23rd and returned to Chicago on the night of the 23rd?

A. As to those dates there may be an error as to whether it was that week or the following week.

Q. You again left Chicago for Buffalo on the night of August 27th, arriving in Buffalo on the morning of the 28th?

A. I don't understand your question. I am afraid we are getting confused.

Q. How many trips did you make?

A. Two, one in August and one in September.

4870 Q. I understood you to tell me you left Chicago on the night of the 27th?

A. I am not sure which it was. I went in the month of August. I made only one trip in August. I left on Sunday night, left there on the night of Sunday the 27th, or the night of Sunday the 20th, I am not positive which of those it was. I believe it was on the night of Sunday the 27th. I spent Monday, Tuesday and Wednesday in Buffalo.

Q. You said something in your direct examination about Labor Day, did that intervene?

A. No, I hurried back thinking this court would meet again on Labor Day.

Q. Labor Day was on September the 4th; so that you had completed your work in Buffalo and returned to Chicago prior to that day?

A. Not completed my work; I had made my examination.

Q. You had completed your work so far as Buffalo was concerned?

A. No, sir; so far as my first trip was concerned.

Q. When did you make the second trip?

A. I was in Buffalo on my second trip on September the 28th, 29th and 30th.

Q. Now will you tell the Master in a general way about the number of books and records you examined on your first trip covering the three days to which you referred?

A. I should hardly say it amounted to an examination and audit. It was a trip to get information as to the character of the records, what I could obtain, and it was based upon an examination of the record on the stores' department of the bureau of public works for the water department, showing the material which they had issued for the construction of mains and I checked that with the extension record in the office of the general book keeper of
4871 the water bureau, and made a pretty thorough examination of the years 1906, and 1907, as I recall, and then made a rather hasty examination of the last two years, possibly three, to see if there had been any material increase in cost or change in conditions since then.

Q. You took some time to make inquiries from the different departments of the city?

A. Oh, yes.

Q. Talked with the engineer?

A. Yes, sir.

Q. And the accountants in the office?

A. Yes, sir.

Q. You were not during all that time engaged in examining books and records?

A. I suppose I spent during those days as much as two or possibly three hours' time talking with officials. I met the different officers of the company, visited with them, told them what I wanted in a general way, and they referred me to the proper parties and gave me an introduction and I went to work. During the course of the work of course I talked with them some.

Q. Did you go out to visit the pumping station?

A. No, sir.

Q. Did you go over the city to see the location of the hydrants?

A. No, sir.

Q. Or the location of the water mains as shown by the records of the office of the water commissioners?

A. I wouldn't know where the mains were located. The records show how many feet they were laid from the curb and I supposed that was sufficient.

Q. Were you familiar with the city?

A. I had been in Buffalo a number of times.
4872 Q. Had you ever constructed a water works system?
A. No, sir.
Q. Ever laid any water mains?
A. No, sir.
Q. Ever supervised the construction of trenches?
A. No, sir.
Q. You had no personal contact with the construction of water works in any sense whatever, had you?
A. No, sir.
Q. You do not claim to know anything about the practical construction of water works?
A. No, I am not a constructing or operating engineer of any water department.
Q. You are not a consulting engineer?
A. No, sir; not personally. I have an employé in my office who renders that service.
Q. You had no assistance on this first trip and all the work done there on behalf of the complainant in this case was through your individual efforts?
A. Yes, sir.
Q. Do you recall the name of the engineer with whom you talked or met?
A. Yes, sir; it was Mr. Richardson. I don't remember his initials. I think he has been with the department about 18 years.
Q. On your second visit to Buffalo, the latter part of September, did anyone accompany you?
A. Yes, sir.
Q. What person or persons?
A. Mr. L. S. Weeks.
Q. Who is he?
4873 A. An engineer in my employ in my St. Louis office.
Q. How long has he been in your employ?
A. About a year.
Q. And has he made his office in St. Louis during all that time?
A. No, he is engaged there at present upon work of my own in St. Louis.
Q. Where had he worked before going to St. Louis?
A. He was with me in Chicago.
Q. How long were you in Chicago?
A. About a year.
Q. Was he assisting you in your work for the city of Chicago in the gas inquiry?
A. Gas and telephone, yes sir.
Q. Engaged on that work during all the time he was in Chicago?
A. No, Mr. Weeks performed other services during that time.
Q. What other service had he performed in addition to this work?
A. I gave him a leave of absence for a short time to do some work in the city, I think it was Reading, Lancaster, Allentown, a number of cities in Pennsylvania in the appraisal of telephone plants.
Q. Were any gas works to be appraised in any of those citirs?
A. No, sir.

Q. Is Mr. Weeks a graduate engineer?

A. I don't know whether he graduated; my impression is he graduated from the University of Illinois. He attended there at least three years. I don't know whether he received a degree or not.

Q. How old a man is he?

A. I think about 27 or 28 years old.

Q. Did you have any assistants in Buffalo, if so, tell us who they were?

4874 A. Mr. Rose, who is an employé of the meter department of the water works department in Buffalo. I found Mr. Weeks and myself together could not secure the information we wanted and asked the engineering department and accounting department if they could give me some assistance, I would be willing to pay the men. They laid aside to me the services of Mr. Rose.

Q. Let me ask you, do they use meters to any considerable extent in connection with the water works system in Buffalo?

A. I have no personal knowledge of that. I assume from the extensive meter department they do.

Q. Do you know how many miles of main they have in Buffalo?

A. No, sir.

Q. How many public hydrants?

A. No, sir.

Q. Do you know the common way of measuring the consumption of water?

A. I suppose it is by the meter. I have no personal knowledge.

Q. Do you know how many services are metered there?

A. No, sir.

Q. Have you any idea about it?

A. Not as the result of any inquiry.

Q. Or any investigation made by you, personal investigation?

A. I made no inquiry as to the total number of services or the conditions of the services.

Q. Or how many metered services there are?

A. No, sir; my examination was devoted exclusively to the question of the cost of laying mains.

Q. Well, you secured the assistance of Mr. Rose while at Buffalo?

A. Yes, sir.

Q. And the data and information which you secured there was secured either by yourself or Mr. Weeks or through Mr. Rose?

4875 A. Yes; Mr. Rose was engaged practically all the time he was working with me on this pay roll distribution.

Q. Did Mr. Rose have any connection with any other department aside from the meter department of the water works system?

A. I have no personal knowledge as to that. But the party who introduced me to him said he had been with the water bureau a long time and was acquainted with all the records, and he was a very efficient assistant.

Q. You don't know what practical experience he had with the water works system, except what some one told you?

A. His title was chief clerk of the meter department.

Q. An accountant of the office?

A. I don't know what particular duties he performed.

Q. How old a man was he?

A. There again I have to estimate; I think 35 to 37 years of age.

Q. Just what did Mr. Rose do in connection with this investigation made by you?

A. He worked on the distribution of the pay roll as shown from the time sheets reported by the foreman to the engineering department.

Q. Do you know how many time sheets he examined?

A. Not as to numbers, but a good many.

Q. Do you know what years they covered?

A. All these years from 1902 to 1906 inclusive. He and Mr. Weeks made the distribution; they worked together.

Q. Do you know of your own personal knowledge just what Mr. Rose covered in your investigation?

A. I don't know now; I was out of the office a number of times and he and Mr. Weeks were working together.

Q. How long was Mr. Rose on the job?

A. Saturday, the last day I was there.

4876 Q. Just one day?

A. Not all of that day; I think he started about eleven o'clock and worked up until nearly six o'clock.

Q. You think he covered the time sheets for the years 1902, to 1906, inclusive, for the work that had been done in the city of Buffalo in the extension of mains during that period?

A. No, I don't think he did. I know he didn't, because he analyzed the pay roll only for the years 1902 to 1906 inclusive, working with Mr. Weeks. He worked only from Saturday morning about eleven until six in the evening. Mr. Weeks and I had carried the work along pretty well up to that time. We did not analyze the pay roll on every job, because we found the conditions were practically the same.

Q. How many time sheets did you personally examine before you brought your assistant Mr. Rose in on this Saturday?

A. I examined personally probably thirty or forty, so as to become familiar with the general nature and how to handle them and started Mr. Weeks, and then he and I worked together and then had Mr. Rose help us and he and Mr. Weeks worked together. I might say our work was very much simplified. I was very much indebted to Mr. Richardson who made it an easy matter for us to get the record, brought the records from the vault and explained every item. We worked next to his desk.

Q. Do you remember what years the 30 or 40 estimate sheets you examined covered?

A. No, I do not.

Q. You did not undertake to make a careful analysis and audit of the time sheets of the Buffalo Water Department covering the period which you referred to in these reports?

A. Not of the department, but the wages that went into the work I did.

4877 Q. How many hours a day did the laborers work from the year 1902 to 1906?

A. An eight hour day.

Q. Eight hour shift?
A. Just eight hours a day; not a shift.
Q. What wages did they receive for these services, say in 1902?
A. These wages are taken from the pay rolls as reported to the Engineering Department by the foreman. The foreman received three dollars per day.
Q. In the year 1902?
A. Yes, sir.
Q. What did the others receive?
A. Calkers, $1.75 per day; laborers $1.50 per day, watchmen $1.64 per day; lead boys $1.50 per day.
Q. What was the scale of wages paid in the year 1905, covering the same character of labor?
A. These figures are again taken from the pay rolls reported by the foremen on the job to the engineering department. The foremen received $3.00 a day; calkers $2.00 a day; watchmen $1.63 a day; laborers $1.50; lead boys and water boys were classified as laborers.
Q. In 1906 what was the scale of wages paid?
A. These wages are likewise taken from the time sheet reported by the foreman to the engineering department; the foreman $3.00 calkrs $2.00 a day; watchmen $1.65; laborers $1.50; water boys and lead boys were classified as laborers and paid $1.50 a day.
Q. You say the trenches were 2½ feet wide?
A. Yes, sir.
Q. How deep were they?
A. Six feet.
4878 Q. In all cases?
A. I was told so, yes, sir, for the size of the pipe in these tabulations. I don't know how deep they laid the twelve inch mains or the larger mains.
Q. You hav-n't any personal knowledge on the subject?
A. No, sir. I visited no open trench, and I don't know whether it is actually six feet or six and a half feet. The engineer told me the instructions to the foremen were to make the trench six feet deep. I have no reason to believe they were laid under any other conditions.
Q. What was the weight of the cast iron pipe used?
A. I don't know.
Q. What was the weight of the specials that were used?
A. The weight was as a rule given. I didn't take the weight of individual castings; it might be a very large one or a small one.
Q. Do you know anything about the specials used in the distribution system of the water works?
A. I have seen a great many. I am not acquainted with them in the sense that I have manufactured them or put them in.
Q. Do you know the names of the specials?
A. Yes, a good many.
Q. Do you know how they are used?
A. Yes, sir.
Q. How frequently they are used?
A. I know the use of specials depends on the conditions en-

countered. There are no specials in straight work; unless you have hydrants.

Q. Did you examine the ordinances of the City of Buffalo to ascertain how the service connections are made from the mains to the curb or property line?

4879 A. I paid no attention to that.

Q. Do you know whether or not the time sheets which you examined included labor of that kind?

A. They didn't show any labor of that kind.

Q. What did they show?

A. They showed the cost of laying, trenching, putting in the pipe and making joints, putting in the hydrant, filling the trench, and tamping the dirt.

Q. Do you know whether they do make service connections from the main to the curb at the time the main is laid in the streets?

A. I don't know that from any other source than these books which I examined, which show all the detailed costs which went into the cost of that particular job of main extension. There was no charge there for any service pipe, from which I assume there was no service pipe put into that job.

At this time, 12 M. an adjournment was taken until 9 A. M. October 14, 1911.

4880 9 A. M., SATURDAY, *October* 14, 1911.

W. J. HAGENAH continued on cross examination by R. O. Brennan, Esq., testified as follows:

Q. Now Mr. Hagenah did you have any other assistants besides Mr. Weeks and Mr. Rose, who assisted you a few hours in your work?

A. No other assistants than the general assistance of Chief Engineer Richardson who lent me every possible assistance in showing me the records, very often bringing them to the place where I was working so that no time was lost in getting the desired information.

Q. Were any of these details worked out for you by any one connected with the United Gas Improvement Company or any of its employés?

A. Oh no, none whatever.

Q. Did all this work yourself with the assistance of these men?

A. With the *asstants,* yes.

Q. Can you tell us about how many entries you examined during the six days covering this work?

A. That would be almost impossible Mr. Brennan. Some of the pages had as many as seventy five entries I should say and some of them not more than a dozen. On some of the pages the columns were footed and on some they were not, we had to foot them.

Q. And this report purports to give the structural cost of the laying of mains in the city of Buffalo, is that the purpose of this report?

A. Yes, sir.

Q. Then I understood you to say on yesterday that you found no record covering the trenches or excavations, is that right?

A. I don't understand your question.

Q. Did you find any record in the water bureau in the city of Buffalo that showed the cost of digging trenches?

4881 —. Not for these years covered by my investigation from 1902 to 1906 inclusive.

Q. Somewhere in this report I noticed you showed the average as being 75 cents per cubic yard. How did you arrive at that figure?

A. No, sir; I think I showed 57 cents.

Q. How did you get that figure if there was no record from which to compute cost on digging trenches?

A. I computed it myself. The department did not have that unit cost analyzed for these years. I computed it, taking the total length of the trench, and width of the trench, reduced that total cubic feet to cubic yards, analyzed the labor statement to find the total labor cost incurred in digging the trench and back filling, then made my simple division.

Q. You could in a very brief space of time could you not secure for the Master right from the books and records of the Des Moines Gas Company the structural cost for laying mains and digging trenches in the city of Des Moines, say for the years 1909 and 1910, without going to Buffalo New York for that purpose could you not?

A. As far as the ability to make the analysis from the records of the Des Moines Gas Company is concerned, I certainly could. My report does not purport to show the cost of laying mains in Des Moines of the Des Moines Gas Company, it is an investigation of conditions in the city of Buffalo.

Q. It would be a very small amount of work comparatively speaking to get the information for the Master as to the structural cost of digging trenches and all work incident to laying gas mains.

A. As far as the work is concerned with a number of assistants.

Q. Say you had the number of assistants you had in Buffalo it would not take you nearly as long would it because you are

4882 familiar with the records?

A. I would not want to express any opinion on that without having an opportunity of looking the records over.

Q. You have gone over the books pretty thoroughly and I believe you stated on your former examination the books were well kept, that everything could be found upon the books. Isn't that the substance of your former testimony in this case?

A. Yes, I audited the books, but I have not gone over the items going into making up the cost of main- distributed over the particular work in order to get the unit cost.

Q. You saw these entries in the books as you analyzed them did you not?

A. The detail entries making up the cost.

Q. You saw the entries from which details could be very easily calculated?

A. I didn't see the details, I saw the total cost.

Q. You cover construction account in your report?

A. Yes, construction account, but that don't mean every detail.

Q. You spoke about your analysis of the books and records of the Des Moines Gas Company and that the books were well kept and that the information was easy to get practically in every instance where you desired it, isn't that the sum and substance of your former testimony in this case?

A. I analyzed the construction account, I don't remember making any statement in my testimony about analyzing the cost of laying mains in this city, either that or any other unit.

Q. You have a general idea of the books of the Des Moines Gas Company I take it?

A. Yes, I have a general idea.

Q. You have informed yourself to some extent at least
4883 as to some of the detailed information?

A. Yes, I am familiar with some of the detailed information.

Q. Now it would not be much of a job would it to make up for the Master a report covering the year 1910, showing structural cost for laying mains?

A. It could be done.

Q. And the digging of trenches, how long would it take?

A. I don't know. I would want to make a preliminary survey of it, I would not express any opinion.

Q. About how long?

A. I don't know without looking over these details.

Q. Well will you look over the details?

A. I will, if it is absolutely necessary that I must I will be very glad to do so, otherwise not.

Q. Now Mr. Hagenah you have told us here that in the brief space of six days that you were able to go to the city of Buffalo and make an examination covering substantially seven years which you have set out in the report in which you undertake to tell the Master from that report the structural cost of laying water mains and digging trenches in the city of Buffalo for the purpose of making comparisons in this case. Now you say you did that all in the brief space of six days. I am asking you about how long it would take you to cover that same information in the city of Des Moines for one years, say the year 1910?

A. I don't know. The fact I got the desired information in Buffalo in six days would be no evidence that I could do it from the records of the Des Moines Gas Company for one year in any particular time without my at least seeing and looking at it.

Q. Well haven't you looked at it at all in Des Moines?

A. Not these details, no. I said a moment ago I hadn't
4884 seen the details going to make up unit cost per foot or other unit for laying mains.

Q. You are on a stated salary are you not with the United Gas Improvement Company?

A. Why no.

Q. You are not?

A. No, sir.

Q. What is the character of your employment by the defendant, are you employed by the month?

Objected to because it assumes employment by the United Gas Improvement Company which is not shown by the testimony, the testimony so far as it shows shows he is under employment by the Des Moines Gas Company.

A. I never was employed by the United Gas Improvement Company.

Q. You were first employed were you not by one of the officers or agents of the United Gas Improvement Company in Chicago?

A. Not employed by them no sir, I was asked to come out here and look at the records here by Mr. Curran, I was not engaged by Mr. Curran.

Q. No one connected with the Des Moines Gas Company employed you in the first instance?

A. They did not employ me in Chicago. Mr. Curran asked me to come out here and I came out and talked over the work with Mr. Haines, Mr. Guernsey and others.

Q. Are you employed by the month by the Des Moines Gas Company?

A. No, sir.

Q. Are you paid by the day?

A. I render statements to them at the end of the month, sometimes at the end of two or three months.

4885 Q. What is the per diem or monthly salary which you receive?

A. I am not receiving any salary, no specific amount other than rendering an account.

Q. How much do you receive a day for services in this case?

A. I do not put it on a daily basis at all.

Q. Well on a weekly basis?

A. Don't put it on a weekly basis.

Q. A monthly basis?

A. Don't put it on a monthly basis, just render a statement for my services.

Q. You don't attempt to say so much a day, so much a week or so much a month but just render a statement for the services.

A. Just render a statement of services for such a period, services and expenses.

Q. For the month of September how much did your statement amount to for services rendered the Des Moines Gas Company?

A. I don't believe I rendered a statement for the month of September, quite sure I didn't.

Q. For the month of August then?

A. I think my total statement for services and expenses during the month of August, and I will have to give you my best recollection on that——

Q. Don't you know?

A. I have not my record here, the exact amount but it was somewhere near $800.

Q. How much for the month of July?

A. I don't remember that. That is on the record over there, I can get the exact figure or could tell from my own books.

Q. Don't you remember how much you had or how much you charged for your services in this case?

4886 A. I would like to see my own books, I render services to a good many people, I can't recollect specific amounts.

COURT: State as near as you can.

A. I would say somewhere around $600, I can't give the exact amount.

Q. Up to about the first of September you have been paid have you not in the neighborhood of $1,500 for services?

A. I believe that is the amount.

Q. Now have you made up a statement for the month of September?

A. No, I didn't render a bill for that month.

Q. Have you made any charges against the company for services?

A. I think the month of September I rendered an expense account of about 290 odd dollars, I don't remember the exact amount and received an amount on account of $500.

Q. But that was for expenses?

A. Not the $500.

Q. You got $500 on account.

A. On account. I rendered no bill of services, but got a check for $500 on account.

Q. You say that your statement is not based on so much a day or so much a week or so much a month?

A. No, I render a statement according to what I think my services are worth. I of course go through some method of analysis in arriving at the figure, but I don't say so many dollars per day or per part of a day.

Q. It would amount to about so much a day wouldn't it in the final wind up?

A. Not necessarily.

Q. In how many places are you performing services in the way of giving testimony such as you have in this case?

4887 A. Well I am not giving testimony this month in any other case than here, but I am doing work in other places.

Q. In what other places are you performing like services?

A. I will have to ask you a question, what you mean by like services you mean in a rate case or you mean just a general utility case?

Q. Yes, the question is plain?

A. Four cities.

Q. Will you name the cities in which you are performing like services?

A. I would rather not do that.

Q. Why not?

A. Because in some cases the suit has not yet been brought, investigations are being conducted to see what course is to be taken. I will tell you my principal work now is in the city of St. Louis but as to other cities I would rather not state what my relation is now.

Q. You have been working for these other cities during the past month have you?

A. I have been doing some work for them, yes.

Q. Are you preparing the side of the case for one of the parties in interest in some prospective law suit?

A. I don't know whether I would be justified in saying I was preparing the case for the purpose of having my material used as a basis for a law suit. I am making an audit and appraisel and cost analysis and preparing rate schedules in some cities.

Q. In cities that there is in contemplation some rate litigation.

A. Litigation or compromise. Making up a contract for services for a number of years to come, not necessarily litigation.

Q. Are you representing the municipality or company affected in the suit?

4888 A. In St. Louis I am representing the company. In two of the cities I am representing the city and two the company.

Q. You have got five cities?

A. No, I have four cases. I include St. Louis in the one where I represent the company. I have four matters I am interested in, two representing the company and two the city.

Q. Four cities outside of Des Moines?

A. Yes.

Q. In the cases where you represent the municipality, do you include Chicago?

A. Oh no. I am all through with the city of Chicago.

Q. Outside of Chicago is it?

A. Yes, sir.

Q. Don't include that in any way?

A. Not the city of Chicago, no sir.

Q. Now Mr. Hagenah I wish you would take a look at the records of the Des Moines Gas Company, say for the year 1910, at your earliest convenience and I wish you would be prepared to tell the Master when you return after making that examination about what length of time it would require to prepare some sort of a statement that would give the Master an opinion or an idea of the structural cost of mains, services and trenches in the city of Des Moines for the year 1910.

Mr. GUERNSEY: We object to this so far as the complainant is concerned as in the first place absolutely in no sense cross examination, the testimony of the witness having been confined entirely to the city of Buffalo for a period ending January 1, 1907, and we object for the further reason that if the parties desire this information they have their own experts and they have access to the books and there is no obligation on the part of Mr. Hagenah or

4889 upon the part of the complainant to do this work for them, and as far as the complainant is concerned it is not disposed to do it. If they want to make an arrangement with Mr. Hagenah

of course we have no objection whatever. I would like to have the record show that their own expert, Mr. Hall, is sitting in the room and has been over these books and spent more time on them with his assistants than Mr. Hagenah, and the last I knew Mr. Sangster, Mr. Hall's assistant was at work on the books. I don't think there is anything in the situation that warrants the defendant that wants this information in asking complainant to do the work of examining the books and compiling it.

Q. I wish you would tell the Master this, for whom you are employed if you know, whether for the Des Moines Gas Company or the United Gas Improvement Company. Tell us the terms of your employment?

A. I am employed by the Des Moines Gas Company to appear in this case as an expert witness, there is no specified amount to be paid to me for my services. I am to render my bill and I presume it will be paid. Up to this time my bills have been paid. These are the only terms of my employment here.

Q. Is that contract in *w*riting?

A. There is no contract at all, consequently not in writing.

Q. There is no contract express or implied?

A. No, sir; nothing more than I have said.

Mr. GUERNSEY: That is objected to as calling for a legal conclusion, we all know if a man is employed there is a contract for payment, but I don't' believe the witness should be called upon to testify to a legal proposition.

Q. Let me ask you this question, in the other cities where you are engaged on behalf of the companies affected by some con-
4890 templated rate regulation or otherwise are your services secured by the United Gas Improvement Company in these cities?

A. No, sir; I may say not in any of the four cities where I have personal employment outside of Des Moines is the U. G. I. Company in any way a party or operating a plant in that city.

Q. A stockholder in any of the plants?

A. I am sure it is not.

Q. You are sure it is not?

A. I have not seen the stock book, but I am satisfied in my own mind it is not a stockholders.

Q. Does your employment whether a verbal contract—I suppose you must have some arrangement with them?

A. Yes, a verbal understanding I am to testify here and to be paid for my services.

Q. Was anything said as to how long your services would be required in this case?

A. No, sir. I have been called back two times. No statement as to how long I should be here.

Q. Can you tell us about how much you have been paid up to date for your services in this case?

COURT: He has really answered that question, $2,290.

A. I think it is a little more than that, there was another expense

account for the month of September that was put in there. I should say it was between 24 and 25 hundred dollars.

Mr. GUERNSEY: That covers expenses as well as services?

A. Yes, sir.

Q. To go back to your table of unit prices in the city of Buffalo do you know whether the cast iron pipe which was used in making the extensions, whether they were delivered at the trenches or whether delivered on board the cars?

4891 A. The foundries manufacturing pipe used in Buffalo are located in that city consequently there is no freight. They are not delivered on cars. The records for pipe are not shown separately for several of the years covered in that five year statement. My understanding of it is and the only conclusion one could get from the books in the absence of——

Q. I don't want you to draw conclusions, simply want you to tell what you know about it from the examination you made of the books?

A. Have to conclude from what the books show and that is that the city buys the pipe at the works, at the pipe yard of the works and hauls it to the trench.

Q. Did the books show where the pipe had been purchased?

A. Not on the entry on the construction record, no sir.

Q. So you simply infer from the fact there are pipe foundries in the city of Buffalo, the city of Buffalo must have purchased at these foundries?

A. No, sir; I did not. I inquired how they obtained pipe in view of the fact there was no freight charge there.

Q. There was not a single entry on the books indicating where the pipe had been purchased.

A. Not on the pipe extension records, there was no item of that kind, but in the absence of a freight charge there I inquired as to where the pipe was purchased and how the freight cost was taken care of. I was told then by the deputy commissioner of the water department that the pipe was purchased from local foundries.

Q. I believe you testified to that and I believe we objected to that and moved to strike it as hearsay. There was not anything on the records to show where the pipe had been purchased.

4892 A. Not the pipe extension record, but I examined contracts and correspondence in regard to it.

Q. You can't tell the Master the weight of the cast iron pipe that was used?

A. No I can't. Standard sizes of pipe.

Q. Nor the weight of the specials?

A. That appeared on the books, the price for the specials I may say is fixed by a specified amount per pound.

Q. Do you know the dimensions of the trench ordinarily made by the gas company in extending its mains in the city of Des Moines?

A. I do not.

Q. Did you attempt to make any comparisons between Buffalo and Des Moines based upon the same dimensions?

A. No, sir; I make no comparison between Des Moines and Buffalo at all. My work in Buffalo was not for the purpose of comparison as I understood it was merely to find out what is the cost of laying pipe and mains in that city. This I obtained at the request of Mr. Guernsey and made my report to Mr. Guernsey. The purpose which he wants to use it for is something I do not know. I made no appraisal while I was down there, made no audit of the general books, merely analyzed what it cost to lay mains over the five years' period.

Q. That analysis was from a cursory examination of the records and some talks you had with different ones around the office and from that you have made up this detailed statement?

A. I must object to that, it was not a cursory examination, not based on talks with officers, but based on the pipe extension record which is the final record of cost kept by the bureau of water.

Q. You mean to tell the Master now do you that your figures represent a detailed investigation of everything connected
4893 with the pipe extensions covering the years 1902 to 1907?

A. If you mean by detailed investigation the carrying of every particular charge on the books back through the store house and through the requisitions, then of course I did not.

Q. You took the totals?

A. Yes, but if you want to know whether my figures show the actual cost as appeared on the final books of the Buffalo Water Company taken from those books, and verified by several years' examination of the requisitions in the stores department and for a test of the pay rolls for each year then I say my results are the actual records as shown by the books of the Buffalo Water works for the cost of laying pipe for that five year period.

Q. Do you know how large a force the city used in extending its mains?

A. No, it was not necessary for me to go into that. I saw the pay roll. I testify only what the books show.

Q. Can you tell us now on the average about how many men were used in the year 1904 digging trenches and laying mains?

A. No, sir.

Q. There would be considerable difference would there not in the cost where you were laying a large number of mains and where the company extend a block or two this month and a couple of bloc the next month and so on scattered throughout the year, be considerable difference?

A. I don't know. My record shows the conditions during this five year period in the city of Buffalo conditions under which these mains were actually laid from which I exclude abnormal construction orders and short extensions.

Q. Have you in mind any considerable extension during any one year during the period shown in your report?
4894 A. You mean the length of feet of pipe laid on any particular job?

Q. Well for the whole year?

A. I am afraid I don't quite understand your question.

Q. Can you pick any particular year in which the city of Buffalo

extended its mains to any considerable extent over and above any prior years?

A. There was a great deal of extension work every year there.

—. What would be the average per month of extensions.

A. I don't know that.

Q. You haven't figured that out?

A. No.

Q. Can you from your report?

A. No, I don't know whether I can say it was laid in the month of June, September or October, I don't know that. It appears on the books for this particular year.

Q. It don't show the month in which it was laid?

A. Shows the month when it was started, on a very long job, the work might last six or seven months, sometimes finish in one month.

Q. Take Main street, that is the principal street in Buffalo, I think your report shows that there was some main extensions in that street made by the water company.

A. Yes, sir.

Q. Is there a record showing when the work was commenced and how much pipe was used, character of the pipe and where the pipe was purchased and where delivered by the foundry and the amount of labor expended in extending the main in that street, in other words, could you from the records that you examined could you give the detailed information with respect to the extension of the water main in Main street in the city of Buffalo?

4895 A. Most of the items which you have mentioned appear on some book or record in the Bureau's records, some of them you have assumed and are contrary to the facts.

Q. I am speaking of this particular street?

A. I don't know, but I don't believe the record shows that the pipe was delivered to the trench by the foundry.

Q. What do you remember that the books which you examined would show with respect to the water main which was extended and placed in Main street in the city of Buffalo?

A. I know from the books the actual cost of that job and the detailed cost of it. The books will show the date when the work was commenced and the date when specific charges were entered on the books.

Q. Will the books show and do they show, that is the books which you examined, did they show the amount of cast iron pipe that was used, the cost of that cast iron pipe, the number of laborers employed upon the job, the size of the trench. In other words did the books which you examined with respect to the extension referred to show a detailed statement of the cost of the extension?

A. If you will let me add to that and say books and records which I examined, because detailed labor charges are not entered on the book, it is merely total labor appears there, then I will say the records show all that information except the depth and width of trench which I got by asking the engineering department.

Q. Have you any memoranda or data from which you can tell

us just the amount of labor that was used in this extension on Main street?

A. Yes, it appears on my table.

Q. How long were they engaged in that work, and how many persons were employed?

4896 A. That could be obtained from the detailed pay roll. I have not made a copy of the pay roll. I could tell you from these records the total amount of labor cost which entered into the cost of the job.

Q. I want to know whether in making this investigation you took up that job and examined the time sheets and pay rolls and everything concerning that job so you are able to tell us just how much it cost the city of Buffalo to lay that main and make that extension, did you do that in each and every instance as shown in your report?

A. On every one of the jobs which appears in my report I secured from the records all the detailed information which is shown there, but did not analyze the pay roll on every job to find out how much of that total labor charge went to the foreman, how much to the water boy, how much to the lead boy, how much to the trench operators and diggers and how much went to the caulker on the job. I got the total labor charge and I analyzed the pay rolls on about one half or one third of each of the jobs for each of the years.

Q. What I want to get is whether to get at each one of the items shown in the report, the way you got it and whether you would be able to state that you personally examined all of the books and records with respect to that job so that you are able to state to the Master under oath that it cost the city of Buffalo in extending its mains in a particular street so much for the cast iron which was used, so much for specials, so much for labor, in other words, can you segregate each and every one of the items and tell the

4897 Master the actual cost to the city of Buffalo was for that particular job as shown by the books and records?

A. Exactly that information which you have indicated is contained in the exhibits filed here for each of the jobs shown there and I realize that I am under oath when I say that those are the exact figures taken from the books and office records of the water bureau.

Q. You were able to cover that seven years in about six days.

A. Five years.

Q. You said you examined 1910 and '11?

A. Yes, but I am not including those in my report.

Q. Took some time to go over these, didn't it?

A. Yes, it did.

Q. You were able to do that and segregate each and every item so you know that the figures are correct with respect to every street main that is referred to in that report?

A. With my assistants I covered exactly that information and data shown on those sheets as exactly as the books show it.

Redirect examination by N. T. GUERNSEY, Esq.

Q. You were asked several questions which you finally answered by saying that you were not a water works engineer, you had not

built water works, and so on. I wish you would state whether you have frequently examined the books and records of the water works companies?

A. I have.

Q. You have also been asked once or twice whether you knew that these trenches were six feet deep, as deep as that and I wish you would state in that connection—I think it is obvious—whether if the trenches were not as deep as that it would simply result in increasing the unit cost per yard of excavation?

4898 A. Yes, it would naturally increase the unit cost if the trench were shallower, indicate less dirt had been thrown and the labor cost would be higher per cubic yard excavated.

Recross-examination by R. O. BRENNAN, Esq.:

Q. It would not cost as much to dig a trench five feet deep or four feet deep would it as it would one six feet deep?

A. No, the narrower your trench is the less it costs. Here I only give the item so many days' labor on this job and if the trench which was made as a result of that labor investment is six feet deep it has cost less per cubic yard than if the trench were only four feet deep.

Q. It would not cost as much to dig a trench 18 inches wide and five feet deep as it would to dig a trench two and a half feet wide and six feet deep.

Q. If everything was equal I think I am safe in saying the small ditch would not cost as much as the big one.

Witness excused.

4899 B. F. KAUFFMAN being recalled on the part of the complainant and examined in chief by W. L. Read, Esq., testified as follows:

Q. I believe you stated when on the stand before that you and your firm were in the insurance business?

A. Yes, sir.

Q. Do you also write liability insurance?

A. Yes, sir.

Q. Are you familiar with the prevailing rates or premiums for such insurance?

A. Yes, sir.

Q. Upon what is the rate of premium based in liability insurance?

Objected to as incompetent, irrelevant, immaterial and not proper rebuttal.

A. It is based upon the pay roll expenditure.

Q. With reference to any other matter, that is the character of the employment or character of the business have anything to do with it?

A. It does, based on the pay roll expenditure in connection with the work. Such liability as exists in connection with teamsters, automobiles, etc., is based at so much per automobile.

Q. I didn't know but the fact that some business is attended with greater hazard than others would affect the question of the rate?

A. Yes, sir.

Q. Have you seen and examined what is now marked complainant's Exhibit 90?

A. Yes, sir.

Q. Directing your attention to the first sheet I will ask you to state what the rate of premium would be upon the assumption that
4900 the pay rolls for the work specified as is stated on the exhibit.

Objected to for the reasons heretofore urged.

A. The first item operating works and distribution system. The first item would be a rate of $9.90 per hundred dollars pay roll, total annual premium, $6,199.92.

Q. The second item.

A. The second item takes upon the pay roll a premium of $1.16, making a total premium of $585.69.

Q. The third item?

Mr. BRENNAN: We would like to have the record show that to each and every one of these questions the defendant- interposes the same objections.

COURT: The objection will apply to each and all the questions and answers of this witness touching the matter of insurance without being repeated with the same force and effect as though they were made after each and every question and the answer of the witness is taken subject to that objection.

A. The next item is four motorcycles at $42.00 each.

Q. The third item is vehicles?

A. Yes.

Q. You may state with respect to the several details what the rate of premium would be and what the total would be?

A. Rate of premium on motorcycles $42.00 each. On the tri-cars $84.00 each; on the teams $15 each, on one automobile $56.25, on one automobile $72.50. Total premium, $734.75 on vehicles.

Q. That is the annual premium?

A. Annual premium.

Q. Where you have given totals thus far you have referred to the total annual premium on the item?

A. Yes, sir.

4901 Q. Referring to the fourth item on the subject of elevators, what would be the premium upon that?

A. $12.50 on each elevator, total annual premium of $50.00.

Q. For four elevators?

A. For four elevators.

Q. What is referred to by the 5th item?

A. That refers to the property damage outside of the plant. It would refer to property damage by reason of gas explosions or any promiscuous liability by the gas company or other property damaged.

Q. Is that covered by the usual liability insurance?

A. It is not.

Q. Are there any rates upon that?

A. There are no definite rates obtainable on that owing to the fact that the insurance is not obtainable outside of London.

Q. It is obtainable from the Lloyds?

A. Yes, sir.

Q. And not outside of that?

A. Not outside of that.

Q. So there is no rate included in the exhibit for that item?

A. No, sir.

Q. Turn to the next sheet of Exhibit 90, what is that; what does that show?

A. That is a detailed statement of the totals under the first item on the first sheet.

Q. What does the third sheet show?

A. A detailed statement of the items shown under the second item on the first sheet.

Q. And the next sheet?

A. The next sheet a detailed statement of the vehicles
4902 shown under the third item of the first sheet.

Q. And the fourth sheet?

A. The detailed statement of the vehicles as shown under the fourth item of the first sheet.

Q. Thus far you have spoken of the operating liability?

A. Yes, and distribution.

Q. Now the next sheet in the exhibit refers to construction?

A. Yes.

Q. Assuming that the pay rolls are as stated on the sheet now under consideration what would be the rate of premium and what the premium.

A. The rate of premium covering laying mains and services would be $14.40 for each $100 pay roll and on the pay rolls stated in the exhibits the total annual premium would amount to $4,166.78. On additions, alterations and repairs to works, the rate would be $7.30 per hundred dollars pay roll, total annual premium $428.24 making the total premium annually $4,595.02 for this work not including any structural steel work, sewers, tunneling, shafts or subways that might be necessary.

Q. Why is that excluded?

A. Excluded on account of being extra hazardous.

Q. That rate is not ordinarily written?

A. Not ordinarily written.

Q. In either class is what is known or sometimes called as property damage incouded?

A. No, sir.

Q. That is where a workman goes into a house and making
4903 repairs and doing work and there is damage to the property, that is not covered?

A. That is not covered.

Q. What is shown by the two following sheets of Exhibit 90?

A. The next following sheet is a detailed statement of the laying

of mains and services as outlined in the first statement under the construction sheet.

Q. And the next sheet?

A. The last sheet is simply a detailed statement with reference to additions, alterations, and repairs to works as shown on the second item of the construction sheet.

Mr. BRENNAN: Defendants move to strike out all of the testimony of this witness in reference to liability insurance for the reason that the same is entirely incompetent, irrelevant, immaterial not proper rebuttal and because the witness had not shown himself not competent to testify concerning it.

Witness excused.

4904 JANSEN HAINES being recalled on the part of the complainant and examined in chief by *by* W. L. Read, Esq., testified as follows:

Q. Referring your attention Mr. Haines to Exhibit 90 and to the first sheet or rather to Exhibit 90, was that prepared by you or under your direction and supervision?

A. Yes, sir. That is Exhibit 90 from the rates which I got.

Q. That you got where?

A. From Mr. Kauffman.

Q. Referring your attention to the first page what does that purport to show, what does that report show?

Mr. BRENNAN: We want the same objections to this testimony as was made to the same line of testimony when Mr. Kauffman was on the stand.

COURT: The same objection and the same order with reference to it.

A. That purports to show the cost of liability insurance on the basis of the 1910 pay rolls and the equipment in service during 1910 of the Des Moines Gas Company.

Q. That answers the question generally. Now what is shown in the first column of the first sheet of Exhibit 90?

A. Shown the amount of the pay roll distributed among operating works and distribution system and clerical force.

Q. Do the figures set forth in the first column state the pay roll for the year 1910, for the several items specified?

A. Yes, sir.

Q. For operating works and distribution system what was the total pay roll?

A. $62,625.48.

Q. Clerical force how much?

A. $50,490.64.

4905 Q. What are the figures $37,943.91 at the bottom of the column?

A. That is the amount of the pay roll paid during 1910 for the operating and distribution system only.

Q. And why is it set forth in the exhibit?

A. It is set forth under item five on page 1 as the basis for the

rate covering the risk for damage to property outside of the plant in operating distribution system.

Q. I notice that no rate is specified, why is that?

A. Because I was unable to obtain any rate on that class of risk.

Q. From your experience is there a hazard from such risk?

A. There is a very decided hazard as has been illustrated by some accidents and losses which we have had in the past.

Q. Is anything included in this estimate of insurance for what is known as property damaged?

A. Well this item five on page 1, is to apply to property damaged, but the companies object to writing that and the insurance people tell me it can only be written by the Lloyds of London.

Q. If I understand you, you say there is risk and hazard?

A. Yes, sir.

Q. And that you are not able to obtain insurance?

A. Not any underwriters in Iowa, no, sir.

Q. Turning to the fifth sheet I think it is of Exhibit 90, heade construction liability insurance on basis of 1910 pay rolls, etc., does the amount $28,736.43 in the column entitled pay roll represent the amount of the pay roll for the item entitled laying mains and services?

A. Yes, sir.

Q. For the year 1910?

A. Yes.

Q. Does the amount $5,866.32 correctly state the amount
4906 of the pay roll for the year 1910, for additions, alterations and repairs to works?

A. It does, yes.

Q. Are there any exclusions?

A. No, sir, there are no exclusions in that.

Q. What is the meaning of the note in parenthesis excluding structural steel, sewers, tunnels, shafts and subways?

A. That memorandum in parenthesis on page 6 means that the premium rate does not cover liability insurance on work on structural steel, sewers, tunnelling, shafts and subways which is an additional hazard not included in that rate.

Q. Referring your attention now to the first sheet of Exhibit 90, and upon the assumption of sales of gas of 532 million cubic feet and assuming a total annual premium for the items specified to be $7,570.36 have you figured out the cost per thousand cubic feet of gas?

A. I have, yes.

Q. As a matter of convenience, I wish you would just state it?

A. It is 1.423 cents per thousand cubic feet of gas.

Q. Referring your attention to the sheet of Exhibit 90 entitled contsruction liability insurance on the basis of 1910 pay roll, assuming the total sales to be as stated and the total premium to be $4,595.02, what would be the cost annually per thousand cubic feet for that item?

A. .8637 cents per thousand cubic feet.

Cross-examination by Hon. H. W. BYERS:

Q. Mr. Haines, what is included in that term clerical force as you use it here on this sheet?

A. That is the office force.

4907 Q. I know, but tell us what office force?

A. It is the office force, that is the force of employés in the office of the Des Moines Gas Company in Des Moines.

Q. Including you?

A. Yes, sir.

Q. And the United Gas Improvement Company?

A. No, sir; just simply includes the employés of the Des Moines Gas Company in the office in Des Moines.

Q. Does not include this $10,000?

A. What $10,000.

Q. That goes to these several gentlemen that do not stay in Des Moines always?

A. You mean the salaries that are paid Mr. Clark, Mr. Lilley——

Q. Yes, is that it?

A. That is not in there, no sir.

Q. How much liability insurance did you have on that force last year?

A. We didn't carry any liability insurance on it.

Q. How much did you have on your office force in 1909?

A. We have never carried liability insurance on our office force.

Q. Can you tell off hand what was the pay roll of the clerical force as you have now explained it was made up of in 1909?

A. No, sir; I have not got it. It shows in the books which are in evidence.

Q. This $50,000 includes everything in the office in the way of employés of the Des Moines Gas Company?

A. Yes. We classify our clerical force on a separate pay roll and that covers them all.

Q. Did you ever know of a gas company carrying liability insurance on its clerical force, ever hear of such a thing before?

4908 A. Not to my own knowledge, no sir.

Q. Your own salary is included in it?

A. Yes, sir. Just the general office pay roll just as it appwars on the books.

Q. That liability as you understand, does that cover accidents and injuries to the employés, this clerical force, is that the kind of liability insurance you are talking about?

A. That includes employés liability and the workmen's collective insurance.

COURT: Protects the company simply against any liability to an employé by reason of any negligence of the company. That is what it means?

A. Yes.

Q. Does it cover insurance to the company against liability against accidents to the employés by reason of negligence of the company or its other employés, is that what you understand?

A. Yes, includes what is ordinarily known as liability insurance.

Q. Now what are the risks that you have in mind incident to the business of working up there in your office that would justify adding to the cost of gas this $585.69 a year that you can think of just now.

A. You mean me to give a list of the accidents which have occurred to this *this* liability insurance would apply?

Q. One fifth of this represents your salary, $10,000, now what risks do you take up around the office there that ought to be insured against and that ought to be charged up to the cost of making gas as you look at it?

A. I suppose the same risk that any employé takes of the company.

Q. Of course you don't just mean that, you mean the same risk that any other clerk in the office.

4909 A. Employé that would be covered by this insurance.

Q. When you say employees, that covers the boys that are working in ditches and down at the plant in the engine room, the teamsters and drivers that do have some risks. I am talking now about the clerical force alo*j*e, what you mean is that you have the same risk that any other clerk or man in the office has?

A. Any other employé that is coverec by this insurance as specified.

Q. You have got an automobile in here, one automobile $56.25. Who uses that automobile?

A. That I think is the engineer's automobile.

Q. And belongs to the company?

A. Yes, sir.

Q. Another automobile here $72.50, whose is that?

A. That is the manager's automobile.

Q. That is the one you used?

A. Yes, sir.

Q. You use it for all purposes?

A. All necessary purposes.

Q. All purposes, you keep it at home don't you and use it for your personal use as well as for the gas company don't you?

A. I use it in connection with the gas company's business.

Q. It is the only automobile you do use isn't it?

A. Yes, sir.

Q. You use it all the time for your personal use, your family's use and your friends don't you?

A. I use it whenever it is necessary to use it, yes.

Q. Still you think that that ought to be charged up to the cost of making gas and have liability insurance for it? Did you carry any liability on these automobiles last year?

A. I think either last year or the year before, yes.

4910 Q. Who was the policy written to? Who was the policy in favor of?

A. The policy was written in favor of the Des Moines Gas Co.

Q. Are you sure about that?

A. That is my best recollection, yes.

Q. What company did you have the policy with?

A. I really have forgotten, *H*eneral. I never made a claim under it, I don't remember making a claim under it.

Q. That was liability insurance insuring yourself against accidents, accidents to yourself and not in favor of the Des Moines Gas Co.?

Mr. READ: That is wholly immaterial, the question here is what would it cost to carry liability insurance, not whether the insurance as carried or not and whether there was liability insurance or not the risk had to be carried by the company if it didn't have insurance and I submit it is immaterial.

A. Do you mean accident to myself when riding in the automobile?

Q. Yes, or when somebody else was riding in the automobile or would run into you?

A. I carried personal accident insurance which was covered by that liability but I paid for that myself, that was purely a personal matter.

Q. That was the only kind you did carry at any time, the Des Moines Gas Company had no liability insurance on that automobile did it at any time?

A. Yes, it did.

Q. Who wrote the policy do you know?

A. I can't remember. The policy has not been renewed.

Q. What liability insurance have you ever carried there since you have been in charge outside of this one year you say you had some automobile insurance?

A. I don't remember at any time when we have carried
4911 liability insurance for the Des Moines Gas Company, we have always——

Q. Well that is an answer. Now Mr. Haines, another matter, I direct it to you as president of this company. In examining the books and records of the company which was made necessary by your counsel's statement you did not have the time nor the inclination to look up the matters that I asked you to last week, we find an authorization issued in 1901, as I remember it, for a certain holder, the holder that has been the subject of some talk here for several weeks, a water gas set, a governor and an oil tank, and all of them refer to certain contracts with one Mr. G. J. Roberts as I remember it and we request of you now, as president of this company to furnish to counsel and to the Master a detailed statement of the accounts and records of the Des Moines Gas Company to the United Gas Improvement Company covering these items. And there is one thing further we request of you too at this time, we request you to furnish before the close of this trial a detailed statement of all of the overhead charges that have been entered in your books for the years 1909 and 1910, charged to construction, everything in the way of an overhead charge that has been charged into construction and if not in construction a detailed statement of the entries showing charges in any other account. In addition to that we want you to furnish a detailed statement from the books and records of the Des Moines Gas Company showing the charges and the character of them for construction work done by the Des Moines Gas Company during the year 1911 beginning with December 31,

1910 up to and including the first day of September, 1911. The reason we demand this information of you at this time is that the books and records are so kept that it is impossible for the expert accounts of the city to trace these items satisfactorily even to themselves or to counsel.

4912 Complainant offers and reads in evidence Complainant's exhibit No. 90.

Complainant's exhibit No. 90 is objected to by the defendants for the reason that the same is incompetent, irrelevant and immaterial, not proper in rebuttal, not properly identified and for the further reason that some of the items referred to in said Exhibit No. 90, the expenses for some of the items referred to in Exhibit No. 90, have never been incurred by the Des Moines Gas Company or charged upon its books.

Witness excused.

Mr. GUERNSEY: This is all of the testimony that the complainant has in rebuttal at this time. We wanted to use Mr. Alvord for I suppose not over an hour on some general questions relating to these overhead charges in rebuttal of some things that have been said here but he is in New York and will be there for about a week as I understand it so we cannot get him now, but if we can get him at the time when we begin again without any inconvenience we shall ask to be permitted to. But aside from that and any possible omissions through oversight complainant rests.

Mr. BRENNAN: Defendants now move to strike out the testimony of the witnesses Jansen Hains and B. F. Kauffman in reference to liability insurance for all of the reasons urged to the introduction of complainant's Exhibit No. 90.

Mr. GUERNSEY: We want the statement that we rest to be subject to the same understanding we had with the defendant if from oversight or any other reason we omitted offering any exhibit we intended to offer we may have the privilege of making the offer.

4913 *Defendant's Testimony in Sur-Rebuttal.*

Mr. BYERS: To complete the record of Mr. Douthirt's testimony, I offer in evidence for whatever it is worth defendant's Exhibit No. 78 which is the last statement of the Commercial Trust Company of Philadelphia showing the officers and directors, one of them vice president of the Des Moines Gas Company and the United Gas Improvement Company.

Mr. GUERNSEY: We object to this statement because it is in no wise identified and is therefore incompetent and because it appears to bear upon its face lead pencil memoranda which are not a part of the original statement and the source of which is not shown at all and we object to it further because it is wholly irrelevant and immaterial.

W. F. DOUTHIRT being recalled on the part of the defendant and examined in chief by Hon. H. W. Byers, testified as follows:

Q. You may examine Exhibit No. 78 and state whether the list of officers there, principal officers of the Commercial Trust Company are correctly stated.

A. I know that Mr. Thomas De Witt Cuyler is president of the Commercial Trust Company of Philadelphia and I know Mr. John H. Mason is vice president. The other officers mentioned there I do not know.

Q. The list of directors there, how many of the names are officers of the U. G. I. Company?

A. One.

Q. Which one is that?

4914 A. Samuel T. Bodine.

Q. Isn't Mr. Ellis an officer?

A. No.

Q. When did he cease to be?

A. Never has been.

Q. Are you sure about that?

A. Yes, sir. He is a director not an officer.

Q. That was the distinction you had in your mind?

A. Yes, sir.

Q. Mr. Ellis is a director of the U. G. I.?

A. Yes, sir.

Q. How about Mr. Clement A. Griscom?

A. He is a director.

Q. Mr. Samuel T. Bodine is an officer and director of the U. G. I.?

A. Yes, sir.

Q. Any of the others of that list there either officers or directors of the U. G. I.?

A. Mr. Morris L. Clothier who is put down here as a director of the Commercial Trust Company is a director of the U. G. I.

Q. Any others?

A. No.

Q. This Exhibit No. 78 gives the proper name of the corporation does it and its location in Philadelphia?

A. I believe the Commercial Trust Company is the proper name of the corporation and I see here a photograph of a building and below it the words 20 South Broad street, City Hall square. I recognize that building as the building in which I know the office of the Commercial Trust Company is located.

Q. Have you seen this statement before?

A. No, I never saw it before.

4915 Q. Counsel suggests it was probably *g*otten up for this case, do you think it was?

Mr. GUERNSEY: No, I said we didn't know it had not been gotten up for this case.

Q. Now one thing further Mr. Douthirt you told us you were secretary of the Des Moines Gas Company and also of the United Gas Improvement Company. We have had some difficulty, at least

our side of this case has, in trying to locate the book entry covering a certain holder down here at the gas works, I think it is the large holder, any way it is one that is authorized along about 1901, completed between that time and 1906 or 1907, along in there and also a certain water gas set authorized at about the same time and a governor and a large boiler and also an oil tank I think. Can you tell us where we can put our hands on the books that will show all the details about that apparatus, these different articles?

A. I think I can tell you where some of the information will be found.

Q. Where?

A. Philadelphia.

Q. In whose offices and in whose books?

A. It would be found very likely in the books that Mr. Roberts who is mentioned as the contractor kept or had kept at the time the work was done.

Q. Who was Mr. Roberts at that time?

A. Mr. Roberts at that time was one of the engineers of the United Gas Improvement Company.

Q. Where was his office during these years?

A. It was in the office of the United Gas Improvement Company.

Q. Who is Mr. Roberts now?

A. Mr. Roberts now is—you mean what is he doing now?

4916 Q. What is he doing now?

A. He is now, I think his title is first vice president, at any rate he is chief operating man of the public service corporation of New Jersey and his headquarters are at Newark, N. J.

Q. He is with the U. G. I. Company?

A. No.

Q. Don't they control that plant?

A. No.

Q. When did Mr. Roberts leave the U. G. I.?

A. I can only make a guess at that. I will give you my best impression about it if you like. I should say it was about three or four years ago.

Q. He didn't take any of the U. G. I. books away with him did he?

A. No.

Q. The books you refer to are the books of the U. G. I. are they not kept by Mr. Roberts?

A. They will probably be found in the office there.

Q. You have known that all the time since this trial has been on and all the time our accountant has been trying to dig up these facts?

A. Yes.

Q. You were an officer of the U. G. I., at the time of the authorization of these several things that I refer to were you not?

A. No, 1901 and 1902, *mo* I entered the service of the United Gas Improvement Company November 1, 1902.

Q. What were you doing before that?

A. I was working in an office in New York City?
Q. Not for the U. G. I.
A. Not for the U. G. I.

Q. When was your attention, after the commencement of
4917 this trial first called to these things that I now refer to?

A. I don't know what you mean by the question.

Q. When was your attention first called to the fact that we were having difficulty about finding the cost of some of this property that was invo-ced here as belonging to the Des Moines Gas Company?

A. I can't fix the time.

Q. It was right at the beginning of the case wasn't it before any evidence was taken at all?

A. I don't recall.

Q. Perhaps you can tell the Master how that holder was paid for?

A. No, I can't.

Q. Why can't you?

A. Because I can't.

Q. You mean because you can't just simply you haven't tried to find out?

—. Because I have not the knowledge.

Q. Have you tried to find out?

A. No.

Q. Why?

A. I didn't know of any reason why I should.

Q. You thought it was nobody's business did you?

A. No.

Q. Have you had any of these numerous gentlemen that you have on the pay roll looking that up or try to look it up?

A. No.

Q. You have been in charge of this field force haven't you all these twelve weeks?

A. Well if you will define what you mean by in charge perhaps I can answer.

4918 Q. Well you have been the superior and man who had the authority to direct this numerous force of employés of the U. G. I., and of the Des Moines Gas Company during the twelve weeks that this trial has been on?

A. Why I have been here helping the counsel who have charge of the case doing what I could.

Q. That is not quite an answer Mr. Douthirt. You don't mean to tell the Master that you have occupied only the same relation to this law suit that this numerous other employés of the U. G. have? You have been the superior and the directing force haven't you?

A. Of some of them, not all of them.

Q. Well all of these U. G. I. boys?

A. No.

Q. Who has been superior to you?

A. Well some of the men who have been here are men from the operating department over whom I have no control.

Q. How is it with Mr. Curran?

A. Mr. Curran is in the department with which I am connected and I may say that I have control over him.

Q. Mr. Curran is comptroller of the U. G. I.?

A. He is.

Q. And is here because you had him some here?

A. Yes.

Q. He is the one man who ought to know all about the books at least of the U. G. I. Isn't he?

A. He ought to have familiarity with the books at least covering the time he has been in that department of the company. Whether he has ever gone back of that I do not know.

Q. You produced here or had produced on our request what is supposed to be the treasurer's books, his check book which
4919 was introduced as showing all of the transactions at least with respect to paying out money upon interest and bonds and you produced them for the purpose of enlightening the Master about the business of the Des Moines Gas Company and the U. G. I. Company as far as it would go. Now did you know that you were not producing all of the books that were kept by the treasurer that would have enlightened the Master and counsel as to the cost and the payment of these several pieces of property that I have just referred to?

Mr. GUERNSEY: We object to the first part of this question as argumentative, a statement which is not consistent with the record and which is misleading because it apparently has for its purpose charging the witness with having produced something and only producing a part of the record for the purpose of misleading, whereas, as a matter of fact the record will show that what was produced was produced at the request of the other side and not produced I think by Mr. Louthirt at all, but produced by Mr. Haines, and I will say further that what was produced was exactly what was asked for.

Mr. BYERS: That is not a correct statement which is probably due to counsel's memory. The gentleman who is on the witness stand is the man that suggested that the check book was here and was responsible for having it brought into this case while Mr. Haines was on the witness stand.

A. There are no books kept by the treasurer that would show anything about the cost of the apparatus mentioned, the cost of the apparatus mentioned to the Des Moines Gas Company is shown by the books of the Des Moines Gas Company in part.

Q. This holder was not all paid for prior to 1906 was it?

A. It was not paid for by the Des Moines Gas Company or by the Capital City Gas Light Company, no.

4920 Q. I mean prior to 1906?

A. No.

Q. If they paid for it at all it was paid for after 1906 wasn't it?

A. Paid for by the $285,000 bonds which have been mentioned a number of times in this hearing.

Q. Well then was some part of this holder and the apparatus I re-

fer to included in the $105,000 open account with the U. G. I., with the Capital City Gas Light Company?

A. No, I think not. The books of the Capital City Gas Light Company would show just what was covered by that $105,000 account.

Q. Don't you know that the books of the Capital City Gas Light Company show that $120,000 of the $240,000 which didn't go to pay that $105,000 went to the Capital City Gas Light Company and was distributed as dividends?

A. Yes.

Q. And not in payment of any property. Now then the fact or truth is about that holder and about that water gas set and the governor and the oil tank can very largely be secured from the books of the United Gas Improvement Company can they not?

A. I think that the cost of the labor and material that went into the items of property you have just mentioned ca- be obtained from the books which were kept by or for Mr. Roberts that I mentioned a few moments ago.

Q. Those are books of the United Gas Improvement Company are they not?

A. Well technically no. But they are there in the office.

Q. I am not speaking technically, I am speaking broadly. Who dealt with Mr. Roberts in these matters?

A. You must remember that you are speaking of matters now that occurred before I was in the service of the company. I
4921 will give you my best impression about it, but I must say it is only an impression because I was not there at the time. If you want that kind of an answer I will be glad to give it to you.

Q. I want what you know about it?

A. I have no personal knowledge then.

Q. If you don't know who Mr. Roberts dealt with with respect to this property I am asking you about, that is an answer.

A. You mean with whom he contracted for the erection of the holder for example?

Q. Yes.

A. I don't know who built the holder, who the persons were who actually built it.

Q. Who has the contract?

A. I suppose it is in the ofiles covering the Roberts business.

Q. Where?

A. That would be in Philadelphia.

Q. In whose files?

A. In the files which are kept in the office of the United Gas Improvement Company.

Q. Whose files are they?

A. I am trying to tell you.

Q. Just tell me whose files?

A. They are files covering matters of this sort kept in the office of the United Gas Improvement Company.

Q. Whose are they, whose files?

A. You mean whose room, whose case?

Q. Who has charge of them, a part of whose business?

A. They are in charge of the United Gas Improvement Company.

Q. And they are a part of the records of the United Gas Improvement Company are they not?

4922 A. You may call them that if you like.

Q. You said a moment ago you did not know how the holder was paid for. Since then you volunteered the statement that it was paid for with $285,000 in bonds. Now which statement is correct?

A. The question is a little bit involved, do you mean how the contractor who built the holder was paid?

Q. Yes.

A. Or how the Des Moines Gas Company paid for it?

Q. No, I have not said anything about the Des Moines Gas Company.

A. I want to find out what it is you would like to know.

Q. I want to know which of your statements are correct that you don't know how the holder was paid for and then later you said it was paid for with $285,000 in bond. I want to know which of these statements were correct.

A. I think they were both correct. So far as payment made by the Des Moines Gas Company is concerned that is covered by the bonds.

Q. Who put the money into the property doring its construction?

A. You mean the holder?

Q. Yes.

A. The United Gas Improvement Company.

Q. Who did they deal with while doing that?

A. I told you a moment ago I didn't know who the building of the holder was.

Q. When they put any money into it a record of that money went on the books didn't it?

A. The record would show that money to pay the contractor for the holder was advanced to Mr. Roberts who had the contract with the Capital City Gas Light Company and it would be charged against Mr. Roberts very likely.

4923 Mr. BYERS: The defendant at this time demands of you as secretary of the United Gas Improvement Company and as secretary of the Des Moines Gas Company a complete detailed statement covering the building of the holder which has just been referred to, the water gas set the covernor and oil tank and boiler, a statement from the United Gas Improvement Company of all dis-Improvement Company also the original contracts made by the United Gas Improvement Company with Mr. Roberts for the construction of this apparatus, the several pieces of apparatus. And we also demand of you the production before this Master of the books of the United Gas Improvement Company showing the account kept between it and the Des Moines Gas Company of Des Moines, Iowa, covering the years 1906 to 1910. We also desire to have you produce for counsel and for the Master and for use in this case a detailed statement from the United Gas Improvement Company of all dis-

counts and rebates on material and supplies furnished to the Des Moines Gas Company by the United Gas Improvement Company during the years 1906, 1907, 1908, and 1910. We say to you now that unless these things are produced that we will urge the information that we have from the books now as showing that this whole business was paid and cleaned up in the form of rebates and discounts.

Mr. GUERNSEY: I don't quite understand that last statement, this whole business was all cl-aned up in the way of something and discounts. I wish counsel would make that a little more explicit.

Mr. BYERS: I am referring now to these articles that have been mentioned, the holder, water gas set, the tank and boiler and governor and the numerous other things that we have not yet been able to discover. These contracts are No. 37 and No. 52. Will you produce these records and statements.

4924 Mr. GUERNSEY: In the first place of course these cannot be produced now and if these matters are to be produced it will mean I suppose we shall all take a new start in the testimony in this case and as far as the company is concerned—Mr. Douthirt can speak for himself, we have nothing to say as far as he is personally concerned, as far as the U. G. I. is concerned, but as far as the Des Moines Gas Company is concerned we object to all the matter as immaterial bearing on matters of cost and not of value and object to it for the further reason that it is too late to ask for this now because none of this information is here, none of it can be produced and whether or not the United Gas Improvement Company would produce it or not I do not know. We have no control over it.

Mr. BYERS: What do you have to say for yourself Mr. Douthirt?

A. I will take the matter under consideration.

Q. When will you decide? We want to know today.

A. As soon as I can.

Q. We would like to have — answer now while you are on the witness stand as to whether you will produce the books and records asked for or not?

A. I have made the best answer I can.

Q. That is all the answer you will make?

A. I have said I will take it under consideration and let you know as soon as possible.

Q. You refuse to say now that you will produce the books, records and papers we have asked for?

A. I refuse to say anything more than I have already said.

Witness excused.

4925 Mr. BRENNAN: The defendants now offer- and read- in evidence Section 1 of Ordinance No. 724 passed on the 16th day of May 1895 as the same appears in section 1230 of the Revised ordinances of the City of Des Moines for the year 1900, said ordinance No. 724 being an ordinance to fix the price of illuminating gas, and to prescribe the conditions under which persons and corporations dealing in illuminating gas can occupy and use the streets and alleys of the city of Des Moines.

SECTION 1230. Rates. Section 1. That every person, firm or corporation furnishing to the inhabitants of the city of Des Moines Illuminating gas shall be entitled to charge and receive therefor, the following prices and no more, to-wit: For illuminating purposes $1.40; for fuel purposes, $1.10; per thousand cubic feet, with a discount of 10 cents per thousand feet if paid on or before the fifteenth day of the month following that in which the gas is furnished. The above prices are for illuminating gas having an illuminating power of not less than twenty four candle power; gas having less candle power shall be furnished at a proportionate less rate per candle power.

The defendants also offer- in evidence and read- Section 3 of said ordinance No. 724 May 16, 1895, as follows:

SEC. 1232. Report to City. Section 3. Any person, firm or corporation which is now in possession of the streets or alleys of the city, for the purposes provided in this ordinance, shall be and is hereby required to file a report with the city clerk on the fifteenth day of January and July of each year giving the number of thousand feet of gas manufactured and furnished the city or its inhabitants during the previous six months and the amount per thousand feet received therefor.

In case any such person, firm or corporation shall fail or
4926 refuse to file said report as aforesaid then each and every such person, firm or corporation shall be required to pay to the city the sum of $25 per day for each and every day said report is delayed. And each such person, firm or corporation shall be required to furnish all necessary meters free, and shall furnish and lay service pipe to the lot line free, and from the lot line to the meter for not to exceed 15 cents per foot.

Defendants now offer- and read in evidence ordinance No. 751 passed February 7, 1896, being an ordinance to amend an ordinance heretofore passed by the city of Des Moines on the 29th day of April A. D. 1895, and again passed on the 11th day of May A. D. 1895, and designated as ordinance No. 724, and entitled as follows: An ordinance to fix the price of illuminating gas, and to prescribe the conditions under which persons and corporations dealing in illuminating gas can occupy and use the streets and alleys of the city of Des Moines, and prescribing the terms of a proposed contract with the Capital City Gas Light Company as to rates for gas and conditions of purchase of said plant. Said ordinance last offered appearing in sections 1237 to 1247 both inclusive of the revised ordinances of the city of Des Moines for the year 1900, and which is as follows, this offer being made by the defendants on the suggestion of the Master.

SEC. 1237. Capital City Gas Light Company. Section 1. That said ordinance No. 724, passed on the 29th day of April A. D. 1895, and again passed on the 16th day of May A. D. 1895, (and more fully described in the caption hereof), be and the same is hereby amended and modified, as respects the Capital City Gas Light Company, to the extent hereinafter specified and no further: Provided, that this amendment shall be accepted by said Capital City Gas Light

Company as hereinafter specified, unless so accepted said ordi-
4927 dance No. 724 shall continue in full force as originally passed.

SEC. 1238. Rates. Section 2. From and after January 1, A. D. 1896, the said Capital City Gas Light Company shall be entitled to charge and receive for gas for illuminating, fuel or other purposes, furnished by it to the City of Des Moines or its inhabitants, for the period of fifteen years from and after the first day of January, A. D. 1896, prices or rates not to exceed the following: For two years thereafter, to-wit: the years 1896 and 1897, $1.30 net per thousand cubic feet; for the next two years, to-wit: the years 1898 and 1899, $1.25 net per thousand cubic feet; for the next two years, to-wit: 1900 and 1901, $1.20 net per one thousand cubic feet; for the next three years to wit: 1902, 1903 and 1904, $1.15 net per thousand cubic feet; for the next year, to wit: 1905, $1.10 net per thousand cubic feet; for the next five years, to wit: the years 1906, 1907, 1908 and 1909 and 1910, $1.00 net per thousand cubic feet. The said Capital City Gas Light Company may add 10¢ per cubic feet to each of these prices, but shall be required to discount that sum for payment by or before the 15th day of the month following that in which the gas was consumed.

SECTION 1239. Street Lamps. Section 3. The city of Des Moines shall pay to the Capital City Gas Light Company for said term of fifteen years for such street lamps as said city may use, and that may be furnished by and gas be supplied from the Capital City Gas Light Company as follows: For each lamp until the number shall reach the total of five hundred, $18 per year; after the number of five hundred has been reached $17 per lamp per year for the total number of lamps so used. The gas so used to be paid for by the city
monthly. Five foot burners or their equivalent in illumin-
4928 ating power shall be used in street lamps.

SEC. 1240. Quality. Section 4. The Capital City Gas Light Company shall furnish under this ordinance, gas of not less than twenty-two candle power.

SEC. 1241. Purchase. Section 5. The said city of Des Moines shall have the right to purchase, at the price as hereinafter determined, at any term after five years and within fifteen years from January 1, 1896, by giving not less than one year's notice in advance, the Capital City Gas Light Company's property. this right to exist in the city in its corporate capacity, or in the city's trustee, or in the city in any other manner by which the privilege of purchasing may on behalf of the city, be exercised in good faith. To that end, the present value of the Capital City Gas Light Company's plant shall be determined by three appraisers, one of which shall be chosen by the Capital City Gas Light Company, one shall be nominated jointly by the committee on gas light and lamps of the city council, and the citizens' special committee and be confirmed by the city council, and the third shall be chosen by the two thus selected. These appraisers shall file a complete inventory of all the property of the gas company, with their findings. The Capital City Gas Light Company shall furnish the city an annual statement in complete

detail of expenditures for betterments and repairs, verified by the oaths of its manager and secretary. The city to have the full facilities for verification of the same by experts of its own selection. Replacements and ordinary repairs not to be counted as betterments. This statement to be furnished on or before the 30th day of January in each year for the year preceding. In the event of purchase by the city, the actual cost of such betterments is to be added to the first appraisement, and no more.

SEC. 1242. Time Limit. Section 6. The provisions of
4929 this amendment shall not be taken or construed to in any manner either affirm, recognize or deny any franchise or other rights now claimed by said Capital City Gas Light Company under ordinances heretofore passed, or contract made with said city of Des Moines, and the privileges granted by this ordinance shall absolutely cease at the end of the term of fifteen years for which its specified rates for gas. This amendment shall not be construed as conferring upon the Capital City Gas Light Company an exclusive right for any period of time, to furnish gas to said city or to private consumers, nor to limit or restrain the city or such private consumers from purchasing gas from any other gas company upon such terms as may be agreed upon or may be fixed by legal authority, nor to limit the city of Des Moines from purchasing from any other company, person or persons, or from at any time constructing gas, electric light or any other works that may be adapted to the purpose, either in its own name or through the instrumentality of trustees, or in any other manner, for the purpose of lighting its streets, and of supplying the city and its citizens with light, fuel or power.

SEC. 1242. Suits. Section 7. The Capital City Gas Light Company shall dismiss its suit now pending against the city of Des Moines now pending in the United States Circuit Court of the Southern District of Iowa, Central Division, and shall pay the court costs.

SEC. 1244. Payment to City. Section 8. The Capital City Gas Light Company, as a license fee for each year that it may continue to use the streets of said city in distributing gas beginning January 1, A. D. 1896, shall pay to the city treasurer, for the use of said city of Des Moines, two per cent of its gross receipts for gas sold during such year; the same to be paid semi-annually and within thirty days after the expiration of the preceding six months.

4930 SEC. 1245. Acceptance. Section 9. This amed*n*cment shaall not become operative or go into effect unless and until the same shall be accepted in writing by said Capital City Gas Light Company, and such written acceptance shall be filed with the city cierk of said city within fifteen days after the passage of this ordinance and not afterwards; and when so accepted this amendment shall be deemed a contract between said city of Des Moines and said Capital City Gas Light Company.

SEC. 1246. Large Consumers. Section 10. That if the said Capital City Gas Light Company shall at any time reduce the price of gas to its patrons below the price fixed in this ordinance, then said Capital City Gas Light Company shall be prohibited during the en-

tire term covered by this ordinance from charging any person or persons or patrons of said company for gas a price in excess of that which said company has charged any other person. This shall not be construed to prohibit special contracts for lower rates to large consumers.

SEC. 1247. Terms. Section 11. All the provisions, terms and conditions of this ordinance shall apply and be binding upon said Capital City Gas Light Company, its successors or assigns.

4931 W. F. DOUTHIRT, being recalled on the part of the defendants and examined in chief by Hon. H. W. Byers, testified as follows:

Q. Who is Mr. Thomas S. Genay?
A. He is Mr. Walton Clark's chief clerk.
Q. In whose employ is he at this time?
A. United Gas Improvement Company.
Q. And in whose employ was he in 1903?
A. The same.

Witness excused.

ANDREW SANGSTER being recalled on the part of the defendants and examined in chief by Hon. H. W. Byers, testified as follows:

Q. You may examine defendant's exhibit 79 and state where you got the information of which Exhibit 79 is a memorandum?

A. The information contained in this Exhibit 79 was taken from a file of the authorizations of the Capital City Gas Light Company. I don't know that the book was numbered or had any title but they are all filed.

Q. And where was this file with respect to the Des Moines Gas Company's office?

A. It was in the Des Moines Gas Company's office.

Witness excused.

4932 Mr. BYERS: Defendant offers and reads in evidence defendant's Exhibit No. 79.

Objected to on the grouns that it is irrelevant immaterial and because containing nothing that has any bearing upon any of the ultimate questions that are in controversy in this case no objection on the ground it is a copy.

Mr. BYERS: Defendant offers in evidence defendant's exhibit No. 80 which has just been marked, a summary of the data on which were based the tables pages 91 and 92 of defendant's exhibit No. 43 and reads the same in evidence as follows:

Objected to as irrelevant, immaterial and as incompetent because not identified by anybody and not shown by anybody to be correct and because there is no evidence showing where it comes or anything about it.

Summary of the Data on Which were Based the Tables, Pages 91 *and* 92 *(the Latter as Corrected in the Testimony Oct.* 5*), in Defendant's Exhibit No.* 43*, Relative to the Seven Massachusetts Companies, Fall River, Lawrence, Lowell, Lynn, Springfield, and Worcester, Being Nearest in Size to Des Moines.*

Year.	Sales in feet.	Gross mfg. cost.	Distribution.	Management.	Taxes.	Incidentals.
1900	1,529,658,694	$798,381.65	$189,154.22	118,22.62	101,045.11	15,291.88
1905	2,585,356,352	1,353,442.74	283,352.52	151,842.99	153,780.34	35,555.70
1906	2,819,997,005	1,317,755.33	308,344.65	154,410.06	172,413.76	41,430.23
1907	3,160,671,179	1,493,240.81	346,325.36	168,822.34	180,467.83	47,568.24
1908	3,402,736,827	1,676,830.14	368,238.16	175,950.95	188,779.45	47,959.14
1909	3,678,066,273	1,569,398.84	352,603.88	200,497.35	215,249.88	43,758.54
1910	3,968,397,562	1,602,021.06	405,280.24	209,174.69	289,348.86	47,168.69

(*Summary of Data, Pages* 91 *and* 92*, Continued.*)

Year.	Gross operating.	Income from residuals.	Income from gas.	Other operating income.	Profit.	Depreciation.
1900	$1,222,084.88	$181,360.31	1,637,402.78	$1,174.25	$597,852.46	82,691.11
1905	1,977,974.29	275,659.31	2,517,899.91	1,487.75	817,072.68	110,855.02
1906	1,994,354.03	286,379.46	2,673,990.37	1,548.96	967,564.76	154,414.54
1907	2,236,424.58	299,114.02	2,890,958.65	8,672.45	962,320.54	72,111.11
1908	2,467,757.84	336,163.01	3,064,173.68	8,538.79	941,117.64	72,953.44
1909	2,381,508.49	330,694.64	3,161,688.94	8,679.86	1,119,554.95	112,062.66
1910	2,552,993.54	323,834.38	3,398,280.99	10,173.57	1,179,295.40	133,931.03

4935 JAMES HALL being recalled on the part of the defendant and examined in chief by Hon. H. W. Byers, testified as follows:

Q. Have you worked out from Mr. Hagenah's report the investment that would result from his tables say, from July 1, 1886, to December 31, 1910?

A. Yes, sir.

Q. And what would be the figure?

A. The investment in the plant stripping the Wisconsin theory of any anticipated returns and simply accepting his opening balance 1886, using his additions as shown in his statement, take out his two per cent depreciation will give a net investment December 31, 1910, $1,671,456.

COURT: At six per cent?

A. No, sir; stripping the thing altogether of any interest calculation. That includes the $120,000 paid for the $105,000.

Cross-examination by N. T. GUERNSEY, Esq.:

This computation is based upon the investment figure shown in Mr. Hagenah's report?

A. It is based on his original value of 1886 plus his additions as shown by his report.

Q. What I want to get at is the basis for your statement. His report as I recall it was Exhibit 23.

A. Not his report, it was the big statement, I don't recall the number of it.

Q. You mean the sheet marked Exhibit 26?

A. Yes.

Q. You take out of that his valuation, that column—no, you didn't?

A. I accepted his opening figure.

4936 Q. You took his $308,983 to start with?

A. Yes.

Q. Then you add to that the additions to the plant as shown in the column additions to plant, including working capital.

A. Yes.

Q. Then you deduct from those amounts the two per cent on the amount which you have each year?

A. Yes, the two per cent as shown in the sixth column.

Q. You took the column that Mr. Hagenah has depreciated at two per cent on depreciable property and deduct the sum of that column from the sum of $308,983 and the sum of the column headed additions to plant including working capital?

A. Yes, sir.

Q. That is your whole computation?

A. Yes, sir.

Redirect examination by Hon. H. W. BYERS:

Q. And is that worked out in this sheet marked by the reporter defendant's exhibit No. 81, is it shown by the first four columns of figures?

A. First four columns of figures.

Q. Beginning with investment at the opening of year and ending with investment at the close of year?

A. Yes, sir.

Mr. BYERS: Defendant offers in evidence defendant's exhibit No. 81 just identified by the witness Hall.

Complainant objects to it as irrelevant, immaterial to any question here because it does not purport to have any bearing upon value upon any theory.

Witness excused.

Here the further hearing of this case was adjourned until 9:30 a. m., Tuesday, November 14, 1911.

4937 Tuesday Forenoon Session.

NOVEMBER 14, 1911—9:30 a. m.

Counsel for the respective parties all present.

Pursuant to the adjournment heretofore entered the hearing was resumed as follows:

The MASTER: Is there anything you desire to present Mr. Byers with respect to this amendment?

Mr. BYERS: I would like to be heard just briefly on it, if your honor desires to take it up at this time. Counsel for defendants offer this amendment for two reasons. We have, as your honor well knows, a statute in this state which provides that every action shall be prosecuted in the name of the real party in interest, with certain exceptions, which are stated in the statute. The federal court of course recognizes that statute, and in all cases where the question is raised, examines the record and pleadings for the purpose of determining whether the statute has been violated. Now we offer the amendment, first, because we believe under that statute it is proper to plead it at this time in the way we did. There is another reason why we offer the amendment, and that is because we contend and are fully satisfied that the record discloses a condition involving this local concern and the United Gas Improvement Company, which makes the operation of that concern illegal, that is to say, under the recent decisions of the Supreme Court of the United States, involving the American Tobacco Company and the Standard Oil Company, the parent company here is operating in this country in violation of the statute of the United States, and if that of course be true, if we are within any reasonable distance of the truth of that statement, the United States court of course, would grant relief in

4938 an action of this kind, even if the real party in interest was here prosecuting this action. That is to say, if this holding company, and I think it would be ridiculous for anybody conversant with this record to contend for a moment that it does not appear beyond controversy that the United Gas Improvement Company is the holding and parent company, if I may use this term, and that the Des Moines Gas Company is a mere fiction, a mere name

of the local concern for convenience. Now we deemed it proper and really our duty, in view of the recent decisions of this court to suggest this situation in the pleadings.

There is another reason why we urge it at this time and why we set it out in an amendment and ask to have the amendment filed, and that reason is this: it goes to the jurisdiction of this court, I think your honor will concede promptly, and counsel will probably not dispute the proposition that if the United Gas Improvement Company is the real party in interest here, and that is a matter of course that cannot be established by argument, but must be found from the record with which your honor is fully conversant, but if the United Gas Improvement Company is the real party in interest, as we contend in this amendment, then this court is without jurisdiction to try this proceeding at all, and while it might not be necessary to raise that question at this time by way of amendment, I am satisfied that it is a proper way to raise it and the proper time to suggest it. The action, as you- honor knows, is being prosecuted in the name of the Des Moines Gas Company and was commenced in this state and in this circuit. The United Gas Improvement Company is a foreign corporation with its principal place of business at Philadelphia, Pennsylvania, and if it is the real party in interest this court is without jurisdiction, and any order or decree finally entered here would be a nullity, if we are right in the contention that
4939 the United Gas Improvement Company is the real party in interest. That is all I care to say at this time. The resistance is simply, that the proposed amendment presents matters wholly redundant and immaterial.

The MASTER: It has struck me, on examination of the question, I am not very familiar with the pleadings, etc., in chancery practice in the United States Courts. I have had a little to do with it at different times, but never enough to make myself fully conversant with it. I recognize the rule in the chancery practice of the United States Supreme Court governs rather than our state law. It struck me that your denial here puts that question in issue. Practically every allegation down to the last clause in the amendment is proven or not denied at all. That the United Gas Improvement Company owns the stock of this company, there isn't any question about that. They dominate it, and there is no question about that. If they do not have the right to dominate it, who would?

Mr. BYERS: Nobody.

The MASTER: If they are stockholders, they have a right to dominate it. But now you have another allegation here: That it is the purpose and policy of the said United Gas Improvement Company to own, control, manage and operate gas works throughout the United States by and through subsidiary companies to the end that it may exercise exclusive power and control over said gas industry, and to use said subsidiary companies, or any one of the same, as its interest may be affected, to obstruct, hinder and delay the state or the appropriate subordinate agency thereof, in the proper exercise of its police powers; more particularly, in respect of the regulation and control of such public utilities in fixing reasonable rates for gas manufac-

tured and supplied by said subsidiary company, and to thereby control the price of gas manufactured and supplied to municipalities and the inhabitants thereof. That in truth and in fact, everything pertaining to the ownership, control, management and operation of the complainant, the Des Moines Gas Company, is vested in, exercised and controlled by said United Gas Improvement Company; and that the complainant, Des Moines Gas Company, has not such interest in the subject matter of this controversy as entitles it to maintain this action against the said City of Des Moines and its officers, and is not entitled to any of the relief asked in its bill of complaint or in the amendment to the bill of complaint.

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Now, would any court of chancery, if these allegations were found to be true, that it is an illegal corporation, whether it is pleaded or not, grant any relief?

Mr. BYERS: It would not make any difference.

The MASTER: If I should find those facts to be true, I would unhesitatingly recommend the dismissal of the bill. As to the other matters pleaded in there, every word of it is true. Strictly speaking, the United Gas Improvement Company is trustee for its stockholders in this plant, and the Des Moines Gas Company is the trustee for the United Gas Improvement Company, of its stock. So that I am not going to pass on the question now. I think that really every issue is raised. But if there is any doubt about it, it is possible this amendment should be allowed.

Mr. BYERS: Just a word in response to the suggestion about the rules. I think there is no rule better established, more firmly established, and one which is universally conceded, and that is that the courts of equity of the United States look through and beyond all technicalities, subterfuges, and pretenses in the matter of parties. There is no court anywhere that is so jealous of the rule that relief cannot be had in a court of equity upon any pretense, or by a party who is representing not himself but somebody else; that rule is firmly established. I may say, your honor, that I agree fully with the suggestion of the court, that if what is alleged there in the paragraph the court read, should appear at any time during the progress of this trial, whether here before your honor as Master, or before the court upon report, or finally in the United States Court, if it ever gets there, these parties would not be entitled to relief; but that of course is not a conclusive reason why the allegation should not stand. It oftentimes answers a very good purpose, and we filed it because we thought we found a situation here that required it.

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Mr. READ: I surmise, a court of chancery would even protect the property of a malefactor. I do not understand that the property rights are to be invaded because of the moral delinquency of the owner. I understand it again to be true, that whether there is a combination in restraint of trade under the Sherman law or other legislation of congress, can only be ascertained upon the complaint of the government. I mean it cannot be adjudicated—for instance,

that the United Gas Improvement Company is an illegal combination, except and only upon the bill of the government.

But now if your honor will permit me I have a few words to say upon the general subject. If this amendment is to be allowed, it should be only because it presents some matter not presented by the record, otherwise that ought to be brought to the attention of the court and that constitutes a defense to this suit, or that is in aid of some other allegation contained in the answer to complete a defense pleaded. Unless it does that, then this is wholly and entirely immaterial, and because it is, as we regard it, immaterial and presents no defense, therefore the objection and resistance to its filing is presented. There isn't any occasion for presenting immaterial issues. Now, does this present a defense? The claim is that the Des Moines Gas Company, the complainant is not the real party in interest.

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The MASTER: Right there, can that question be passed upon on an application for leave to amend?

Mr. READ: That of course is a legal question that arises upon this record. It either is or is not the real party in interest. Now if the rule of the state statute prevails and obtains in this suit in chancery, then if it is not the real party in interest, it has no right to maintain this action and it should be abated, and for that reason that question has to be met. I want to meet it now. Your honor made an observation a moment ago that I want to correct. So far as the amendment claims the United Gas Improvement Company is the owner of all the stock of the Des Moines Gas Company, that is true. The United Gas Improvement Company, like any other stockholder, does control the affairs of the company; that necessarily is true; that is the function of the stockholders. But there are allegations here that are not true. For instance, here is this allegation that each and all of the shares of the capital stock of said complainant, the Des Moines Gas Company, and all business, property and assets thereof are owned, controlled, operated and managed by the said United Gas Improvement Company. Of course that is not true in that broad sense.

The MASTER: Not directly, but indirectly it is true.

Mr. READ: It is the ownership any of the stockholders exercise, in that sense it is true.

The MASTER: That is perfectly legal too, because if the stockholders do not have the right, there isn't anybody has it.

Mr. READ: At that point arises the very question we are interested in. The assertion on the part of the defendant is, because of this ownership of the capital stock of the Des Moines Gas Company, therefore the claim is that the Des Moines Gas Company has no legal interest in the property; that it is owned by the United Gas Improvement Company and that therefore the United Gas Improvement Company is the real party in interest and only can maintain this bill. Now is that true? That is the test of the whole thing. The question is whether or not the Des Moines Gas Company has such an interest in this property as that it can main-

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tain this bill. That proposition is denied by the other side, and the suggestion and claim is that because of the fact that the United Gas Improvement Company owns all of the capital stock and is a corporation engaged in the business of operating gas companies through its ownership of stock, therefore that the Des Moines Gas Company cannot maintain this action. In other words, the claim is, that because of the facts asserted, the ownership of stock and control of the corporation and the corporate property, there results a merger of the Des Moines Gas Company; it is absorbed and coalesced in the United Gas Improvement Company, and the United Gas Improvement Company only can maintain this action.

The MASTER: I do not believe I care to hear you on this question. I am frank to say that the Des Moines Gas Company is really the only party that could maintain this action, unless they refused to do it and the stockholders would come in on their own account, for the simple reason that the Des Moines Gas Company holds the legal title, and holding the legal title of this property, and in trust, with the powers conferred upon it, that gives it the authority. It struck me all the time that the general denial raised that question. So that I do not think it is necessary to discuss this question. In relation to the other question, they claim that it so dominates and controls this company that under the United States statutes it has
4944 become a monopoly, a conspiracy and all those things. Now that is the question that I prefer to hear you on.

Mr. READ: The other question is elementary. It is everywhere held that ownership does not merge a corporation, and the only right of action to allow the stockholder to sue, is in the corporation. What is the other proposition? That the United Gas Improvement Company is a combination in restraint of trade. That may be true. But here is the Des Moines Gas Company owning this property: possessing the legal title and possessing the sole and only right to sue and to protect their property. That is the proposition that your honor announces, and that is the proposition that Mr. Byers announces. Now the suggestion is that the Des Moines Gas Company, which is a legal corporation, cannot maintain this action, because the owner of its stock is a combination in restraint of trade. That does not sound like a reasonable proposition at all, and that is what it is reduced to. As I said a moment ago, my understanding of the law is that the government alone can be a party and institute a bill and declare or dissolve a corporation because it is in restraint of trade. But we have not that question here, because there is no attempt to go to that extreme and the only attempt is to deny the right of the owner of this property to protect it from confiscation. The City says by its amendment as construed in this presentation, that the Des Moines Gas Company ought not to be allowed to maintain this suit, for the protection of this property against confiscation, because the United Gas Improvement Company, the owner of all the stock in the Des Moines Company, and the owner of the stock in other companies is a combination in restraint of trade. I do not imagine that this court is going to sit and determine that question in this

case. If that question is to be inquired into, it ought to be
4945 in proceedings instituted for that purpose. It ought not to be incidentally dragged into this case and at this stage of the hearing.

The MASTER: Right in this connection, I will call your attention to this thought: There isn't any question in my mind but what the Des Moines Gas Company is the creature of the United Gas Improvement Company. It is the creature of it as every corporation is the creature of its stockholders. If that was created as a part of a conspiracy in restraint of trade—it is a sort of a puzzle to me whether it could be in this kind of a utility—but suppose it is in restraint of trade, and that was very clearly to appear here, would it have any standing in a court of equity?

Mr. READ: I do not think this court would entertain that question. That question could only be raised by the state, under the state laws, only by quo warranto. Mr. Guernsey suggests to me: suppose the City were to lay off a street through the ground owned by the Des Moines Gas Company without making compensation, simply appropriating it, and the Des Moines Gas Company should appeal to a court of equity for protection, according to General Byers, it is a sufficient answer to say although you are not a trust yourself, you are owned by a corporation which is a trust in restraint of trade and therefore illegal, and you cannot be heard to invoke the powers of a court of equity to protect your property. Of course that is an absurdity. So that as to the question just suggested, I do not think for one instant that the fact that the Des Moines Gas Company is a corporation whose stock is owned by the U. G. I. Company, which may or may not be a combination in restraint of trade, at all militates against the right of the Des Moines Gas Company to a standing in court to protect itself and its property against appropriation without compensation or against confiscation.

4946 Mr. Byers alluded to the Des Moines Company and called it a mere creature or dummy corporation. Now it is true that under certain circumstances and for certain purposes a dummy corporation will be disregarded and the courts will look beyond to the real party in interest. I looked up the matter recently—for instance, where a person has been engaged in business and sells out and agrees not to engage in business in the same community for a term of years. Suppose he shall form a corporation and the corporation engages in that business. The courts will look after the corporation, and finding the party who agreed not to engage in the business behind the corporation, will enjoin it, so as to prevent frauds and protect the creditors of a corporation which has taken refuge behind a dummy corporation, the courts will look through and beyond the corporation to protect the real parties and subject the property to the real owner. No such question is here involved. There is merely involved the question of a court of equity to protect the property from confiscation. Now if it should appear from this record that the U. G. I. Company, which owns the capital stock of the Des Moines Company, is a combination in restraint of trade, will this court for that reason deny the Des Moines Company relief? As I said a moment ago, I cannot conceive that this court will enter upon that

question at all. I don't think you have any jurisdiction or power to do so, because the government has not made any complaint or filed any bill, and the government alone can file a bill for that purpose.

Mr. Byers: I do not care to follow counsel upon his questions of technical pleading and rules. If they are content and satisfied with the suggestion that this amendment is absurd, that is entirely
4947 satisfactory to us. I only respond for the purpose of dissenting to two suggestions the Master made and counsel very promptly acquiesced in. The first one is that the party or corporation holding the legal title is the only person that can sue and is the proper person that can sue. I dissent from that statement for the reason that it has no application whatever in what we are trying to establish here, or what this pleading goes to. It is a general rule which no one would dispute and we have the statutes in this state which permit action to be prosecuted in the name of parties who do not have the equitable title or who do not have an absolute beneficial interest. But here is what I contend and that proposition I want—since this record is being taken down—I want to state it now, in view of what the Master has said. The books are full and the United States Court decisions are numerous in which they hold that a person or corporation that has the legal title is not the legal party — interest and cannot prosecute the suit. I do not think counsel would contend for a minute that the legal title was in the name of the party simply for the purpose of convenience or carrying out the original plan or scheme, such as we try to plead here, and our pleading rests upon the record and the evidence that is here with respect to the manner in which the Des Moines Gas Company had its birth and its creation. Another reason why I do not care to spend much time is because the pleading is here, the question is raised, and it is raised in the only way we know how to raise it, and it is in this record and of course will stay in here to the end of the road, wherever we go. But it is not true, in my judgment, that the general rule that the person having the legal title may bring suit, can be applied to that class of cases where the holder of the legal title is the holder simply for the purpose of carrying on the plan or scheme we contend is contrary to law.

4948 Now as to the question of the government being the only party that could appear and prosecute an action, that is conceded. We are not asking that the United Gas Improvement Company be dissolved or that it be put out of business. We simply suggest by an*d* amendment here that if what we say is true, what we think the record shows, they are not entitled to relief in a court of equity. I want to dissent from counsel's suggestion that the stockholders always run the business of the corporation. That I do not think is correct. As a rule the stockholders do not operate the business. The ordinary business of a corporation is conducted by the directors and officers who are selected for that purpose by the stockholders, and we contend this is an entirely different situation from the exercise of the power that the ordinary stockholder has in the conduct of business in which he holds his stock. This is the situation where a holding company, a corporation is controlling and op-

erating the business of another corporation, and it is doing it through stock ownership. That is the very question which is covered completely in the two recent decisions I referred to a moment ago.

Mr. READ: That depends on what the inquiry is. Here the inquiry is whether this property, the legal title of which is held by the Des Moines Gas Company, will be confiscated.

Mr. BYERS: Just one further suggestion. Counsel cited a case that I think in all of that class of cases, the very rule I am contending for is laid down; that is the dummy case that he cited. The illustration he gave, where one person sold out his business and contracted not to go into the business again, and then organized a corporation in order to evade and get around his agreement with his purchaser and pretends to operate his business through the corporation, that
4949 is exactly the rule of law that applies to this case; that is, this mere pretence, mere name—they might as well call it a branch gas company; they might as well call it the Des Moines branch of the United Gas Improvement Company. The rule that he cited applies here.

Mr. READ: I just want to call attention to some adjudicated cases upon this question, upon the effect of the unity of ownership. Here is a statement of the general rule as laid down in the text books: Distinct corporations may have the same officers and shareholders and this does not operate to merge the two corporations into one.

In Missouri Pacific Ry. Co. vs. Bolling, 48 Pac. 806, the court said: "But the evidence shows that the two companies remained separate corporations, and that they, by consent, appointed or selected the same persons as officers in each company to reduce their expenses. The facts stated do not show that the existence of one was merged in that of the other. The corporations, and their officers and stockholders, are separate persons. The stockholders and officers might be the same and the corporations different."

So in Fitzgerald vs. Railway Co., 45 Fed. 812, where it is said: "The owner of all the stock and bonds of a corporation does not own the corporate property. The corporate property, which includes all rights of action and claims for damages belongs to the corporation and is subject to the management and control of its board of directors."

Mr. BYERS: That is conceded in that class of cases.

Mr. READ: Counsel say they concede that and yet they advance a proposition directly in the teeth of this fundamental proposition. Unless they go to the proposition that because the owner of stock in the Des Moines Gas Company is a corporation which owns stock in other corporations carrying on a like business and which has
4950 never been adjudicated to be an unlawful corporation, therefore the corporation owning the property is deprived of the right of maintaining an action for its protection. I think I am entirely justified in saying that kind of a proposition is an absurdity.

Mr. GUERNSEY: Under the Texas law a foreign railroad corporation could not own a railroad there. In a case decided by the United States Supreme Court the record showed that this Rock Island Company of Texas was organized by the Rock Island Railroad; it owned all the stock; the officers were identical; that the

conductor was employed by the Rock Island Company until he hit the Texas line and then was employed by the Rock Island Company of Texas, and the same way with all the other trainmen. The Supreme Court of the United States in a recent case, to which I can give your honor a reference, held they were separate and distinct corporations and that they were not merged, and held it on a jurisdictional question.

Mr. READ: The American Bell Telephone case, 117 N. Y., is identical. It was there stated that the Bell Telephone Company owned a lot of concerns and therefore could not maintain actions for its protection. Here the claim is because the stock of the Des Moines Company is owned by the United Gas Improvement Company, which is a bad corporation, a bad combination, not a good one, that therefore the Des Moines Gas Company cannot maintain this action to protect its property from confiscation, and that in a hearing such as this, this court would enter upon the inquiry whether the U. G. I. Company is a good trust or a bad trust.

Mr. BYERS: I do not want counsel to get the notion now that we are contending for a single moment that there cannot be such a thing as a legitimate ownership of stock by one corporation in another corporation. That question is put at rest, at least in
4951 this state. It is not a question of legitimate ownership of stock by one corporation in another. Our contention is that the stock, the manner of golding it, the issuance of it in the first place, and all the acts done in connection with it is a mere pretense and is for the purpose of carrying out this scheme and plan of the United Gas Improvement Company. Of course, the court has many times held where one corporation held all the stock in another corporation, that did not make the holding company in the sense of the term ownership is used, the owner of the property of the corporation in which it owned all the stock, because the property was subject to distribution according to the laws of the state in which the corporation existed and was doing its business. But in these two decisions I have called attention, all of these questions are reviewed and the suggestion by counsel that the authorities he refers to apply where this question is raised, a question that goes clear back to the beginning, they wiped them out as so much dust. You take the American Tobacco Company, it has stores in this town and stores all over this country, operating under separate organizations, and yet the Supreme Court of the United States have no trouble looking through and beyond this mere pretense.

Mr. READ: That suit was to dissolve this combination.

Mr. BYERS: Yes, sir. I understand the Master will refer the matter to Judge McPherson.

The MASTER: Certainly.

Mr. BYERS: Of course if counsel furnishes authorities we would like to see them.

The MASTER: The evidence introduced and offered in this case tends to show that the United Gas Improvement Company became the owner of the Capital City Gas Light Company's stock
4952 about the 1st of June 1886, and at that time it had an authorized capital stock of $300,000.00. Later the capital

stock was increased to $600,000.00, but owing to the growth of the gas business in the City of Des Moines, and on or about the 28th day of February, 1906, the United Gas Improvement Company still owning their stock caused to be formed the Des Moines Gas Company with an authorized capital stock of $2,250,000.00 and at that time became the owner of all the stock so authorized by the Des Moines Gas Company and the property of the Capital City Gas Light Company of the City of Des Moines connected with the gas plant was all at that time conveyed to the Des Moines Gas Company and the Des Moines Gas Company then became the legal owner as a corporation under the laws of Iowa, and all that property that had been formerly owned by the Capital City Gas Light Company, and the legal owner as a corporation of all the extensions and improvements since made. The United Gas Improvement Company as a corporation under the laws of Pennsylvania, and as owner of all the stock, has elected the officers of the Des Moines Gas Company ever since its organization on the 1st day of March or last day of February, 1906, and through those officers have dominated and controlled the property and business of the Des Moines Gas Company and continues to do so. The Des Moines Gas Company holds its property in trust for its stockholders and is clothed with the authority and power conferred upon it by the laws of Iowa. The incorporation appears to be regular in every respect. Practically all the allegations contained in the proposed amendment, down to the fourth line of the bottom of the second page of it, are true, and in the opinion of the Master the United Gas Improvement Company as owner of the stock would have the right
4953 to elect the officers, dominate and control the business of the Des Moines Gas Company through its officers so elected by them. The only evidence that has any tendency to establish the allegations contained in the next paragraph is the fact that the United Gas Improvement Company owns and controls the stock in from 30 to 40 different gas companies in the United States, and operates gas works in the city of Philadelphia, Vicksburg, Miss., and Waterbury, Conn., and the possible further fact that it has prosecuted this action very vigorously and spent a good deal of money at it.

Mr. BRENNAN: We think the manner in which the alleged salaries were paid, which finally reached the United Gas Improvement Company, were not paid to the officers named, is also a question to be considered.

The MASTER: I doubt very much whether that is a legal charge in a rate question at all. As to the question of whether or not the Des Moines Gas Company has a right to maintain this action as the legal owner of the property, the Master is inclined to think that it has that right under the evidence in this case, but is also inclined to think that question is raised by the general denial in the bill. The other questions I shall refer to Judge McPherson, together with the claims of counsel which are set forth in the argument, will be transmitted with the recommendation. Counsel for complainants claim any question of illegal monopoly can only be

raised by the government in an action for that purpose, and as your honor os more familiar with the law touching that question it is referred with the foregoing statement, to be determined by your honor.

The fact that the United Gas Improvement Company owned and controlled the stock of the Des Moines Gas Company was
4954 disclosed early in the trial. I am not sure whether it was a part of the opening statement or not. The number of the corporations whose stock it owned was not disclosed until later, and all the facts that may bear upon the matter in the amendment were not disclosed until along toward the latter part of the trial, especially that part with reference to the money expended in the prosecution of this action.

Mr. READ: Is there any question at all as to where the legal title is in this property?

Mr. BYERS: Not if you mean by that any question about the form of the articles of incorporation or the proper filing and the transfer of the property; we proved that ourselves.

The MASTER: The legal title to this property and all its extensions is in the Des Moines Gas Company, and the legal title to the stock of the Des Moines Gas Company is shown to be in the United Gas Improvement Company. Counsel for defendants say they do not desire or expect to offer any additional testimony than that already offered.

Mr. BYERS: I do not know what form we are going to proceed here; there may be some additional testimony.

Mr. READ: On this point we will introduce the deed of conveyance, the transfer of the property.

The MASTER: My recollection is the deed is in evidence.

Mr. GUERNSEY: This is perhaps what the situation is: that the corporate record very likely showed a copy of the deed that was authorized, but I do not believe the deed itself has been introduced.

Mr. BYERS: We offered the record. We have never seen a deed that I know of of any kind.

Mr. GUERNSEY: It won't take but a moment to introduce
4955 that deed at any time. It certainly can do no harm.

Mr. BYERS: Certainly not.

The MASTER: The Master further states that the following clause in the amendment to-wit, that all extensions made to the distribution system of the gas works in the city of Des Moines, Iowa, and all other additions and improvements to the plant and property used in the manufacture and distribution of gas in said city, are made by authorization of the said United Gas Improvement Company through the officers of the Des Moines Gas Company who are at the same time officers of the United Gas Improvement Company.

I might further state that the evidence shows that for all extensions and improvements of the gas plant at Des Moines requisition is made on the engineer of the United Gas Improvement Company who is at the same time the engineer of the Des Moines Gas Company, and they are accompanied with recommendations and statements of the manager here, and upon these recommendations, they

are passed upon by the engineer, and the cost of them approximated or ascertained as nearly as possible, and then they are submitted to the officers of the Des Moines Gas Company, who are at the same time the officers of the United Gas Improvement Company and they purport to be authorized by and in fact are authorized by the officers of the Des Moines Gas Company, all of whom reside in the city of Philadelphia, and the records of this company are kept at the city of Philadelphia, and the board of directors holds its meetings in the city of Philadelphia and passes resolutions and transacts the business of the Des Moines Gas Company, so far as the acts of the board of directors are necessary, at the city of Philadelphia.

Mr. BYERS: There is an important statement there that I do not think appears from the record at all. In fact I think the
4956 opposite appears, that is, that an engineer of the Des Moines Gas Company ever passes on these requisitions at the Philadelphia end. The evidence is just to the contrary, that it is the engineer of the United Gas Improvement Company and not of the Des Moines Company.

Mr. READ: Mr. Clark is one of the vice presidents of the Des Moines Gas Company and he is an engineer, and it is to his department, as I understand it, the matters are referred.

The MASTER: The engineer of the Des Moines Gas Company at the city of Philadelphia is not the resident engineer at Des Moines, but is a consulting engineer and as such passes upon the wisdom of making extensions and improvements.

The Master calls attention to the suggestions made by counsel and the briefs offered by them upon the question and submits the matter to his honor, Judge McPherson, for decision.

Are you ready to proceed with the arguments?

Mr. GUERNSEY: There are two or three exhibits we have identified but which have not been formally offered which we desire to offer now.

Complainant offers in evidence Exhibit 38 which has not been heretofore offered.

Complainant also offers in evidence Exhibit 44 which was not offered heretofore, which is a computation relative to some Massachusetts cities.

Complainant offers in evidence Exhibit- 65 and 65-*a*, which were identified and not offered, also referring to some Massachusetts reports.

Mr. GUERNSEY: The working sheets which Mr. Hagenah
4957 used in Buffalo were identified and offered, with the agreement at that time that typewritten copies could be substituted. They are Exhibits 83 to 87 inclusive. We have here the typewritten copy and would like to substitute for these working sheets these copies. We will furnish copies for the other side.

Since the adjournment in the month of October, in order to bring the sales as nearly down to date as possible, we have had them added to the sales of the first eight months, so that we have ten month- of sales for this year, and I will ask to have this marked Exhibit 91, and we offer it in evidence.

Mr. BYERS: It is understood that the defendants reserve the right to examine it.

Mr. GUERNSEY: We have also the operating costs figured out in detail covering ten months for 1911. It has not been entirely checked; at some convenient time we will offer it in the same way.

As I stated when we took the adjournment, if we could get Mr. Alvord here, we would like to ask him one or two questions in respect to overhead charges. Mr. Alvord is here now.

Mr. BYERS: I want to mention now, in addition to the question put to Mr. Haines and Mr. Douthirt which are still unanswered, we want a certain voucher that is at the gas office, showing the taking of testimony, the testimony of Mr. Baehr, and Mr. Lea and Mr. Hagenah and perhaps some others, in February last, and showing the amount paid, the voucher covering that whole question. We would like to have Mr. Haines have it here after dinner so that we could introduce it. It is a matter involving the taking of testimony and the record of it we only discovered after adjournment of court in our further examination of the records.

4958 JOHN W. ALVORD, being first duly sworn on behalf of complainant, examined in chief by N. T. Guernsey Esq., testified:

Q. Where do you reside?

A. I live in Chicago.

Q. What is your profession?

A. I am a sanitary and hydraulic engineer.

Q. In your engineering work you have specialized with reference to things in connection with water works usually?

A. Very largely, yes; municipal work as well, of all kinds.

Q. Give us in a general way what your experience has been.

A. Well I have been engaged for the past thirty years in various kinds of municipal work, largely water works, sewer systems, filtration works, water power works and reservoirs, and all of the physical constructions that go with these lines of work. I have been consulting engineer for quite a number of years, and in one way or another been connected in some capacity with over one hundred water works and perhaps over sixty sewer systems in various cities, and with perhaps twenty odd water power projects and with ten or fifteen filtration plants, and works of kindred nature.

Q. In what parts of the country has this work been, Mr. Alvord?

A. Very largely in the middle west, although in isolated instances it extended all over the United States.

Q. And were you recently one of the board of experts that the government took to go to Panama in connection with some trouble there in their work?

A. We were invited by the President to visit Panama.

Q. That was this spring or summer?

4959 A. Yes, sir; in March.

Q. You were recently president of the American Water Works—what is the title?

A. American Water Works Association. I was President in 1910. I was also President of the Western Society of Engineers in 1910.

Q. To what extent has your employment been by municipalities, Mr. Alvord?

A. Roughly, three fourths of all my work has been done for municipalities. All of my earlier work for some twenty years was done for municipalities, and of late years some work for private corporations, largely water works companies.

Q. Were you the engineer employed by the city of Omaha in the Omaha Water Works controversy, in the valuation there?

A. Yes, sir; I was one of the board of three appraisers that was appointed to make a valuation of that plant.

Q. What I wanted to get at, whether you were the one designated by the city?

A. By the city, yes sir.

Q. In the Des Moines Water case you were the engineer that valued the plant for the Company?

A. Yes, sir.

Q. Now, Mr. Alvord, I wish you would state to the Master whether there are certain underlying or overhead expenses which are inevitable incidents to every large engineering work?

Objected to on part of defendants as incompetent, immaterial, calling for a conclusion and not rebuttal, being a part of complainant's case in chief.

A. Yes, sir; there are such important items in every enterprise.

Q. Now what efforts have you made and what study to qualify yourself to accurately estimate these items of expenses?

4960 Same objection.

A. Why in the course of my experience I have had to learn there were such items and that they had to be allowed for, and more recently in connection with the work of the valuation of public utilities I have made some further study of these so-called overhead charges and I have collected considerable information about different cases, wherever they occurred, so as to verify my experience.

Q. Now there has been prepared in connection with this case a very complete inventory of the physical property that goes to make up the property of the Des Moines Gas Company. I wish you would state whether or not the fact that there it such an inventory renders it practicable to disregard these underlying or overhead expenses, or whether it obviates the incurring of these *these* expenses?

Objected to as incompetent, immaterial, not a matter of expert investigation. For the further reason that it is not rebuttal and the testimony evidently is offered for the purpose of establishing the propriety of certain overhead charges in this case, and the addition of such charges to the value of the property, and the record at this time shows that whatever of overhead were actually incurred by this company, appear upon the books of the company, and the original and best proof as to every question of overhead charges is within the reach of the complainant and can be found in its books, and the —

along these lines by this witness for that reason is not the best evidence.

A. It does not in my opinion. The inventory is in, of course, the nature of the plans and specifications, or what would be
4961 a plan and specification for the new works, and has to do with the physical property and the various steps of progress, but does not in any way obviate the necessity for incurring contingencies during construction—contingencies that may vary in even reduplicating the same property. For instance, it may be known precisely what contingencies were met in building——

Objected to on part of defendants to the statements of the witness because the question has been fully answered.

(Answer continued) the present plant. But it by no means follows that these same contingencies would be again met with if it were necessary to rebuild the plant, and indeed, in all human experience it has been shown that the same contingencies would not be met and that other contingencies would probably be met, and it is so in all undertakings of this kind which involve human forecast, that there must be an allowance of the unforeseen in such cases—allowances which the inventory can not describe nor specify.

Q. Into what classes do you divide these underlying or overhead expenses or costs?

Same objection as last above.

A. For convenience, in keeping the subject clear, I have always found it desirable to subdivide them, much as they would be naturally subdivided in the undertaking of any project. The very first subdivision would be the promotional expenses; that is to say, the effort of conception of this entire project; the initial and general investigations that would be necessary; the assistance of legal and expert engineering advice, to formulate and shape the project as a whole; and the organization of a company and the acquisition of the necessary rights and privileges. Up to the time when
4962 these rights and privileges are acquired, this seems to constitute one distinct step which might be named the preliminary or promotional expense. Then naturally we come to the second step, which is to construct the necessary works. Here we come against the necessity for maintaining administrative, organization officers, accountants, general manager's offices which shall conduct the work of installing the necessary physical construction. This makes what I would like to call the administrative expenses. Then as a large part of the operative work of that period there comes the design, the detailed plan and specifications for all the various physical constructions that enter into the project, and their supervision, the setting of the lines and grades, necessary directions to the contractors, the issuing of estimates and the testing of completed works and of putting, the tuning up of the completed works, and putting then into operation. This is the engineering of the plant. Then duirng this construction there are certain items which are underlying. I prefer to call those items underlying rather than

overhead charges, because to my notion they are fundamental; that is to say, no physical construction can precede them; physical construction must be built upon them. They are to my mind the underlying charges as against the physical construction. Among others are the question of the cost of keeping money idle in construction which is not yet completed, and another item, that of taxes and insurance on uncompleted works, casualty insurance and other insurance, and the item of contingencies; that is to say, after having forecast everything which human experience can think of, we find there are still things that will occur that will cost us money.

The MASTER: Right there you speak of taxes and interest.

4963 What do you m-an by that?

A. Well in works that extend over a considerable period of time, there may be a tax upon the works in their uncompleted state. For instance, a plant which takes from three to six years to build, and is a private property subject to taxation, is quite often taxed accordingly.

The MASTER: Then you mean taxes on the property during this construction that is not earning any money?

A. That is not yet earning.

Q. Would you class that as a part of the going value or physical value?

A. That would have to be, to my notion, added to the capital cost, because there is no other place to charge it as a part of the physical property, and I think I would classify it as a part of the going value.

The MASTER: What is known as the going value, would you clas- the taxes and lost interest as a part of the physical value or a part of the expenses in developing the business?

A. I think it is a part of the business development of the capital cost of the plant, for the reason that it is automatically invested. By the time you have finished your physical property and before you commence to acquire your going value, you must have invested this interest which is not capable of being earned on the moneys invested in the physical construction.

Q. You class it rather as a part of the establishing of the business than as a part of the physical value?

A. It occurs also again in the going value, from the fact that with the physical property thus completed together with the automatically invested interest which accompanied it you must in return acquire a revenue which will be a return to that capital.

4964 The MASTER: How do you figure that in this particular case?

A. Supposing it takes the project three years to be completed, the physical property, in that three years you have automatically invested the interest on the money which you have put into construction, because you have been unable to earn it elsewhere. You have taken your money out of the channels of earning and put it into channels where it does not earn. When you have completed your physical property you then have to acquire or reproduce in this case the revenues which the company is possessed of.

The MASTER: Wouldn't the effort of producing revenue be a part of the going value rather than a part of the physical value?

A. Yes, sir; certainly, that would not be a part of the physical plant.

Q. Let me see if I understand you correctly. Your idea is this: that the two items the Master speaks of, that is the interest and taxes, would be considered by you or classified by you as a part of the cost of reproducing the physical property up to the time that the property was completed, so that it could earn and operate?

Objected to as incompetent, immaterial and not rebuttal.

A. Yes, sir.

Q. And after that you would take that into account in ascertaining the losses to measure the going value?

Same objection and leading.

A. Yes, sir. There is one explanation I might make there, that going value as I conceive it, is not limited to the particular period after the completion of the physical property, but is all of the lossess which a company would be put to by reason of not at once possessing an income paying plant from the very start to the time when the revenues were fully acquired.

4965 The MASTER: In other words, when completed it would not be a paying proposition and it would not have much going value?

A. A plant can have a going value even if it is not paying, because going value is the value of a creative income. Now if you have an income which is not sufficient to pay your operating expenses, it is nevertheless a fact, that income, whatever it might have been, was created at some cost and expense. Therefore a plant which is losing money may have a going value, or the value of whatever creative income it has.

The MASTER: It wouldn't sell for very much?

A. Oh, no; it wouldn't sell for very much, but any theoretical valuation of the plant having an income almost up to its operating expense is worth more than the plant which has only just a physical finish and has no income at all.

The MASTER: The thing I can't understand is how you can have a going value of a thing you are losing money at.

A. Because going value is the value of created income, whatever it may be. The plant arrives at a period when its physical property is finished and has no income whatever. The moment it gets ten thousand dollars of an income it certainly is worth more to a prospective purchaser than without that income. Notwithstanding that ten thousand dollars income may not pay the operating expenses for the time being, it is presumable that the intending purchaser expects it may grow in time and not only pay operating expenses but fixed charges. But whatever it is, if it has an income it is worth something over and above the fact that there is no income.

The MASTER: It wouldn't sell in the market for its cost?

A. Well that brings in a good many other questions, as to what it would bring on the market.

4966 Q. Now, then, Mr. Alvord, I wish you would tell us what in your judgment is a conservative estimate of the preliminary costs of an enterprise such as this one invo-ved here, this Des Moines gas enterprise?

Objected to as incompetent, not rebuttal and the witness not having been shown to be competent to give an estimate.

A. Any such enterprise as that in a general way requires, I think, all of the preliminary investigation which I have indicated in a general way, necessary to almost any enterprise, differing only in the character of its business. In a general way these preliminary costs, while they vary largely in different cases, do usually bear some fixed ratio to the physical construction which follows them, and with good management and with efficiency they may be kept, to my notion, as low as two and a half per cent on the physical construction which follows. In many cases they will exceed that. To my mind that is the minimum. With peculiar problems of special difficulty, with lack of ability in the technical advice, they may go up to three, four or five per cent of the physical property, even more than that in exceptional cases.

Q. What is a conservative estimate of the administrative costs and legal organization during construction of such an enterprise as this?

Same objection.

A. The administrative costs generally also bear a pretty direct ratio to the physical construction of plants which extend over a great many years. So far as I can discover about two and one half per cent to five per cent is the average figures there, two and a half per cent being the minimum at which proper administration costs to my notion can be had for. In order to have them for that

4967 amount there must be economy practiced and there must be no excessive delays, or litigation, or strikes, or other hazards which may prolong unduly the length of time through which the administration is conducted.

Q. What is a conservative estimate for the engineering during construction, including the supervision you refer to on an enterprise such as this one?

Same objection.

A. The minimum cost there will run hardly less than five per cent. There is some difference in different classes of work about the percentage of engineering. Work which is widely scattered and which has a great deal of detail in its character, will necessitate a higher percentage of engineering than work which is in bulk and done in one place and in which a great deal of money enters for very little planning. But generally speaking five per cent is about as low as the engineering in an important project can be done for. From that it varies in public works and projects which I have examined and listed in some detail, all the way up to twelve and in some cases twenty per cent. I am prepared to say, however, in one or

two instances I have found where it went to four and two-tenth- and four and one-half. But those are very rare.

Q. Have you kept any recent cost of engineering expense incident to pipe laying for water works in Des Moines?

Same objection.

A. I have a number of instances, among which are the engineering of the extensions of the Des Moines Water Company's filtration gallery.

Mr. BYERS: I suggest this is not rebuttal in any sense and is simply opening up this question again.

4968 Q. That is work recently done in this city?
A. Yes, sir.

Q. Involving the excavations and laying of some concrete conduits?

A. Yes, sir.

Q. About what did the engineering amount to on that?

Same objection. Immaterial and not rebuttal and not the best evidence.

A. Seven and two-tenth- per cent.

Q. What is a reasonable estimate upon such a job as this of the contingent costs?

Same objection.

A. The contingent costs on a work of this magnitude ought in my opinion to be not less certainly than five per cent. Seven and a half per cent would seem to me to be a much more conservative estimate, and it would not be at all surprising if it ran to ten per cent. If I were estimating for a company which was about to construct, I should certainly add ten per cent. If I were valueing for the city about to buy and wished to be equally conservative I would certainly not go lower than five per cent.

Q. You gave me an illustration in talking to me yesterday about this of some unexpected contingent costs that could not possibly appear in any inventory, due to some situation in Chicago this present season. I wish you would state what that was.

A. A great many million dollars' worth of buildings have been tied up all summer in Chicago by reason of a strife between the plumbers and the steam heating unions—a jurisdictional strife in which the unions disputed with each other as to whose business it was to put certain pipes in the buildings. The subject did not concern the owners, it did not concern the contractors in any way;

4969 but as I have stated, many millions of dollars' — of buildings have been tied up from three to five months in the city of Chicago, thereby adding to their underlying charges a great deal of money, making them cost a great deal more than they otherwise would.

Q. It was simply a dispute between the unions and not between them and their employers?

A. Not between them and their employers.

Q. Now I wish you would state, Mr. Alvord, what in your judgment is a fair estimate of the total underlying costs you have referred to on an undertaking such as the construction of a plant like that of the Des Moines Gas Company in the city of Des Moines?

Objected to as incompetent, immaterial, not rebuttal and the proper foundation for the testimony not having been laid and the witness not having been shown to be competent.

A. I think that not less than twenty per cent and from that up to thirty per cent is the range of these underlying charges on work of this magnitude.

Q. And does that assume that the work is economically done and properly handled?

A. The twenty per cent would certainly assume that there were no accidents of any kind, no delays; that there was the very best and most efficient management of payment, the most skilled business forecast, and that in short everything proceeded in a perfectly lovely way, we might say, which is hardly usual.

Cross-examination by Hon. H. W. Byers:

Q. How long since you were employed by a municipality, Mr. Alvord?

A. Well, I am employed by a great many.

4970 Q. I mean in this class of cases where the question of the rate to be charged by public service utilities was involved?

A. I am now employed by a city in such a case.

Q. Where is that?

A. At Streator, Illinois.

Q. Is that a gas case?

A. No, sir, that is a water case.

Q. When before that?

A. I was employed just a short time ago by the city of Rockford in a water valuation case.

Q. Was that a case between the city and the company as to rates?

A. No, sir; that was a case where the city desired to know the value of the plant and property for the purpose of fixing proper rates themselves.

Q. Is that where the city owned the plant?

A. Yes, sir.

Q. Is that true of Streator?

A. No, Streator was a case where the city desired a water company who owned the plant to adjust their rates.

Q. Was it in a suit in controversy between the water company and the city?

A. Yes, sir.

Q. You appeared as a witness for the city?

A. Yes, sir.

Q. When was the last one just preceding the one you just referred to?

A. Well I don't know that I can remember now without referring to a list.

Q. Give me in a general way the number of cases, as you remember now, where you are representing the company, that you
4971 have on right now, as distinguished from the municipality?

A. Well, I represented the Des Moines Water Company in their recent rate case here, testifying as to the values, and I was engaged to represent the Peoria Water Company, but that case never came to trial; it was settled out of court practically. I am representing the Springfield Consolidated Water Company which controls the water supply of about seventy-three suburbs around Philadelphia, in a case which is about to be tried as to the rates. I could give you a list quicker than I can think of them. My employment has been about equally divided between the cities and the companies. I have valued very close to fifty million dollars' worth of water works property.

At this time, 12 M., an adjournment was taken until 1:30 P. M.

4972 1:30 P. M., TUESDAY, *November* 14, 1911.

John W. Alvord.

Cross-examination by Hon. H. W. BYERS:

Q. What is the name of your firm?
A. Alvord & Burdick.
Q. And what is their general business.
A. Is hydraulic and sanitary engineering.
Q. I was not attentive at the beginning of your examination, that is your occupation is it?
A. Yes, sir.
Q. How long have you been an engineer?
A. Over thirty years.
Q. How long have you been giving a good portion of your time to the business of valuing property like water plants and gas plants and other similar utilities?
A. Well since the Dubuque case in this state which I think was about 1899, that was the first case I ever was engaged in.
Q. The Dubuque case?
A. Yes, sir.
Q. In 1899.
A. That is my impression, yes.
Q. That was a water case?
A. Yes, sir.
Q. And have you during your experience as an engineer valued gas plants?
A. Yes, sir.
Q. When was the last one you inquired about?
A. Well my experience in valuing gas plants is limited to very small plants a good many years ago, one of them was a coal
4973 gas plant in the Hyde Park District, Chicago.
Q. When was that?

A. Well it must have been about 1884 I judge or 1886, along in there.

Q. Was that a controversy about rates?

A. No, sir; it was prior to one of the consolidations that took place about that time of a number of small plants.

Q. And the valuation at that time was for the promoters of the consolidation.

A. I presume so, I have forgotten now just what it was for.

Q. And when was the other one?

A. The other one was a small plant in Grand Forks, N. Dakota, about all of 20 years ago.

Q. That was a very small concern?

A. Very small plant, yes.

Q. And was that in a rate case?

A. No, I went up there in the interests of some parties who were proposing to take bonds on the plant.

Q. You stated in your examination in chief, if I remember your language correctly that it was only recent years that you had given particular attention and study to this question of overhead charges. Can you tell about when you commenced to give particular attention to that branch of the valuation subject?

A. If I said that I didn't correctly convey my meaning. As I recall it I said I had always given that subject more or less attention and especially in late years in connection with caluation.

Q. Well perhaps I didn't quote you exactly correct.

A. Of late years in connection with valuation is what I am interested in and the general subject prior to that time.

Q. About how long ago was it do you think that you com-
4974 menced to pay particular attention to the question of overhead charges in valuation cases, cases where the value of property was the subject of inquiry?

A. Well it came to my attention presumably first in connection with the first valuation which I had occasion to make which as I said was at Dubuque.

Q. Was the question of overhead charges prominent in that case?

A. Not particularly.

Q. *They* commenced to be prominent, however, did they not about the time that we began to have public regulation and control over these utilities, isn't that about right?

A. Well we had always given attention to overhead charges.

Q. In regard to this particular attention, this theory of figuring out any percentages had its origin about the time of the beginning of the public regulation, did it not?

A. No, sir. Engineers had always figured their overhead charge*w*, or underlying charges, as I prefer to call them, in that way. The only emphasis which came about in the matter was when their methods of figuring these underlying charges came to be disputed by parties to appraisals who wanted low valuations.

Q. When do you know or remember the first gas case in which the question of overhead charges was prominent at all?

A. No, I could not say that.

Q. The overhead charges that you dealt with in your examination

in chief, you were dealing principally with the estimated overhead charges were you not?

A. Evidently so, yes.

Q. Do engineers agree about these things?

A. I also said in my testimony that I had looked over a very large number of actual cases in order to substantiate the views
4975 which I have always held and which when we come to go into these rate cases about valuation causes general dispute.

Q. You were not giving us the actual cases at all, you were simply dealing with estimated overhead charges in your examination supporting them as you say by what you have learned from cases that have actually existed?

A. Yes, sir.

Q. Has it been your experience that engineers agree about these charges?

A. They agree pretty well when they are not on opposite sides of appraisal cases.

Q. How is it on opposite sides of a case?

A. They agree fairly well even then although it is fair to say that if there is any tendency to differ that would bring it out. If there is any tendency to differ due to lack of experience on overhead charges valuation cases often bring that out.

Q. You stated this morning that the overhead charges that you were dealing with, that it was your notion that they should be added to the capita- cost. Is that correct?

A. I didn't know that it was my notion. I thought I tried to make it very clear that it was impossible to do anything else with it.

Q. Of course I was not playing on the word notion. Then if these overhead charges are to be added to capital cost it is because they are a part of the cost of the property, the plant or the business, is that right?

A. Yes, sir.

Q. Is there ever any time when overhead charges become a verity a definite sum, definite statement or ascertainable amount?

4976 A. Always after the works are completed, yes.

Q. So if you wanted to know what the Des Moines Gas Company for instance in the last six months have expended on extending its plant, say that the cost of the estensions were in the neighborhood of $40,000 and you wanted to know what was the exact cost or expenditures of the company in these different overhead or underlying matters that you refer to, where would you go to find out?

A. Primarily to the books of account.

Q. You stated in your examination as I remember it that these charges of course vary, which seemed very natural to me, and as to promotion I think you fixed the minimum of your estimate of what the minimum cost would be at two and a half per cent and from that say to five? Of course that would depend altogether would it not upon what was actually paid for what you call promotion?

A. It certainly would. It is an effort to find out what would naturally and legitimately be necessary to extend for that purpose.

Q. I don't want to put it that way. Take for instance a company that is organized here now, articles already filed and the books opened

and they are promoting an enterprise and have reached a point now where everything is done that is necessary to be done in order to start the business going. The cost to that company or rather the way to measure the charge*m* the overhead or underlying charge that you would call promotion expense as to that enterprise would be to ascertain what they paid wouldn't it?

A. Yes, sir.

Q. You have just said that the cost to the company that I use in my illustration would be ascertained by what they paid.

4977 Now in that connection you have also stated that the amount of these underlying charges and especially take the one for administration, I think you used that term, would depend a good deal on the efficiency of the management and the competency of the managers and so on. Now if you were engineer in charge of an enterprise for an employer and it was your duty to see that the plant was created at as low an expense as possible keeping in mind of course an efficient machine when it was finished, and these underlying expenses were being incurred all the time where would you go to ascertain the question of efficiency in management and how would you determine whether your employers were getting what they were entitled to or not or whether they were paying more than they ought to pay. How would you ascertain that fact?

A. That is a matter of judgment, of business judgment.

Q. You would not depend on your judgment would you in a case of that kind?

A. I certainly should.

Q. How would you know what it was costing the concern?

A. I should have an idea of the matter under observation. Your suggestion is I have that matter under your observation and if I saw people going out and buying material without a sufficient idea of what they were going to do when they bought it or putting a force to work without any detailed plans or clear formulated idea of what they were going to do I should feel that they were very inefficient and that the cost of physical work, as well as the administrative charge for one is dependent on the other, would be very seriously enlarged by such a management as that.

Q. You didn't quite catch the drift of my question or per-

4978 haps I did not state it very clearly. We will assume now you are in charge of the promotion of a gas enterprise. You are the engineer upon whose reports and upon whose judgment the investor is going to depend from the beginning, from the inception of the enterprise to its completion, up to the time it is ready to be operated and you assume that there is a manager an office manager or business manager with the general helpers about the business office. Material must be purchased and labor employed, other engineers, field engineers and all the engineering force that is necessary has to be hired and that is all done by this managing force, not by you, you are simply the man in charge to keep check upon the business and see that it is done not only properly, but without unreasonable and unnecessary charges to expense. Now one of the underlying items that you include in your overhead charges is engineering. Suppose you wanted to check that manager up and determine

whether he was getting that service at a reasonable and proper sum or not, how would you do it? You would not just say that an engineer ought to be worth a thousand dollars a month and let it go at that would you?

A. I should observe whether he was getting and paying for engineering talent that -as consistent with the importance of the responsibilities which he had and that he was getting that engineering talent, after he got it employed giving it proper support time and money for investigation, so that that department could carefully think out in advance everything which necessarily precedes construction and the more detailed I should observe that manager allowed this engineering work to be done, the more confidence I would have in his judgment and the fact that he was getting
4979 the proper results for his money because it is my theory that every useful thing has to be preceded by a thought, an engineering thought if your mind is put on engineering things and the more time and patience that is spent in these preliminary thoughts the more valuable the results of the engineering and the less the waste and loss when we come to the final construction.

Q. What I am getting at is this, you don't have in your mind any fixed measure for the service of an engineer do you in any particular matter as to what his services are worth per day or per month or per year.

A. I don't know that I understand you.

Q. What I mean is this, if the Des Moines Gas Co., for instance can hire an engineer that is in every way competent and hire him here in Des Moines, a man that is competent for the work on -hich he is to be employed and can get him for $5.00 a day or $10 a day that would be the thing for the manager to do wouldn't it, to hire him at that sum notwithstanding it might cost a good deal more to get some other fellow.

A. Well I don't know as I would agree with you on that. He might be a competent $5 a day man, but that is not the question I conceive would be up to the manager. The manager I should think, if he was going to spend this amount of money would be justified in getting the most competent, not a competent, but the most competent engineer.

Q. Without reference to price?

A. With hardly any reference to price.

Q. Conceding that that is the way business men do as a rule, and getting back to my original question which you have not yet answered, I will put it this way to you. Of course if you are employed to promote this company's property as I suggested
4980 and asked you to assume that position, you would determine yourself probably for the manager who is not an engineer the size of the engineering force would you not?

A. You mean as an observer?

Q. As an engineer in chief, the man who is in charge of this office you would determine?

A. Yes, I should think I ought to determine that, yes.

Q. After you had determined the force, the size of it and number

of engineers that you have employed and then you observed what whey were doing, would you want to know anything about what they were being paid?

A. Yes, sir.

Q. How would you find that out?

A. I should loom at the salary roll.

Q. When you had done that you would find exactly what as being paid for that service wouldn't you?

A. Yes, sir.

Q. And when you ascertained that fact you would know then what that part of the cost of that business was going to be wouldn't you?

A. No, I would not because I should have to know some other things.

Q. But I mean as to that particular part of the work?

A. I should have to know that the manager was getting the worth of his money in the talent that he was employing because it might be very easy for him to spend a great deal of money for engineering and get very little talent in which case he would produce tremendous waste all through his physical construction.

Q. To follow off on that side issue a minute, suppose that
4981 is the way the plant is constructed, suppose that is the way this property is created. Would that make any difference at all with the question of value?

A. It certainly would. It would increase the cost of the property to have inefficient engineering.

Q. Leaving out of mind any *any* inefficiency which is not covered by that former question at all, I assumed you selected proper men, men who can do the work and do it right. Now you will ascertain upon an examination of the payroll just what the engineering aside from your own pay is costing that enterprise won't you?

A. I should think so, yes. Providing the accounts are kept properly and that everything is charged in the proper way.

Q. That is true. You don't contend of course that more should be paid for engineering and promotion and these different underlying charges that you have *efe*rred to than they are worth, ought not to be extravagant sums paid for that work, ought to be gotten at about what such work could be gotten done for.

A. Well it is not such an easy proposition as you make it appear.

Q. What is not an easy proposition?

A. To get a engineer and pay him just what he is worth and have him the right man in the right place.

Q. Oh well there is some reasonable place where you can state that a man's pay is reasonable isn't there and measures up about with the average?

A. I have a very long list of the actual costs, but I would have to assume that certain proportions of them were either not accurately charged, the engineering was perhaps skimped or perhaps was extravagant, but taking a long line of them I can
4982 form an opinion as you have just suggested as to what engineering ought to be.

Q. You referred this morning to an engineering situation where the item of engineering as it relates to your theory of underyling charges might run way up to a great deal higher than any per cent you mentioned here, 20 or 3- per cent?

A. Yes, sir.

Q. Of course that would be because of some difficulty, either of some soil condition or some condition of the land or the streams or railroads, something of that kind that made it necessary to work out very carefully and after the most careful examination as to all the details—well for instance tunnelling through a hill or rock, something of that kind, all these things would affect the engineering item wouldn't they?

A. Not so materially. The thing which affects it materially is size of the expenditure in relation to the amount of study or preliminary work that has to be done. Now in some very large projects that proportion is different from what it is in some small detailed plan which has nevertheless to be all thought out with as much care as a large plant would have to be. That affects that percentage more than the causes you have just mentioned.

Q. They don't base much on the size of the enterprise before them?

A. Certainly do, yes. Always take into consideration the size and character of the enterprise, that affects the percentage of the engineering.

Q. You mean size in investment or size in character of the plant?

A. Well size in relation to the expenditure.

4983 Q. The money that is going to be put into it?

A. The money that is going to be put into it in comparison with the thought that is going to be put into it.

Q. Do I understand from that that the engineering fees are determined by comparison of the amount of the investment always?

A. Not always, no sir.

Q. Is that ever so in a gas works?

A. Oh yes, it is often so.

Q. In gas enterprises?

A. I a- not so familiar with gas enterprises but it is so in water enterprises.

Q. Take a concrete case here. You said you had just recently had some expe-ience as to the engineering cost if I remember you rightly, it may have been some one of these underlying costs, but I think engineering.

A. Yes, sir.

Q. For the Des Moines Water Co. How did you find out how much was engineering cost of the Des Moines Water Co. just recently?

A. We charged the Des Moines Water Co. our stated rates for our assistant engineers on which all bills are made. At the end of the work took the total amount of such bills and took the total amount of expenditure that they supervised and divided it and got the per cent that showed in that case to be due to engineering.

Q. So what you did in that case your firm was employed to per-

form the service that is necessary to be performed by engineers and when you got through you figured up what your charges were and then ascertained the per cent?

A. Yes, sir.

4984 Q. So that there was no guess about it, was there?

A. No, sir.

Q. No estimate about it?

A. No, sir; I know just what percentage of engineering was in that particular case.

Q. So if anybody wa-ted to know now, if any question arises in the future as to the engineering expense for that work and the amount that must be added to what you call the capital cost of that construction all that would be necessary in the world to find out will be to go to the Des Moines Water Co.'s books and asce-tain what they paid you for that work.

A. Yes, I think that is right.

Q. You refer to contingent costs, if I caught the term correctly?

A. Yes, sir.

Q. Just what do you mean by contingent costs?

A. Well the unforeseen things which the most careful forecaster or estimator is unable to see, which is humanly impossible for him to see. In other words that must be done in the near future.

Q. That at some pe-iod becomes a certainty doesn't it?

A. At some period that becomes a certainty, but in the outset it is a hazard.

Q. When does it become a certainty?

A. Becomes a certainty when the work is completed.

Q. Do you know of any contingent cost about the Des Moines Gas plant that has not been covered by their inventory?

A. I have not gone into the details of the cost of the Des Moines Gas plant.

4985 Q. You have no information as to how accurate it was or anything of that kind?

A. Except to look over in the most general kind of a way the testimony and the figures that have been put in and to see what the percentages of cost have been taken on these different items by the different gentlemen who testify.

Q. Take this situation to be true, Mr. Alvord, that a most careful inventory was made of all of the physical property that is involved in this controversy, every item of it down to scrap almost, being set out in the inventory, and this controversy has been going on for three or four months speaking roundly, without their being a suggestion from anybody that any considerable items or in fact any particular items of property were omitted from that inventory would you say in a case like that that there would be anything like contingent costs of five per cent to cover it?

A. Yes, I should. Now one of the biggest items of contingency to such an inventory as that it is a moral certainty that it does not include everything that the Des Moines Gas Co. has. It is a moral certainty that something is omitted; That has always happened in every inventory which I have made that there has been

something omitted. Now as an illustration of that in making an inventory of the Peoria Water Co. we listed the reservoir with its embankments and gate house and it appeared after the estimates were all made that there was no water on top of that hill by which embankments could be puddled or concrete mixed and the contractor at great expense to himself had gone some miles and erected a pumping station and built a pipe line up to the reservoir which was entirely removed when the work was done and entirely
4986 forgotten and left out of the inventory but it was an absolutely necessary thing to that reservoir and h-manly speaking as a man now who has made quite a number of inventories I am morally certain that no inventory that I ever made, however diligently I may have worked and how anxious I may have been to have made it complete ever really was complete. That is one of the contingencies of an inventory such as you speak. Another contingency along the line which you mention is this that it is humanly impossible to recreate any work in its exact precise form and meet with the same contingencies that the original work met with. There will be a variation just as there is a variation in the nature of the accidents and of the difficulties and the things which interfere which will be different every time you reduplicate it and if you redupl-cate it ten times you would have ten times the variation of contingencies to meet.

Q. These variations would be both ways wouldn't they?

A. No they are not generally both ways. There is a possibility sometimes of offset there, but the net result is always to add to your estimated costs, your estimate*d* made by a human being and — human being is not a perfect forecaster.

Q. But you do not want to be understood do you that in reproducing property like that this that has bee- in operation for nearly thirty years that the variations would all be in *an* addition to the expense?

A. The things I say that the human forecaster cannot foresee will be in addition to his estimate every time and I may say that that is one of the failings of the engineering professions that they do not sufficiently allow for these things which they cannot humanly foresee and that therefore they are constantly complained of by bankers and by promoters and by monied men that their
4987 estimates are not high enough.

Q. Do you say in none of these inventories you have been interested in, there was never too much in it, that the mistake was not in getting too much in?

A. We never get in too much. Never put in anything t*j*at is not a fact, not to our knowledge or intentionally.

Q. Oh certainly not intentionally, and you don't leave it out intentionally.

Q. Don't leave it out intentionally, but the net result of trying to list up all of the things which have cost money in a plant of this magnitude is that you never wholly reach the goal of having ever included everything that exists. That something is left out in this inventory I am morally certain.

Q. Where is it if it is not in sight. Everything is in sight except the pipe?

A. I say I am morally certain from my experience that this inventory here is not a full and complete list of everything in this plant.

Q. How long would it take you to check that up?

A. I could not do it.

Q. Why couldn't you?

A. Because I am a human being and I would not reach a full list if I should undertake to do it. I base this answer on experience in making some 20 to 25 inventories of large plants.

Q. You would not miss any buildings?

A. Oh I don't think I would miss a building.

Q. You would not miss any apparatus?

A. A great many things about the plant I don't know about and can't see.

4988 Q. Would you say in this case where there is a lot of old pipe left in the ground, take for instance two inch, inch and a half and inch and a quarter pipe that has been abandoned for years, should that go into the inventory?

A. It should certainly be put in whatever it is there.

Q. Why should it be put in?

A. Because everything should be put in.

Q. That is the kind of inventories that are made in these rate cases?

A. That is the only honest kind of inventory to make out.

Q. Even though the pipe is abandoned and no longer used?

A. That is for the appraiser to srttle whether the pipe is of any value or not. It is not the function of the inventory man to settle that question.

Q. That was done in this case wasn't it?

A. I don't know.

Q. You say you don't know.

A. I don't know anything about it. I neve- heard of that incident.

Q. And that is done by these public service corporations in inventorying their property?

A. It is the duty of every man making a- inventory to make it honestly and put in every pi-ce of physical property or tangible property that he knows belongs to that company. It is not for him to say whether it is worth this or that, that is the appraiser's work, but it is honest business to put it in.

Q. We will admit that is what they did in this case. Now then the engineer or appraiser you call him, he is usually an engineer isn't he?

A. No, sir; the man who makes the inventory is not always the man who——

4989 Q. The appraiser, not the man who makes it, isn't he usually an engineer?

A. The appraiser is usually an engineer, yes.

Q. Always in these cases?

A. Yes, sur.

Q. He comes along then and puts a value on the inventory as it is turned over to him. Take your own case for instance, you take the inventory just as it is furnished to you and there is so much inch and a quarter pipe for instance. You value that at so much a foot or so much a pound and set your valuation and go on to the next item and do the same way don't you?

A. Yes, sir.

Q. So it is your idea that that is the usual way of valuing gas and water plants especially the pipe, that is right is it?

A. If I understand you it is, yes.

Q. That is the usual way of finding the reproduction cost?

A. It is not of finding the value that is finding of the reproduction cost.

Q. And from that they work out what they call their value of the property with the other elements that enter into valuation?

A. Yes, sir.

Q. Now going back to this question of these so called underlying charges. Assume that a new plant—we will assume that you are not advisee about local conditions further than you can observe by a visit or two to the town and here is a local plant that has recently been constructed within two years and it is just beginning to operate and the investor that contemplates taking it over employs you to ascertain for him without going to the trouble of making an inventory of the property, to ascertain for him about
4990 what the plant cost the owners and among other things you wanted to ascertain the cost of these several items of underlying charges, how would you go at that to find that out?

A. Well I should first of all find whether he had kept proper accounts, full and complete accounts. It usually happens that preliminary expenses are missing, the proper accounts, and I should make it my duty first of all to be sure all of the things were in for which money had been expended legitimately. If I was satisfied that the accounts were full and complete from the very initial inception then I take it that these past costs represented one element which would enable me to arrive at value.

Q. You evidently look at this question from a wrong angle. This man simply wants to know from you, wants you to find out for him what these different items cost in that particular case. Now it would make no difference to you about whether the management was efficient or not to ascertain that you would simply go to the books and ascer-n what they paid, wouldn't you if you could?

A. If just wanted the cost, he didn't care whether that -as the full cost or complete cost, I would do as you say, but I should be certain that he understood that I did not consider that was the full and complete cost or was any means of checking it.

Q. How would you check it, but find out what they had on the books and check it?

A. I should inquire as to all the circumstances, should find as to whether the accounts were complete, whether everything was in that had been paid for.

Q. Is that all you would do?

4991 A. That would be the first thing I would do.

Q. How else would you check it?

A. The next thing I would do would be to find out as much as I — about the initial inception of the enterprise, its promotion and administration and see whether that compared properly with the costs I found on the books.

Q. That is the way you would check that.

A. Yes, sir.

Q. Now for instance if you were trying to find out about legal and organization as some of the engineers call it which you call promotion, if you were checking up that item to see whether about the right sum had been paid you would make some inquiry wouldn't you as to what the cost of the service that enters into that item was in this locality.

A. Well I should try to see that nobody had given services for which they were not remunerated, that would be the first thing I should look at because that is a usual thing, I find that services are often give- that are not represented on the books. That is very common.

Q. Suppose in a local organization, suppose the filing fee for articles of incorporation was $2,000 and you would find charged on the books for that item $4,000. Then what would you do or say about that?

A. I should inquire about it certainly.

Q. So that in order to check up the first thing you would want to know is what the several things would cost in the locality where the enterprise was to be promoted?

A. Certainly.

Q. And that would include legal expenses and engineer-
4992 ing and all that class of so called underlying charges?

A. Yes, sir.

Q. And to determine whether the amount claimed was correct you would inform yourself with respect to these things locally and not simply take your estimate wouldn't you?

A. Well if I found that they varied very much from my estimate I should be very suspicious and I should make a very great many side inquiries to find out why they varied from the usual run of things.

Q. It would be absolutely impossible to reach a reliable result without finding out what was ac*ut*ally paid in the community where the enterprise exists?

A. I find it so. I may say I do a great deal of that work for bankers and I find it is very difficult to get a set of accounts that show all of the expenditures that is made in a preliminary way. There are very many reasons for that. That is usually one of the difficulties.

Q. Of course you don't claim do you that these several items cost the same in every locality?

A. Oh no.

Q. They vary some do they not?

A. They certainly do.

Q. Then if the Master wanted to know just what the services that are involved in these several items costs, wanted to get exact information, not somebody's guess or estimate for the last six months, what it was in the operation of this Des Moines gas plant, where would be the best place to get it?

A. Well I think the best place would be to get it from the books if a discriminating person investigated the books and was certain that all charges were there properly made.

4993 Q. You mean if sure they had not manipulated the books?

A. No, I don't mean that, but I mean to say taking your own illustration that it is not likely that even the company themselves would charge against extension expense all of the administrative costs or time that the manager or the clerks or the treasurer gave to that particular work, to carry that out would be carrying out a great deal of detail which companies often do not try to do but are a part of these underlying charges just as certainly——

Q. Now I don't want to argue with you, but take it on your own suggestion, which is aside from an answer to the question, if I understand you correctly it would be impossible to ascertain from the books the cost of these items that you have given an estimate upon here, it would be because the books were so *j*ept that the items were covered up.

A. No, sir; you have misunderstood me. You gave me a specific example of extensions in the last six months and asked me how I would go to work to find from the company's books all these underlying charges on these extensions. Am I right?

Q. Yes.

A. Well I endeavored to make myself clear that there might be many administrative charges properly chargeable to these extensions which the company may not separate from their main administration expense and put them against it?

Q. Couldn't you separate them?

A. I coul- with labor and time certainly. And it is for that reason I said to you a moment ago I would examine the books with care and discrimination.

Q. Now then if you found that they had failed to properly distribute these charges and you found it necessary to add some-

4994 thing to administration you would take it out of operating expense wouldn't you?

A. Certainly. I don't dispute with you a moment.

Q. When we ascertain in that way these charges, these so called underlying charges of this plant we have got, so far as this community is concerned, we have got their exact cost haven't we, no longer a question of guess work or estimate and no longer a question of difference between engineers, we have got the exact figures paid for that work haven't we?

A. I don't see how we have unless we go through and recast the accounts in such a way as we have just been discussing.

Q. When you do that they are.

A. Yes, then if I understand you I answer yes.

Q. If the books of the company here in Des Moines are properly

kept and the proper charges, that is the charges for these so called underlying services, if that is a proper term, are entered in the proper account there is no trouble at all to ascertain just what that kind of work -osts in Des Moines is it?

A. As a matter of past cost no sir.

Q. As a matter of past cost, why do you put in that modification?

A. I have been discussing all of this time the theory of reproduction.

Q. Yes, I know you have and I have not been quarreling with you about that.

A. No, but the example which you now cite is a matter of past cost which is not reproduction cost.

Q. It is a matter of past cost in the same sense the work has been done and paid for.

A. Yes, but it is not reproduction cost.

4995 Q. How do you differentiate?

A. The courts have very clearly pointed out——

Q. I am not asking what the courts have done.

A. You asked how I differentiate and I want to answer the question please. The courts have very clearly pointed out there are several ways in which plants may be valued. You may arrive at the past cost of it as one element of determining value or you may consider its reproduction cost as another element entering into its value, or you may consider the market value of its stock and bonds if an adequate market exists as another element which determines value, but neither of these things are value in themselves.

Q. I have not been discussing value, discussing costs.

A. You seemed to me to be confusing past cost with reproduction value.

Q. No I have not. What I am trying to do is simply to find out from you if I can what sort of a check, if any, there is on these so called underlying charges or whethe- we are just simply compelled to rely upon the guesses and estimates of engineers.

A. Now are you referrng to reproduction estimates or past costs?

Q. I am referring to what these things actually cost the enterprise that is now the subject of controversy and not what you might guess they would cost some other time or next year or the year after.

A. As far as you confine *t*ourself to past cost I agree with you that the books properly kept carefully examined and audited are a record of the past cost of the plant.

Q. Then with that statement if we were trying to arrive at the cost of these several underlying items for say January 1911

4996 or at a time just prior to that, within a few weeks of it, would the books show what it cost since, wouldn't you say that wa- a pretty good way and a prett- good place to anchor on the question of these costs?

A. I would not say it had anything to do with reproduction cost.

Q. Just get out of your mind that reproduction proposition. I am asking now about finding the value of these things the first day of January, 1911, or 31st of December 1910?

A. For what month?

Q. Is it a method of ascertaining exactly what it costs?

A. Past cost. That is the past cost method is it not.

Q. If you were going to get at the reproduction cost—I will indulge on your physical reproduction theory—suppose you were dealing with that and the question was what it would cost to reproduce this plant beginning say on the 1st day of January, 1911, would the cost of material and the cost of labor and the cost of services of engineers and lawyers for the year 1911 have anything to do with your reproduction cost?

A. It would be a guide?

Q. What kind of guide?

A. Just the same guide that all other experience is.

Q. How much of a guide is that?

A. That is the guide that you would use if you were a forecaster endeavoring to see what this plant would cost to reproduce you would use the experience that was avaialable to you.

Q. You would use the cost of labor as one of the elements?

A. I would use the cost of labor which I would expect to obtain in the near future during the period which I had set aside for the reproduction of this plant in a manner which would be humanly possible based on the cost of labor as it was discovered in
4997 the near past.

Q. Take it right now if you were figuring on reproducing this plant and labor right now in Des Moines is say at $2.50 a day the kind you have to use. Now how much of a figure would that $2.50 a day cut in your labor cost in your reproduction theory?

A. Naturally be very important.

Q. Controlling wouldn't it, absolutely.

A. No, sir, not absolutely.

Q. Would not disregard it and estimate it next year at $3.00.

A. No, would not di-regard it and would not take it as absolutely controlling.

Q. Why wouldn't you?

A. Because I have got to reproduce in the near future, not in the past.

Q. But you are not dealing in the past now?

A. We are in the present. I am in precisely the position that any engineer is in when he is asked to make an estimate on building a new plant. He must take all of the information which is available to him from the near past and apply it to the probabilities of the near future.

Q. Let's confine ourselves to the labor question and we are dealing with your reproduction theory. You assume that the cost of labor, common labor is $2.50 a day. It is going to take you to produce your finished plant. Just tell us in as brief a time as you can how far that $2.50 a day would settle with you the question of the cost of that kind of labor in the construction of that plant in your preliminary estimate?

A. I should take that $2.50 and I should look over the last
4998 three or four or five years in this town and I should see whether that was declining rate of wages or increasing rate

of wages. If wages had been going up until they reached that sum I would then look ahead and see whether the probabilities of the near future meant that that increase would continue or whether it would become stationary or whether the possibilities were that it might decline? The figure itself would have a controlling influence on my mind in that it would be the central point from which I would reach. But it would not absolutely be correct for me to take it without going — the reasoning that I have just described.

Q. Now would you confine yourself in that method to just labor?

A. No, sir; I would do that———

Q. You would then deal with past cost even in your reproduction theory?

A. I would deal with past costs as throwing light on the near future.

Q. You would not, as an engineer, you would not feel that you had been even fair to yourself if you undertook to make an estimate that did not rest to some extent at least upon past cost would you?

A. Why of course not. Past cost is the very greatest light.

Q. It is the most important element isn't it in the whole problem to determine what is going to be the cost in the future?

A. Past cost of material and labor are but past cost of the plant isn't so entirely.

Q. You don't confine it to material and labor do you?

A. Intangible things or underlying charges themselves, the past cost of the plant is a very different things.

Q. What do you mean when you say past cost of the
4999 plant, do you mean cost paid for the organization end?

A. I mean cost you find on a correct set of accounts of the plant in the past has got to be reasoned out in the same way I have just described. It has had its appreciation and it has had its depreciation, all of which must be taken into account before you can reason correctly if you are going to use it as a yard stick upon which to predicate value.

Q. Would you feel if you were an investor and were about to put your money into an enterprise, a live enterprise and you had engaged an engineer who was not even a resident of the town where the enterprise was in operation, had little if any acquaintance with local conditions, would you be satisfied with an estimate that he would furnish to you as to even the value of that property if it was based entirely upon his judgment as to what it would cost to build it in the future?

A. I think that would be the very best evidence that I could get. If he had followed the series of reasoning which I have just described.

Q. Your answer is inconsistent with the other. I am assuming that this engineer that you have employed -as given no attention whatever to past cost either of material or labor or any of these underlying charges, but has simply set down at his table and worked out for you his judgment as to what it would cost to rebuild that

plant in the future beginning at the present and building it through a year or two in the future.

A. I should say that he had neglected one source of information which I should consider was important, but if he was an experienced engineer I should still think that his estimate had a good deal of value.

Q. Oh it would have some value, but an experienced engi-
5000 neer that has no information about local conditions don't even know anything about local markets is he competent in that condition to furnish you an estimate as to the cost of a piece of property that you would be willing to take?

A. Yes, he is because local conditions do not have the weight that you seem to think they do.

Q. Well does it have any weight?

A. They vary slightly in this or in that, but the net sum and net result of a great amount of estimated work smoothes out these differences so that they have very little weight with the final result.

Q. Suppose a town is situated on two sides of a large stream of water with hard stone bottom, s-one sides and all that sort of thing, your engineer ought to know about that hadn't he if your pipes had to be put across the river and all that sort of thing?

A. You are quite right there.

Q. Isn't that a local condition?

A. Hardly such a local condition as I thought you had in mind.

Q. What did you think I had in mind?

A. I thought you had local variations in prices of material and labor.

Q. Material I suppose would not be so very much although there would be some on that. But I had in mind all local conditions that must enter into any sort of intelligent estimate of the cost of building an enterprise like a gas plant.

A. It is fair to you to say that it would certainly be very important for him to determine whether the town was founded on rock or sand, you are quite right there.

COURT: You spoke of promotion, what did you put the
5001 minimum on that?

A. Two and a half per cent.

COURT: And the maximum?

A. Five per cent.

COURT: And organization?

A. My promotion means the organization up to the time when the actual work on the ground can commence.

COURT: That includes organization?

A. That is included in what I call promotion.

COURT: And engineering?

A. Engineering the minimum five per cent, the maximum seven and a half per cent.

COURT: In the engineering expense you include the work of the engineer in superintending the construction and seeing that it is done right, is that correct?

A. This is supervision, inspectors, even clerks in the engineer-

ing department, the issuing of estimates, control of the contractor, giving him his final certificate and the direction of the work up to the time it is completed.

COURT: That is the entire supervision?

A. Entire supervision as well as details and specifications.

COURT: What do you have for casualties?

A. For casualties, if you mean by that what is called incidental expenses from five per cent as a minimum to ten per cent as a maximum.

COURT: That then would include the contingent and incidental expense.

COURT: Some of the engineers here gave casualties such as these things that result in injuries to persons or loss by reason of that.

A. This I include under the head of taxes, insurance, etc.,
5002 which I put at two and one half per cent.

COURT: Contingencies and incidentals?

A. From five to 10 per cent.

COURT: Taxes?

A. Taxes, insurance and casualties, a minimum of two per cent perhaps to two and a half per cent on a work of this magnitude. For taxes, insurance and casualties and matter- of that kind. The administration during progress of the work aside from the engineering two and one half per cent.

COURT: Interest during construction?

A. Interest during construction figured at six per cent on the amounts of money invested from time to time on structures not yet earning. Therefore it is something different from a rate. That has to come on the thing before you can begin to figure what your return will be as to going value. That is the one paradox which perplexes almost anybody that comes to going value for the first time.

COURT: Six per cent on the amount actually invested before you got started.

Mr. BYERS: I don't care to go into the question of going value with you further than a question or two. When did you first work out a definite theory upon going value, when do you remember it about the first?

A. The Dubuque case.

Q. That was in the Dubuque case about twenty years ago?

A. No, thirteen years ago.

Q. Now have you followed the same theory up to this time?

A. Yes, with minor changes suggested by experience from time to time.

Q. Was the Dubuque case a rate case?

5003 *a.* No it was a purchase case.

Q. Were you valuing the property for the seller or buyer.

A. For the seller.

Q. Do you know Mr. Humphreys, Dr. Humphreys?

A. No, sir. Well I have corresponded with him but I have not met him personally.

Q. Did you ever do any work for him?

A. No, sir.

Q. When did you have your last correspondence with him, do you remember?

A. He wrote me a letter here a short time ago asking some questions about a paper which I wrote on going value for the American society of Engineers published along in the spring.

Q. And you sent it to him?

A. I replied to it at the time.

Q. Is that all the correspondence you have had?

A. Yes, sir.

Q. Did he tell you what his notion of going value was?

A. No, he did not.

Q. Sure about that are you?

A. Yes, sir.

Q. I have a certified copy of Mr. Humphreys' testimony in a recent case on the question of going value and I want to read you what he says about it and get your notion as to whether that is your theory?

Objected to as not cross examination.

Q. "Now what have you to say as to the amount which should properly be inserted in this statement for going value of the plant. A. Can I answer that in my own way? Q. Certainly. A. Well I start off by saying that it is absolutely a matter of judgment.
5004 I do not believe that any rule can be developed for it that can be mathematically applied and that no matter what guidance we may get by certain lines of reasoning I think that finally they all lead into a matter of developed judgment and many of the so called rules or lines of procedure are simply reasoning in a circle because if we say it depends upon the question of income and the question of income depends upon the rate and that is what we are here for so we have got to get into the circle and can't get out. Of course there are lots of thoughts that are helpful as to what was the cost to get and hold a consumer. Then cost is not necessarily value. The value of every consumer attached would depend upon the character of his connection with the company, whether it was for a large amount or small amount of consumption and also it would depend how we secured that and help him after we have gotten him. In many cases the cost of getting a consumer is exceeded by its value. I am afraid in this particular case of ours that the cost is in excess of the value. I don't believe it is necessary to go into a talk as to the different ways of arriving, of course one of the processes that we have followed and followed with a good deal of satisfaction as far as our own estimates are concerned was that of saying each consumer was worth for going value say $20 or right up about $30 some range in there. In the old days where we were not subjected to government control of course the way that we applied it then was to capitalize our earnings and the amount in excess of the physical value of the plant if it was determined, it usually was not in those says, would be the going value as appraised

by the appraiser, that is what he was willing to pay for it." Is that your notion of going value in any sense?

5005 A. No, sir. May I ask the date of that?

Q. The certificate is "Office of the Public Service Commission State of New York, Second District. I have compared the preceding with the original transcript of stenographer's minutes of hearing held at No. 216 Chamber of Commerce Building, Buffalo, New York, June 6, 1911, in the matter of the Complaint of the Buffalo Gas Company against the City of Buffalo of testimony shown on page 1069 beginning with line 19 pages 1070 and 1071."

A. Perhaps my modesty is leading me to do an injustice as to my own theory. Mr. Humphrey's letter has been written since that date and in it he expresses his satisfaction with the way in which I solve the problem of going value. Then he asked me some questions as to how, evidently that he might understand a little further.

Q. He is a gas man, in the gas business.

A. I understand he is yes.

Q. It was after this testimony that was given because of the controversy down there he wrote you.

A. My paper was published since that date.

Q. Your notion without going into it extensively, your notion about going value is that the going value is measured to some extent at least, maybe entirely by created income.

A. My notion is that the going value is the value of the income and if you are approaching the value through the medium of reproduction then you will compute your going value upon the theory you must reproduce the income as well as the physical property in order to be consistent and complete the yard stick for your

5006 use.

Q. Then do you measure the going value by the income from the beginning of the receipt of the income at all, that is every dollar of income represents some going value does it in your notion?

A. No, sir; I measure it from the point of view of the investor who is, we might say, standing at the parting of the ways. He may buy the plant before him at its fixed price or he may build and create an income. He reasons that the value of the plant before him is what it will cost him to build and create an equal income. He therefore takes all the necessary steps on both of these paths, compares them and finds the difference between a physical ppant and the plant with an income and credits that to the plant with an income as to the cost of reproducing that income.

Q. Here is a plan- that the cost of the physical property to the company was $1,500,000, no dispute about that. That was the actual cost, the money actually put into the property and none of it taken out.

A. That is past cost.

Q. Yes, that much money actually expended in the property. Now the property has been in operation for several years and it is bringing in an income of $10,000 not a cent more, that is the net

income I mean of $10,000. Now if you had a customer, a man that was an investor and was relying on your judgment in the purchase of the plant how much would you add to the cost price which was a million five hundred thousand dollars, how much would you add for going value?

A. Well I could not undertake to go through the computation now.

Q. Would you add anything?

A. I certainly should compare as I stated before——

Q. There is a loss of money?

5007 A. That doesn't make any difference. As I have stated to the Master this morning that don't make a particle of difference. If that plant is there it has got to go. You won't get anybody to take that plant unless it is worth running.

Q. Then it would be valueless to any investor?

A. That might be, but would not be so valueless as it would be if it did not produce that $10,000, if it is producing that $10,000 revenue it makes it less valueless than it would be otherwise.

Q. If it only produced $5,000 it would be worth $5,000 less? What I would like to have you do under your scientific theory of going value, have you tell the Master if you can and that seems to be a pretty simple proposition, you have got a gas property of $1,500,000 giving a net income of $10,000 and you say the going value is an income proposition. Now how much would you add in value, I mean your so called going value?

A. Going value is a great deal more than an income proposition. It is an income proposition for one main consideration and it is a great deal more.

Q. If it is more what are the other things?

A. The other things are the difficulties in the way of the proposed consumers in obtaining whatever this plant turns out whether it be water or gas. If the consumers in this town have absolutely no other source of supply and they must come to this company for the staple it produces then obviously it would not take that company much time to reproduce that income, people would come flocking back to the company.

Q. You are getting away from the proposition.

A. I am illustrating to you going value depends on more things than revenue. It is facility I am talking about, facility is

5008 the next largest item in going value to revenue.

Q. I am asking you to assume the situation that covers everything you are talking about. Assume a plant was in operation and been in operation in a community for several years?

A. Necessary to the community?

Q. Yes, to that extent.

A. Must be run?

Q. I won't say must be run, that does not follow in any case.

A. Oh yes it does a water works company may be losing money, but somebody has got to run it just the same. I will take you at your word; we will assume a water works company in a town like Des Moines costing a million and a half——

Q. You are engaged in the water works company, take some other company.

A. I prefer this company because familiar to me, I illustrate it better. It has cost a million and a half and got to be run in this community because this community has got to have fire protection and water. It is producing an income of $10,000 and no more. Now what is there to that company in the way of going value. Certainly it is worth more producing that 10,000 if it has got to be run than if it did not produce that $10,000.

Q. Anybody would admit that.

A. You did not seem to admit it awhile ago.

Q. I never questioned it. But I am asking you to state to the Master because you introduced yourself here as an expert on these questions and I am asking you to state, for our benefit if you will, and I want to be entirely courteous about it, in this case if you want the water company for an illustration say that the water com-
5009 pany, the actual cost of the property is a million and a half dollars, no dispute about that and been operated here for years bringing in a net income of $10,000. Now how much would you add to the physical value of that property for going value in that case?

A. I would add what it would cost to re-create the company and produce that $10,000 of income.

Q. Re-create what company?

A. The water plant.

Q. How much would you say that is, what I want there is to get an estimate?

A. You have given the amount of income. I could not tell that off hand because it is a matter of some study and depends on more factors than you have enumerated. Depends on the facility with which people can get another supply, if there are wells here in Des Moines all over the outskirts they don't have to come to this company for water and it might take them quote a long time to build up that income. If the contrary is the case the reverse will be true. It is simply a proposition of arithmetic.

Q. The demand is already here, you know the situation, you know the town, you know your water company you have already had experience with it. Now I started by asking you if you were employed as an engineer by an investor who was going to put his money into this business, into this water company here which cost $1,500,000 and it was only producing an income of $10,000, how much in that case going into the field generally how much in that case would you add to the phy-cial value of the property as going value?

A. I would advise him to add just what he could see it would cost him——

5010 Q. Would you advise him to buy the property at all?

A. I should advise him to add to the cost of the physical property what it would cost him in losses to re-create that property and its income. Now I can't tell you offhand as a plain sum of two and two is four what that is.

Q. If I understand you now you would advise that investor to add

to the value of that property for the purpose of buying it what he might lose in the future by running it is that your idea?

A. No, I don't know what that step would mean.

Q. Isn't that just what you said, didn't you get into rather an inco-sistent position?

A. I don't think I understand you.

COURT: That is on the theory the more it goes the less you are worth under those circumstances. Of course if a man made a contract by which he has got to put this thing in and run it whether he loses or not, that is another proposition altogether?

A. That introduces an element of general market value which is hardly what we are considering in this question of cost of these public utilities because we do not start here subject to the rules of ordinary market value, you know that as well as I do. There is one purchaser for a public utility which approaches the subject different from an ordinary market investor and that is the city. If the city must purchase and providing the plant is running at a loss and it purchases it it should be willing to pay more for a plant that is running for a less loss than it would for a plant that is running at a greater loss. That is the principle.

Q. That would seem to be reasonable, but you are getting away from this proposition. You have a client in Chicago that has
5011 a notion of investing his money in a water plant. He employes you to come out here to Des Moines, he has heard about the Des Moines plant, to come out here to Des Moines and look this plant over and come back and advise him with respect to its purchase and he wants you to ascertain *from* him every fact that is important in connection with the enterprise and among other things the income, its going value and all that sort of thing and you find just the situation I have asked you two or three times to assume, a water plant worth a million five hundred thousand dollars that has been in operation here in the city where they use water and know how to use it for years, but was only earning a net income of $10,000. When you went back to report on that situation, how much would you advise him should be added to the cost of the plant for going value.

A. I have not gone through the computation, but if he was determined to buy I should advise him, he must have some reason for buying and I should advise him if the plant was losing money in the first place not to buy it. That is certainly obvious.

Q. Your going value would be a-solutely worthless wouldn't it in a proposition of that kind?

A. Yes, and your physical value would be equally worthless as an investment to an outside investor looking for return on his money.

Q. What pount then in the return or income on the property do you have to reach before there is any actual value in this thing you call going value?

A. The thing itself on the general market if it does not have to be run has no value until it produces a return which pays all
5012 fixed charges and operating expenses. That certainly is clear.

COURT: I think I understand the witness and I am going to state it and see if I do or not. Here is a city that is bound to have

water. It goes to work and builds water works and uses them and produces a revenue. That revenue is not sufficient to pay the expenses of operation yet they must have it, it is their works, they are getting water and the city as such and the public as such have to have it. Of course it is worth more when it is in operation and discharging and performing its duty and supplying the city by reason of that than it would be if it were just lying there naked and not in operation. I understand that proposition, but for a market value to sell on the market with the same kind of revenue I don't think you would find a purchaser anywhere?

A. That is exactly my point of view your honor.

Redirect examination by N. T. GUERNSEY, Esq.:

Q. To avoid any misunderstanding with reference to the questions that were asked you about inventorying abandoned pipe and property that is not in use and as to the custom of public utilities in rate cases, do you mean to be understood that it would be the custom to take that property at the same price or at the same value as if it were in use or had not been abandoned or that you would not take that fact into account?

A. I certainly would take that fact into account. I was speaking wholly from the point of view of the man who makes the inventory I do not think he has any right to omit property, however valueless it may seem to him. He may be a different person from the
5013 appraiser, but it — his duty to list up all property and the appraiser may mark it all off if he sees fit or any portion of it, exercising his function as a v-luer.

Recross-examination by Hon. H. W. BYERS:

Q. If you should find an inventory in a gas case where the company had been in operation for thirty years or more, nearer forty and you found listed a very large amount of small sized pipe would you put a value on that pipe as an enginee- and appraiser without making some inquiry about it as to whether it was abandoned pipe or whether it was still in use or whether it was buried up where no one could ever get it or as to whether it was inadequate and all that?

A. I should certainly inquire as to all of those things.

Q. You would not just go out and fix the regular market price the price it is being sold on the market today upon all pipe and then add to it all these overhead charges and even more than the amount suggested without making very careful inquiry would you?

A. If I did do that I should make such inquiry as would convince me what its useful future life might be and I would depreciate it in exact accordance with these facts.

Q. You would not just put the same price or same value on the pipe that was abandoned and was no longer being used at all, left in the ground just as it was abandoned would you with all the other pipes and then finally wind up with a certain per cent of depreciation on the whole business?

A. I should certainly take all these facts into consideration and

at the same time I might say that I have marked off such
5014 pipe as that at a hundred per cent depreciation in Dubuque which they are still using today so that we sometimes missed out on the question of whether it is abandoned or not.

Q. Well take this kind of a case, take a case where there was say 1500 feet of four inch pipe that had been used for main for years, twenty or twenty five years and then they substituted for that an eight inch main, the service required an eight inch main and they put in an eight inch main, just abandoned the other and left it in the ground, cut off the connection and it is buried there in the ground and left there would you value that at anything if you found it in the inventory?

A. I don't know that I should wipe that off fully.

Q. Why in a rate case.

A. Because there is always a possibility such property as that will still have value, I might depreciate it very heavily, very heavily indeed, but I am not sure that I should wipe it out.

Q. Well what kind of pipe do you wipe out, you say you depreciated 100 per cent in Dubuque, what kind of pipe was that?

A. That was a system of drive wells by which at one time they had hoped to obtain a supply of water from the gravels near the river and at the time of our appraisal it was abandoned and everybody had agreed it was a foolish thing to put in any way and I think three or four pretty good engineers besides myself followed the general thought and depreciated that property 100 per cent.

Q. You thought that was proper didn't you?

A. I thought so at the time, but a few years later they went down there and they found the man who had connected that up tapped the pipe up in the top of the pipe so it was all air
5015 bound and by making the proper connections they drew a large amount of water from these pipes and been drawing it ever since so I was mistaken.

Q. Well the point was it had some value since, although at that time it had no value, bearing no part of the production of that system.

A. Yes, but it would have been the part of wisdom not to have depreciated it entirely.

Witness Excused.

Complainant offers and reads in evidence Complainant's Exhibit No. 92.

5016 JANSEN HAINES being recalled on the part of the defendant and examined in chief by Hon. H. W. Byers, testified as follows:

Q. Do you have a voucher showing the payment of certain expenses under date of April 11th, covering the items taking of testimony on February 22, 23, 24, 25, 26, 27 and March 1st?

A. What is the amount of the voucher?

Q. $222.15?

A. I have, yes.

Q. I wish you would produce it and let the reporter mark it an exhibit. The voucher you handed me Mr. Haines which is approved by Mr. G. I. Vinvent and W. B. Keffer, states on its face as follows: "To services taking testimony of witnesses on February 22, 23, 24, 25, 26 and 27 and March 1st, seven days $56.00." What testimony was taken on those days?

A. That was for reporting the examination of the witnesses.

Q. Who examined them?

A. The attorneys for the gas company.

Q. What attorneys were they?

A. Messrs. Carr and Read and Guernsey.

Q. And where was it taken, where was the testimony taken?

A. It was taken either in their offices or in the offices that we have in the Securities Building up stairs.

Q. I notice among other things here "To transcript Mr. Lea's testimony, 106 pages, two carbons $42.40." Have you got that transcript?

A. I think the attorneys have it.

Q. And was that testimony taken on the days mentioned here?

A. I presume so, if the bill says so. I really don't recall
5017 accurately on what dates it was done, but I presume the dates are correctly stated there.

Q. Mr. Lea and Mr. Bair and Mr. Hagenah were all here at the same time and their testimony taken at the same time here?

A. I don't recall whether they were all here or not at the same time. The recollection that I have is that the attorneys desired to prepare, the usual preparation of any case and that for their convenience and to save time they desired to have it taken in the form of transcript so that they could prepare themselves and properly study the case from the standpoint they desired and therefore they had the stenographer simply employed as that bill states.

Q. And they were examined by the attorneys in the regular way just as though they were on the witness stand?

A. They were not examined under oath as I understand it.

Q. Mr. Maul I see here fifty four pages, what was he testifying to?

A. Well I presume it was in the same line. I could not answer exactly what he was testifying to. He was questioned just the same as any witness would be questioned in the preparation of a case.

Q. He was the foreman, the man that is in charge of the distribution system that testified here?

A. He is our street main foreman, yes.

Q. That had an excellent memory?

A. Yes, sir.

Q. Do you know where this transcript of his testimony is?

A. I do not General. I don't think I have seen it since that time.

Q. Mr. Blair, seventy three pages. He was examined in
5018 the same way by questions and answers and his answers taken down and then transcribed?

A. Yes, at the attorneys' suggestion, that was their request.

Q. And Mr. Hagenah, I notice 62 pages of his examination. Mr.

Hagenah is the man who testified here with respect to an examination that he made of your books is he?

A. Yes, sir.

Q. Had he made any examination at the time he gave these 62 pages of testimony?

A. I really can't recall General. I would have to compare the dates.

Q. Do you have any recollection of what he talked about in these 62 pages?

A. I don't remember whether I was present at the time or not. The attorneys conducted it.

Q. If you have these transcripts, Mr. Lea's, 106 pages, Mr. Bair 73 pages, Mr. Hagenah 62 and Mr. Moul, 54, I wish you would produce them for us.

A. I will be glad to do whatever my attorneys say in reagrd to that.

Q. You preserved that I suppose, did you not?

A. I really don't know what has become of it General, I don't think I have seen it since that time.

Q. What were these carbons for?

A. I think they were probably carbons which were made up for each attorney. There were one original and two carbons in that bill?

Q. Two carbons yes.

A. That would presume one original and two carbons, I presume made up one for each attorney.

5019 Q. When did you see the transcript last?

A. I think when it was delivered.

Q. Just why wasn't this item put on the books, Mr. Haines?

A. Put on the books when?

Q. Any time; is it on the books now?

A. Let me see the voucher just a moment and I will tell you. This bill was paid off by check No. 7743 under date May 18, 1911, on the Iowa National Bank, therefore would appear on our books on the May account.

Q. Do you know what way it was put on the books if it is on at all?

A. Well this voucher was entered on our accounts payable and distributed from that to the accounts shown in our classification column under rate regulation expense.

Q. Do you know yourself just how it appears on the books?

A. Well I have not seen this particular item on the books, because I have not paid attention to it, but I recognize from the check marks and the notations on the voucher that it has been regularly entered.

COURT: It is on the book account?

A. Yes, on the book account and has all the marks regular vouchers have after they have been entered so it has been entered on our books.

Q. Is there anything about it to show when it was entered on the books?

A. Well the payment of the check would enter it on the check book that is shown to have been made on May 18, 1911.

Q. I am speaking about your general books, not your check books.

A. That would go into the May accounts and would be entered on our books some time between the 1st and 15th of June.

5020 Q. Do you know who else was present at the time these men were examined that week in February and the 1st day of March?

A. No. I was present myself at some of those examinations but not I think at all of them. I am not absolutely sure in regard to that. I know I was present at some, but I should not like to say I was present at all.

Mr. BYERS: We would like to have you produce for us in the morning the transcript of these witness-' testimony.

Q. I asked you, you remember, the last day of the hearing to produce certain evidence from your books with respect to the cost of extensions here. Have you worked that out for us? In regard to the overhead charges and other items going into the betterment and improvements and extensions the company has made here in Des Moines one question was as I remember it during the last year.

A. No, sir; I have not.

Q. Have you made any effort to get that information?

A. I made some effort to, yes.

Q. How much.

A. I don't remember the amount of effort I made.

Mr. BYERS: That is all with the exception we want those transcripts.

Mr. BYERS: Defendant at this time offers and reads into the record the following exhibit No. 82, produced by the witness, Haines: Des Moines, Iowa, April 1, 1911. Des Moines Gas Company City in account with Balise & Blaise, General Stenographers, 802 Fleming Building. Then the numbers within a circle on the face of the voucher 478 11-23 154 O. K. J. H. 4-21-11 D. To services taking testimony of witnesses on February 22, 23, 24, 25,

5021 26, 27, March 1, seven days, $56.00. To transcript Mr. Lea's testimony, 106 pp, two carbons, $42.40. To trans- Mr. Brodnax' testimony, 86 pp, two carbons, $38.70. Mr. Bair, 73 pp, two carbons, $32.85. Mr. Hagenah, 62 pp, two carbons, $27.90. Mr. Maul, 54 pp, two carbons, $24.30. Total, $222.15. In red stamp, rate litigation exp. and then in typewritten form. Received payment.

Attached to the bill just read we offer Exhibit No. 83 Des Moines Gas Company, Des Moines, Iowa, to Blaise & Blaise City, Order No. 5602, date 1911, April 1, to services taking testimony witnesses on February 22, 23, 24, 25, 26 and 27 and March 1, total seven days, $56. Transcript Mr. Lea's testimony, 106 pp, two carbons, $42.40. Transcript Mr. Brodnax' testimony, 86 pp, two carbons, $38.70. To transcript Mr. Bair, 73 pp, two carbons, $32.85. Transcript Mr. Hagenah, 62 pp, two carbons, $27.90. Transcript Mr. Maul, 54 pp, two carbons, $24.30. Total, $222.15. Rate regulation ex. Stamped on the face of the paper paid by check No. 7743, May 18,

1911, on Iowa National Bank and signed following the word correct by G. I. Vincent and W. B. Keffer, and then there are some initials in red ink that looks like A S C and the other W M N. Received May 23, 1911, from Des Moines Gas Company, $222.15 in full for above bill. Blaise & Blaise, per J. P. Blaise. The paper I have just read and which I offer in evidence now as read was defendant's Exhibit No. 83.

Witness excused.

5022 W. F. DOUTHIRT being recalled on the part of the defendant and examined in chief by Hon. H. W. Byers, testified as follows:

Q. Just before the adjournment some weeks ago you were asked to produce certain books and records of the United Gas Improvement Company and you stated that you would take time to determine whether you would produce them or not. Have you decided to produce them?

A. So far as they are in existence, yes.

Q. Have you them here now?

A. Yes, sir.

Q. I wish you would produce them as far as you have them here?

(Witness produces documents.)

Here the further hearing was continued until 9:30 A. M. tomorrow.

5023 Wednesday Forenoon Session.

NOVEMBER 15, 1911—at 9:30 a. m.

JUDGE CARR: Before proceeding with the further testimony in this case, I desire to call the attention of the Master to the request made by General Byers last night when Mr. Haines was on the witness' stand, with respect to certain testimony which he desired to have Mr. Haines produce. Mr. Haines was interrogated about this testimony, and it appears from his testimony that the attorneys had requested this arrangement themselves, to have it taken down in shorthand and transcribed for their use. It was a simple way of making a memoranda of what the witness would testify to; something that would be convenient for us to refer to whenever we had occasion to do so. Mr. Byers has asked Mr. Haines to produce that transcript, and I desire to say now for myself and my associates, that we will not produce the transcript and that we have advised Mr. Haines not to produce the transcript. We regard it as a matter wholly immaterial, and something which counsel ought not to call for and ought not to ask for. Counsel would be in the same position if we should ask General Byers to take the witness' stand and then interrogate him at length as to the interviews he had with his witnesses, which is a matter entirely immaterial in every sense, and the only way we can meet a demand of that kind, which from our point of view is a mere impertinence, is to simply decline to produce it.

Mr. Byers: I suppose it is proper for me to make some sort of a response to that sort of a suggestion. I want to begin with what little I have to say upon this question, with the statement that so far as I am individually concerned, and I think I can say
5024 that for all of the counsel on this side of the table, there has been very little in all of these three months of struggle over this case that could be criticised or objected to by us, so far as our treatment is concerned, by counsel on the other side. It has been a long and very carefully tried question, I think. I am under the greatest obligation to the Master and to counsel and to the witnesses on the other side, for their courtesy and kind treatment, and I appreciate it. But I want to say this to your honor and counsel, that I have been actuated by just one single purpose in this entire trial, and that purpose was to get before this Master every fact and every item of information that would be helpful in finally arriving at a correct and intelligent judgment upon these vital questions that must finally be settled in order to get at the final judgment.

This statement of Judge Carr contains what seems to me to be an unnecessary and unjust reflection upon counsel. I think I am safe in saying that the situation that was developed by the testimony of Mr. Haines is at least unusual. I have never said that it was improper, and I do not say so now, but I do say this to counsel, that this court and counsel on this side of the table are entitled to know just exactly what information these witnesses gave at that time, and why. Why is it legitimate? Because the only doubtful question in my mind in this whole proceeding, rather than the one question that will be the most difficult of final solution is the question of the value of this property. Here are certain witnesses introduced by the complainant, and I think I am within the rules of propriety when I say that it is the duty of counsel on the other side and the duty of the complainant too, to furnish to this Master, even without
5025 any request from this side, every single fact or information bearing either upon the question of value or upon the competency and qualification of these several witnesses. It appears in this record that in March, weeks before—I think even before your honor was appointed as Master—at any rate long before any hearing was had, that three of the most important witnesses that have been called to testify on complainant's side were here and were examined to the extent of from 50 to 75 pages of typewritten matter upon these questions of valuations and added values that they testified to later. Now, of course, it is a part of the legitimate conduct of this side of this case to ascertain for the Master and put before the Master every fact or information that will bear upon the credibility of the witnesses, their qualification, and the weight that should be given to what testimony they have offered here in court. This testimony that was taken, the president of this company says, was taken for the purpose of getting ready for this case. What they said then might have a great deal to do with finally determining how much weight their testimony given here ought to have.

I want to say to counsel again, I think I know what a lawsuit is;

I think I know about how far a lawyer ought to go in the trial of a lawsuit, and I want to say to counsel now that in all of these things that I have asked their client for, I have wanted only to convince myself and satisfy myself that I was going to the limit of my duty as counsel in this controversy and I did not want to go one inch beyond that, and I did not want to stop one inch short of that, because this is a tremendously important lawsuit; it is tremendously important to the city of Des Moines; it is important to the Master;
it is important to counsel on both sides, and when we get
5026 through with this fight, as long and as desperate as it has been, and as expensive as it has been, it is important when we get through with it that no one may be able to feel or say that anything that was proper or legitimate has been neglected, and that any fact or information within the reach of the Master has not been called in and used in arriving at the final judgment.

So I say again, the only part of the statement I resent, and I do resent that, is the part that reflects upon counsel and the ugly word used, it is a mere "impertinence." I do not think counsel ought to do that, but I waive it with what I have to say, and let it go at that.

Judge CARR: Just a word. It seems to me my good friend General Byers indulges in very specious reasoning. Of course it is important to get at the facts in this case, and for us to bring forward and respond to any call for any facts in this case. I submit to your honor, that from the beginning to the end of this long litigation we have met every demand made upon us, many of them, it has seemed to us, going clear beyond the limit of what is reasonable. We have, whenever information was called for of any kind or character that could have any possible bearing upon the issues in this case, furnished it and furnished it at a great deal of trouble and expense to ourselves. We have not only turned over our records to them for investigation, but when they said they could not get things we have furnished them every such item of information that would have any bearing upon this case. I do not think any case was ever tried where a party has stood in the attitude of at all times doing everything it could do to bring forward the facts in the case as has
been done in this case, whether General Byers appreciates
5027 it or not—he ought to appreciate it. But what has that got to do with this question? Here were witnesses that were being interrogated as to their knowledge of the facts of this case, to enable counsel to properly examine them when put upon the witness stand. I have no doubt that counsel for the city has spent many hours and many days in interviewing the city's witnesses. I know when General Byers was examining some of his witnesses he had the most voluminous notes before him. General Byers seems to think the word "impertinence" was a word uncalled for. I would have called it a great impertinence to have demanded from him his notes. I would have thought it was the greatest impertinence a lawyer could be guilty of to try to secure from him his notes made up for the examination of his witnesses. Instead of sitting and making long, copious notes in longhand, we had a stenographer that

took them down in shorthand. It was simply a matter of convenience making up the notes of the statements of the witnesses.

General Byers says, if they could show they made statements at that time contradictory to those made on the stand, it would be material. But there is no showing or claim that these witnesses made any contradictory statements whatever to us different than they did upon the witness' stand. What we resent is for General Byers saying that we ought to furnish him for his inspection the notes of the testimony of our witnesses as taken down for our own information. I say again, I see no difference between that and our coming in here and putting General Byers on the witness' stand, or Professor Bemis, or Professor Marks, and say to them, didn't Mr. Byers or Mr.
5028 Brennan make copious notes of your statements; have you got them, and will you produce them, and then turn to counsel and insist for their production for our inspection. Counsel might say, you can have them. But it is an unusual and unheard of thing. There is no reason for counsel to indulge in such a demand. Therefore I feel we are entirely within our rights when I say, we will not turn this over.

Mr. BYERS: I made use of one expression that may be misleading, at the close of my remarks, where I said that we waived—I did not mean that we waived the demand at all. I say it is entirely proper—if a witness was on the witness stand now, it would be perfectly proper and right for us to ask if he hadn't stated a certain theory with respect to a matter he is now testifying about at a prior time. I do not know what these 75 pages of Mr. Baehr's testimony was. There is no way for me to find out. It ought to be here before this court so that the court can tell, and we insist upon its being presented. If they refuse to bring it in—that is all right.

The MASTER: In my judgment a memorandum taken, whether in shorthand and afterwards transcribed, or in any other way, by counsel in the preparation of the case, counsel is not under any obligation to produce it to the court or turn it over to counsel. While it is proper or right to show in cross examining a witness with respect to interviews and talks as bearing upon the credibility of the witness, the fact that they were there and a long interview was had with them and many questions were asked, is proper to be considered, but I do not believe that the memorandum taken—it does not make any difference in what form—counsel for complainant, or counsel
5029 in the trial of a case are under obligations to produce to counsel on the other side. That is my judgment about it.

Mr. BYERS: I will say in that connection, we have had no opportunity to inquire of these witnesses about that matter, because we did not learn of it until after the witnesses had testified and had gone. Of course if either of them were here, we could get at it in that way.

The MASTER: My recollection is, I have required practically every paper, where it was necessary to do so, to be produced. But it strikes me that this would be invading the province of a counsel.

Mr. BYERS: If counsel says professionally that all this stuff was memoranda which they got for their purpose, I concede instantly

that we were not entitled to it and would not ask for it; but then we will not quarrel about it.

Is Mr. Baehr, Mr. Hagenah or Mr. Lea in town?

Mr. GUERNSEY: They have not been here since the last adjournment.

The MASTER: There is one thing I want to state to counsel, and I will state it now so that it will be understood. I think perhaps I have expressed it in the order I made at the instance of General Byers. I want Mr. Haines and all of you to understand it. All of these books and papers that have been introduced in evidence are now a part of the records of the court in this case, and except by leave of court, no one has a right to take them out. Of course, that leave will be granted to counsel on either side in the preparation of their argument and in the prosecution of their work, as a
5030 matter of course. I haven't any objections to Mr. Haines taking any of those books and records to his office during the interval of the court, unless counsel on one side or the other want them for the purpose of examining them, because I regard them important to preserve. I say this now so that you may understand my attitude on these matters and that there be no friction about it.

Judge CARR: Of course these records are records of the court. There are a great many books and records which have been introduced, and we have, as is the practice in our state court, each party has looked after its own exhibits. We never can get the stenographers to take care of the exhibits. These voluminous records we have kept in the vault. I do not understand that your honor suggests that we file them with the Clerk.

The MASTER: As I said, I have no objections to that, but I want it considered that they are the records of the court in this case. I do not want to require Mr. Haines to keep these records here in the court all the time, because that is unnecessary. I presume the books are used from time to time, and I have no objection to that. But whenever necessary and counsel for either side want them, then it is the duty of Mr. Haines to produce them.

Judge CARR: In order that we may be understood, in view of a little incident which happened, there never has been a time when counsel were refused any of these exhibits. In the case referred to, counsel wanted to take the records to their own office and Mr. Haines felt, under the circumstances, he ought not to part with them.

The MASTER: I understood the attitude of Mr. Haines.
5031 He is not a lawyer and perhaps does not understand these matters as well as we do. For that reason I made that order. I wanted it understood without any question hereafter. It is the practice in our district that each attorney takes care of his own exhibits, but when the opposite attorney needs them, he is entitled to them.

Is there anything further now?

Mr. BYERS: We want to recall Mr. Moul as a witness.

Judge CARR: We want to say, we will be perfectly willing Mr. Moul shall be produced.

Mr. BYERS: We also want Mr. MacOlsen.

Mr. HAINES: I do not know where we would find Mr. Moul now. He is out on the work, as the bailiff states, and we can probably locate him sometime today.

W. F. DOUTHIRT, re-called on part of the defendants, examined by Mr. Byers, testified:

Q. In response to a question last evening you produced what is marked "Transcript from George J. Roberts Construction Record," showing detailed costs of the construction of a gas holder at Des Moines, Iowa, and transcript from George J. Roberts Construction Record, showing detailed cost of construction of oil tank and water gas apparatus at Des Moines, Iowa, and what purports to be a ledger account under the name or title "Des Moines Contract Number 55" what purports to be the ledger account under the title "Des Moines Contract No. 37" and transcript from ledger 8-*a* of the United Gas Improvement Company, showing account of the Des Moines
5032 Gas Company, March 1, 1906, to December 31, 1910, and an instrument denominated Contract Between the Stacy Manufacturing Company and George J. Roberts, October 18, 1902, for the erection of a gas holder and tank on land adjoining gas works of the Capital City Gas Light Company at Des Moines, Iowa, together with certain specifications and blue prints. Are these all of the books and records of the United Gas Improvement Company that were used and kept by that Company in its transactions and relations with the Des Moines Gas Company and the Capital City Gas Light Company?

A. Yes.

Q. The question, Mr. Douthirt, or rather the information that we were trying to secure when you were on the witness stand last, was the manner, or rather the method adopted by the United Gas Improvement Company in closing the account that is represented by the two documents, one the Des Moines contract No. 37, the other, Des Moines contract No. 52. Are there no books or records of the United Gas Improvement Company of Pennsylvania that show how these accounts were closed?

A. Yes, there are.

Q. Where are they?

A. At Philadelphia.

Q. Why didn't you produce them?

A. You didn't ask for them.

Q. This is the question put to you after the examination in which you were asked to state if you knew how these improvements, this holder and tank and governor were paid for—this question was put to you, or request made: "The defendant at this time demands of you as secretary of the United Gas Improvement Company and as secretary of the Des Moines Gas Company, a complete de-
5033 tailed statement covering the building of the holder which has just been referred to, the water gas set, the governor and oil tank and boiler, and a statement showing the items charged on the books of the United Gas Improvement Company, also the original contract made by the United Gas Improvement Company with

Mr. Roberts for the construction of this apparatus, the several pieces of apparatus, and we also demand of you the production before this Master of the books of the United Gas Improvement Company showing the account kept between it and the Des Moines Gas Company of Des Moines, Iowa, covering the year- 1906 to 1910. We also desire to have you to produce for counsel and for the Master and for use in this case a detailed statement from the United Gas Improvement Company of all discounts and rebates on material and supplies furnished to the Des Moines Gas Company by the United Gas Improvement Company during the years 1906, 1907, 1908, 1910." Now have you furnished that statement covering the building of the holder which has just been referred to, the water gas set, tank and boiler, a statement showing the items charged on the books of the United Gas Improvement Company, and the original contracts—you notice that we wanted a complete detailed statement covering the while business and not a part of it?

A. Your question covers two things, a statement and contract. I have to divide my answer between the two. First, as respects the statement, it is furnished you and you have it. Second, as respects what is mentioned here as an original contract made by the United Gas Improvement Company with Mr. Roberts for the construction of this apparatus, the several pieces of apparatus, I am told there never was any such contract.

Q. Well, Mr. Douthirt, to cut the matter short, is the matter that appears upon the two statements, Des Moines contract No. 52 and Des Moines contract No. 57, all that appears upon the books of the United Gas Improvement Company with respect to the holder you were questioned about and the other apparatus?

5034

A. It is, as you request it, a statement showing all the items charged on the books of the United Gas Improvement Company.

Q. That is not an answer to this question. I wanted to know if the items that appear on the two documents here, Des Moines contract No. 37 and the Des Moines contract No. 52 are all of the record that appears upon the books of the United Gas Improvement Company with respect to the holder and the other apparatus about which you were interrogated?

A. So far as any items are charged on the books of the United Gas Improvement Company, as asked for in your statement on page 4923 of the record.

Q. You examined the question so carefully and answered it in the terms that you thought it was put, did you?

A. I tried my best to get for you what I thought you wanted.

Q. Didn't you know the information we were trying to get?

A. I thought I did.

Q. Didn't I ask you a dozen times about the payment for this holder?

A. I thought what you wanted her- was to find out what the holder cost.

Q. The question we were trying to ascertain, you were interrogated about a dozen times was how this holder was paid for; that is what we were interested in now?

A. I told you the money was advanced by the United Gas Improvement Company. You have now the account showing it.

Q. How is it finally closed?

A. I can't tell you.

5035 Q. Why can't you?

A. I don't know.

Q. Did you make any effort to find out?

A. No.

Q. Where did you get this information that was furnished you?

A. That was furnished me on request by the Auditor of the United Gas Improvement Company.

Q. Who did the work?

A. I don't know.

Q. Who did you make the request to?

A. R. C. James, general auditor.

Q. You say you can't tell how this account was closed?

A. I can't tell you.

Mr. Byers: We want to introduce all of these documents for what they are worth, being Exhibits 84-*a*, 84-*b*, 84-*c*, 84-*d*, 84-*e* and 84-*f*; we offer them in evidence at this time.

Excused.

Jansen Haines, recalled on part of the defendants, examined by Hon. H. W. Byers, testified:

Q. I find, Mr. Haines, in examining what the reporter has marked Defendant's Exhibit 84-*d*, which seems to be a sort of a detailed statement of the amounts paid out in the construction of this holder—I notice the payments are divided, apparently in two columns, one headed, "Paid at Philadelphia" and the other headed, "Paid at Works." Turning to the second page of the exhibit, I notice

5036 near the top of the page, where it says, Jansen Haines, report 27, 8-7, and then that is followed with Report 28, Report 29, under dates 8-21 and 8-28, for 168.25 and 77.27; I wish you would explain to the Master what if anything those items had to do with the building of this holder?

A. Will you show me the item?

Q. Yes. That seems to indicate that during the construction of that holder a part of the payments were made here, and I assume from what I read there, that they were made under your direction and that you reported to the United Gas Improvement Company the payments made here locally for the construction of the holder; is that what that means?

A. This payment here, shown on the second page of the exhibit you refer to, on the line following Jansen Haines, Report 27, 8-7, paid at Works, 56.96; then further over on the same line under the heading, Yard Connections, Labor, 56.96, would indicate to my mind that that payment was made for labor on the yard connections—for the pay roll which was paid for labor on the yard connection, and I can only indicate further in regard to that by the

practice under which these payments were made without looking up these specific payments further.

Q. Befoce you do that, report 27, does that mean that was the 27th report with respect to that particular property, that holder?

A. In reply to that I will say that I think you will find the details of these reports and expenditures made under them in another one of these exhibits which has been furnished you. On page 1 of this exhibit, 84-*d*, you will find on the fifth line, Report 1, under date of 10-25.

Q. Then that is what it means—27th report?

A. Each one of these reports were made weekly. Report 1 was made by A. Gilpin, the engineer who was acting for Mr.
5037 Roberts in the construction of this holder.

Q. Was he here?

A. He was here at that time and made that report. That was before I came to Des Moines. The reports which I made as acting for the engineer in the field for Mr. Roberts began, I believe, with Report No. 15, as shown here. I can not testify from my own recollection, but simply from the record as shown here. The money which was used to make these payments was furnished by the United Gas Improvement Company in the form of a draft which was given to me, was sent to me and was deposited to the local account of George J. Roberts, contractor, and these payments were made by checks drawn on that account, as shown on the reports which complete this exhibit.

Q. Have you got any of these reports, copies of them?

A. They are all copied, I think, in this transcript furnished you. These reports were simply weekly statements of the amounts paid out of this fund in the name of George J. Roberts, which payments were made by check, signed by me as engineer for George J. Roberts, contractor.

Q. There are no reports there—there is just a brief statement of the substance of the report?

A. There is a transcript of the report in this record.

Q. Just point out one of them?

A. On Defendant's Exhibit 84-*b* on page 11.

Q. Just read into the record what you claim is the report?

A. As shown under date of August 31, 1903: Disbursements as per report, Jansen Haines, engineer, period July 31 to August 7, 1903—Number 127. Pay Roll week ending 8-1-03. 56.96. Then follows another of the same amount, but it is in detail here in a different arrangement than on the other sheet.

5038 Q. That is what all these reports mean on that exhibit, just what you explained?

A. Yes, sir; I think I explained them.

Q. Where the report was by Gilpin it was a similar report, and where it was by Col. Pratt it covered the same matters?

A. It covered the same matter. Mr. Gilpin was sent here during the early stage of the work, because it required a great deal more personal attention, but during the latter part of the work, when it

was being completed, I acted as Mr. Robert's engineer in place of Mr. Gilpin.

The MASTER: Does this sheet, 84-*d*, relate entirely to the holder or other matters?

A. This exhibit 84-*d* contains the distribution of the amounts paid for the construction of the foundation of the holder and yard connections and also the governor and by-pass, and the extension to office building to accommodate the governor. I think these are all the items that are referred to under that contract No. 52.

Excused.

MACK OLSEN, called on part of the defendants, examined by Hon. H. W. Byers, testified:

Q. I desire to make a little further inquiry with respect to the valuation of the property down here. I want to inquire if you were furnished with any statement, or the testimony of any witness with respect to the valuations at any time in this case last
5039 spring or summer?

A. I don't understand just what you mean.

Q. Were you given any information by anybody with respect to the valuation of this property and what other persons had valued it at, sometime last summer or spring?

A. Yes, sir.

Q. Just when was that furnished you?

A. I couldn't tell you just when it was.

Q. About how many weeks before you were called here to testify?

A. Some—quite a little time.

Q. What form was that in; what shape was it furnished to you in, in typewriting or was it a study in the valuation of property; what was it called?

A. I think it was simply a typewritten statement of my own appraisal as I remember, of the different parts there, for me to look over again. I don't remember whether anyone else's was furnished me or not. I think it was only my own.

Q. Do you remember of having a statement of it out and examining it while coming down from home on the street car once last summer?

A. Possibly, yes sir.

Q. That was before this case was called?

A. Yes, sir.

Q. Had you given some testimony before that; had you gone somewhere and stated just what your valuations were prior to that time?

A. Yes, sir.

Q. Who else was present with you?

A. I think Mr. Kauffman and Mr. Read.

Q. Now when this statement was furnished to you, do you remember at this time just how many persons' names appeared in the statement as having fixed values and what the values were?

5040 A. No, sir.

Q. Do you have that statement yet?

A. I think not; I don't think I have any such statement.

Q. Was it destroyed?

A. I don't remember of any statement except the one that I had was called cross examination of myself on my own valuations.

Q. Who cross examined you?

A. Mr. Read.

Q. Was Mr. Kauffman present and was he cross examined at the same time?

A. I think he was. I don't remember. I came in a little late on my appointment. I think he did answer some questions.

Q. Isn't this true, that after you and Mr. Kauffman and the other gentlemen who were called there, except Mr. Mathis, weren't you furnished a transcript of what was taken down at the time you and the other gentlemen were, as you call it, cross examined about their valuations and wasn't that what you had on the street car the day I refer to?

A. I think possibly it was.

Cross-examination by W. L. READ, Esq.:

Q. Mr. Olsen, you appeared by appointment for the purpose of going over the matter of your testimony with Mr. Read, one of the attorneys?

A. Yes, sir.

Q. And you were examined, that is to say, you were asked questions and you made answers?

A. Yes, sir.

Q. That was taken down in shorthand, was it, or was it not?

5041 A. I think so.

Q. Now after your examination, if you call it that, you were given a copy and transcript of your own testimony?

A. Yes, sir.

Q. Of your own statement as you had given it that day?

A. Yes, sir.

Q. Were you given anything else than a copy of your own statement?

A. I think not. That was my impression, that was all I had. There may have been other papers, but my impression is that is all that was furnished me.

Q. That is all that you now have any recollection of, is it?

A. Yes, sir.

Q. Was that given to you upon your request or how did it happen to be given to you?

A. Just handed to me.

Q. Were you or were you not told when the statement was given to you that it was for the purpose of being looked over by you so that you could make any corrections or changes that you desired to make; was that statement made to you?

A. Yes, sir.

Q. Did you ever see a transcript or copy of the statements of any

other persons relative to real estate values other than your own statements, according to your recollection now?

A. I think I did; I am not sure.

Q. You think you did?

A. Yes.

Q. When do you have the impression you got a copy of such a statement, before or after your own statement?

A. I think at that time that I had seen this in Mr. Read's office, I am not sure as to that; but I have an impression I had seen

5042 others.

Q. Do you recall whose statements you think you may have seen?

A. No. It may have been verbal statements that was made, that I got the impression or the idea of some one else's values on the properties. I don't remember whether they was verbal statements or typewritten statements.

Q. Was that before or after you had made your own statements?

A. It was after.

The MASTER: What do you mean, when you gave evidence here or before that?

A. No, sir; before that. I have got a bad lip here and I can't talk very well.

Q. After you had given your testimony last summer here in court, were you furnished with a copy or transcript of your testimony?

A. Yes, sir.

Q. That was for what purpose?

A. To see if everything was there as I said it, or as I understood it.

Q. I didn't know but what you might have confused what you received at that time with what you previously received; are you in any confusion upon that?

A. I don't remember receiving anything but this copy of my own statement originally, and then this statement after the testimony in court, a transcript of that evidence.

Excused.

5043 B. F. KAUFFMAN, re-called on part of defendants, examined by R. O. Brennan, Esq., testified:

Q. I want to inquire whether or not you have during this trial and before this trial assisted the Des Moines Gas Company in securing evidence or witnesses with respect to the value of real estate, to any extent?

A. Yes, sir.

Q. What interest have you taken in that matter?

A. I have consulted with the attorneys on several occasions. I have consulted with real estate men, men who understood the value of real estate in Des Moines. I have argued the point a great many times with a great many people, to determine in my mind what the values

were, and to assist me in arriving at my valuations to prove to myself as near as I could that I was sound in *in* my judgment.

Q. And did you impress your views upon others with respect to valuations to the extent of arguing the points?

A. Yes, with a great many other people.

Q. Did you have any discussions with any of the witnesses in this case who have testified with respect to valuations?

A. Yes, sir.

Q. And the discussions which you had were along the lines which you have suggested in your testimony now?

A. Yes, sir.

Q. Was any attempt made, Mr. Kauffman, to secure a statement from the witnesses in advance of their being called in this case?

A. Why, there was a general consultation with the witnesses. I have had conferences with, I don't remember who the witnesses were, but I have had conferences with probably some four or five
5044 of the witnesses.

Q. With Mr. Olsen?

A. I have talked to Mr. Olsen.

Q. Mr. McCutcheon?

A. Yes, sir.

Q. Any other witnesses that you recall having talked with?

A. I think that I talked with Mr. Bolton also.

Q. And in the conferences to which you have called attention, was any effort made to reduce their statements to writing, short hand reports made of their testimony, or of their statements?

A. I think so.

Q. To what extent was a record made of their statements with regard to real estate valuations?

A. I don't know to what extent. There was a general consultation at some two or three different occasions, and some of those statements were reduced to writing; I am quite sure they were, in fact.

Q. Taken down by a shorthand reporter?

A. Yes, sir.

Q. And questions propounded and answers given in response?

A. Yes, sir.

Q. And witnesses cross-examined?

A. I am inclined to believe they were to some extent. I don't quite remember the full details of that. I know that I was cross-examined to some extent myself. I don't remember about the others.

Q. Now, Mr. Kauffman, were the shorthand notes translated or transcribed?

A. Some of them were that I saw.

Q. Copies furnished to any one?

5045 A. Mine were furnished me.

Q. Any other testimony furnished to you?

A. No, sir.

Q. Do you know to what extent the other witnesses were furnished with testimony or statements?

A. I cannot say except that I am assuming what statements they made were taken down and furnished to them, the same as mine were furnished to me.

Q. I understand you were present at the different conferences statements were taken?

A. Yes, sir.

Q. Do you remember being present all the time when all were taken?

A. I don't believe I was present all the time.

Q. The testimony was taken all at one time or different occasions?

A. There were different days. I think that I heard the statements Mr. Bolton made, a part of them, and I think I heard the statements Mr. Porter made.

Q. Was Mr. Mathis' statement taken, do you know?

A. I don't know.

Q. Were you present any time when he gave a statement?

A. No, sir.

Q. About what was the date of the conference to which you have referred?

A. Oh, I had conferences running from the first of December, 1910, up to, I expect up to the latter part of this spring or summer, first of the summer possibly.

Q. Well, I want you to be more specific, or have you to be more specific with reference to the time the statements were taken down in shorthand?

A. I can't give you those dates.

5046 Q. About the time?

A. Well, there was very little consultation between the middle of January and the middle of May. The statements were taken, I would say, between the first of December and the 15th of January, and between the first of May and the middle of June, about as nearly as I can give it to you.

Q. Let me see if I can refresh your recollection. There were some affidavits filed in this case along about the latter part of December or first of January this year?

A. Yes, sir.

Q. Now, of course you had a conference with respect to those?

A. Yes, sir.

Q. Then following that you secured from the other witnesses statements, did you not, following the hearing at Council Bluffs in January?

A. Well there were several witnesses who gave their statements as to the value of the property and that statement was given between the first of December and the 15th of January, as near as I can remember it. Those statements were not referred to that I know of until probably the middle of May, and at that time, at least a portion of them who made those statements were asked to confirm them in an argumentative way, to show why they had given those values.

Q. Was that the time when they had the conference at which the statements were taken down in shorthand and afterwards transcribed?

A. Yes, sir.

Q. Mr. Kauffman, were you employed by the Des Moines Gas Company with reference to this matter of assisting in securing testimony?

A. I don't know whether I was employed; I certainly expect to render a bill.

5047 Q. Have you rendered a bill up to this time?

A. No, sir.

Cross-examination by W. L. READ, Esq.:

Q. As I get it, there was first a statement, perhaps in the form of an affidavit, giving the values as fixed by the different persons, and that was the first form?

A. Yes, sir.

Q. And the second form of the statement was made and given in response to questions asked that were taken down in shorthand, and so far as your statements were concerned, a copy or transcript was given to you?

A. I had a copy of the transcript of my own statements.

Q. You spoke about cross-examination, you have in mind, do you not, that questions were asked witnesses in such a manner as to develop the basis and the soundness or lack of soundness of the information and the opinions of the witnesses?

A. Yes, sir.

Q. You refer to cross-examination in that sense only?

A. I assume it was merely an argument to establish the fact as to whether or not we knew what we were talking about.

Q. To test the soundness of the judgment?

A. To see whether we were good real estate men or not.

Q. In other words, you got the idea that the attorneys wanted to know something about how you knew or thought you knew, or what you thought you knew on the subject and took that plan of getting the information?

A. Yes, sir.

5048 Redirect examination by Mr. BRENNAN:

Q. Do you remember how many witnesses were examined in this manner?

A. I think that Mr. Bolton was, and Mr. Porter, Mr. Olsen and Mr. McCutcheon, to the best of my memory.

Q. Anyone else?

A. I think not.

The MASTER: They were all there together in the room?

A. No; I think that I was present at one time when Mr. Olsen and Mr. McCutcheon were there. I think that is the largest number that conferred at any one time.

Q. Did you interview any persons on the subject of real estate values who were not questioned or statements from whom were not received?

A. Yes, sir.

Q. How many?

A. Oh, I couldn't answer that question. I discussed it very generally with a great many people.

Q. With a view of having them testify or make a statement?

A. With a view of assisting me in determining whether or not my judgment of the facts was sound.

Q. Well you talked with a number of persons, and from the number with whom you talked you selected those who gave their statement.

A. I think that there was only one witness with whom I discussed the thing—well I couldn't say on that, Mr. Brennan. I discussed it generally with all the witnesses as wel las with a great many others who were not witnesses.

Q. What I want to know is this: you were endeavoring of course—not criticising you for it—you were endeavoring to secure witnesses who could give their valuations of the real estate in this case, witnesses who would be favorable or as favorable to the Company
5049 as you could secure?

A. No, sir.

Q. You did talk with a number of persons?

A. The only idea I had was simply to determine as nearly as possible what the actual value of the property was and to discuss that with the people who I thought had better judgment along that line.

Q. You secured from them your notion of the value of this real estate?

A. Yes, sir.

Q. You did that practically in every instance?

A. In the instances that have been mentioned here, yes.

Q. You recommended the persons whose statements were taken?

A. I couldn't say definitely as to that.

Q. Did you make any recommendations?

A. Yes, sir.

Q. To Mr. Haines or anyone else?

A. Yes, sir.

Q. And did your recommendations include any other persons than those who testified on the subject of the real estate valuation?

A. I think the only recommendation I made was the statement I made to Mr. Haines and Mr. Read, that Mr. McCutcheon was the best posted real estate man in the state of Iowa, and by all means they should secure his testimony.

Q. You had talked with Mr. McCutcheon about the matter before you made the recommendation?

A. No, sir.

Q. After?

A. After.

Q. Do you have a copy of the testimony, Mr. Kauffman, that was given you at or about this time?

A. I couldn't say; I don't believe I have now.

5050 Q. If you have it, do you have any objections allowing us to examine it?

A. I have no objections to your examining it if I have it in my possession. That would be a matter for you gentlemen here to decide rather than for me to decide.

Q. If you have it in your possession, you have no personal objection of letting us have an opportunity to examine it?
A. I am not afraid of what I say in writing as well as verbally.
Q. Will you make a search and let us have it?
A. I will.

Redirect-examination by Mr. READ:

—. Mr. Kauffman, this conference, or at least the conference when the statements in writing were taken, was with the attorneys of the Gas Company?
A. Yes, sir.
Q. Now with respect to your interviewing people—you had a definite idea with respect to the value of this real estate, did you?
A. Yes, sir.
Q. Now, for instance, Mr. McCutcheon, did you interview him at any time?
A. Yes, sir.
Q. Did Mr. McCutcheon have a definite idea?
A. Yes, sir.
Q. Was that inspired by you or was it one that he entertained?
A. His opinion was made up entirely independent of my own. I have forgotten his total appraisal, but I remember very distinctly arguing for an hour or two as to the value of one section of the piece we have never agreed upon.
5051 Q. With respect to his valuations he had his own conception?
A. Yes, and I had mine.
Q. Take Mr. Bolton, did he have his own conception of the values, or was it inspired by you?
A. His conception was his own.
Q. Is that true of the other witnesses who were examined?
A. Yes, sir.

Redirect-examination by Mr. BRENNAN:

Q. Were these arguments or discussion mainly for the purpose of seeing if you could agree upon the values of the property?
A. Certainly not.
Q. What was the purpose of the discussion?
A. The purpose of the discussion was to confirm what we thought was the proper value. The discussion was beneficial to me.
Q. An exchange of views with respect to the property in question?
A. Yes, sir.
Q. And to endeavor to secure a modification of the views of some particular witness?
A. Not necessarily.
Q. Did you secure a modification of the views of any witness?
A. I think not.
Q. By reason of these discussions?
A. I think not.

Q. How many times did you talk with Mr. Porter?
A. I think once, all I can recollect.
Q. Did Mr. Porter give one or more statements?
A. Only one as far as I know. I am not sure whether he gave any yes, I guess he did give one.
5052 Q. You think but one, as nearly as you now remember?
A. I believe that is the case.

Recross-examination by Mr. READ:

Q. You have been asked to account for the discussion and arguments you real estate men had. I suppose it is true of real estate men, as it is of others where there is a difference of opinion and judgment, each one is trying to maintain the correctness of his own?
A. Yes, sir. The basis of making up values is so different with different men. One man may say a piece of property is worth ten thousand dollars and give his reasons. I may say it is worth ten thousand dollars and give different reasons, and we both arrive at it from different conclusions, and the additional reasons I give the other man and those he gives me may assist us in confirming in our own minds that we are correct.

Excused.

At this time, 12 m. an adjournment was taken until 1:30 p. m.

5053 1:30 P. M., WEDNESDAY, *November* 1, 1911.

Complainant offers complainant's Exhibit No. 93, being a statement of revenue and cost of operating for the ten months ending October 31, 1911. This is subject to verification by defendants if they desire to verify it.

HENRY MOUL being recalled and examined in chief — Hon. H. W. Byers, testified as follows:

Q. Who if you know made up the list of items of mains and services that was used in the inventory?
A. Mr. Walters made it up, I believe that was the name.
Q. And what part did you have in it?
A. He got the information practically from me.
Q. You furnished the information upon which Mr. Walters made up the inventory? Any way you furnished the information upon which he made up the list of the distribution system of pipe and all that sort of thing?
A. Yes, sir.
Q. I find in the inventory under the head of street mains distribution system 2 and one half inch and under 33947 feet. Now how much of that is abdndoned pipe, that is not in use now?
A. Well I don't think there is any of abandoned.
Q. Are you sure about that?
A. Well no I could not say positively to a foot or two. If any of it has been abandoned it has been replaced.

Q. What became of the pipe that was abandoned?

A. When we abandon a piece of pipe we leave it in the ground.

COURT: I understand you to say none of this two and a half inch pipe has been abandoned?

5054 A. It is all in use practically. Maybe a small portion of it possibly but not very much.

Q. There is 1835 feet of this two and a half inch pipe listed here as being under brick and concrete Qavement. Where is that do you know?

A. Two and one half inch?

Q. Two and one half inch pipe.

A. I don't know of it at all any two and a half inch.

Q. There is 3300 feet of two and a half inch pipe listed in here as being under pavement brick and sand, do you know where that is?

A. I don't know of any two and a half inch pipe at all.

Mr. READ: That is two and a half and under isn't it?

Mr. BYERS: Two and a half and under.

A. That is different.

Q. Where is any of this 1835 feet of this two and a half and under *under* brick and concrete, where is it located?

A. Some on Sixth street between Cherry & Mulberry.

Q. In use now?

A. Yes, sir.

Q. How much of it is there?

A. I could not just exactly say, possible half a block.

Q. Did you furnish this information that you gave in writing?

A. No, sir.

Q. How did you furnish it?

A. Verbally outside of what they had of record in the office. They had a record in the engineer's office that was practically correct with a few exceptions and we corrected those and this inventory was supposed to be a corrected copy of their records.

Q. This pipe you say is down here between Mulberry and

5055 the other streets you mentioned, what size is it?

A. Two inch.

Q. And is that being used now as a main?

A. Yes, sir.

Q. That is not abandoned?

A. No, sir.

Q. Where is the rest of this 1800 feet?

A. Well it is pretty hard to just remember that from memory.

Q. That is the way you gave it to this man Walters from your memory?

A. That is true, but we took it a different way from that because he took a streeet at a time and asked me what was on the street I did not jump all over town and tell him where was a piece here and there. If you will ask me any street in town I will tell you any size in that street.

Q. All right I will ask you a street or two. What is the size of the pipe on 32 street, the main on 32d street?

A. From where?
Q. Thirty Second street?
A. What part of 32 street?
Q. Any part of it.
A. We have got four inch and two inch on 32nd.
Q. How much four inch?
A. I could not tell you that amount laid on each street.
Q. How did you get at it?
A. That goes in bunches, you take a section of it today and a section prabably a year from today and add it together and get the total.
Q. Who was Mr. Walters, do you know who he was?
A. No, sir; I don't.
5056 Q. Did he know anything about the distribution system except what he got from you?
A. He only knew what was in the engineer's office and what information I gave him. He tested it out in some instances, I don't know how much to prove whether it was correct or not.
Q. Take for instance 25th street. Do you know what sized main is in the ground on 25th street?
A. Four inch.
Q. How many feet of it?
A. Well there is several blocks of it on 25th street.
Q. When was it put in?
A. 25th street was put in I think in 1896 the first of it.
Q. The four inch pipe?
A. Yes. Then it has been added to since that time.
COURT: 1896 or 1906?
A. 1896.
Q. What size pipe was in there before you put in the four inch pipe.
A. Wasn't any in on 25th street.
Q. None at all?
A. No, sir. Well might have been a few around the corner, Cottage Grove or University or something of that kind, a short piece taking care of a house.
Q. Where you put in four inch pipe for the purpose of replacing inch and a half pipe, I wish you would tell us how many places you know of that was done?
A. Well I don't know as I can call that to memory right now. I can't call an instance to mind now where we traded.
Q. Is that because your memory is not clear about it?
A. My memory is clear enough.
5057 Q. There was a good many places wasn't there?
A. Well no, not very many. Only as I said before little short pieces of that kind. There was none of any particular length whatever.
Q. Well let's see if you remember one particular instance. You know all about the pipe that is laid in west Fourth street don't you?
A. Yes, sir.
Q. What kind of pipe is there there?

A. There is four inch, six inch and there is a little piece of three inch. Now by the way though there is a pi-ce of inch and a quarter pipe that used to run from the Rock Island down possibly to the Q that was abandoned for four inch.

Q. That is, it was substituted, there was four inch pipe put in and inch and a quarter abandoned?

A. Yes, sir.

Q. And it is there yet?

A. Inch and a quarter is.

Q. There yet?

A. Yes.

Q. And not being used?

A. No, sir.

Q. First tell me when you put in the six inch main on west Fourth street?

A. I can't tell you that sir.

Q. Can you give some idea?

A. No, sir; it was here when I came.

Q. The six inch pipe?

A. Yes, sir.

Q. *There* was not put in there then in 1906?

A. Not six inch pipe.

5058 Q. No six inch pipe at all?

A. It was all in Fourth street. There was a little pi-ce down here by Locust street which was put in.

Q. I find in the books of the company a memorandum of 200 feet of six inch pipe on west Fourth street to take the place of 200 feet of three inch pipe.

A. That is down by Locust street.

Q. Where?

A. Locust and connected with the six inch coming from Walnut.

Q. What did you do with the three inch pipe?

A. Left it in.

Q. Been any substitution since then?

A. No, sir; tha- is the last put in on Fourth street.

Q. Give us your judgment of how many pieces of main in these different streets have been abandoned in the last five years.

A. That is two and a half or less?

Q. Where you put in larger pipe and abandone- the smaller.

A. In the last how many years?

Q. Since 1906.

A. Well I would judge to take the small pipe that is not in use that has been left in the ground, I would judge that there is possibly a couple of thousand feet, something like that.

Q. You know where east 15th street is?

A. Yes, sir.

Q. What size pipe is in that street?

A. A 12 a 3 and a four.

Q. When was the 12 inch put in?

A. I can't give you all the dates of those.

Q. Can you tell anywhere near?

A. I don't keep them that way.

5059 Q. What was the 12 inch *Q*ipe put in for, substituted for some smaller pipe?

A. No, sir; to increase the pressure.

Q. Increase the pressure what for, to carry gas to the smaller pipe?

A. We had in a main on 15th street and served several little *syubs* running north and south of Court Avenue and we run this 12 inch pipe to circulate across to 15th over to Hubbell and over to 14th and tied it in with Washington so as to get a circulation and increase the pressure in that territory.

Q. That didn't have anything to do with the smaller pipe.

A. Not a thing.

Q. Was there some other street about the same time you put in larger pipe to increase the pressure?

A. Did it on east Court Avenue.

Q. And on Fourth street?

A. No, we did not.

Q. You know where east Washington is?

A. Yes, sir.

Q. What kind of pipe is under that street?

A. Four inch and eight inch.

Q. When was the eight inch put in?

A. Well I would say about four years ago, something like that.

Q. How much four inch pipe is there on that street?

A. One block.

Q. In which block?

A. Between Pennsylvania Avenue and east Ninth street.

Q. And is it in use now.

A. Yes, sir.

Q. Is there any smaller pipe in that street?

A. No, sir.

5060 Q. What became of it?

A. As I said before the small pipe that was in was used to satisfy a corner house and it is still in use, when we put the four inch in there we didn't remove that, we left it still in use.

Q. What did you do when you put in the eight inch?

A. The eight inch we did that to connect up the but ends on Ninth street, 12th street and 13th and to connect with the twelve inch on 14th. Run that as a header to increase the pressure.

Q. What did you do with the inch and a quarter pipe on that street?

A. In some cases cut it out where the new main reached, connected with the new main and in other cases left it to supply the house it was supplying.

Q. Is it being used there yet?

A. Most of it is.

Q. All the inch and a quarter?

A. Yes. A very small portion of it was abandoned.

Q. When?

A. At the time we put in the eight inch.

Q. Do you know how much of it?

A. Oh I would say possibly a hundred feet maybe.
Q. That is on east Washington?
A. Yes, sir.
Q. It is your memory it was about 100 feet?
A. Yes, sir.
Q. On Woodland, what size pipe is used there.
A. There is a four and three and a sixteen.
Q. Which was put in first?
A. The three.
5061 Q. How much of it is there in now being used?
A. Well I think that three inch starts at 12th street and ends at 15th. Then starts four inch running to 19th.
Q. About how many feet of three inch pipe on that street?
A. The distance between 12th and 15th street-, I would say about 800 feet guessing at it.
Q. Is that the amount you gave to this Mr. Walters?
A. I could not say to that.
Q. How many feet of four inch pipe?
A. I didn't give him any feet, gave him the lay of it and he scaled the map to get the number of feet.
Q. You just tell me where it was then he figured out the feet himself.
A. He sc*la*ed the map and got the exact amou-t and in some instances went and measured the block to see if it corresponded with the map.
Q. Do you know how many feet of four inch pipe on that street?
A. The four inch pipe runs from 15th street to 21st.
Q. About how many feet?
A. I would say pretty close to a thousand feet.
Q. How much of 16 inch pipe?
A. Sixteen on Woodland Avenue from 19th to 25th that would be about 15 or 16 hundred feet.
Q. You know where Ridge Road is?
A. Yes, sir.
Q. How much pipe is there out there and what kind?
A. Ridge road, what portion of that do you term Ridge Road, I am kind of mixed up in that territory.
Q. As I understand that street it is the one that runs up there by where Mr. Clark lives, north of where he lives.
5062 A. Just a block as I understand. 28th and what used to be Linwood Road, 28th to 29th.
Q. What kind of pipe have you got in there?
A. Four inch and inch and a half in there.
Q. How much of each do you have in there?
A. Four inch ties in at Linwood, 29th and ties in 28th, I would say 600 feet in that block. T*g*e inch and a half goes from Linwood out to about half way, I would say about three hundr*e*e feet of that.
Q. Isn't any inch and a half pipe there at all.
A. Yes, sir.
Q. You sure about that?
A. Yes, sir.

Q. How did you satisfy yourself there was?
A. Because I put it there.
Q. Put it in yourself?
A. Yes, sir.
Q. When?
A. That was quite a long while ago. That was way back in 1891 or '2 that went in there, a good ways back.
Q. Now how many feet or how much of that inch and a half pipe did you give to this Mr. Walters to go into the inventory for Ridge Road?
A. I think I have it all to him.
Q. About how much was it?
A. I think about 300 feet if I remember right.
Q. Inch and a half.
A. Yes, sir.
Q. How much four inch? Did you say about 600 feet in that street?
A. I think the block is about 600 feet long, maybe less or more.

5063 Q. You have every facility now for answering these questions for me and you are just as certain about what you say about it as when you furnished the information for Mr. Walters?
A. I am using the same method exactly.
Q. Where is East H street?
A. I can't tell you.
Q. If you can't tell, how could you give the information about the pipe on that street?
A. I didn't give him any information on H street, he had another name for it.
Q. East H street.
A. Never heard of it.
Q. Don't know where it is?
A. No, sir; he gave another name, never gave it that way.
Q. Have you any pipe at all on Easy H street?
A. I don't know where H street is.
Q. You furnished information about it?
A. Yes, that is all true, but it was under another name, it was not H.
Q. What name do you think it was?
A. I don't know. If you tell between what streets it is I could tell you.
Q. You know where I street is?
A. Yes, sir.
Q. Where is it?
A. I know where it used to be.
Q. Can't you locate H street by I street?
A. No, sir; I can't.
Q. Mr. Walters didn't know anything about the streets?

5064 A. No, he didn't know, he only had the records and the new changes. I am not familiar with those new changes of names of streets.

Q. What kind of pipe is on I street?
A. Four inch.
Q. And how much of it?
A. I would say that block is pretty close to 400 feet long.
Q. How much pipe on the street?
A. Before 400 feet about.
Q. 400 feet of four inch pipe?
A. I am only guessing at the width of these blocks. I may not get it correct.
Q. I am trying to get the same information you gave this man; if you guessed at it then guess now.
A. I didn't guess at the length of the blocks.
Q. Is there any other pipe on I street except this 400 feet of four inch pipe?
A. A little piece of inch and a quarter satisfying a corner house.
Q. How much of that?
A. Possibly 75 feet maybe.
Q. No other kind on that street?
A. No, sir.
Q. You know where Francis street is?
A. Yes, sir.
Q. What kind of pipe on Francis street?
A. Four inch.
Q. How much of it?
A. Well it runs up from—there is about 700 feet I guess over there.
Q. 700 feet of four inch pipe?
A. I can give the beginning and ending of it the same as I did him and you can scale the map to get the feet the same as he did. I am not burdening my mind with feet in the street.
5065 Q. You know a great deal more about that than I do.
A. I will give you the beginning and ending of it and you can determine how many feet in it. I have got to guess at the width of the blocks from memory, but if I had the map here so I could scale it I could give the same information I gave him.
Q. You did scale the map and give him the information of the scaling?
A. No, sir; gave him the information of the beginning and ending point and he scaled the map and got the number of feet.
Q. Give me exactly the same information you gave Mr. Walters about Francis street and I will be satisfied.
A. Francis street is four inch, starts 20th street and goes east to the alley, about 150 feet east of the alley turning south on the top of the hill.
Q. Is that all the information you gave him?
A. Yes, sir.
Q. And from that he made up the pipe that is on Francis street?
A. Yes, sir.
Q. Now Witmer street, you know where that is?
A. Got me guessing again.
Q. You don't know where Witmer is?

A. Not by that name.
Q. This pipe was not put in very long ago?
A. That is all true too.
Q. How did Mr. Walters find out about this street?
A. That pipe might have been put in there before the names of these streets was changed. Tell me what streets it is between. These new names bother me considerable.
Q. I am talking about 1907.
5066 A. I don't know any street by the name of Witmer.
Q. You know where Hubbell street is?
A. Yes, sir.
Q. And Hepburn?
A. That is another street I don't know.
Q. And McCormick?
A. I am not very familiar with that territory.
Q. You know where Sampson is?
A. I am not right certain whether I do or not. It is over northeast in that territory but I could not pick it out.
Q. You know where High is?
A. Yes, sir.
Q. And know where 8th is?
A. Yes, sir.
Q. What kind of pipe on 8th street west?
A. On 8th street you have got two, four and eight. Take four and then you have got six, then you have got four again.
Q. How much four inch pipe is there on 8th street?
A. Well sir, your four inch pipe on 8th street starts at Walnut and goes to Grand, then it jumps and goes to Park and Chestnut and it runs four inch to School. Then it is six inch from School to Forest avenue and four inch from Forest avenue to the other side of Franklin. Now the number of feet I could not tell you.
Q. You have given me now the same information you gave Mr. Walters?
A. Yes, starting point and ending.
Q. And it ended the other side of what street?
A. The other side of Franklin it ends.
5067 Q. You know where Guthrie street is?
A. Yes, sir.
Q. Where is it?
A. It comes right along the north side of Union Park, begins at what they term now North Union, and it goes east. I think it is opened up possibly to 15th.
Q. It is a short street?
A. About four or five blocks long now.
Q. What kind of pipe in use there?
A. Four inch.
Q. Anything else but four inch?
A. A little strip of inch and a quarter satisfying two services.
Q. How much inch and a quarter?
A. I would say both jobs together was possibly 150 feet.
Q. You mean both four inch?

A. No, the small jobs.
Q. Both small jobs was about 150 feet?
A. Yes, sir.
Q. You have given all on that street?
A. Yes, sir.
Q. The same information you gave Mr. Walters?
A. No. I didn't give you a piece of four inch on Guthrie running from East Ninth street west about 250 feet. Then we have got a four inch this side of 12th going to 14th, four inch. Now you have got all that is on Guthrie.
Q. That is all that is on Guthrie?
A. Yes, sir.
Q. You know where Terrace Drive is, do you not?
A. Well that is in one of those—Terrace Drive, is what they call Forest Drive now.
5068 Q. No, I think Terrace Drive and Forest Drive are two different streets.
A. Comes right from Hubbell's barn and goes to the street Byers lives on?
Q. No, running off of Grand Avenue between Hubbell's and Fullertins.
A. Well they call that Forest Drive from Grand Avenue.
Q. How much pipe and what kind is on Terrace Drive?
A. That starts at Forest Drive, I suppose it would be, and runs around to go east and then go south down to, I don't know what the name of the street is that Major Byers lives on ain't that Terrace Drive?
A. Yes.
A. There is about 350 feet in there, come down the first block whatever it is.
Q. That is the best you can tell about it.
A. Yes, that comes from one block to the other.
Q. Saylorville, Road, do you know where that is?
A. Saylorville Road, is the same as Eastern Boulevard.
Q. The same as Penn. Avenue isn't it part of the way?
A. Oh yes, that is right, Penn. Avenue.
Q. Do you know what kind of pipe on that street?
A. Penn. Avenue comes down to Locust and you get three and four and go to six, then you have got inch and a half.
Q. How much inch and a half?
A. Well now let me see, there is about pretty close to 250 feet I guess, across three lots. About 250 feet I guess.
Q. That is all the information you have about that street?
A. That is all.
Q. Can you give the names of streets in Valley Junction?
5069 A. I am not very familiar with them.
Q. You have charge of that territory do you not?
A. I have as far as extension and new service work is concerned.
Q. You don't know the names of the streets your distribution system is on?

A. I know the names of the streets but I most generally have got to go out there to get them twisted around which comes first.

Q. You gave Mr. Walters information about Valley Junction.

A. No, sir; I think he took that off of my returns that I had made from Valley Junction.

Q. He got information either from you or from records you had made?

A. Yes, sir.

Q. You can't now give me the streets?

A. I can give you a good many of them.

Q. You know where Ascension street is?

A. Yes, sir.

Q. Is that in Des Moines or Valley Junction?

A. That is in Des Moines.

Q. Where is it?

A. It is up this side of North street.

Q. How much pipe have you got on that street?

A. We haven't got any.

Q. Is Scott street in Valley Junction or Des Moines?

A. It is in Des Moines.

Q. And Railroad Avenue is that in Des Moines or Valley Junction.

A. Both, got one in Valley Junction and got one in Des Moines.

Q. Where is Railroad Avenue in Des Moines, along the tracks?

A. Down by the Rock Island line from Third to Fourth.

Q. Wilbut street, where is that.

5070 A. I can't tell you that. Wilbur is a new one on me.

Q. And Montgomery? What pipe have you got on either of those?

A. I could not tell you.

Q. Searles street, you know where that is.

A. Yes, sir.

Q. You know what pipe you have got there?

A. Yes, sir.

Q. Tell us about that.

A. Got four inch running from Easton Boulevard north to I guess it goes about a thousand feet north of Easton Boulevard.

Q. Is that all?

A. All we have got on Searles.

Q. Do you know where State street is?

A. Yes, sir.

Q. What kind of pipe have you got in on that street?

A. Six, four and 12.

Q. When was the 12 inch pipe put in?

A. About four years ago I believe, something in that neighborhood.

Q. How much.

A. About four or five years ago.

Q. What was it in for.

A. Increase the pressure.

Q. Any other purpose?

A. No, sir.
Q. Sure about that?
A. That is all it was put in there for.
Q. Did it take the place of any other pipe.
A. No, sir.
Q. Sure about that?
A. Yes, sir.
Q. And no other pipe was removed when it was put in?
5071 A. No, sir.
Q. Nor abandoned?
A. No, sir .
Q. Sure about that?
A. Yes, sir.
Q. What other pipe is there on that street now?
A. Well there is six four and 12.
Q. Is that all.
A. That is all the sizes on State street.
Q. All that is in use there?
A. Yes, it is all in use, every bit of it.
Q. That is the only kind of pipe there is there?
A. That is on State street yes.
Q. This 12 inch pipe that is on State street, was it all put down at the same time?
A. No, sir.
Q. Put down at different times.
A. Yes, four or five different times.
Q. I find this kind of a memorandum, 300 feet of 12 inch main on State street, 200 feet on inch and a quarter pipe to be taken up or abandoned. Do you know anything about that?
A. Yes, sir.
Q. Then there was some 12 inch main there substituted for smaller mains?
A. Didn't substitute it, didn't take it up.
Q. What did you do with it?
A. Left it there, in use how.
Q. How in use?
A. Because satisfying houses it did satisfy.
Q. Who is served from there now, give the name of one
5072 person.
A. I can't do it. I can't tell you that, I can take you over there and show you.
Q. Don't you know how it is hooked up over there?
A. Yes, I can show you, but I don't know the man's name that lives there.
Q. You don't know the people, is that what you mean?
A. That is what I mean.
Q. Here is another item, 370 feet of 12 inch main on the same street, 175 feet or inch and a quarter pipe to be taken up or abandoned, what do you know about that.
A. That runs west from 13th street, that inch and a quarter was abandoned.

Q. That was actually abandoned. Then there was some substitution there?

Q. Well just on that block.

Q. So that had slipped your memory?

A. Well I hadn't got down the street that far.

Q. Do you remember of overhauling any of the mains of the city recently where paving was about to be done?

A. Yes, sir.

Q. About how much of the work do you remember has been done?

A. Oh we have done—well how far back, what do you mean by recently the last year?

Q. Within the last four or five years.

A. Oh we have done an enormous sight of it.

Q. Give us some idea about the enormity of it.

A. I think the last four or five years. I think Locust street was overhauled from the river to 10th street or 8th, 10th I guess it was, and we overhauled Grand Avenue, you might say from the river too. I don't know as that would be the last four or five
5073 years but it is right recently anyhow just ahead of the pavement and we overhauled 28th street from University to Forest, overhauled Forest Avenue ahead of paving from 27th street to 36th I guess it was, we overhauled 34th from University to Forest and overhauled 27th street—31st street from Kingman I should have said, to Forest, 28th street it was from University to Forest and then 31st street from Kingman to Forest and Cottage Grove Avenue from 31st to 39th.

Q. Any others?

A. I don't know whether I can bring them all to memory just now or not.

Q. How long had this Locust street pipe been in before you overhauled it?

A. That was here before I came. I can't tell you its age.

Q. Been there a good many years.

A. Yes, sir. That is a portion of it. A portion of it is new, from Second street up to Fourth is new.

Q. Put that in new?

A. Put that in at the time just ahead of the paving. The rest of it is old.

Q. This on 28th street could not have been very old could it?

A. No, that I would say was put in about 1897, somewheres in there.

Q. You overhauled it in the last three or four years?

A. Yes, I have.

Q. Ahead of the paving?

A. Yes, sir. We make that a practice as a general thing.

Q. That has been your practice right along ever since you have been with the company?

5074 A. Yes, sir.

Q. Kingman is comparatively a new street is it not?

A. Well there was some of that put in from 24th street to 35th

street has been in there, well it must have went in there in 1897 or '8. Then from there west it is about I think three years ago.

Q. What sized pipe is used on Kingman?

A. There is an eight inch to 35th and then two lines of four inch from there to 44th I guess some would call it, some say 45th. There is a jog in the street out there.

Q. 44th or 45th, across a block?

A. The street jogs here one calls it 44th and over here one 45th.

Q. How many feet would you say on Kingman?

A. I would think about 2500 something like that is single line that is of the four inch.

Q. I mean four inch.

A. That is the single line of course, two lines.

Q. Well how many feet altogether of four inch pipe.

A. Pretty close to 5000 feet.

Q. Well is there that much?

A. I would have to measure it up.

Q. Was it measured up when you gave it to Walters?

A. Yes, sir.

Q. Did you go out with him and help measure it?

A. No, I told you before I gave him the beginning and ending points and he scaled the map in a great many instances. In some places he went out with a tape line him and some other fellow to prove up whether or not the map was correct.

5075 Q. Of course the only way he could measure the pipe by scaling the map would be to map the streets correctly and any pipe that extended from one cross street to another?

A. That is the way he did.

Q. Part of it that was in the middle of the street or ran around the corner he could not do it by scaling the map.

A. No.

Q. When you said about a thousand feet north of a certain place and I——

A. In cases like that he took my return, my card I had turned in in cases I had measured it and got the number of pipe I used and got the number of feet given. In the case of a street like Kingman Avenue 28th street to 44th, he could scale that on the map. He could also look up my returns when the pipe was laid and get the amount of pipe used and that would give the amount of feet used.

Q. Is that the way you got Kingman by looking up your records did you lay all the pipe that is on Kingman?

A. Yes, sir.

Q. And laid it in the last few years, probably since 1897.

A. I think it was in 1897 or '98 that the first was laid and the last was laid I think four years ago the four inch part of it and part of it was laid this year.

Q. The west end of it was laid this year.

A. Yes, sir.

Q. There is nothing there but four inch and eight inch?

A. Now I disremember, I believe it is six from 24th to 25th, I

believe that is six if my memory serves me just right, I ain't certain about that. Six off of Grand Avenue and four—I believe it is all eight inch, that one block might possibly be six, but I doubt
5076 it.

Q. Well at any rate you are sure it is all either six eight or four.

A. Yes, sir.

Q. There is no other size of pipe out there?

A. Not on Kingman.

Q. I mean on Kingman.

A. No, sir.

Q. Now can you give us some idea about the number of feet of pipe there is in the Valley Junction system large and small.

A. No, I don't think I can.

Q. How much of a plant is that out there?

A. I would judge that there is possibly somewhers about five miles.

Q. And what size pipe is it largely?

A. Well principally four inch, there is some ten.

Q. About how much of ten do you think.

Q. Let me see, it leads from First to Elm, I should say about 12 or 15 hundred feet of ten inch, about that much eight inch the six inch leading from Vine to Railroad, there would be about 3000 feet of six inch and the balance of it four.

Q. About 2000 feet of six inch?

A. Yes, sir.

Q. About 2000 feet of four?

A. No, the balance of it would be four.

Q. How much eight inch did you say?

A. There is from Fifth to Ninth, about 1500 feet.

Q. Did you give the amount of ten and 12 inch, how much ten inch pipe?

A. Ten inch leads from First to Fifth.

5077 Q. How many feet?

A. About 1500 feet of that, about the same as the eight.

Q. About how much of 12 inch?

A. Not any 12.

Q. And nothing larger?

A. Ten, eight, six and four.

Q. Are there some buildings out there?

A. Yes, sir.

Q. Tell us something about the buildings?

A. There is about 2000 dwelling houses out there, something like that big and little, no very large ones.

Q. That is not what I meant, I meant that the gas company uses in connection with the gas plant property.

A. They have a governor house out there, sitting right in Valley Junction, then they have their office and that is all I know of that they have got.

Q. This meter house is just a small affair?

A. Well yes, call it a small affair.

Q. What was the other building you spoke of?
A. The office.
Q. What is it a small affair?
A. No that is a pretty good sized room.
Q. Frame or brick?
A. I think brick.
Q. It belongs to the gas company?
A. That I could not tell you.
Q. They use it?
A. Yes, sir.
Q. Anything else out there in connection with it?
A. Not to my knowledge.
5078 Q. Do you know the number of services there are out there.
A. No, I don't believe I can tell you.
Q. About how many?
A. Well there is pretty close between 3000 and 3500, I guess something like that.
Q. You don't mean 3000 or 3500 do you?
A. No there is about—well there is about 2500 I guess, 2000 or 2500 services, something like that. Of course I could not tell that, I am only guessing at that.
Q. Don't you have anything to do with that.
A. I do, but I don't keep a record of that.
Q. You put them all in?
A. I sent them in, yes I don't keep the numbers.
Q. How far this way from the main part of Valley Junction is what you would call the dividing line between Des Moines and Valley Junction, speaking now of the gas plant.
A. Well their meter house sets between First and Second in Valley Junction and the main section of the business is along about 5th street so it would be about four blocks this side of the center.
Q. That is not what I wanted to get at. Where is the dividing line wher- you would call it between Valley Junction and Des Moines in speaking of service of the gas company where would be the dividing line?
A. The dividing line between Des Moines and Valley Junction is First or 63 street.
Q. From there on what size pipe is there?
A. Which do you mean, in to Valley Junction?
Q. Yes.
A. It starts with a ten.
50[illegible] Q. Hooks on to what size pipe?
A. From Des Moines in.
Q. Yes.
A. Six inch high pressure.
Q. And that ten inch runs to the central station?
A. Up to Fifth street, from there it goes into the governor then out of the governor into ten inch and then ten inch to Fifth street and then reduce to eight and six and so on around the town.
Q. You have given us in a general way about all there is out

there have you in the way of pipe and buildings and other apparatus?

A. Well as far as my knowledge. As far as the building is concerned the possession of the gas company out there, I don't know what that possession is.

Q. I don't ask you who has title, I am just trying to get at the character of the property used?

A. Well I have told you as far as I know.

Q. If I remember your testimony you have been in charge of the field work, I don't know whether you call it that or not, the work with the distribution system right along for several years?

A. Yes, sir.

Q. At least ten years?

A. Yes, sir.

Q. And when was the largest part of this Valley Junction system put in?

A. Well I can't give you the year.

Q. About when?

A. I would say about five years ago.

5080 Q. That is that it was finished then?

A. The big end of it you said.

Q. Was the big end of it finished prior to five years ago?

A. Well somewhere in that neighborhood, I would not say just when the big portion of it was put in say this fall like now and then next spring they connected it up. They go- no use out of it that winter practically, then the next spring run the high pressure out there and connected it up. That was the big bulk of the work.

Q. Of course you can't tell when the high pressure was run out there?

A. Well I can't give you the exact year.

Q. Within three or four years.

A. I could by looking up notes, but I would say it is about five years.

Q. Anyhow there was no hooking up or serving of gas in Valley Junction until that high pressure main went in.

A. Well we connected up, made a temporary connection over here and served them before we got the line completed across the river.

Q. I mean for the permanent service.

A. Well we served gas out there quite awhile before the permanent connection was made across the river.

Q. That was before this high pressure main was completed.

A. No the high pressure was completed from the river here to Valley Junction but not from this side of the river across to the works.

Q. Of course you could not use it until you got across the river with it?

A. Oh yes we did, used a temporary connection and served
5081 Valley Junction with a temporary connection.

Q. This permanent connection, can you tell about when that was made?

A. That was put in I think that is four years ago this winter if I remember rightly.

Q. When did you first go over this question of the distribution system for the purpose of furnishing information to Mr. Walters about the system, when did you first go over that?

A. Well I can't tell you just exactly the dates.

Q. About when?

A. I would say it was some time possibly, we will say I guess it was in July possibly.

Q. This year in July?

A. Yes, sir.

Q. It was long before that wasn't it?

A. I don't know just when it was.

Q. Long before this case was called?

A. A very short time before the case was called.

Q. It was quite a long time before it was called wasn't it? Wasn't it as early as February?

A. Well I would not say. It was in this year, I don't know the exact date.

Q. You don't mean to say you can't remember within three or four months of the time?

A. I can't remember just what month it was in.

Q. It is true you first went over this business along in February-

A. Well it was some time prior to the case starting.

Q. Now just tell us how you went to work to get this information and give it to Mr. Walters?

A. Mr. Walters to-k the record out of the engineer's office,
5082 that was all in his possession.

Q. I am asking about the information you gave him.

A. I am trying to give that part of it, I have got to go quite a ways around before I come to it. He had made a copy of what was in the engineer's office and got them in what they term an inventory and some time later on I was called up in Judge Carr's office to find out what I knew about their correctness and the Judge and somebody else, I forget who it was questioned me considerable and found out there was an error or two in the inventory and the Judge suggestee that be corrected and then from that time on I began to study it so as to correct that. And they made a corrected map and also corrected the inventory from what records they already had in the office and from my memory.

Q. That is what I would like to know Mr. Moul, what was the character of this error that was discovered?

A. Well the records there did not show in some instances mains that we had in the streets and in other instances it showed mains that we did not have. So we made those corrections and got out a map that I claim is absolutely correct.

Q. Now did you furnish the information from which the map that you claim is correct was made up.

A. Well I furnished this way. I took it street by street, I sat down here with Mr. Walters and Hopper at the other end of the

table and I would detail each street, the size of pipe from where to where and they would trace that on the map.

Q. You would make statements and they made up the map?

A. That is to see whether correct or not.

Q. Was that the map that was used here on the witness stand before.

A. The map was placed here in front of me when I was on the stand.

5083 Q. So that the map that showed the distribution system which was used while you was on the witness stand was one made for this case?

A. I don't know as made for this case.

Q. It was not one they had in the office up there before the suit was commencee?

A. No the one they had in the office was absolutely correct with the exception of two or three errors in the map in the engineer's office and the records they had copied from that was in error several instances. They corrected them from this map.

Q. I suppose at that time *time* when you we-e questionee about what you knew and you were giving from memory about this distribution system what you said was taken down by somebody in writing wasn't it?

A. Not to my knowledge.

Q. Wasn't a shorthand reporter right there taking it?

A. Not to my knowledge.

Q. Couldn't you see that?

A. No, sir; nobody there but Hopper and this young man I spoke about a moment ago.

Q. You know Mr. Blaise that has been reporting the testimony?

A. I said there was — anybody at that time but that young fellow and Hopper and myself in the room. You were talking about one thing and me another.

Q. Let's talk about the thing I am.

A. You are talking about when that map was corrected. I say when that map was corrected there was nobody in the room but Tom Hopper and this young fellow and myself.

Q. I am talking about the time when you were examined as to your memory about the distribution system and you were

5084 telling from memory where the pipes were and the size of them, these statements were taken down by the reporter were they not?

A. You mean the examination that we had up in Judge Carr's office I just told you about?

Q. I don't know where you had it.

A. I just told you we were up in Judge Carr's office.

Q. Well if it was up there?

A. Judge Carr and myself and that gentleman over there, I don't know; somebody else was there I have forgot who.

Q. Mr. Douthirt?

A. That fellow, yes he was there and there was some other fellow there sat right cross the table from me, I could not recognize him now.

Q. What you said at that time about this distribution system and where there were pipes and the size of them was taken down by the shorthand reporter?

A. Well now I could not say as to that. I never saw a copy of it.

Q. Didn't he furnish you a copy of it?

A. No, sir; I never saw one.

Q. How long were you there giving testimony about it?

A. Well I was not giving any testimony particular at all only trying to see how near correct their inventories were with my memory.

Q. Of course what we want to get is the best information we can about this pipe and what you said last February when you were being examined about it after you had been told what the company wanted to find out was just how much pipe there was what you
5085 said about it then was when your memory was fresh and you gave the information correctly as you believed it was didn't you?

A. Yes, sir.

Q. Now if we had that it would show exactly what you believed and understood to be the situation with respect to the distribution at that time wouldn't it?

A. Yes, sir.

Q. You told the whole situation didn't you?

A. As far as I knew it.

Q. You gave every street upon which you believed there were gas pipes and the size of them and the starting and the ending of them didn't you?

A. Yes, sir.

Q. And all the specials that you could think of and every other thing in connection with the distribution system in the way of apparatus and material and pipe and that sort of thing?

A. I aimed to.

Q. In that statement?

A. Yes, sir.

Q. If we had that, that would show exactly——

A. There it is right there in that map.

Q. I am talking about things you said that were taken down by the reporter.

A. I didn't say a thing that is not on the map at all except as I told you awhile ago there was an error or two and we corrected those errors in the inventory in the book form which was produced here in this trial, but they were made from that and that gave you all the information with regard to the size and lengths of mains and services—well I don't know as the map will—but the map told
5086 you every foot of pipe the gas company owns under ground in Des Moines to the best of my knowledge.

Q. If we had what you said and what the reporter took down then we could take it and check it with that map and know ourselves whether it does or not?

A. Well I can tell it to you and tell it to you just the same as I did to him.

Q. You think you got it right as you told it to me?
A. Very near it.
Q. Let's see if you did. Just take the map and turn to Kingman Boulevard and tell me how much four inch pipe is on Kingman according to the map?
A. I didn't give to you any feet, I only guessed distances.
Q. How many feet of four inch pipe on Kingman is shown on the map.
A. I told you practically a certain number of feet single line. I didn't give you exactly how many, but I know I told you about 1,500 feet, something like that single line.
Q. I don't care about what you told me, I want to find how much is there.
A. Well I can't tell you exactly. I didn't aim to give you these streets in feet. About seventy five double line four inch.
Q. About 7,500 feet of four inch pipe on Kingman.
A. Yes, sir.
Q. Is that what the map shows?
A. That is about what it scales.
Q. You are sure that is right?
A. Starts 28th and ends 44th that side.
Q. How many feet of eight inches there on Kingman according to the map?
5087 A. About 3,000.
Q. 3,000 feet of eight inch. How much six inch.
A. About 700.
Q. Any other size?
A. No, sir; not on Kingman.
Q. That map shows, the way it is mad up, shows 7,500 feet of four inch main, 3,000 feet of eight inch main and about 700 feet of six inch main.
A. Yes, sir.
Q. Now do you say that is what is out there?
A. Yes, that shows on this map every foot of it.
Q. Do you say that is what is out there?
A. Well I am only scaling the map according to scales. The points on this map is absolutely correct where it begins and where it ends.
Q. How much inch and a quarter main is shown by that map on Fourth street?
A. West Fourth?
Q. West?
A. This mapm shows about 250.
Q. Of -uarter inch?
A. Yes, sir.
Q. How much inch and a half is it?
A. I don't see any inch and a half.
Q. Well you spoke about some a little while ago.
A. On Fourth street.
Q. Yes, you said it was still in use there.
A. I don't know where it was on Fourth street.
Q. Well was there any two and a half inch on Fourth street?

A. No, sir.

5088 Q. Any three inch?

A. On Fourth street, yes.

Q. How much three inch.

A. About 5,000 feet of four inch.

Q. How much four inch.

A. About 5,000 feet.

Q. That is all the four inch pipe on Fourth street.

A. That is three inch you were talking about?

Q. Or three inch?

A. Yes, sir.

Q. How much inch and a half pipe is there on State street according to the map?

A. I fail to find any at all.

Q. How much inch and a quarter pipe is there on State street?

A. I don't find any.

Q. When was it taken out or abandoned or do you know?

A. Well there was a piece of it taken out the other side of 13th street when we put in the 12 inch.

Q. Then you were mistaken about saying there was not any used up there.

A. Not that corner. It is up above, you were asking about two places talking about 18th street.

Q. I am asking now anywhere.

A. There is a little piece up about 18th street on College Avenue in use now, piece of six inch going to supply a house at some time.

Q. Not on State street?

A. I am talking about State street.

Q. How much would you say in that little piece?

A. I would say possibly 75 feet, something like that.

5089 Q. That is all there on State street?

A. Yes, to my knowledge.

Q. Take east Fourth street and give us the number of feet of the different kinds of pipe the map shows on that street?

A. You ought to have a college man giving these measurements, not a scrub like me, it is out of my line of business. Beginning at First street and going east to Fifth the first piece you have got, 1,500 feet of eight inch, then you have got about 300 feet of three inch.

Q. Is that all there is on the street anywhere?

A. All three inch on Court Avenue. Then you commence four inch and go about 5,300 feet of four inch. Commence with sixteen and go about 8,000 feet or sixteen. I am doing this just as near as I know how to do it.

COURT: There are two lines up there?

A. Up as far as Sixth street goes on here four and sixteen two lines all the way out.

Q. Is there an inch and a half pipe on that street anywhere?

A. Court Avenue, not to my knowledge.

Q. Any inch and a quarter?

A. Not to my knowledge.

Q. Anything under three inch?

A. Not to my knowledge.
Q. I mean as shown on the map?
A. No, sir; don't show it here.
Q. None to your knowledge.
A. No, sir.
Q. Now take east Washington and tell me how much inch and a half pipe is there shown by the map?
A. I don't see any at all.
5090 Q. How much inch and a quarter?
A. I don't see any at all. There is one mistake though I will admit, you asked me awhile ago if any abandoned in Washington. I see I forgot a strip from Penn Avenue to the river, forgot that.
Q. That skipped your mind?
A. Yes, sir.
Q. Then there is not any on that street that is not used now?
A. No, sir.
Q. Is there anything under three inch at all?
A. No, isn't any three inch on Washington whatever.
Q. Any four inch?
A. Yes, sir.
Q. How much four inch?
A. About a thousand feet of four inch.
Q. How much six inch?
A. No, six.
Q. How much ten inch?
A. No, ten.
Q. How much eight inch?
A. About 1,800 feet.
Q. Just 1,800?
A. Might be a little fraction, pretty close to 1,800.
Q. Now you have got Ridge Road haven't you there?
A. No, it is in the other map.
Q. See what the map says about Ridge Road. How much inch and quarter pipe on Ridge Road?
A. Don't see any at all.
Q. How much inch and a half.
A. Don't see any.
5091 Q. Then you were mistaken then?
A. Yes, sir.
Q. So you see we would be much safer if we had your statement you made last spring when that map was gotten up?
A. Not a bit more. This was taken off at that time and this was the statement. I might be in error now more so than I would be at that particular time.
Q. But whatever you said then was what you intended to have go on this map?
A. Did go on this map.
Q. You didn't make the map?
A. No, but I corrected it, I checked it over street by street as

I told you. Some of these little instances might slip my mind in regard to cutting them off and in regard to being in use.

Q. You know the streets, some of them you didn't know them because several you didn't tell me.

A. I didn't, but I am going to hunt them up too.

Q. You can't tell whether that map is correct unless you know the streets, all of them. Find Witmer street, see if there is one. I don't know myself where it is.

A. I don't know either.

Q. You don't find it?

A. I don't find where Witmer is.

Q. I wonder if you can find east H street?

A. H street we term it 15th street from Vine south.

Q. Now is there inch and a half pipe on that?

A. No, sir.

Q. Any inch and a quarter?

A. I think possibly 50 to 75 feet of inch and a quarter.

5092 Q. Shown there by the map?

A. No two inch is shown here.

Q. How much two inch?

A. Well about 275 feet.

Q. 42nd street is a comparatively new street isn't it?

A. Yes, sir. That is from Grand Avenue to University.

Q. And 35th street is comparatively new.

A. Yes, sir; that is it is an old street but recently paved.

Q. Is there any small pipe on that street, on 35th, according to the map?

A. Should be.

Q. Tell how much there is according to the map?

A. Ought to be on 35th about 400 feet. It shows 300 feet of four inch.

Q. Smaller pipe I mean, inch and a half and inch and a quarter, show any?

A. No, sir.

Q. Can you give me some idea about how much of the distribution system in Valley Junction has been put in, in the last four years?

A. Well it was practically all put in at the same time when that was first put in. They have made but two or three very small extensions out there since the first of them, about three possibly.

Q. And about how much of an extension was that?

A. Oh the different times each one of them—well let's see we put in about 800 feet of six inch and then one time put in about seven or 800 feet of four inch, well I would say that there is about right recently or since the first bunch was put in out there has been possibly a thousand feet of extensions made out there since

5093 it was originally put in.

Q. Thousand feet of extensions.

A. About that yes.

Q. How about services.

A. Well we put them in right along all the time.

Q. About what proportion of them has been put in the last four or five years?

A. Well as I said before when we put in the big end of them they was put in that particular time. Of course after this taking year by year we put in possibly maybe eight or ten or twenty five during a year since that time. Depend on the new houses going up or the demand. But Valley Junction was all built up and we laid practically all of it at the same time.

Q. I suppose the same thing is true about meters?

A. Well the meters of course didn't come until the following year until we turned gas into the mains out there then they commenced to put in meters.

Q. Then the meters were put in the last four or five years were they?

A. I don't know just when we put that pipe in. I think it was the last four or five years, I think it is that. Of course I would have to look up dates to be accurate on it.

Q. Do you know how many meters are out there.

A. No, sir.

Q. Don't remember about that?

A. I have no access to know.

Q. Did you devote considerable time just prior to February in looking up these matters and brightening up your memory about them.

A. No, I didn't waste any particular time or put in any
5094 particular time. I looked up some old notes that I have from time to time for my own guide.

Q. When were you first asked to get ready to give the information that you finally did give to Walters?

A. The first time I was ever asked about it was when I was invited up to Judge Carr's office and he wanted to find out what I knew about it.

Q. I don't know when that was.

A. I don't know either exactly. It was some time prior to this case I would not know just how short or long it was. It was in 1911.

Q. It was not at that time then that you gave information to Mr. Walters?

A. No, sir, it was later, after that.

Q. You then went to work gathering up information?

A. No, sir; I didn't go to work at all. Only posted myself a little so in case you might ask me how I knew the certain amount of things and certain things I could give it to you with my own figures which didn't correspond with those.

Q. The only thing you got ready for was any questions we might ask?

A. Yes, or anybody else.

Q. Then you got ready for everything didn't you because you expected to be asked all about it didn't you

A. What I wa-ted to do and what I tried to do is to keep myself in readiness to find out about the total number of feet. I didn't

have totals and I went and hunted up my records and got totals to show how they corresponded with these.

Q. I would like to have those.

A. I gave them to you when on the stand before.

5095 Q. You said several times you did not undertake to give the feet?

A. I do not.

Q. But you have now gone to work and made up a list or table showing the number of feet.

A. Total from street to street.

Q. Have you got that?

A. Not with me, no sir.

Q. Where is it.

A. I gave it to you here.

Q. When?

A. When I was on the stand.

Q. What list did you make up.

A. Practically this, the amount of four inch and different sizes that was under the ground. I didn't undertake to tell where they laid.

Q. You say now that you wanted to qualify your memory and prepare for anything that might come and after you had given the information from which this map was made you then made up a statement showing the total number of feet.

A. Different sizes.

Q. The different sizes of pipe.

A. Yes, sir.

Q. Now we would like that if you have got it where it is convenient.

A. I have not got it.

Q. What did you do with it?

A. Destroyed it.

Q. When.

A. After I gave it to you here as evidence.

Q. You mean you showed us the statement or turned it

5096 over to——

A. It was here in my evidence the amount of feet. I only had a little note for my personal good. You got the benefit.

Q. Are you sure in your testimony you gave the number of feet of each size of pipe in this distribution?

A. No, sir; I did not. I didn't make any pretense of giving the total number of feet.

Q. What are *t*ou talking about here in the record.

A. I stated on this stand the number of feet of pipe that the gas company owned under the ground, three inch and over. I didn't make any pretense of giving three inch and under or under three inch and you have got it in my evidence here the amount of feet that I said was in the ground. Now it does not correspond with the inventory that they have here to the amount of feet, it varies some.

Q. You claim now that when you were on the witness stand before

you gave us the number of feet of all the different sizes of pipe above three inches.

A. Three inch and above.

Q. That the gas company has under ground?

A. Yes, sir.

Q. And you gave that as being correct did you?

A. Yes, practically.

Q. You intended it to convey to us the truth about the number of feet?

A. Yes, sir.

Q. And you think that is in your evidence?

A. I know it is.

Q. Did you take it from the paper, from the memorandum at the time?

A. No, sir; I did not.

5097 Q. But you had a memorandum in your pocket at the time that had all this information didn't you?

A. Well it just had the number of feet of different sized pipe and number of services year after year and I added them together. The way I keep that was the number of feet of pipe laid this year and how many another year and added them together at that time showed the number of feet laid added to what was already laid when I came here. That was the evidence I gave you.

Q. You say you do*j*'t have that memorandum here now?

A. No, sir.

Q. You destroyed it?

A. Yes, sir.

Q. Just because you thought you were through with it?

A. Yes, sir.

Q. Never would need it again?

A. No, sir.

Q. You didn't put these figures down anywhere?

A. No, sir.

Q. How much difference was there between your figures of the total amount of two and a half inch pipe and under the map figures.

A. There was considerable difference between less than three inch for this reason as I gave it in my evidence before at the time that that pipe was put in the ground we termed it as new service which goes back quite a ways, a good deal of it and under the new management of Mr. Haines here he placed that under the system of mains, anything that run parallel with the street as mains at that time, but previous to this I know it was all called new service for less than four inch and we varied considerable on that amount.

5098 Q. Of course you had that by figuring it out at the time finally?

A. No, I didn't make any pretense as I told you before on less than the three inch because I kept that—it got rather mixed that way because I kept that under new service really a good dea- of it. I gave it to Mr. Walters when he was making this up the best I could. I would not say that was absolutely correct.

Q. You gave him the service pipe too didn't you?

A. No, he got a great many of them off the records. Of course he got them from me in this way, I made the return of those. he took the returns and then he had men go around from house to house and count the services as they go into the cellars. then we corrected a great many of them after he had them all collected together.

Q. How would he get the length of service?

A. Measure from the mains to the inside of the cellar, give you practically the length of the service.

Q. That is from the street to the meter?

A. Yes, sir.

Q. Is that the way you did in all cases?

A. Practically. That is the way all services measure. Of course years ago it used to be we would run clear around a house to get the meter in the back end if necessary so as to save inside pipe, but now we go in the front and do the inside piping from the meter in the building so that cuts the service some shorter now than they were years ago.

Q. Did you get the exact length of these services?

A. Practically.

Q. Did you figure them so long?

A. No, I figured them each year.

5099 Q. Averaged them about 80 feet?

A. Yes, sir.

Q. Whether that or not?

A. They will average that long and short.

Q. That means from the main that runs parallel with the street to the meter?

A. Yes, sir.

A. That is the way the inventory was made up?

A. Yes, sir.

Q. You have said once or twice that it was inch and a half or rather three inch and over that you covered by your memoranda. Do we understand from that that you do not vouch for these measurements as to the smaller pipe?

A. I do not in this way as I explained to you. At the time that a good deal of that was put in, it was put in under the head of new service. We have gone ahead and estimated the length of that the best we could and put it into the extension list under this new management, a great deal of that was on record as new service so I did not dictate to the full extent of that because I could not tell in every instance. Then I kept no record of that particularly.

Q. Just what do you mean by new service?

A. Say a main came here part way up the street and you lived a little beyond the main in place of them extending that main they would run a service pipe up there to satisfy you and that would go in under the head of new service, but now we can't do that. The system is now we have got to extend that main up to you so your service will come direct off the main.

Q. What is in the ground parallel with the street is termed mains?

5100 A. It is.

Q. All called mains now, but before part of it had been called services?

A. Yes, sir. That is the reason why I would not be positive about the amount of it.

Q. The largest pipe there is no chance for you to be mistaken about, 24 inch pipe is there?

A. I don't think so.

Q. The amount you give and the amount the map shows you think is correct do you?

A. Could not be any difference.

Q. Have you measured up on that map to see *see* just how much 24 inch pipe?

A. I didn't scale the map, no sir.

Q. Do you have any idea what it shows?

A. I can tell you what it ought to show. 24 inch main to Second down to First and First down to south of the Wabash where it crosses the river and over the river to the governor, that is all the 24 inch we use.

Q. About how many feet would that be?

A. I would say about 1,800 feet.

Q. 1,800 feet?

A. About that.

Q. How long has it been that you put these services in clear to the meter, have you always done that?

A. Oh yes. That is we go to wherever the pipe sets that distributes through the house we have to go and that is where the meter sets. In a great many instances in times past that would be anywhere in the house, the center of the cellar or something of that sort. Now we set the meter at the head of the service.

5101 Q. For instance, take the Savery House, that was built quite a good many years ago. You were with the gas company when the services were put in there were you not?

A. Yes, sir.

Q. How were they put in, the services, where did they start from.

A. There was only one.

Q. Where was it put in?

A. It is on the alley west of the building, goes back to pretty well in the rear and then it goes in the front wall and runs across one room the same as this. The service comes in here and goes over and runs across to the meter box up against the east wall of that room.

Q. How was that work done at that time?

A. Free of charge.

Q. All of it free of charge?

A. No, not all of it.

Q. What was the charge for any part of it?

A. Run to the lot line free of charge and the- got fifteen cents a foot from that in.

Q. From the consumer?

A. Yes, sir.

Q. How long was that method pursued?

A. We followed it up until 1896, the spring of '96.

Q. Isn't this the way of it, prior to and up to 1896, all of the services that were put in in this town the owner of the property paid fifteen cents a foot for the services from the lot line to the meter?

A. Yes, sir.

Q. Since 1896 how has it been?

A. Free; any length or any size from the main to the
5102 meter, no matte- where the meter sets.

COURT: In other words, you mean that is at the expense of the company?

A. Yes, sir.

COURT: Including the meter also.

A. Yes, sir.

Q. That is for instance up until 1896 the lot owner paid 15 cents a foot for all the service from the lot line to his meter?

A. Yes, sir.

Q. And that was under some ordinance here was it not?

A. Yes, sir.

Q. What was the average distance at that time?

A. Well at that time it was mostly down town districts and the services would average about 75 feet.

Q. About five feet shorter than they do now?

A. About that yes. The last year or two so many of these houses set back so far it has increased the length.

Q. About what would be the average distance from the lot line to the meter in these services up to 1896?

A. Well they would run along about 40, 45, and 55 feet, in other words nearly every service we run cost them about $7.50. I can remembe- that better than I can the distance because we figured on about $7.50.

Cross-examination by Hon. GEORGE H. CARR:

Q. You say Mr. Moul that the first time your attention was called to this matter of the distribution system of the gas company was in conversation with me in my office.

5103 A. Yes, sir.

Q. And what was it I inquired about?

A. Using your words as near as I can recall, is that what you want?

Q. Yes.

A. Said you brought me up there to find out what I knew about this or in other words you wanted to know what I knew.

Q. Wanted to know what personal knowledge you had with regard to this distribution system?

A. Yes, sir.

Q. Did you tell me you knew all about it?

A. I did.

Q. Did I then inquire whether you could give me the pipe and the size of them and streets in which they were located?

A. Yes, sir.
Q. Where they began and where they ended and all that?
A. Yes, sir.
Q. You say some time after that or perhaps at that time that I asked you a good many questions about it and it was taken down by a stenographer?
A. I didn't say that sir.
Q. Well what did you say about it?
A. It was the particular time, I didn't say as far the shorthand was concerned whether taken at all or not. I never saw a copy of it.
Q. Now in the conference that we had the matter was gone into somewhat in detail wasn't it, for the purpose of finding out what you knew?
A. Yes, sir.
Q. You were asked with regard to quite a number of streets
5104 weren't you?
A. Yes, sir.
Q. Somewhat in the same manner General Byers interrogated you here?
A. Yes, sir.
Q. We didn't go over all the streets did we?
A. No, sir.
Q. Just enough to satisfy me that you knew about it?
A. I think so.
Q. Then later you worked with Mr. Walters in the preparation of that map?
A. They took the record out of the engineer's office and put on this here as far as they went off of that record that they then had in the office and Mr. Hopper and Mr. Walters were together on one side of the table and I sat at the end and they pointed that map out street by street first one side of the river and I sat at the end of the table and told them what we had under ground and they followed that tracing, traced that map from one end to the other.
Q. Then was when you went over the entire system all of it in detail?
A. Yes, sir.
Q. No one present at that time except you and the two gentlemen named?
A. Not to my knowledge.
Q. Where were you?
A. We were in the gas company's office.
Q. If there had been anybody else there you would have seen them wouldn't you?
A. Pretty likely, yes.
5105 Q. In going over the matter in detail did you undertake to state the length of any given pipe?
A. No, sir.
Q. About how was that ascertained?
A. Well I suppose they scaled the map.
Q. How did they go to work to scale the map?

A. Well I gave them the starting and ending points of different sizes of pipe, wherever the pipe changed size I would give them that as a starter or ender.

Q. What did you tell them about that?

A. I would say, take Seventh street for instance, we would start on Seventh street at a certain point with a certain size and end with a certain point and then begin with another size.

Q. How would you describe that point?

A. Wherever it ended. Say we would start with the main on Walnut street and go north to where the intersection came and if it didn't increase in size of the pipe would continue on to the end. Take Seventh street from Grand Avenue there is no change until you get to School and I would just say it started at Grand Avenue and goes to School three inch and then increases to a four and continues a four then until you get to Prospect Boulevard or Drive, whatever it is out there.

COURT: You gave where it began and ended?

A. Yes, sir. In a great many instances later on, a great many took my measurements as I turned in my reports.

Q. You are not accustomed I judge yourself to scaling maps?

A. No, sir; that is not my business.

Q. In answering General Byers' questions as to various lengths of pipe from what source of information have you spoken?

5106 A. I told him I had to guess at it. I took for granted that the blocks here averaged 350 feet from center to center. I counted the blocks generally or portions of that block and in a great many instances some 600 foot blocks. I had to guess at it, it was all guess as I told him I would be guessing at the length.

Q. This scaling, did you do it as well as you could?

A. That I done as best my knowledge let me. I aimed to get that as near correct as anybody could do it.

COURT: A mere supposition about the scaling or did you see it done?

A. I didn't see it done, no sir.

Q. You have been asked with regard to certain streets that you say you don't know about. What is the fact as to whether quite recent*ed* there has been a change made by the City Council in the naming of streets?

A. About a year ago or I think last spring early, possibly, maybe in the winter they changed a great many of these streets a great many of them and there are some new districts that I am not familiar practically with the old or new names.

Q. You were asked about east H street and you traced that up did you on the map?

A. Yes, found that to be east 15th.

Q. That is the ordinary name, is east 15th?

A. That is what we call east 15th.

Q. Sampson, street did you look that up?

A. No, didn't look up Sampson. That is the only one I looked up I think.

Q. Do you know now and did you know when on the witness stand before where all the pipe is and stated as you understand
5107 or understood the name of the street?

A. I think so, yes. I don't think there is a foot of pipe, as I said before from three inch up that I can't tell exactly where it is under ground.

Q. Did you assist Mr. Walters or give him information rather in making up a table showing abandoned pipe?

A. Yes, sir.

Q. I call your attention to Exhibit 37 showing mains in ground one column, size, next number of feet in use, next number of feet laid in a given year and the number of feet taken up or abandoned in a given year and the number of feet in use following on from 1889 on up to 1911. Did you give him that information as shown in that table with respect to the abandoned pipe that is shown in the table?

A. Well some of it I did and some of it he took from the records showing replacement and also whether it was abandoned or not. In some instances I gave it to him from memory but not all.

Q. Well any way you assisted, that is you gave him your personal knowledge as to all abandoned pipe did you?

A. Well I aimed to give all of them. Now I might have missed some but very few.

Q. I suppose in going over these streets and the mains in the streets with Mr. Walters in making that map you had some map before you to locate the streets did you?

A. No, sir.

Q. You had no map?

A. No, sir.

Q. Do you know anything about whether the authorizations for mains in the streets always correspond with the mains that are actually laid ?
5108 A. I don't believe I understand you, am I familiar with the fact that the authorization covers the amount laid?

Q. Yes?

A. Well I suppose yes, the authorization is supposed to specify practically the exact amount, also the size and site and depth that is supposee to show on the authorization, the supposed amount per foot of cost laying it, replacing the pavement or anything of that sort.

Q. What I am getting at is do you know whether in all instances the authorizations were carried out, that is the pipe laid just in accordance with the authorization or whether authorization when there was no pipe laid?

A. It hardly ever laid exactly the authorization because the authorization might determine one side of the street, might determine four or five hundred feet when we find it necessary to trade sides of the street from the fact of keeping away from water or sewer. They don't practically correspond with one another, but of course aim to keep the two as near together as practice will let us.

Q. Do you know whether authorizations are sometimes made where the mains are not laid, for example there might be an authorization for laying main in Witmer street and no mains laid there.

A. Well if it is not laid this year it will be laid next year. I don't know of any instance where they have issued an authorization where the pipe has not been laid or pending to be laid. Sometimes we carry them over. They may ask for an authorization to lay a certain amount of pipe to lay this year in a certain street. Business don't demand it and they hold that over till next year or possibly the next year. I have known them to go over two years before
5109 laid, but eventually it will be laid.

Q. By the authorization you mean the authorizations given to you as foreman.

A. Yes, sir; my authority to lay the pipe or information about laying the pipe.

Q. From whom do you get this authorization?

A. The engineer's office. And before we had an engineer they came direct from the manager.

Redirect examination by Hon. H. W. BYERS:

Q. These authorizations whenever there is any change made in them that is to say if an authorization covers a certain improvement and you do not make the improvement or only make a part if it, that is shown then on the authorization and the part you do not make is either canceled or carried over and made afterwards.

A. Yes, sir.

Witness excused.

Mr. BYERS: I would like to ask and have it in the record for the transcript of Mr. Moul's testimony that was taken in February and was referred to by Mr. Haines in this $220 charge or voucher of the Blaises and I ask for it for this reason that that voucher shows, as I remember it, without going to the voucher that there was something over 50 pages of Mr. Moul's statement and it now appears that it was taken for the purpose of furnishing information to the Master in this trial and it also appears that some of the exhibits that have been offered by complainant are based on the in-
5110 formation, at least partly upon the information that is contained in that transcript and that it is important and will be helpful in figuring out this distribution system and we ask counsel or ask the complainant to produce it and have it go into the record.

COURT: That presents a little different question gentlemen from the question this morning. That presents this question, that is the question of information given from which an exhibit is made. I will give you both an opportunity to be heard on that. I want you to distinctly understand that so far as information given to attorneys, whether they take it down themselves or whether taken down by a shorthand reporter in the preparation of their case, I have no hesita-

tion to say that I do not understand that counsel are required or obliged to produce it. They are at liberty to do so if they want to. This presents a little different question and I will not dispose of it now, but I will hear from you on that question hereafter. It is nearly adjourning time now.

Judge CARR: I think perhaps you may not have the situation clearly in mind. Mr. Moul's testimony is that at the time the map was made, at the time he furnished the information from which the exhibit was made, there was no one present but himself and Mr. Walters and the other gentleman assisting Mr. Walters. That no report of that was made. He just simply sat down there and furnished the information. The report that they speak of was the interview that I had with him when I was asking for information here and there to test his recollection. That is the record your honor.

COURT: When the reporter has a transcript of this testimony I will look that question over a little further and I will hear
5111 you both fully at that time. My recollection of it is that he stated at the time that Mr. Walters made the map that he then went over it and made corrections and the map was corrected, some errors and mistakes and there was just himself present with Mr. Walters and one other person and that was in the gas company's office. I am not right sure as to what his testimony was of what occurred in the office at the time of his talk or conversation. Of course it could only be used for one purpose and that would be as impeaching testimony. It is not original testimony and could not be. But as I have said I will not pass upon this matter until I have looked over the transcript and given you an opportunity to be heard fully at that time.

Here the further hearing was adjourned until 9:30 a. m. tomorrow.

5112 In the Circuit Court of the United States, Southern District of Iowa, Central Division.

DES MOINES GAS COMPANY, Complainant,

vs.

CITY OF DES MOINES et al., Defendants.

Before Hon. Robert Sloan, Special Master in Chancery.

We, J. P. Blaise and Frank C. Walrath, hereby certify that we were duly appointed and sworn to take the testimony in shorthand in the above entitled case and that we correctly reported the proceedings upon the said hearing and that the foregoing transcript contained in four volumes is a correct, true and complete transcript of our shorthand notes taken in the above entitled cause and that it contains, together with the documentary evidence and exhibits therein re-

ferred to, all of the evidence that was offered or introduced on the trial of said cause and all of the objections and rulings, if any, made and exceptions taken.

Witness our hand this 1st day of December, A. D. 1911.

(Signed) J. P. BLAISE,
FRANK C. WALRATH,
Shorthand Reporters.

5113 DES MOINES GAS COMPANY

vs.

CITY OF DES MOINES et al.

Special Master's Certificate.

I, Robert Sloan, Special Master, do hereby certify that the foregoing transcript of the short hand notes of the reporters herein before set forth, in four volumes, from page 1 of the 1st volume to page 5111 of the fourth volume inclusive, together with the exhibits therein referred to, contains all the evidence offered on the trial of the above entitled cause by either the complainant or the defendants and objections made by respective counsel and the rulings thereon.

____ ____,
Special Master in Chancery.

5114 In the Circuit Court of the United States, Southern District of Iowa, Central Division.

THE DES MOINES GAS COMPANY, Complainant,

v.

THE CITY OF DES MOINES et al., Defendants.

Certificate of Evidence.

I. Robert Sloan, Special Master in Chancery before whom the above entitled case was tried, do hereby certify that the hearing thereof began on the 12th day of July, A. D. 1911 and the arguments closed on the 29th day of November, A. D. 1911, and that during the hearing thereof J. B. Blaise and Frank C. Walrath were the official stenographers duly appointed thereto and took down and reported in shorthand from day to day as the trial progressed, all the evidence offered on the trial thereof by either party to the case, and, the objections thereto and such rulings thereon as made by the Master in Chancery at the time, and from day to day furnished true and correct translations and transcripts of the evidence as

taken down and reported in short hand by said stenographers and the translations and transcripts thereof and each and all consecutively paged and put in book form and duly bound in four volumes entitled in the case, beginning with page 1, Vol. 1 and ending with page 5111, Vol. 4 of such reports.

5115 I further certify that said bound volumes from page 1, Vol. 1 to page 5111, Vol 4 have been duly certified to by said stenographers and each of them and that said volumes together with exhibits therein shown to have been offered in evidence constitutes and contain a complete record of all the evidence in the case offered by either of Complainants or the Defendants or any of them, as well as the objections of counsel thereto, and such rulings as made by the Master in Chancery thereon, and constitute a full, true and correct and complete record of all the evidence offered on the trial thereof by either party.

I further certify that by agreement of counsel that the oral arguments were duly reported by said stenographers and fully translated and transcribed and bound in a separate volume, which contains a full, true and correct transcript thereof.

Witness my hand this 29th day of November A. D. 1911.

(Signed) ROB'T SLOAN,
Special Master in Chancery.

5116 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M. Equity.

DES MOINES GAS COMPANY, Complainant,

vs.

CITY OF DES MOINES et al., Defendants.

Clerk's Certificate to Part Two (2) of Transcript.

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the District Court of the United States for the Southern District of Iowa and as successor in office of the Clerk of the Circuit Court of the United States for said District and State, hereby certify the foregoing, designated as part two of the transcript, (pages 1 to 5115 inclusive, all contained in seven bound volumes, marked Part Two A, to G inclusive,) to be a full, true and complete copy of the testimony, as called for in the Appellant's præcipe and the Appellees' præcipe for a transcript in cause numbered 71-M Des Moines Gas Company versus the City of Des Moines, Iowa, et al., lately pending in said District Court of the United States for the Southern District of Iowa, as successor of the

Circuit Court of the United States for said District and State, as full, true and complete as the originals thereof now on file and of record in my office in the City of Des Moines in said District.

In testimony whereof, I have hereunto set my hand and affixed the seal of said Court at my office in the City of Des Moines in said District this 30th day of November A. D. 1912.

[Seal U. S. District Court, Southern District of Iowa.]

W. C. McARTHUR,
Clerk as Aforesaid.

[End of Volume IV.]

Vol. V.

TRANSCRIPT OF RECORD

SUPREME COURT OF THE UNITED STATES.

OCTOBER TERM, 1913.

No. 375

DES MOINES GAS COMPANY, APPELLANT

vs.

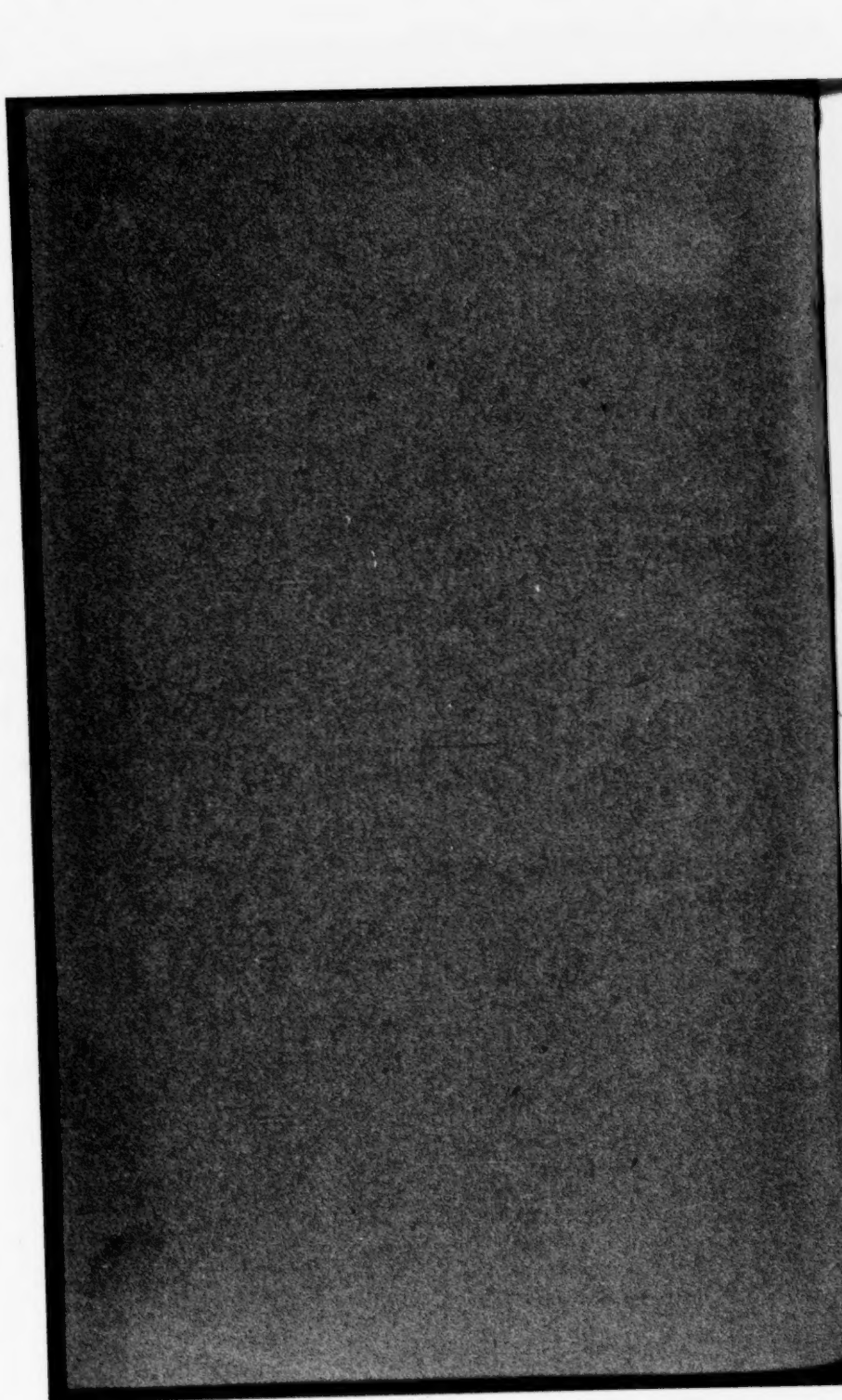
CITY OF DES MOINES.

MINNESOTA LAW LIBRARY

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

FILED DECEMBER 14, 1913.

(23,459)



(23,459)

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, 1913.

No. 397.

DES MOINES GAS COMPANY, APPELLANT,

vs.

CITY OF DES MOINES ET AL.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

VOLUME V.

INDEX.

	Original.	Print
Complainant's Exhibit No. 1—Certified copy of record of articles of incorporation of Des Moines Gas Company (read in record page 58 of testimony).		
2—Certified copy of record of ordinance No. 1767 of city of Des Moines, passed December 27, 1910 (read in record page 65 of testimony).		
3—Proceedings of the city council of city of Des Moines, October 21, 1910, page 958 (read in record page 67 of testimony).		
4—Proceedings of city council of city of Des Moines, February 1, 1911, pages 1186 and 1192 (read in record page 68 of testimony).		

JUDD & DETWEILER (INC.), PRINTERS, WASHINGTON, D. C., JULY 18, 1913.

		Original.	Print
Complainant's Exhibit No.	5—Map of gas works real estate (omitted in printing)	1	
	6—Map of city of Des Moines showing location of gas works (omitted in printing)	2	
	7—Copy of letter, Jansen Haines to John MacVicar, dated November 22, 1910 (read in record page 4 of testimony).		
	8—Letter, John MacVicar to Jansen Haines, dated November 25, 1910 (read in record page 6 of testimony).		
	9—Copy of letter, Jansen Haines to John MacVicar, dated November 26, 1910 (read in record page 9 of testimony).		
	10—Letter, John MacVicar to Jansen Haines, dated November 29, 1910 (read in record page 11 of testimony).		
	11—Copy of letter, Jansen Haines to John MacVicar, dated December 2, 1910 (read in record page 13 of testimony).		
	12—Letter, John MacVicar to Jansen Haines, dated December 2, 1910 (read in record page 16 of testimony).		
	13—Letter, John MacVicar to Jansen Haines, dated December 3, 1910 (read in record page 16 of testimony).		
	14—Copy of letter, Jansen Haines to mayor and city council of city of Des Moines, dated December 28, 1910 (read in record page 89 of testimony).		
	15—Inventory of property of Des Moines Gas Company, volume I (omitted in printing)	3	
	16—Inventory of property of Des Moines Gas Company, volume II (omitted in printing)	284	
	17—Street-main map Des Moines Gas Company, eastern district (omitted in printing)	458	
	18—Street-main map Des Moines Gas Company, western district (omitted in printing)	459	
	19—Street-main map Des Moines Gas Company, Valley Junction district (omitted in printing)	460	

	Original.	Print
Complainant's Exhibit No. 20—Report of Henry I. Lea on the Des Moines Gas Company	461	3245
21—Report of W. A. Baehr on the Des Moines Gas Company	594	3329
22—Report of W. W. Randolph on the Des Moines Gas Company	759	3415
23—Report of W. J. Hagenah on financial condition of Des Moines Gas Company	773	3427
24—Des Moines Gas Company, statement of profit and loss covering periods from January 1, 1906, to December 31, 1910	818	3467
25—Des Moines Gas Company, annual investment value on 8 per cent earning basis, depreciation 2½ per cent (omitted in printing)	819	
26—Des Moines Gas Company, annual investment value on 8 per cent earning basis, depreciation 2 per cent (omitted in printing)	820	
27—Des Moines Gas Company, schedule comparing capital expenditures as per books with average of engineers, present value	821	3467
28—Des Moines Gas Company, gross revenue and net earnings without allowing for depreciation, for 3 years ended September 30, 1910	822	3467
29—Des Moines Gas Company, gross revenue and net return applicable to interest and profits for 5 years ended December 31, 1910	823	3467
30—Des Moines Gas Company, gross revenue and net return applicable to interest and profits for 5 years ended December 31, 1910, excluding Valley Junction	824	3467
31—Des Moines Gas Company, working capital December 31, 1910	825	3468
32—Des Moines Gas Company, gas sales first 6 months of 1911	826	3468
33—Des Moines Gas Company, statistical data	827	3468
34—Des Moines Gas Company, detailed statement of gas sales, June 30, 1888, to December 31, 1910	828	3468
35—Statement of active meters in service December 31, 1886, to December 31, 1910	829	3469
36—Des Moines Gas Company, statistical percentage schedule	830	3469

	Original.	Print
Complainant's Exhibit No. 37—Mains in ground by years, January 1, 1889, to December 31, 1910 (omitted in printing).....	831	
38—Photograph of insurance map, gas works territory (omitted in printing).....	843	
39—Consolidated Gas Company, New York City's Exhibit No. 126 (read in record page 2417 of testimony).		
40—Des Moines Gas Company, photograph of stairway on purifier-house (omitted in printing).....	844	
41—William D. Marks' diagram showing estimated cost of laying gas mains.....	845	3470
42—William D. Marks' data sheet for diagram showing estimated cost of laying gas mains.....	846	3470
43—William D. Marks' data sheet for diagram showing estimated cost of laying gas mains, as taken from Buffalo testimony, Defendants' Exhibit "G".....	847	3470
44, 44A—Table showing average price, total sales, sales per capita, total meters, sales per meter, population, population per meter, miles of main, and works capacity of the cities of Lawrence, Cambridge, Lowell, New Bedford, and Springfield, Massachusetts, years 1901 to 1910, inclusive, taken from State reports.....	848	3470
45—Tax return statement made by Des Moines Gas Company, January 1, 1909.....	849	3470
46—Tax return statement made by Des Moines Gas Company, January 1, 1910.....	850	3470
47—Tax return statement made by Des Moines Gas Company, January 1, 1911.....	851	3470
48—Average gross revenue and net return applicable to interest and profits for 4 years ended December 31, 1909 (read in record page 3268 of testimony).		
49—Average gross revenue and net return applicable to interest and profits for 4 years ended December 31, 1909, excluding Valley Junction (read in record page 3270 of testimony).		

Original. Print

Complainant's Exhibit 50—Average gross revenue and net return applicable to interest and profits for 5 years ended December 31, 1910 (read in record page 3272 of testimony).

51—Average gross revenue and net return applicable to interest and profits for 5 years ended December 31, 1910, excluding Valley Junction (read in record page 3274 of testimony).

52—Profits on the basis of 90-cent gas and average expenses for 5 years to December 31, 1910 (read in record page 3277 of testimony).

53—Profits on the basis of 90-cent gas and average expenses for 5 years to December 31, 1910, excluding Valley Junction (read in record page 3279 of testimony).

54—Profits on basis of 90-cent gas and adjusting operating expenses (read in record page 3289 of testimony).

55—Profits on basis of 90-cent gas and adjusting operating expenses (read in record page 3293 of testimony.)

56—Annual investment value on an 8 per cent earning basis, without depreciation (omitted in printing).. 852

57—Working capital (referring to Hall's Exhibit F of the Defendants' Exhibit 30), including current and working assets and current liabilities less bills payable (read in record at page 3371 of testimony).

58—Working capital (referring to Hall's Exhibit F of the Defendants' Exhibit 30), including current and working assets and current and accrued liabilities (read in record page 3372 of testimony).

59—Explanation of working of Wisconsin theory of investment values, using as a basis an original investment of $1,000, with annual additions of $1,000 for 20 years (omitted in printing)..... 853

60—Table referring to Defendants' Exhibit No. 34 (read in record page 3452 of testimony).

	Original.	Print
Complainant's Exhibit 61—Adjustment of gross corporate income as shown by complainant and as recorded in Defendants' Exhibit No. 30, Exhibit "A" (read in record page 3454 of testimony).		
63—Organization expenses, Des Moines Gas Company (read in record page 3840 of testimony).		
64—Blue-print, "straight line depreciation, 20-year period".....	854	3470
65—Table giving statistical data of seven Massachusetts cities compared with William D. Marks' unit cost, Defendants' Exhibit No. 23.....	855	3470
65A—Table giving statistical data of seven Massachusetts cities, compared with William D. Marks' unit cost, Defendant's Exhibit No. 23, street main details	856	3470
66—Table showing sales for seven Massachusetts cities, 1900, 1905 and 1910; also giving per capita sales for 1910 correcting page 86, Defendants' Exhibit No. 43 (read in record page 4164 of testimony).		
67—Table showing total for year 1900, 1905, and 1910 of seven Massachusetts cities, giving mains, meters and sales, correcting page 87 of Defendants' Exhibit No. 43 (read in record page 4171 of testimony).		
68—Agreement, Edward W. Bemis and City of Des Moines (read in record page 4197 of testimony).		
69—Synopsis of transaction of the U. G. I. Company with the Des Moines Gas Company, as prepared by Mr. Andrew Sangster.....	857	3470
71—Miscellaneous papers and letters produced in court by Mayor James Hanna (read in record page 4636 of testimony).		
71A—Tabulation made by Mayor James Hanna from letters contained in Complainant's Exhibit No. 71 (read in record page 4648½ of testimony).		
72—Copy of letter, Mayor Hanna to Prof. Wm. D. Marks, dated February 11, 1911.....	860	3472
73—Bill of Prof. Wm. D. Marks to the city of Des Moines, dated February 29, 1911, for professional services and expenses.....	861	3473

	Original.	Print
Complainant's Exhibit 74—Prof. Wm. D. Marks' report to the mayor and city council of the city of Des Moines *in re* Des Moines Gas Company, dated February 17, 1911 (read in record page 4634 of testimony).		
75—Clipping from "Register and Leader," February 21, 1911 (read in record page 4721 of testimony).		
76—Clipping from "Tribune," February 21, 1911 (read in record page 4722 of testimony).		
77—Verified copy of audit of Boston Consolidated Gas Company for year ended June 30, 1911 (omitted in printing).....	862	
78—Copy of letter, J. A. Pearson, purchasing agent, to various oil companies (read in record page 4829 of testimony).		
79—Proposed contract, Des Moines Gas Company and Nashville Refining Company, May 3, 1909 (read in record page 4830 of testimony).		
80—Letter, Sun Oil Company to J. A. Pearson, January 7, 1909 (read in record page 4831 of testimony).		
81—Letter, Great Western Oil Company to J. A. Pearson, May 11, 1909 (read in record page 4832 of testimony).		
82—Letter, Gas Oil Company to J. A. Pearson, May 5, 1909 (read in record page 4833 of testimony).		
83—Cost of laying water mains in Buffalo, municipal water works, fiscal year 1902, prepared by W. J. Hagenah.	870	3473
84—Cost of laying water mains in Buffalo, municipal water works, fiscal year 1903, prepared by W. J. Hagenah.	872	3473
85—Cost of laying water mains, Buffalo municipal water works, fiscal year 1904, prepared by W. J. Hagenah.....	874	3473
86—Cost of laying water mains, Buffalo municipal water works, fiscal year 1905, prepared by W. J. Hagenah.	876	
87—Cost of laying water mains, Buffalo municipal water works, fiscal year 1906, prepared by W. J. Hagenah.	878	

	Original.	Print
Complainant's Exhibit 88—Recapitulation sheet, cost of laying water mains in Buffalo, municipal water works, 1902 to 1906, inclusive, as shown by pipe extension records, prepared by W. J. Hagenah.	880	3473
89—Unit cost of water mains laid in Buffalo municipal water works, 1902 to 1906, inclusive, prepared by W. J. Hagenah.....	881	3474
90—Liability insurance, estimated on basis of 1910 pay-roll and sales of 532,000,000 cubic feet of gas.....	882	3474
91—Statement of gas sales ten months ending October 30, 1911.....	890	3476
92—Certified copy of deed, Capital City Gas Light Company to Des Moines Gas Company, March 1, 1906.....	891	3476
93—Statement of revenue and cost of operating 10 months ended December 31, 1911.....	894	3478
Defendants' Exhibit 1—Tax return statement made by Des Moines Gas Company January 1, 1908 (read in record page 205 of testimony).		
2—Des Moines Gas Company, street main instruction order blank (omitted in printing).	895	
3—Des Moines Gas Company, street main instruction order blank filled in.....	896	3478
4—Des Moines Gas Company, street main authorization No. 520 (read in record page 728 of testimony).		
5—Copy of page No. 59, Des Moines Gas Company street main record book No. 7, showing sketch covering authorization No. 520.....	897	3478
6—Copy of report Henry I. Lea on the Gage County Gas Light and Power Company, Beatrice, Nebraska, February 3, 1911.....	898	3478
8—Des Moines valuation, notes on depreciation by J. B. Klumpp.....	906	3485
9—Historical development curves No. 1, Des Moines Gas Company.....	963	3518
10—Historical development curves, hypothetical plant, No. 3, Des Moines Gas Company	964	3518
11—Historical development curves No. 2, Des Moines Gas Company.....	965	3518
12—Detailed statement of gas sales, 1904 to 1910 (read in record page 2076 of testimony).		

	Original.	Print
Defendants' Exhibit 13—Record of mains laid by year and sizes, 1888 to 1910 (read in record page 2076 of testimony).		
14—History of price of gas, Des Moines Gas Company (read in record page 2076 of testimony).		
15—Statement of profit and loss, years ended September 30, 1908, and September 30, 1909, Des Moines Gas Company (read in record page 2076 of testimony).		
16—Statement of profit and loss, years ended September 30, 1910, and December 31, 1910, Des Moines Gas Company (read in record page 2076 of testimony).		
17—Des Moines Gas Company, cost of services 1906 to 1910, inclusive (read in record page 2076 of testimony).		
18—1911, annual estimate and correspondence pertaining thereto, Des Moines Gas Company (read in record page 4201 of testimony)..	966	3519
19—Copy of oil contract, dated May 6, 1907 (read in record page 2095 of testimony).		
20—Copy of oil contract, dated May 14, 1909 (read in record page 2098 of testimony).		
21—Copy of coke contract, dated May 27, 1911 (read in record page 2103 of testimony).		
22—Capital City Gas Light Company, Des Moines Gas Company—analysis of real estate account.....	1000	3535
23—Report of Wm. D. Marks on Des Moines Gas Company.....	1001	3536
24—Wm. D. Mark's diagram showing estimated cost of laying gas mains, being the same as Complainant's Exhibit No. 41. (See page 845).	1002	3536
25—Capital City Gas Light Company, stockholders' and directors' minutes, volume I (omitted in printing).....	1107	
26—Capital City Gas Light Company, stockholders' and directors' minutes volume II (omitted in printing).....	1320	
27—Des Moines Gas Company, stockholders' and directors' minutes, volume I (omitted in printing)...	1508	

	Original.	Print
Defendants' Exhibit 28—Des Moines Gas Company, directors' minutes, 10 pages, covering meetings of April 24, 1911, May 22, 1911, June 26, 1911, July 10, 1911, and July 24, 1911 (omitted in printing)	1749	
29—Plat of property adjacent to gas works, showing assessed valuation thereof, prepared by James Parker (omitted in printing)	1760	
30—Report of James Hall, of Marwick, Mitchell and Company, on the Des Moines Gas Company	1761	3611
31—Des Moines Gas Company, rate regulation account for the years 1909 and 1910	1831	3662
32—Figures made by Mr. Hall in endeavor to reconcile Defendants' Exhibit 30 with Complainant's Exhibit 23 (read in record page 3146 of testimony).		
33—Report of James Hall, of Marwick, Mitchell and Company—investment value of plant, Des Moines Gas Company, December 31, 1910 (omitted in printing)	1835	
34—Explanation of Wisconsin theory of investment value, using as a basis an original investment of $1,000 with annual additions of $1,000 for 20 years, prepared by James Hall, of Marwick, Mitchell and Company (omitted in printing)	1843	
35—Summary of plant investment as per books, January 1, 1895, to December 31, 1910, prepared by James Hall, of Marwick, Mitchell and Company (read in record page 3458 of testimony).		
36—Estimated average investment and return from estimated revenue, prepared by James Hall, of Marwick, Mitchell and Company (read in record page 3461 of testimony).		
37—Contract, Des Moines Gas Company and Percival Porter Co., agent, *in re* street main extension (read in record page 3601 of testimony).		

	Original.	Print
Defendants' Exhibit 38—Capital City Gas Light Company, Des Moines, Iowa, cash invested in construction and working capital, December 31, 1894, as shown by affidavit of Edw. G. Pratt, filed June 14, 1895, in cause No. 2033, equity, in the U. S. circuit court, southern district of Iowa, being Capital City Gas Light Company *vs.* City of Des Moines.....	1845	3666
39—Affidavit of Edw. G. Pratt, June 7, 1895, in case of Capital City Gas Light Company *vs.* City of Des Moines	1846	3668
40—A part of the affidavit and statement of Edw. G. Pratt as filed in the case of Exhibits Nos. 38 and 39, *supra*.	1853	3672
41—Transcript of testimony in No. 2330, equity, Capital City Gas Light Company *vs.* City of Des Moines.	1855	3673
42—Affidavit of Edw. G. Cowdery, June 6, 1895, in cause No. 2330, equity, Capital City Gas Light Company *vs.* City of Des Moines.....	1879	3691
43—Report of Edward W. Bemis on the Des Moines Gas Company.....	1895	3700
44—Pamphlet entitled "The Issue in the Foreground—Gas" (omitted in printing).....	1987	
45—Price of cast-iron pipe, Des Moines Gas Company—Edw. W. Bemis (read in record page 4252 of testimony).		
46—Illustration of sinking fund method of financing depreciation, by E. W. Bemis (read in record page 4262 of testimony).		
47—Operating expenses and profits, 1910 and 1911, Des Moines Gas Company, by E. W. Bemis (read in record page 4341 of testimony).		
48—Bill, Des Moines Gas Company to the U. G. I. Company for fee paid A. B. Cummings, March 23, 1906.....	2017	3747
49—Bill, Des Moines Gas Company to the U. G. I. Company, expenses of F. C. Morgan, March 14, 1906 (read in record page 4418 of testimony).		

	Original.	Print
Defendants' Exhibit 50—Bill, Des Moines Gas Company to the U. G. I. Company, expenses of D. D. Reinhardt, March 31, 1906 (read in record page 4420 of testimony).		
51—Bill, Des Moines Gas Company to the U. G. I. Company for notary services, April 3, 1906 (read in record page 4425 of testimony).....	2018	3747
52—(Not offered.)		
53—Bill, Des Moines Gas Company to the U.G. I. Company, October 31, 1906, October time of J. S. Harrison	2019	3747
54—Bill, Des Moines Gas Company to the U. G. I. Company, September 30, 1906, September time of J. S. Harrison	2020	3747
55—Letters between Jansen Haines and Lewis Lillie *in re* journal entry of September 15, 1910 (read in record page 4513 of testimony).		
56—Treasurer's check book, Des Moines Gas Company on First National Bank, Philadelphia (read in record page 4477 of testimony).		
57—Voucher, September 15, 1911, Des Moines Gas Company to the U. G. I. Company (read in record page 4515 of testimony).		
58—Voucher, September 15, 1911, Des Moines Gas Company to the U. G. I. Company (read in record page 4516 of testimony).		
59—Analysis of accounts, Des Moines Gas Company with the U. G. I. Company, March 1, 1906, to December 31, 1910.....	2021	3747
61—The U. G. I. Company, statement taken from Moody's Manual Service, 1910 (read in record page 4590 of testimony).		
67—Des Moines Gas Company, operating expenses for 8 months ending December 31, 1910.....	2027	3748
68—Des Moines Gas Company, additions to plant Jan. 1, to Aug. 31, 1911..	2031	3751
69—Des Moines Gas Company, note of gas sales for 12 months to February 28th in each year, 1907 to 1911...	2032	3752

	Original.	Print
Defendants' Exhibit 70—Mr. Sangster's figures analyzing the account of the U. G. I. Company and Des Moines Gas Company, being the same as Complainant's Exhibit No. 69.		
71*a*—Ordinance of the city of Minneapolis passed February 23, 1910 (read in record page 4658 of testimony).		
71*b*—Ordinance of the city of Minneapolis passed March 24, 1910 (read in record page 4674 of testimony).		
72—Letter, J. R. Hanna to Jansen Haines, dated February 7, 1911 (read in record page 4713 of testimony).		
73—Letter, Jansen Haines to Mayor J. R. Hanna, dated February 14, 1911 (read in record page 4715 of testimony).		
74—Prof. Bemis' analysis and correction to Complainant's Exhibit No. 65.	2033	3752
75—Prof. Bemis' correction for page 92 of his report, Defendants' Exhibit No. 43.....	2039	3756
76—Prof. Bemis' margin between price of gas on the one hand and manufacturing expenses, leakage, and taxes, on the other hand, in Des Moines and in seven Massachusetts cities.....	2040	3757
77—Des Moines Gas Company, rate regulation expense, January 1 to August 31, 1911, prepared by Mr. Sangster.....	2042	3758
78—Semi-annual statement of Commercial Trust Co. of Philadelphia at close of business on July 31, 1911 (omitted in printing).....	2053	
79—Capital City Gas Light Company, copies of improvement and repair authorizations Nos. 439, 460, and 467, covering the million-foot holder and 8 ft. 6 in. water gas set.	2054	3779
80—Summary of data on which were based the tables Nos. 91 and 92 in the report of E. W. Bemis, Defendants' Exhibit No. 43 (read in record page 4933 of testimony).		

	Original.	Print
Defendants' Exhibit 81—Wisconsin theory, summary of investment account after crediting depreciation charge and on operating expense, July 1, 1886, to December 31, 1910, prepared by James Hall, of Marwick, Mitchell and Company (omitted in printing)	2057	
82—Bill, Des Moines Gas Company in account with Blaise and Blaise, dated April 1, 1911	2058	3781
83—Voucher, Des Moines Gas Company to Blaise and Blaise, April 1, 1911.	2059	3781
84*a*—Extract from U. G. I. Ledger 7*a* and 8*a*, Des Moines contract No. 87. (omitted in printing)	2060	
84*b*—Extract U. G. I. Ledger 7*a* and 8*a*, Des Moines contract No. 52 (omitted in printing)	2079	
84*c*—Transcript from construction records of George J. Roberts, showing detailed cost of constructing oil plant and water gas apparatus at Des Moines, Iowa (omitted in printing)	2098	
84*d*—Transcript from construction records of George J. Roberts, showing detailed cost of constructing gas-holder at Des Moines, Iowa (omitted in printing)	2103	
84*e*—Extract from U. G. I. Ledger 8*a*, showing account with Des Moines Gas Company, March 1, 1906, to December 31, 1910 (omitted in printing)	2108	
84*f*—Contract, Stacey Manufacturing Company and George J. Roberts, October 18, 1902, for erection of gas-holder on land adjoining gas works of Capital City Gas Light Company at Des Moines, Iowa (omitted in printing)	2153	
Clerk's certificate to part three (exhibits)	2167	3782
Clerk's certificate to complete transcript	2169	3783

VOLUME V.

DES MOINES GAS COMPANY
vs.
CITY OF DES MOINES et al.

1—460 * * * * * * *

461 COMPLAINANT'S EXHIBIT # 20.

7/21/11. H. C. W.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company, Des Moines, Iowa.

462 Henry I. Lea, Consulting Gas Engineer,
People's Gas Building, Chicago,
Member American Gas Institute, American Society of Mechanical Engineers.

JUNE 24TH, 1911.

Jansen Haines, Gen. Mgr., Des Moines Gas Company, Des Moines, Iowa.

DEAR SIR: In accord with your instructions of January 13th last, I have made a detailed examination of that portion of the property of the Des Moines Gas Company which is used and useful in the manufacture, distribution and sale of gas within the City of Des Moines, and of the operating expenses and income of the Des Moines Gas Company, in so far as they are affected by the sales of gas within the City of Des Moines.

This examination was made for the purpose of determining the value of the aforesaid property and business of the Des Moines Gas Company, and I am now able to report that, in my judgment, the present costs of reproduction and the present value of such property and business, are fairly shown in the table following:

	Reproduction costs.	Present values.
Organization & Legal Expense	$68,023.00	$68,023.00
Working Capital	150,896.00	150,896.00
Real Estate	259,655.00	259,655.00
Buildings	106,934.00	82,445.00
Works Equipment	510,179.00	384,723.00
Distribution System	1,963,027.00	1,732,963.00
Going Value	583,000.00	583,000.00
Totals	$3,641,714.00	$3,261,705.00

In the form of Exhibits attached hereto, you will find a large amount of the data and some of the calculations through which I have arrived at the above conclusions.

Respectfully submitted,

HENRY I. LEA.

H. I. L.—M. S.

463 *Index.*

Organization and Legal Expense	Exhibit A.
Working Capital	" B.
Engineering, etc.	" C.
Summary of Physical Equipment, Reproduction Costs, Present Values, etc	" D.
Summary of Physical Equipment, Net Construction Costs	" E.
Net Construction Costs:	
Real Estate	" F.
Buildings	" G.
Works Equipment	" H.
Distribution Systems	" I.
Going Value Calculation	" J.

464 EXHIBIT A.

465 *Organization & Legal Expense.*

Preliminary investigation	$3,000.00
Preparing articles of incorporation, making and certifying abstracts, drawing and examining contracts, and general retaining fee	10,000.00
State incorporation fee	4,000.00
Salary of manager (3 years)	22,500.00
Incidental and travelling expenses (3 years)	4,500.00
Clerical force (3 years)	13,500.00
Rent and stationery (3 years)	4,500.00
	$62,000.00
Taxes during construction	1,429.00
Loss of interest during construction	4,594.00
Total Organization & Legal Exp	$68,023.00

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EXHIBIT B.

467

Working Capital.

Materials and supplies:		
Storeroom	$40,251.89	
Tar	1,235.34	
Gas Stock	811.44	
Boiler Fuel Stock	737.95	
Generator Fuel Stock	10,449.98	
Gas Coal Stock	1,222.16	
Oil (W. G.) Stock	9,301.80	
Purification Supplies Stock	4,113.30	
Stable	5,805.40	
Gas Arc Lamps	3,481.20	
		$77,410.46
Accounts receivable:		
Gas Sales	$34,092.34	
Sundry Sales	17,851.80	
City of Des Moines	126.40	
Sundry Debtors	1,556.92	
		53,627.46
Cash:		
Cash	$20,137.61	
Petty Cash	1,350.00	
Treasurer	27,946.54	
		49,434.15
Advance accounts:		
Advance Insurance		905.20
Total		$181,377.29
Less accounts payable		39,607.29
Total		$141,770.00
Say		$142,000.00
Taxes during construction		2,412.00
Loss of interest during construction		6,484.00
Total working capital		$150,896.00

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EXHIBIT C.

469

Engineering, etc.

Engineering and Supervision	5%
Casualty Liability	2%
Omissions and Contingencies	8%
	15%

(With exception of Real Estate, the above percentage (15) has been added to net construction costs of all physical equipment.)

EXHIBIT D.

Summary of Physical Equipment.

	Total reproduction cost.	Age in years.	Assumed life. (Years.)	Per cent condition.	Present value.	Depreciation annuity on sinking fund basis.
Real estate:						
Parcel A— 78,400 sq. ft.	.....	....	..	....	.....	.....
" B— 66,784 " "	.....	....	..	....	.....	.....
" C— 17,424 " "	.....	....	..	....	.....	.....
" D— 19,600 " "	.....	....	..	....	.....	.....
" E— 14,156 " "	.....	....	..	....	.....	.....
196,358 " "	.....	....	..	....	.....	.....
Total Real Estate	$259,655.00	46	..	100	$259,655.00	0
Buildings:						
# 1 A & B	$11,860.00	19	50	77.	$9,132.00	$105.00
# 1 C	155.00	8	30	82.	127.00	3.00
# 3	9,718.00	35	50	66.	6,414.00	86.00
# 4	6,300.00	35	50	66.	4,158.00	56.00
# 5	3,754.00	35	50	66.	2,478.00	33.00
# 6 A & B	8,550.00	9	50	78.	6,669.00	76.00
# 6 C	1,689.00	2	40	98.	1,655.00	22.00
# 7	19,131.00	2	50	99.	18,940.00	179.00
# 8 A	8,700.00	15	20	34.	2,958.00	308.00
# 8 B	549.00	10	20	60.	329.00	19.00
#10	10,255.00	35	50	66.	6,768.00	91.00

#11	263.00	2	50	98.	258.00	2.00
#12	1,098.00	1	50	99.	1,087.00	10.00
#13	285.00	4	50	96.	274.00	3.00
#14	1,966.00	2	50	98.	1,927.00	17.00
#15	2,827.00	20	20	25.	707.00	100.00
#16	1,226.00	5	30	90.	1,104.00	26.00
#17	164.00	6	20	79.	130.00	6.00
#35	42.00	6	20	79.	33.00	2.00
#53	729.00	24	20	25.	182.00	26.00
#54	92.00	4	20	87.	80.00	3.00
#55	117.00	5	20	81.	95.00	4.00
West Side Office	17,464.00	1	20	97.	16,940.00	618.00
Total Buildings	$106,934.00	10.14	41	77.1	$82,445.00	$1,786.00
Works equipment:						
In Building # 1 A & B:						
1 Steam hydraulic elevator	$352.00	18	30	52.	$183.00	$7.00

	Total reproduction cost.	Age in years.	Assumed life. (Years.)	Per cent condition.	Present value.	Depreciation annuity on sinking fund basis.
4 Purifying Boxes	$23,784.00	6	30	87.	$20,692.00	$500.00
1 Oxide Conveyor	1,275.00	6	16	70.	892.00	66.00
Pipe	1,939.00	6	50	95.	1,842.00	17.00
	27,350.00					
In Building # 3:						
Foundations	1,984.00	10	25	69.	1,369.00	51.00
Photometer, etc.	1,650.00	11	15	33.	545.00	86.00
Pentane Lamps, etc.	895.00	6	10	42.	376.00	75.00
8′ Meter	3,161.00	9	30	80.	2,529.00	66.00
7′6″ "	2,918.00	6	30	87.	2,539.00	61.00
16″ Governor	1,032.00	15	50	83.	857.00	9.00
24″ "	2,002.00	8	50	92.	1,842.00	17.00
Washstand, etc.	544.00	6	15	68.	370.00	5.00
# 8 Exhauster	2,524.00	2	25	95.	2,398.00	65.00
# 7 "	2,047.00	16	25	49.	1,003.00	53.00
# 7 "	2,047.00	13	25	58.	1,187.00	53.00
# 5 Exhausters	2,452.00	5	25	87.	2,133.00	63.00
Tar Extractor	2,082.00	6	30	87.	1,811.00	44.00
Work Bench, etc.	467.00	6	15	68.	318.00	24.00
Pumps	969.00	14	20	40.	388.00	34.00
Pipe	3,783.00	10	50	90.	3,405.00	31.00
	30,557.00					

In Building # 4:						
Foundations	584.00	12	15	26.	152.00	30.00
Engines, etc.	1,365.00	12	15	26.	355.00	71.00
Water Gas sets	14,308.00	12	30	70.	10,016.00	301.00
Elevator, etc.	620.00	6	30	87.	539.00	13.00
Benches	13,106.00	12	20	0.	000.00	0.00
	29,983.00					
In Building # 5:						
Foundations	379.00	12	30	70.	265.00	8.00
Switch, etc.	1,134.00	6	25	84.	953.00	29.00
	1,513.00					
In Building # 6:						
Foundations	948.00	12	20	51.	483.00	34.00
Condensers	6,157.00	6	30	87.	5,357.00	129.00
Engines, etc.	3,567.00	11	15	33.	1,210.00	190.00
Pipe	1,295.00	8	50	92.	1,191.00	11.00
Boilers, etc.	6,801.00	11	15	33.	2,244.00	352.00
	18,868.00					

	Total reproduction cost.	Age in years.	Assumed life. (Years.	Per cent condition.	Present value.	Depreciation annuity on sinking fund basis.
In Building # 6 C:						
Foundations	$275.00	6	15	68.	$187.00	$14.00
Boiler, etc.	2,121.00	6	15	68.	1,442.00	110.00
	2,396.00					
In Building # 7:						
Foundations	4,789.00	9	30	80.	3,831.00	101.00
Water Gas sets	41,744.00	2	30	95.	40,074.00	877.00
Lockers, etc.	4,792.00	4	15	79.	3,786.00	248.00
	51,325.00					
In Building # 8 A:						
Scales	183.00	4	15	79.	145.00	9.00
In Building # 8 B:						
Elevator	1,942.00	15	30	61.	1,185.00	41.00
In Building # 10:	17.00	10	15	39.	7.00	1.00
Foundations	242.00	10	15	39.	94.00	13.00
Blowers, etc.	997.00	6	15	68.	678.00	52.00
Drill Press, etc.						
	1,256.00					

In Building # 12:						
Pumps	1,202.00	2	20	93.	1,118.00	32.00
"	256.00	10	20	60.	154.00	9.00
Pump	152.00	12	20	51.	78.00	5.00
"	85.00	6	20	78.	66.00	3.00
	1,695.00					
In Building # 13:						
Foundations	12.00	8	20	70.	8.00	1.00
Pump	595.00	8	20	70.	417.00	21.00
	607.00					
In Building # 14:						
Foundations	225.00	2	30	96.	216.00	5.00
Meter	10,194.00	2	30	96.	9,786.00	214.00
Pipe	1,056.00	2	30	96.	1,014.00	22.00
	11,475.00					

In Building # 16:	Total reproduction cost.	Age in years.	Assumed life (years).	Per cent condition.	Present value.	Depreciation annuity on sinking fund basis.
Foundations	$151.00	4	15	79.	$119.00	$8.00
Slab, etc.	83.00	4	15	79.	66.00	4.00
Boiler, etc.	1,280.00	4	15	79.	1,011.00	66.00
Gauges	1,047.00	4	10	61.	639.00	87.00
Fire protection	518.00	4	10	61.	316.00	43.00
Works Tools	728.00	2	10	80.	582.00	60.00
Outside Apparatus	1,990.00	20	20	25.	498.00	70.00
Wells, etc.	4,230.00	10	30	76.	3,215.00	89.00
Exhaust Steam Piping	2,744.00	5	20	82.	2,250.00	97.00
Steam Piping	4,932.00	5	20	82.	4,044.00	174.00
Circulation Piping	1,562.00	5	20	82.	1,281.00	55.00
Oil Piping, etc.	5,096.00	5	20	82.	4,179.00	180.00
Water Piping, etc	4,238.00	5	20	82.	3,475.00	149.00
Gas Piping	650.00	5	20	82.	533.00	23.00
Electric Wiring	229.00	5	15	72.	165.00	12.00
Sewer Piping	3,418.00	8	30	82.	2,803.00	72.00
Drain Piping	694.00	8	20	70.	486.00	25.00
Tar "	948.00	7	20	74.	702.00	34.00
Gas mains, etc.	25,705.00	8	50	92.	23,649.00	239.00
Paving	3,138.00	8	15	54	1,695.00	162.00
Fencing, etc.	3,481.00	6	20	78.	2,715.00	123.00
Oil Unloading Device	162.00	2	20	93.	151.00	6.00

Lumber	81.00	1	20	97.	73.00	3.00
Fixtures (Building # 50)	631.00	4	20	86.	543.00	22.00
Relief Holder # 18	36,248.00	49	40	25.	9,062.00	481.00
Storage " # 19	55,454.00	20	40	63.	34,936.00	735.00
" " # 20	137,988.00	8	40	89.	122,809.00	1,830.00
Oil Tank # 21	7,213.00	9	30	80.	5,770.00	152.00
" " # 22	3,461.00	14	30	65.	2,250.00	73.00
" " # 23	1,729.00	20	30	45.	778.00	36.00
Oil Tanks # 24 & # 25	20,500.00	2	30	96.	19,680.00	430.00
Oil Tank # 36	121.00	18	30	53.	64.00	3.00
" " # 58	495.00	7	30	85.	421.00	10.00
Pipe coating tank	72.00	11	10	25.	18.00	6.00
Rubbish Kiln	12.00	3	10	73.	9.00	1.00
Total Works Equipment	$510,179.00	9.24	33.32	75.41	$384,723.00	$9,933.00

Summary of Physical Equipment.

Distribution system.	Total reproduction cost.	Age in years.	Assumed life (years.)	Per cent condition.	Present value.	Depreciation annuity on sinking fund basis.
Street mains:						
2½" & Under	$14,838.00	8.97	25	76.	$11,277.00	$381.00
3" W. I.	39,025.00	8.97	35	85.	33,171.00	645.00
4" C. I.	572,370.00	8.97	50	91.	520,857.00	5,071.00
6" "	222,901.00	8.97	75	96.	213,985.00	1,034.00
8" "	128,270.00	8.97	75	96.	123,139.00	595.00
10" "	72,691.00	8.97	75	96.	69,783.00	337.00
12 "	78,159.00	8.97	75	96.	75,033.00	363.00
14" "	1,605.00	8.97	75	96.	1,541.00	7.00
16" "	124,887.00	8.97	75	96.	119,892.00	579.00
20" "	29,593.00	8.97	75	96.	28,409.00	137.00
24" "	20,659.00	8.97	75	96.	19,833.00	96.00
Total Mains	$1,304,998.00	8.97	62	93.25	$1,216,920.00	$9,245.00
House Services	$364,290.00	8.94	25	76.	$276,860.00	$9,351.00
Lamp "	31,592.00	8.94	25	76.	24,010.00	811.00
Total Services	$395,882.00	8.94	25	76.	$300,870.00	$10,162.00
Line Pot Drips	$3,040.00	8.97	60	94.	$2,857.00	$22.00
Valves	4,457.00	8.97	60	94.	4,190.00	33.00
Steam R. R. Crossings	4,839.00	8.97	60	94.	4,548.00	36.00

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Street " "	7,074.00	8.97	60	94.	6,650.00	52.00
Tools	6,333.00	8.97	60	94.	5,953.00	47.00
Total Miscellaneous	$25,743.00	8.97	60	94.	$24,198.00	$190.00
Meters in Use	$227,145.00	7.7	25	80.	$181,716.00	$5,831.00
" " Stock	9,259.00	0	25	100.	9,259.00	238.00
Total Meters	$236,404.00	7.4	25	80.78	$190,975.00	$6,069.00
Total Distribution System	$1,963,027.00	8.77	50	88.23	$1,732,963.00	$25,666.00
Total Physical Equipment	$2,839,795.00	*8.9	*46	*85.3	$2,459,786.00	$37,385.00

* All Physical Equipment except Real Estate.

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476 *Average Age of Mains.*

(Installation Basis.)

Year.	Total miles end of year.	Number miles installed during year.		Years in service.		Total year miles.
1910.....	183.89	6.73	x	0	=	0
1909.....	167.16	9.28	x	1	=	9.28
1908.....	157.88	6.70	x	2	=	13.40
1907.....	151.18	8.17	x	3	=	24.51
1906.....	143.01	21.71	x	4	=	86.84
1905.....	121.30	16.91	x	5	=	84.55
1904.....	104.39	5.48	x	6	=	32.88
1903.....	98.91	10.16	x	7	=	71.12
1902.....	88.75	7.24	x	8	=	57.92
1901.....	81.51	9.16	x	9	=	82.44
1900.....	72.35	2.93	x	10	=	29.30
1899.....	69.42	4.91	x	11	=	54.01
1898.....	64.51	6.84	x	12	=	82.08
1897.....	57.67	8.84	x	13	=	114.92
1896.....	48.83	10.47	x	14	=	146.58
1895.....	38.36	.92	x	15	=	13.80
1894.....	37.44	.13	x	16	=	2.08
1893.....	37.31	1.04	x	17	=	17.68
1892.....	36.27	.40	x	18 Av. 6.29		7.20
1891.....	35.87	35.87	x	27	=	988.49
1890-1864, 26 years	0	183.89		=		1,899.08
Average age						10.3 yrs.

* 18 : 26 : : 6.29 : x
x = 9.08

Average age of mains on investment basis = 8.97 years.

477 *Services—Average Age.*

(On Investment Basis.)

Year.	Investment.		Years service.		Dollar-years.
1910	$18,579		0		0
1909 (10 mos.)	14,002		5/6		11,668
1909 (12 mos.)	12,636		1 5/6		23,166
1908	12,538		2 5/6		35,524
1907	14,738		3 5/6		56,496
1906 (2 mos.)	649		4		2,596
1905	19,306		5		96,530
1904	14,913		6		89,478
1903	23,045		7		161,315
1902	17,843		8		142,744
1901	23,339		9		210,051
1900	16,944		10		169,440
1899	10,897		11		119,867
1898	7,716		12		92,592
1897	6,901		13		89,713
1896	6,879		14		96,306
1895	2,364		15		35,460
1894	1,617		16		25,872
1893	1,548		17		26,316
1892	2,272		18		40,896
1891	2,134		19		40,546
1890	1,783		20		35,660
1889 (6 mos.)	852		20.5		17,466
1889 (12 mos.)	2,601		21.5		35,921
1888	1,381		22.5		31,072
1887	2,358		23.5		55,413
1886 (6 mos.)	599		24		14,376
1885	2,776		25		69,400
1884	1,439		26		37,414
1883	1,604		27		43,308
1882	3,183		28		89,124
1881	1,174		29		34,046
1880	617		30		18,510
1879	428		31	Av. 8.26	13,268
1878	725	252380	32	2,084,754	23,200
Jan. 26, 1878	6,411		35.6		228,232
1878-1864, 14 years	258,791				2,312,986

$$\text{Aver. Age} = \frac{2,312,986}{258,791} = 8.94 \text{ years.}$$

x (32 : 14 : : 8.26 : x)

x = 3.6 **Against 8.27**

478 *Average Age of Meters.*

(Installation Basis.)

Year.	Total number of meters end of year.	Number of meters installed during year.		Years in service.		Total meters years.
1910	19,742	1,303	x	0	=	0
1909	18,439	1,339	x	1	=	1,339
1908	17,100	1,027	x	2	=	2,054
1907	16,073	1,433	x	3	=	4,299
1906	14,640	1,700	x	4	=	6,800
1905	12,940	1,504	x	5	=	7,520
1904	11,436	1,041	x	6	=	6,246
1903	10,395	1,497	x	7	=	10,479
1902	8,898	1,216	x	8	=	9,728
1901	7,682	1,257	x	9	=	11,313
1900	6,425	1,117	x	10	=	11,170
1899	5,308	1,181	x	11	=	12,991
1898	4,127	648	x	12	=	7,776
1897	3,479	611	x	13	=	7,943
1896	2,868	380	x	14	=	5,320
1895	2,488	263	x	15	=	3,945
1894	2,225	178	x	16	=	2,848
1893	2,047	173	x	17	=	2,941
1892	1,874	154	x	18	=	2,772
1891	1,720	182	x	19	=	3,458
1890	1,538	200	x	20	=	4,000
1889	1,338	17	x	21	=	357
1888	1,321	17	x	22	=	374
1887	1,304	43	x	23 (Av. 6.85)		989
1886	1,261	1,261	x	29.1	=	36,695
1886-1864, 22 years	0	19,742				163,357

$$\frac{163,357}{19,742} = 8.27 \text{ years (average age of meters).}$$

Average age of meters on investment basis 7.70 years.

479 EXHIBIT E.

480 *Summary of Physical Equipment.*

	Net construction costs.
Real Estate	$215,993.00
Buildings	85,723.00
Works Equipment	420,428.00
Distribution System	1,549,871.00
Total	$2,272,015.00

481 **EXHIBIT F.**

482 ***Real Estate.***

All that certain tract of land situated in the City of Des Moines, County of Polk, State of Iowa.

Consisting of five (5) parcels described as follows:

Parcel A is that tract of land on which the principal buildings of the Gas Works are located.

Beginning at a point at the South East corner of East First and East Vine Streets, thence in an Easterly direction Two Hundred and Eighty (280) feet to the Southwest corner of East Vine and East Second Streets, thence in a Southerly direction Two Hundred and Eighty (280) feet to the Northwest corner of East Second and East Market Streets, thence in a Westerly direction Two Hundred and Eighty (280) feet to the Northeast corner of East Market and East First Streets, thence in a Northerly direction Two Hundred and Eighty (280) feet to the point of beginning.

Containing 78,400 Sq. Ft.

Parcel B is that tract of land on which the Storage Holders, Stable, etc. are located.

Beginning at a point at the Southeast corner of East First and East Market Streets, thence in an Easterly direction Two Hundred and Eighty (280) feet to the Southwest corner of East Market and East Second Streets, thence in a Southerly direction Two Hundred and Eighty (280) feet to the Northwest corner of East Second and East Elm Streets, thence in a westerly direction One Hundred and Forty eight (148) feet to a point in the North side of Elm Street, thence in a Northerly direction Eighty-eight (88) feet to a point, thence in a Westerly direction One Hundred and Thirty-two (132) feet to a point in the East side of East First Street, thence in a Northerly direction One Hundred and Ninety-two (192) feet to the point of beginning.

Containing 66,784 Sq. Ft.

Parcel C. is that tract of land on which the Oil Storage Tanks are located.

Beginning at a point at the Southeast corner of East Elm and East Second Streets, thence in a- Easterly direction One Hundred and Thirty-two (132) feet to a point in the South side of East Elm Street, thence in a Southerly direction One Hundred and Thirty-two (132) feet to a point in the intersection of two alleys, thence in a westerly direction One Hundred and Thirty-two (132) feet to a point in the East side of East Second Street, thence in a
483 Northerly direction One Hundred and Thirty-two (132) feet to the point of beginning.

Containing 17,424 Sq. Ft.

Parcel D is that tract of land on which the Coke Storage Shed, Rack, etc. are located.

Beginning at a point at the Southeast corner of East Second and East Vine Streets, thence in an Easterly direction One Hundred and

Forty (140) feet to the centre of a vacated alley, thence in a Southerly direction One Hundred and Forty (140) feet to a point in the middle of the intersection of two alleys, thence in a Westerly direction One Hundred and Forty (140) feet to a point in the East side of East Second Street, thence in a Northerly direction One Hundred and Forty (140) feet to the point of beginning.

Containing 19,600 Sq. Ft.

Parcel E is that tract of land West of East First Street.

Beginning at a point at the Southwest corner of East Vine and East First Streets, thence in a Southerly direction Two Hundred (200) feet to a point in the West side of East First Street, thence in a Westerly direction Seventy feet Nine Inches (70′9″) more or less to a point in the East bank of the Des Moines River, thence in a general Northerly direction Two Hundred (200) feet to a point in the South side of East Vine Street, thence in an Easterly direction Seventy feet Nine inches (70′9″) more or less to the point of beginning.

Containing 14,150 Sq. Ft.

484 *Summary.*

Parcel A	78,400	sq. ft.	
" B	66,784	" "	
" C	17,424	" "	
" D	19,600	" "	
" E	14,150	" "	
	196,358	sq. ft. @ $1.00	$196,358.00
Add 10% for difficulty of obtaining contiguous lots at this time			19,635.00
Add for sinking test holes, grading and filling			5,000.00
			$220,993.00
Taxes during construction			10,470.00
Loss of interest during construction			28,192.00
			$259,655.00

485 EXHIBIT G.

486 *Purifying House (Building # 1 A & B).*

This building was erected in the year of 1892. It is divided into two divisions A & B.

Division A of brick, wood and steel construction, two stories high.

Division B of brick and wood construction, one story high.

Division A comprises the main structure and contains the purifying boxes, centre seal, etc., for the purification of gas.

Division B contains the elevator which was formerly used for raising oxide to the filling floor.

In the year of 1905 an addition was made to the building in the form of an oxide conveyor, which is used to elevate oxide from the yard to the filling floor.

Foundations of Division A are of concrete and brick in cement mortar.

Foundations of Division B are of brick in cement mortar.

Walls of Division A are of brick in cement mortar, reinforced by pilasters, cornice and watertable.

Walls of Division B are of brick in cement mortar.

Roof of Division A, slate on rough boards, resting on wood purlins, the whole supported by wood trusses.

Monitor of wood construction, with single swinging sash windows.

Roof of Division B, slate on rough boards, resting on wood rafters.

Ground floor of Division A of concrete on earth.

Second or filling floor of matched boards supported by wood members.

Ground floor of Division B of brick laid flat, cement grouted.

Doors in Division A of batten construction.

Doors in Division B of panel construction.

Windows in Division A are single and double sash, plain and box type.

Windows in Division B, double sash, box frame.

Sills and lintels of dressed stone and steel members.

Outside stairs and landing of wood construction.

Inside stairs also of wood construction.

All wood, structural steel and iron work painted.

487 *Purifying House (Building # 1 A & B).*

	Net construction cost.
Clearing site	$20.00
Excavation:	
189 cu. yds. at $1.10	208.00
Foundations:	
Concrete:	
39 cu. yds. at $8.00	312.00
Forms at $2.00 per cu. yd. concrete	78.00
Brick:	
3,056 Brick at $16.50	50.00
Backfilling: 49 cu. yds. at 60¢	30.00
Walls:	
235,742 Brick at $17.00	4,008.00
Extra for pilasters and cornices = 12886, at $4.25	55.00
Scaffolding at $1.00 per M Brick	236.00
Roof:	
Slate—35.75 squares at $14.50	519.00
Wood supports—7,151′ B. M. at $26.00	186.00
Framing and erecting at $15.00 per M	108.00
Iron—451# at 6¢ erected	27.00
Sheathing—3,575 Sq. Ft. at $40.00 erected	143.00

	Net construction cost.
Monitors:	
6.55 Squares slate at $14.50	95.00
892′ Wood supports at $41.00	37.00
134# Iron " at 6¢	8.00
655 Sq. Ft. Sheathing at $40.00	27.00
Flashing tin—144 Sq. Ft. at 14¢	20.00
Floors:	
Concrete—2,752 Sq. Ft. at 12¢	331.00
Wood —1,169 " " at 9¢	106.00
Concrete Partitions—3 cu. yds. at $10.00	30.00
488 Forms at $8.00 per cu. yd. Concrete	$24.00
Supports—26,932′ B. M. at $26.00	701.00
Framing and erecting at $15.00 per M	404.00
Doors:	
155 Sq. Ft. Batton at 15¢	24.00
54 " " Panel at 20¢	11.00
Placing at 5¢ per sq. ft	11.00
Windows:	
Plain—325 sq. ft. at 50¢	163.00
Box —510 " " at 75¢	383.00
Fitting and setting at 35%	191.00
Sills:	
Cut stone—34 cu. ft. at $1.75	60.00
Lintels:	
Cut stone—72 cu. ft. at $1.75	126.00
Iron—2,555# at 4.5¢	115.00
Painting:	
Brickwork—3,446 sq. ft. at 6¢	207.00
Woodwork—1,790 sq. ft. at 9¢	161.00
Pit for pipe—180 bricks at $19.00 per M	4.00
Driveway:	
587 Brick at $19.00	11.00
Wood floor 18′ B. M. at $41.00	1.00
Brick " 56 sq. ft. at 10¢	6.00
Stairs:	
19 Treads at $1.50 erected	29.00
Platforms:	
162′ B. M. at $26.00	26.00
Erection	10.00
Elevator Shaft:	
Labor sinking	225.00
Total	$9,507.00

489 *Fire Brick Shed (Building #1 C).*

This shed was erected in the year of 1903.

It is of the lean-to type, and was constructed for the storage of fire brick.

Foundations of brick in lime mortar.

Walls and roof of corrugated iron, supported by steel members.

Floor of dirt.

490 *Fire Brick Shed (Building # 1 C).*

	Net construction cost.
Clearing site	$2.00
Excavation:	
6 cu. yds. at $1.10	7.00
Foundations:	
365 Brick at $17.00	7.00
Wall:	
1.2 Squares corrugated iron at $7.00	9.00
Roof:	
2.47 Squares corrugated iron at $7.00	18.00
Iron supports—1311# at 6¢	79.00
Wood " — 51′ B. M. at $41.00	2.00
Total	$124.00

491 *Meter, Exhauster and Wash Room (Building # 3).*

This building was erected in the year of 1876.

It is of brick and wood construction, one story high, with basement, divided by partition walls into Divisions A, B, C and D.

Basement of Division A contains fire pump, and pumps for supplying the works with river water. First floor contains lockers and toilet facilities for works force.

Basement of Division B contains piping and by-passes for exhausters and tar extractor, etc. First floor of Division B contains engines and exhausters for transferring gas from Relief Holder through Purifying Boxes, etc., to Storage Holders; engines and boosters for transferring gas to outlying districts; and tar extractor for removing tar from the gas.

Basement of Division C contains automatic blow-back for the prevention of accident in the line due to excessive pressure, and piping for same.

First floor of Division C contains chemical apparatus, store room supplies, and toilet facilities for office force.

Basement of Division D contains piping and by-passes for meters and street main governors.

First floor of Division D contains desks for office force, station meters, street main governors and Photometer Room.

Foundations of rubble stone in cement mortar.

Walls of brick in lime mortar, reinforced by pilasters, cornice and watertable.

North, South, and Partition walls are parapetted and protected by cement coping.

Roof of slate resting on rough boards, the whole supported by wood trusses.

Flashing of tin.

Two ventilators of the "Star" type.

Doors are of panel construction.

Windows double sash, box frame.

Sills and lintels are of dressed stone, plain and ornamental.

Floor of Division A, basement is concrete on earth; first floor of concrete resting on matched boards supported by wood joists.

Floor of Division B, basement is of dirt; first floor is of concrete resting on matched boards and cast iron plates supported by wood joists.

Floor- of Division- C and D, basement of brick flat; first floor of double matched boards, supported by wood joists.

Stairs of wood.

All wood, structural steel and iron work painted.

492 *Meter, Exhauster & Wash Room (Building #3).*

	Net construction cost.
Clearing site	$20.00
Excavation:	
Foundations—161.28 cu. yds. at $1.10	178.00
Cellar —945.86 " " at 1.30	1,230.00
Foundations:	
Rubble stone—187.5 porches at $5.50	1,032.00
Backfilling—169 cu. yds. at 60¢	102.00
Walls:	
117,278 Brick at $17.00	1,994.00
Extra for pilasters, etc.,—1,548 brick at $4.25	7.00
Scaffolding at $1.00 per M	118.00
Emplacements:	
4,489 Brick at $17.00	77.00
Water table—dressed stone—140.11 cu. ft. at $1.75	246.00
Window sills—cut stone—11.5 cu. ft. at $1.75	21.00
6 as per sketch at $4.00	24.00
Lintels—cut stone—20.68 cu. ft. at $1.75	37.00
8 as per sketch at $20.00	160.00
Floors:	
"A" balcony—436 sq. ft. at 14¢	61.00
872.12 sq. ft. at 14¢	122.00
Timbers—654′ B. M. at $41.00	27.00
"A" basement—497 sq. ft. at 8¢	40.00
"B" timbers—600.79′ B. M. at $41.00	25.00
Floor —298.71 sq. ft. at 14¢	42.00
597.42 " " at 14¢	84.00

	Net construction cost.
Cast iron plates—3821# at 4¢	153.00
"C" timbers—486.8′ B. M. at $41.00	20.00
Floor —645 sq. ft. at 8¢	52.00
Base floor—301.8 sq. ft. at 11¢	34.00
493	
"D" timbers—960′ B. M. at $41.00	$40.00
Floor —1,272 sq. ft. at 8¢	102.00
Base floor—602.42 sq. ft. at 11¢	67.00
Roof:	
"A" wood trusses—509.65′ B. M. at $41.00	21.00
"B" 246′0″ of 1½″ pipe at 30¢	74.00
"C" wood trusses—713.51′ B. M. at $41.00	30.00
"D" " " —1,427′ B. M. at $41.00	59.00
"B" rafters —661′ B. M. at $41.00	27.00
Sheeting—2,977.76 sq. ft. at 5¢	149.00
Slate —29.776 squares at $14.50	432.00
Ventilators—2 at $9.00	18.00
Gutters—197′ at 20¢	40.00
Down spouts—60′ at 15¢	9.00
Doors:	
Panel with transom—163.99 sq. ft. at 30¢	49.00
Placing and fitting at 35%	18.00
Panel common—37.53 sq. ft. at 25¢	9.00
Placing and fitting at 35%	3.00
Batten—37.53 sq. ft. at 15¢	6.00
Placing and fitting at 35%	2.00
Windows:	
274.88 sq. ft. at 50¢	137.00
Placing and fitting at 35%	48.00
Boarded—21′ B. M. at $41.00	1.00
Stairs:	
36 treads at 50¢	18.00
Platforms—43.73′ B. M. at $41.00	2.00
.068 cu. yds. concrete at $15.00	1.00
494	
Steel Bracing:	
1,548.72# I beams at 4½¢	$70.00
152.# C. I. Brackets at 3½¢	5.00
Railing—76′—1″ pipe at 15¢	11.00
Sumps:	
"A" excavation 2.44 cu. yds. at $1.10	3.00
450 Brick at $17.00	8.00
Covers—351.33# at 3½¢	12.00
Painting:	
1,510 sq. ft. at 6¢	91.00
549 sq. ft. x 2 at 6¢	66.00
8,444 sq. ft. at 2¢	169.00
Photometer Room:	
283′ B. M. at $41.00	12.00

	Net construction cost.
Batten door—16 sq. ft. at 15¢	2.00
Painting 477 sq. ft. at 9¢	43.00
Tool Room:	
108′ B. M. at $41.00	4.00
Batten door—16 sq. ft. at 15¢	2.00
Wire screen—160 sq. ft. at 8¢	13.00
Toilet Room:	
"A"—116′ B. M. at $41.00	5.00
"C"—145.5′ B. M. at $41.00	6.00
Door—8.47 sq. ft. at 30¢	3.00
Total	$7,793.00

495 *Retort, Generator, Engine & Blower House (Building # 4).*

This building was erected in the year of 1876.

It is divided by partition walls into divisions A, B and C.

Division- A and C of one story construction.

Division B of two story construction.

Division A contains five benches of 6's, direct fire, for the manufacture of Coal Gas.

Division B contains two 6′0″ sets of Water Gas apparatus, also an elevator for conveying fuel to the operating floor.

Division C contains engines and blowers for supplying air to the Water Gas apparatus.

Foundations of rubble stone in cement mortar.

Walls of brick, lime mortar, reinforced by pilasters, cornice and watertable.

East and West walls are parapetted and protected by cement coping.

Roof of Division- A and B of corrugated iron resting on steel purlins supported by steel trusses.

Roof of Division C of corrugated iron resting on purlins of steel pipe supported by wood members.

Monitor of steel construction.

Floor, Division A of dirt.

First floor Division B of brick laid flat, cement grouted.

Second floor or operating floor of cast iron plates supported by steel members.

Floor of Division C of brick laid flat, cement grouted.

Doors of panel and batten construction.

Windows, double sash, boxed frame and casement.

Sills and lintels of dressed stone, plain and ornamental.

Stairs from street of concrete.

Stairs in Division B from first to operating floor of wood construction.

496 *Retort, Generator, Engine & Blower House (Building # 4).*

	Net construction cost.
Clearing site	$20.00
Excavation—205 cu. yds. at $1.10	226.00
Foundations (Rubble stone):	
2,600 cu. ft.= 105 perches at $5.50	578.00
Backfilling—63 cu. yds. at 60¢	38.00
Walls:	
127,715 Brick at $17.00	2,171.00
Extra for pilasters and cornices—8,900 Brick at $4.25	38.00
Scaffolding at $1.00 per M	128.00
Cement coping—29 cu. ft. at $1.00	29.00
Corrugated iron—3.01 squares at $7.00	21.00
Angle iron—79# at 6¢	5.00
Roof:	
Corrugated iron—21.47 squares at $7.00	150.00
Steel supports—6,141# at 4½¢	276.00
Wood " —58′ B. M. at $41.00	2.00
W. I. Pipe supports—54′0″—2″ at 25¢	14.00
—98′0″—1″ at 15¢	15.00
Gutter—40′0″—6″ galv. at 20¢	8.00
Downspout—17′0″—4″ galv. at 16¢	3.00
Floors:	
854 sq. ft. Brick flat at 12¢	102.00
512 " " iron at $1.50	768.00
Water table—14 cu. ft. cut stone at $1.75	25.00
Sills:	
2 cu. ft. cut stone at $1.75	4.00
5 as per sketch at $4.00	20.00
Lintels:	
6 as per sketch at $20.00	120.00
Wood—110′ B. M. at $41.00	5.00
4 cu. ft. cut stone at $1.75	7.00
497	
Doors:	
Panel common—48 sq. ft. at 25¢	$12.00
" with transom—35 sq. ft. at 30¢	11.00
Batten common—33 sq. ft. at 20¢	7.00
Labor fitting and setting at 35%	11.00
Windows:	
102 sq. ft. at 50¢	51.00
Labor fitting and setting at 35%	18.00
Stairs:	
Wood—18 treads at 50¢	9.00
Railing—39—1″ pipe at 15¢	6.00
Cut stone sill—5 cu. ft. at $1.75	9.00
Concrete—31 cu. ft. at $1.00	31.00
Painting—1,242 sq. ft. at 9¢	112.00
Total	**$5,050.00**

498 *Coal Shed, Scrubber and Condenser Room (Building # 5).*

This building was erected in the year of 1876.
It is divided by partition wall into two divisions, A and B.
It is of one story construction.
Division A contains scrubbers and condenser for the purification of gas from the Water Gas apparatus.
Division B is for the storage of fuel and contains a track for conveying fuel to the boilers.
Foundations of rubble stone in cement mortar.
Walls of brick, lime mortar, reinforced by pilasters, cornice and watertable.
East, West and Partition walls are parapetted and protected by cement coping.
Roof of corrugated iron on rough boards supported by wood rafters.
Division A has monitor of wood contsruction, roof of tin.
Floor Division A of brick laid flat, cement grouted.
Floor Division B of boards.
Building has openings but no doors.
Windows casement type.
Sills and lintels of dressed stone and steel members.
Watertable of dressed stone.

499 *Coal Shed, Scrubber & Condenser Room (Building # 5).*

	Net construction cost.
Clearing site	$20.00
Excavation—94 cu. yds. at $1.10	103.00
Foundations:	
1,304 cu. ft.— 53 perches at $5.50	292.00
Backfilling—38 cu. yds. at 60¢	23.00
Walls:	
53,081 Brick at $17.00	902.00
Extra for pilasters and cornices—5,466 Brick at $4.25	23.00
Scaffolding at $1.00 per M	53.00
Cement coping—27 cu. ft. at $1.00	27.00
Roof:	
Corrugated iron—18.16 squares at $7.00	127.00
Wood supports —2,208′ B. M. at $41.00	91.00
Sheathing—1,576 sq. ft. at $40.00	63.00
Monitor tin—87 squares at $10.00	1,019.00
" framing—198′ B. M. at $41.00	8.00
" Sheathing—97 sq. ft. at $40.00	4.00
Flashing—118 sq. ft. at 14¢	17.00
Floors:	
Brick flat—405 sq. ft. at 12¢	49.00
Wood —945′ B. M. at $41.00	39.00
Windows:	
Plain—13 sq. ft. at 50¢	7.00

	Net construction cost.
Water table—cut stone—55 cu. ft. at $1.75	96.00
Sills—cut stone—1 cu. ft. at $1.75	2.00
Lintels—wood—36′ B. M. at $41.00	1.00
iron—387# at 3½¢	14.00
Platform—542′ B. M. at $41.00	22.00
Partition—172′ B. M. at $41.00	7.00
Total	$3,009.00

500 *Boiler & Engine Room (Building # 6 A & B).*

This building was erected in the year of 1902.

It is of brick and steel construction, one story high, divided by partitions into Divisions A and B.

Division A contains boilers, boiler accessories and feed water heater, for supplying steam for Water Gas apparatus, machinery, etc.

Division B contains Water Gas condensers, engines and flowers for supplying blast to Water Gas sets.

Foundations of concrete and brick.

Walls of brick, lime mortar, reinforced by pilasters, cornice and watertable.

Floors of concrete resting on earth.

Roof of slate resting on steel purlins, supported by steel trusses.

Roof flashing of tin.

Roof Monitor of steel construction, louvres of steel, wood framing.

Roof of monitor Division B is of corrugated iron resting on steel purlins.

Roof of monitor Division A is slate resting on steel purlins.

Doors of batten and steel construction.

Windows of box and plain frame, double and single sash.

Sills and lintels of dressed stone.

All wood, structural steel and iron work painted.

501 *Boiler & Engine Room (Building # 6 A & B).*

	Net construction cost.
Clearing site	$20.00
Excavation—199 cu. yds. @ $1.10	219.00
Foundations:	
97 cu. yds. concrete @ $8.00	776.00
Forms @ $2.00 per cu. yd.	194.00
614 x 30 = 18,420 Brick @ $17.00	313.00
Backfilling—36 cu. yds. @ 60¢	27.00
Walls:	
135,661 Brick @ $17.00	2,306.00
Extra for pilasters, etc.—33,915 Brick @ $4.25	144.00
Scaffolding @ $1.00 per M	134.00

	Net construction cost.
Roof:	
Slate—29.22 squares @ $14.50	424.00
Steel trusses—10,528# @ 4¢	421.00
" purlins—16,198# @ 4¢	648.00
Flashing tin—42 sq. ft. @ 14¢	6.00
Monitor—1.94 squares galv. @ $7.00	14.00
" —1.53′ B. M. @ $41.00	6.00
"Berlin" louvres—140 sq. ft. @ 90¢	126.00
Floors:	
1,489 sq. ft. —40″ concrete @ 12¢	179.00
Doors:	
Batten—125 sq. ft. @ 15¢	19.00
Panel — 53 " " @ 20¢	11.00
Wrought iron—43 sq. ft. @ 60¢	26.00
Fitting and setting @ 35%	20.00
Windows:	
Plain—39 sq. ft. @ 50¢	19.00
Box —165 " " @ 75¢	124.00
Fitting and setting @ 35%	50.00
Sills and lintels:	
100 cu. ft. dressed stone @ $1.75	175.00
1,494# I beams @ 3½¢	52.00
Watertable—85 cu. ft. cut stone @ $1.75	151.00
Painting:	
Woodwork—1,744 sq. ft. @ 9¢	157.00
Ironwork —3,066 " " @ 3¢	92.00
Total	$6,853.00

502 *Boiler House Extension (Building # 6 C).*

This building was erected in the year 1909, the same being an extension to Boiler and Engine House, for increasing the boiler capacity of the plant.

It is of brick and structural steel, one story high.

This building contains a single boiler which in conjunction with boilers in Boiler and Engine House furnishes steam for Water Gas apparatus, engines, etc.

Foundations of concrete and brick in cement mortar.

North and West walls of brick, cement mortar, reinforced by pilasters, cornice and watertable.

East wall of structural steel covered with corrugated iron.

Roof of corrugated iron resting on steel purlins, supported by steel rafters.

Floor of brick on edge, cement grouted.

Doors of batten and panel construction.

Windows plain and box frame, single and double sash.

Sills and lintels of dressed stone.

All wood, structural steel and iron work painted.

503 *Boiler House Extension (Building # 6 C).*

	Net construction cost.
Clearing site	$10.00
Excavation—28 cu. yds. at $1.10	31.00
Foundations:	
374 cu. ft.= 14 cu. yds. at $8.00	112.00
Forms at $2.00 per yd.	28.00
3,638 Brick at $17.00	62.00
Backfilling—4 cu. yds. at 60¢	2.00
Walls:	
17,981 Brick at $17.00	306.00
Scaffolding at $1.00 per M	18.00
Channels, angles, bolts, etc.—2,423# at 4¢	97.00
4.12 Squares galv. iron at $7.00	29.00
Roof:	
5.37 squares corrugated iron at $7.00	38.00
Channel supports —1,381#	
Angle " —1,137	
Bolts, nuts, etc. — 252	
2,770# at 4¢	111.00
Zinc flashing—79 sq. ft. at 14¢	11.00
Floors:	
225 sq. ft. at 12¢	27.00
Doors:	
Panel—123 sq. ft. at 20¢	25.00
Fitting and setting—at 35%	9.00
Windows:	
Plain frame—101 sq. ft. at 50¢	51.00
Box " — 71 " " at 75¢	53.00
Fitting and setting at 35%	36.00
Sills—11 cu. ft. cut stone at $1.75	19.00
Lintels—9 cu. ft. cut stone at $1.75	16.00
346# iron at 3½¢	121.00
Painting:	
Woodwork—590 sq. ft. at 9¢	53.00
Ironwork —618 " " at 3¢	19.00
Corrugated iron—1,026 sq. ft. at 5¢	51.00
Watertable—11 cu. ft. cut stone at 11.75	19.00
Total	$1,354.00

504 *Generator House (Building # 7).*

The West portion of this building was erected in the year 1902 and extended in an Easterly direction in 1909.

It is of brick and steel construction, two stories high, and contains apparatus for the manufacture of Water Gas.

Foundations of concrete.

North, South and West walls of brick, lime mortar, reinforced by pilasters, cornice and watertable.

East wall of temporary construction, consisting of corrugated iron supported by wood framing.

Roof of West portion of slate resting on steel purlins, the whole supported by steel trusses.

Monitor of steel construction, slate roof and metal louvres.

Roof of East portion of corrugated iron resting on steel purlins, the whole supported by steel trusses.

Monitor of steel construction, corrugated iron roof and metal louvres.

First floor of concrete and brick laid flat, cement grouted.

Second floor of cast iron plates, supported by steel members.

Doors of panel and fire door construction.

Windows double sash, box frame and mullion.

Sills and lintels of dressed stone and structural steel.

Stairs from first to second floor of structural steel and wood treads.

All wood, structural steel and iron work painted.

505 *Generator House (Building # 7).*

	Net construction cost.
Clearing site	$30.00
Excavation—203.33 cu. yds. at 80¢	163.00
Foundations—134.74 cu. yds. concrete at $8.10	1,092.00
Forms at $2.00 per yard	270.00
Backfilling—66.75 cu. yds. at 40¢	267.00
Walls:	
112,698 Brick at $17.00	1,916.00
Scaffolding at $1.00	113.00
Studding—2,716′ B. M. at $41.00	112.00
Corrugated iron—16.28 sq. — at $7.00	114.00
Iron—746# at 4½¢	34.00
Corrugated iron (Monitor) 5.35 sq. — at $7.00	38.00
Watertable—52.9 cu. ft. cut stone at $1.75	93.00
Roof:	
Corrugated iron—22.26 sq. — at $7.00	156.00
Slate—29.23 sq. — at $14.50	424.00
Steel supports—54,518.5# at 4½¢	2,454.00
Ridge roll—93′6″ at 20¢	19.00
Louvres—500 sq. ft. at $41.00	21.00
Gutters—56′ at 20¢	11.00
Downspouts—56′ at 16¢	9.00
Flashing—117 sq. ft. at 14¢	17.00
Floors:	
Concrete—258.75 sq. ft. at 12¢	31.00
Vitr. brick—2,148 sq. ft. at 15¢	322.00
Iron—2,967.18 sq. ft. at $1.50	4,451.00
Doors:	
Panel—153.25 sq. ft. at 20¢	31.00
Batten—276 " " at 15¢	42.00
Labor at 35%	**26.00**

	Net construction cost.
Windows:	
Box—1,000 sq. ft. at 75¢	750.00
Mullioned—304.25 sq. ft. at 60¢	183.00
Labor at 35%	327.00
Transoms:	
61 sq. ft. at 75¢	46.00
Labor at 35%	16.00
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Sills:	
48.98 cu. ft. dressed stone at $1.75	$86.00
Lintels:	
95.90 cu. ft. dressed stone at $1.75	168.00
1,807# iron at 4½¢	82.00
108′ B. M. at $41.00	5.00
Stairs:	
46 iron Treads at $2.25	104.00
Painting:	
38,181.26 sq. ft. iron at 2¢	764.00
3,857.68 " " wood at 6¢	231.00
112′ Gutters and downspouts at 3¢	4.00
Steel framing supports—5,904.29# at 4½¢	266.00
Turbine Room:	
Studding—60′ B. M. at $41.00	3.00
Tin sheathing—285.18 sq. ft. at 14¢	40.00
Doors:	
26 sq. ft. Batten at 15¢	4.00
Labor at 35%	2.00
Total	$15,336.00

507 *Runway & Coal Shed (Building # 8 B).*

This runway was erected in the year 1901.

It is of frame construction, supported by steel and wood members, extending from Generator House to Coal Shed.

This runway is used for conveying generator fuel from Coal Shed to Operating Floor of Generator House.

On North end of Runway, a direct acting steam hydraulic elevator is located for raising the fuel from Coal Shed floor to floor of runway.

Walls of corrugated iron on wood framing.

Roof of corrugated iron on wood purlins, supported by wood rafters.

Floor of plank supported by wood joists and structural members.

Windows single sash stationary.

All wood, structural steel and iron work painted.

Coal Shed (Building # 8 A).

This building was erected in the year 1896.

It is of frame construction resting on brick foundations, building is one story high, and excavated to a depth of eight feet below ground level. It is used for the storage of general fuel.

Foundations of brick in cement mortar.

Walls of plank, matched on heavy framing.

Roof, tar felt and gravel on wood sheathing supported by wood purlins, on wood rafters, the whole being shored by wood struts extending from basement floor to underside of rafters.

Roof has three skylights of plain sash in wood frame.

Floor of tar and breeze.

Doors of batten construction.

Ventilators of wood slats of conventional type.

508 *Coal Shed (Building # 8 A).*

	Net construction cost.
Clearing site	$20.00
Excavation—1,810 cu. yds. at $1.30	2,353.00
Foundations:	
384 x 21 = 8,064 Brick at $17.00	137.00
Backfilling—38 cu. yds. at 60¢	29.00
Walls:	
87,900 Brick at $17.00	1,494.00
Scaffolding at $1.00 per M.	88.00
Framing—34,181′ B. M. at $46.00	1,572.00
Sheathing—5,555 sq. ft. at $40.00	22.00
Roof—5,555 sq. ft. at $4.50 per square	250.00
Uprights:	
Excavation—26 cu. yds. at $1.30	34.00
Piers—8,190 brick at $17.00	139.00
Floor—5,281 sq. ft. at 8¢	422.00
Doors—Batten common—203 sq. ft. at 15¢	30.00
Windows—(Ventilators)—228 sq. ft. at 20¢	45.00
Fitting doors and windows at 35%	26.00
Gutters—75′—6″ galv. at 20¢	15.00
Painting—4,875 sq. ft. at 2¢	98.00
Total	$6,974.00

509 *Runway & Coal Shed (Building # 8 B).*

Floor:	
Iron supports—1,011# at 4½¢	$45.00
Wood " —1,277′ B. M. at $41.00	52.00
972′ B. M. at $41.00	40.00
Walls:	
Studding—389′ B. M. at $41.00	16.00
Corrugated iron—6.04 squares at $7.00	42.00

	Net construction cost.
Roof:	
Corrugated iron—4.25 squares at $7.00	30.00
Supports—602′ B. M. at $41.00	25.00
Flashing tin—17.42 sq. ft. at 14¢	2.00
Cornice—box—89′0″ at 50¢	45.00
Gutters—41′6″ galv. at 20¢	8.00
Windows:	
117 sq. ft. at 50¢	58.00
Fitting and setting at 35%	20.00
Painting 1,146 sq. ft. corrugated iron at 5¢	57.00
Total	$440.00

510 *Smith, Carpenter Shops & Storeroom (Building* #10).

This building was erected in the year of 1876.

It is of brick and wood construction, one story high, divided by partition walls into divisions A, B, C, and D.

Division A contains Carpenter shop.

Division B contains Store Room for distribution supplies, etc.

Division C contains Store Room for distribution supplies and tools.

Division D contains Smith and Machine Shop.

Foundations of concrete and brick in cement mortar.

Walls of brick in cement mortar, reinforced by cornice, pilasters and watertable.

North and South walls parapetted and protected by cement coping.

South portion of roof, tin, North portion tar felt, both resting on wood sheathing, the whole supported by wood trusses.

Roof flashing of tin.

Dormers of wood construction with stationary sash.

Floors, divisions A and C of concrete on earth. Division B of brick laid flat cement grouted. Division D of brick on edge, cement grouted.

Doors of panel and batten construction.

Windows plain and boxed frame, single and double sash.

Sills and lintels of cement.

Stairways of cement and wood construction.

Pipe racks and bins of wood.

511 *Smith, Carpenter Shops, and Store Room (Building* #10).

	Net construction cost.
Clearing site	$20.00
Excavation—227 cu. yds. at $1.10	250.00
Foundations:	
906 cu. ft. = 34 cu. yds. at $8.00	272.00

	Net construction cost.
Forms at $2.00 per yd	68.00
3,045 Brick at $17.00	52.00
Backfilling—84 cu. yds. at 60¢	50.00
Walls:	
184,488 Brick at $17.00	3,136.00
Extra for pilasters, etc., 17,566 Brick at $4.25	75.00
Scaffolding at $1.00 per M	184.00
Cement coping—54 cu. ft. at 90¢	49.00
Emplacements—312 Brick at $17.00	5.00
Watertable—53 cu. ft. cement at 90¢	48.00
Roof:	
Tin—31.62 squares at $10.50	332.00
Tar felt—37.95 squares at $4.50	171.00
Supports—9,265′ B. M. at $41.00	380.00
1,064# W. I. at 4½¢	48.00
Flashing ton—261 sq. ft. at 14¢	35.00
Sheathing—6,958 sq. ft. at $40.00	278.00
Floors:	
Brick on edge—726 sq. ft. at 14¢	102.00
" flat—2,112 sq. ft. at 12¢	253.00
Wood—4,354 sq. ft. at $41.00	179.00
Concrete—2,984 sq. ft. at 12¢	358.00
Supports—3,479′ B. M. at $41.00	143.00
Doors:	
Panel finished—40 sq. ft. at 22¢	9.00
" common—148 sq. ft. at 20¢	30.00
Batten " —174 sq. ft. at 15¢	26.00
Fire Und. Standard—26 sq. ft. at $1.25	33.00
Windows:	
Box—352 sq. ft. at 75¢	264.00
Plain—57 " " at 50¢	24.00
Fitting and setting at 35%	101.00
512	
Dormer—1,586′ B. M. @ $41.00	$65.00
Sheathing—732 sq. ft. @ $40.00	29.00
Tar felt—7.32 squares @ $4.50	33.00
Windows—192 sq. ft. @ 50¢	96.00
Fitting and setting @ 35%	34.00
Sills:	
30 cu. ft. cement @ 90¢	27.00
Lintels:	
36 cu. ft. cement @ 90¢	32.00
276# cast iron @ 3½¢	10.00
Painting:	
Woodwork—1,980 sq. ft. @ 9¢	178.00
Brickwork—1,836 sq. ft. @ 6¢	110.00
Stairs:	
Concrete—24 cu. ft. @ $1.50	36.00
Wood—26 treads @ $1.00	26.00

	Net construction cost.
Platform—487′ B. M. @ $41.00	20.00
Brick bin—240 brick @ $17.00	4.00
Brick platform:	
Excavation—4 cu. yds. @ $1.10	4.00
Foundation—1 cu. yd. concrete @ $8.00	8.00
77′ B. M. @ $41.00	3.00
Cement facing—22 cu. ft. @ 90¢	20.00
5,691 Brick @ $17.00	97.00
Brick bin—225 brick @ $17.00	4.00
Wood partitions—859′ B. M. @ $41.00	35.00
Auto platform:	
Concrete—6 cu. yds. @ $8.00	48.00
Forms—1,103′ B. M. @ $41.00	45.00
Cement floor—140 sq. ft. @ 12¢	17.00
Wood " —124′ B. M. @ $41.00	5.00
I beams—104# @ 6¢	6.00
Bin for Ice box:	
.2 cu. yds. concrete @ $8.00	2.00
Forms—46′ B. M. @ $41.00	2.00
Driveway—.2 cu. yds. concrete @ $8.00	2.00
Bench, closets, shelving—5,266′ B. M. @ $41.00	216.00
Stairs—21 treads @ $1.50	32.00
Total	$8,221.00

513 *Barrel Oil Store House (Building #11).*

This building was erected in the year 1909.

It is a one story concrete structure, and is used for storing lubricating oils, paints, gasoline, etc.

Foundations and floor of concrete.

Walls and roof of reinforced concrete.

Doors of batten construction, metal sheathed for fire protection, painted.

514 *Barrel Oil Store House (Building # 11).*

	Net construction cost.
Clearing site	$10.00
Excavation—11.57 cu. yds. @ 80¢	10.00
Foundations—2.62 cu. yds. concrete @ $8.10	21.00
Forms @ $3.00 per yd	8.00
Walls and roof—9.39 cu. yds. concrete @ $8.10	76.00
Forms @ $3.00	28.00
Emplacement—210 Brick @ $17.00	4.00
Floor—268.81 sq. ft. concrete @ 12¢	32.00
Benches—3.49 cu. yds. sand @ $1.00	4.00
Steps—4 @ $1.50	6.00

	Net construction cost.
Doors—39.96 sq. ft. Batten @ 15¢	6.00
Labor @ 25%	2.00
Closet—66′ B. M. @ $41.00	3.00
Total	$210.00

515 *Pump House* (*Building* # 12).

This building was erected in the year 1910.

It is of brick, steel and concrete construction, one story high, divided by partition wall into Divisions A and B.

Division A contains pumps for tar and circulating systems.

Division B contains pump for supplying oil to the Water Gas sets.

Foundations of concrete and brick in cement mortar.

Walls of brick in lime mortar, reinforced by pilasters, cornice and watertable.

Roof of reinforced concrete, supported by steel purlins, it has two ventilators of the "Star" type, and two skylights of wire glass in metal frames.

Doors of panel construction.

Windows of single sash, plain frames.

Sills and lintels of dressed stone and steel members.

Stairs and landing of cast iron and steel construction.

Floors of concrete on cinder.

All wood, structural and ironwork painted.

516 *Pump House* (*Building* # 12).

	Net construction cost.
Clearing site	$5.00
Excavation:	
Cellar—41.18 cu. yds. @ $1.10	45.00
Foundations—8.7 cu. yds. @ $1.10	10.00
Foundations:	
137.99 cu. ft.=5.11 cu. yds. @ $8.00	41.00
Backfilling—5.26 cu. yds. @ 60¢	3.00
Walls:	
17,443 Brick @ $17.00	297.00
Scaffolding @ $1.00 per M	17.00
Extra for pilasters, etc.—1,291 Brick @ $4.25	5.00
Roof:	
Reinforced concrete—356 sq. ft. @ 30¢	107.00
Supports—576# @ 4½¢	26.00
Skylight—280 sq. ft. @ 50¢	140.00
Ventilators—2 @ $7.00	14.00
Floor—4″ concrete—225.7 sq. ft. @ 12¢	27.00

	Net construction cost.
Doors—Panel—45.15 sq. ft. @ 20¢	9.00
Fitting and setting @ 35%	13.00
Doors:	
Sills—7.78 cu. ft. dressed stone @ $1.75	14.00
Lintels—420# iron @ 3½¢	15.00
Stairs—iron—6 treads @ $1.50	9.00
Windows—73.59 sq. ft. @ 50¢	37.00
Fitting and setting @ 35%	13.00
Platform—iron—13.92 sq. ft. @ $1.50	21.00
Painting—237.3 sq. ft. @ 9¢	22.00
Total	$880.00

517 *Oil Pump House (Building # 13).*

This building was erected in the year 1907, and remodelled in 1909.

It is a one story brick structure and contains pump for unloading oil, and loading tar.

Foundations of concrete and brick in cement mortar.

North, East and West walls are parapetted.

Floor of concrete on earth.

Roof of slate resting on steel pipe.

Door of steel plate.

Foundations of concrete and brick in cement mortar.

518 *Pump House (Building # 13).*

	construction cost.
Clearing site	$10.00
Excavation—8.47 cu. yds. @ 80¢	7.00
Foundations—.37 cu. yds. @ $12.00	5.00
272 Brick @ $17.00	5.00
Backfilling—2.63 cu. yds. @ 40¢	1.00
Walls:	
6,531 Brick @ $17.00	111.00
Extra for cornices—255 @ $4.25	1.00
Scaffolding @ $1.00 per M	7.00
Roof—1.04 squares slate @ $14.50	15.00
Supports—163′ @ $41.00	7.00
Floor—54.78 sq. ft. concrete @ 12¢	7.00
Door—fire—25.85 sq. ft. @ $1.50	39.00
Labor @ 35%	14.00
Total	$229.00

519 *Meter House (Building # 14).*

This building was erected in the year 1909.

It is a one story structure of bricks, steel and concrete construction.

It contains station meter for measuring the gas.

Foundations of concrete and brick in cement mortar.

Walls of brick in lime mortar, reinforced by cornice, pilasters and watertable.

Roof of reinforced concrete, supported by steel purlins. It has a ventilator of the "Star" type.

Floor of concrete, on brick on edge.

Door of batten construction.

Windows double sash, box frame.

Sills and lintels of dressed stone.

All brick, wood, structural steel and iron work painted.

520 *Meter House (Building # 14).*

	Net construction cost.
Clearing site	$10.00
Excavation—32.5 cu. yds. @ 80¢	26.00
Foundations—7.06 cu. yds. concrete @ $8.10	57.00
Forms @ $3.00	21.00
Backfilling—10.34 cu. yds. @ 40¢	4.00
Walls:	
48,358 Brick @ $17.00	822.00
Extra for 2,116 Brick @ $4.25	9.00
Roof:	
Concrete—704 sq. ft. @ 12¢	85.00
Iron supports—2,507.96# @ 4½¢	113.00
Tar felt—7 sq. — @ $4.50	32.00
Floors:	
Concrete—466.61 sq. ft. @ 12¢	56.00
Brick on edge—466.61 sq. ft. @ 13¢	61.00
Door—Batten—31.61 sq. ft. @ 15¢	5.00
Labor @ 35%	2.00
Windows—Plain—219.24 sq. ft. @ 50¢	110.00
Labor @ 35%	39.00
Iron angles—1,600.04# @ 4½¢	72.00
Sills—9.52 cu. ft. dressed stone @ $1.75	17.00
Lintels—14.77 cu. ft. dressed stone @ $1.75	26.00
Ventilator—Star	9.00
Total	$1,576.00

521 *Stable (Building # 15).*

Division B was erected in the year 1883.

Division A and C were added in the year 1897.

This building is divided into three Divisions, A, B and C.

Division- A and B contain stalls for the accommodation of horses. for distribution purposes.

Division C contains wagons also for distribution purposes.

Division B of two story construction.

Divisions A and C of one story construction.

Foundations of brick in cement mortar.

Division- A, B and C are of frame construction, weather boarded with rough lumber, placed vertically and stripped.

Roof of Divisions A and B of rubberoid on rough boards resting on wood rafters.

Ventilator of Division B is of wood construction, with openings of conventional type. Ventilator extends from second floor to openings above roof.

Roof of Division C is of shingle on rough boards supported by wood rafters.

First floor of Division B of plank resting on wood joists.

Second floor of matched boards also resting on wood joists.

Floor of Division A of concrete on earth.

Floor of Division C of brick on edge, and brick laid flat, cement grouted, and concrete on earth.

Doors of batten construction.

Windows of single sash, plain frame stationary.

522 *Stable (Building # 15).*

	Net construction cost.
Clearing site	$20.00
Excavation—59.8 cu. yds. @ 80¢	48.00
Foundations:	
10.87 Perches @ $5.50	60.00
11,607 Brick @ $17.00	198.00
Backfilling—28.48 cu. yds. @ 40¢	12.00
Framing—6,584′ B. M. @ $41.00	270.00
Roof:	
Shingles—24.52 sq. — @ $9.00	221.00
Rubberoid—11.84 sq. — @ $6.00	71.00
Sheathing—3,636 sq. ft. @ $41.00	149.00
Supports—2,057′ B. M. @ $41.00	85.00
Ventilator—225′ B. M. @ $41.00	10.00
Floors:	
4″ Concrete—516 sq. ft. @ 12¢	62.00
Brick on edge—604 sq. ft. @ 12¢	85.00
" flat—945 sq. ft. @ 12¢	114.00
Wood—3,359′ B. M. @ $41.00	138.00
Harness rooms:	
"A"—144′ B. M. @ $41.00	6.00
"B"—108′ B. M. @ $41.00	5.00
Stalls—"A" and "B"—1,371′ B. M. @ $41.00	57.00
Feeding cribs:	
4½ @ $10.00	45.00
4 @ $8.00	32.00

	Net construction cost.
Feed Boxes—372′ B. M. @ $41.00	16.00
Tin lining—130 sq. ft. @ 14¢	18.00
Doors—215 sq. ft. Batten @ 15¢	33.00
Labor—@ 35%	12.00
Windows:	
94 sq. ft. Plain @ 50¢	47.00
Labor @ 35%	17.00
Painting:	
3,099 sq. ft. exterior @ 9¢	279.00
2,601 sq. ft. interior @ 6¢	156.00
Total	$2,266.00

523 *Boiler House* (*Building* # 16).

This building was erected in the year 1906.

It is of structural steel and galvanized iron construction, one story high.

It contains a holder for the purpose of supplying steam for holders and buildings on the property on which it is located.

Foundations are of concrete.

Walls of corrugated iron on steel framing.

Roof of corrugated iron on steel purlins, supported by steel rafters, it has skylight of wire glass in wooden frame.

Portion of floor is cement and portion of cinder.

Doors of batten construction, metal sheathed.

Windows single sash, plain frame.

Sills and lintels of wood.

All wood, structural steel and iron work painted.

524 *Boiler House* (*Building* # 16).

	Net construction cost.
Clearing site	$20.00
Excavation—6.8 cu. yds. @ 80¢	6.00
Foundations:	
4.89 cu. yds. @ $8.10	40.00
Watertable—26.26 cu. ft. concrete @ $10.00	10.00
Iron framing—8,644.24# @ 4½¢	389.00
Walls:	
13.86 squares corrugated iron @ $7.00	97.00
Roof—6 squares corrugated iron @ $7.00	42.00
Floor—231.72 sq. ft. cement and cinder @ 12¢	28.00
Bin—408′ B. M. @ $41.00	17.00
Facial strip—21′ B. M. @ $41.00	1.00
Doors—Fire—79.56 sq. ft. @ $1.50	120.00
Labor @ 35%	42.00
Windows—66 sq. ft. box @ 75¢	50.00

	Net construction cost.
64.68 sq. ft. Plain—@ 50¢	33.00
Labor @ 35%	29.00
Steps—3.47 cu. ft. dressed stone @ $1.75	7.00
Skylight—30 sq. ft. @ 75¢	23.00
Ridge roll—14'4" @ 20¢	29.00
Total	$983.00

525 *Fire Brick Storage* (*Building* # 17).

This building was erected in the year 1905.

It is a one story frame structure and used for the purpose of storing fire brick.

Walls of rough boards on wood studding, covered with tar felt paper.

Roof of tar felt on rough boards resting on wood rafters.

Door of batten construction.

526 *Fire Brick Storage House* (*Building* # 17).

	Net construction cost.
Framing:	
1,731' B. M. @ $41.00	$71.00
Covering:	
11 squares tar felt @ $4.50	50.00
Doors:	
Batten—48 sq. ft. @ 15¢	8.00
Labor	3.00
Total	$132.00

527 *Fire Hose House* (*Building* # 35).

This building was erected in the year of 1905.

It is of one story frame structure and contains a hose reel and hose for fire protection.

Walls of matched boards on wood studding.

Roof of tar felt on matched boards, supported by wood rafters.

Floor of dirt.

Door of batten construction.

Wood work painted.

528 *Fire Hose House* (*Building* # 35).

	Net construction cost.
Walls and framing—324′ B. M. @ $41.00	$14.00
Doors—22.28 sq. ft. Batten @ 15¢	4.00
Labor	2.00
Roof—1.5 squares tar felt @ $4.50	7.00
157.52′ B. M. @ $41.00	7.00
Total	$34.00

529 *Coke Shed* (*Building* # 53).

This building was erected in the year 1887.
It is of frame construction resting on brick piers.
This building was formerly used for manufacturing purposes but at this time is used for the storage of generator fuel.
Walls of boards running vertically and stripped, the same supported by studding and rails, which forms framing of building.
Roof of shingles on wood sheathing, supported by wood rafters.

530 *Coke Shed* (*Building* # 53).

	Net construction cost.
Clearing site	$20.00
Excavation—1 cu. yd. @ $1.10	1.00
Foundations:	
1′1″ x 1′6″ x 22½ x 12=540 @ $17.00	9.00
Framing—2,613′ B. M. @ $41.00	87.00
Sheathing—2,736 sq. ft. @ $41.00	112.00
Roof:	
19.87 squares shingle @ $9.00	179.00
1,987 sq. ft. sheathing @ $41.00	81.00
Floor—tar and breeze—1,422 sq. ft. @ 5¢	71.00
Stack:	
Excavation—½ cu. yd.	1.00
Rubble stone—2 perches @ $5.50	11.00
420 Brick @ $17.00	7.00
Cap stone—3 cu. ft. @ $1.75	5.00
Total	$584.00

531 *Coke Rack* (*Building* # 54).

This rack was erected in the year 1907.
It is of wood construction.
It is used for fuel storage purposes.
The sides are plank.
The posts are of heavy timbers imbedded in the ground.

532 *Coke Rack (Building # 54).*

	Net construction cost.
Excavation—12 cu. yds. @ 80¢	$10.00
Backfilling—11 cu. yds. @ $40¢	5.00
Framing—1,419′ B. M. @ $41.00	59.00
Total	$74.00

533 *Oil Barrel Store House (Building # 55).*

This building was erected in the year.

It is a one story frame structure and is used for storing empty oil barrels.

Building rests on rubble stone piers.

Walls are slat construction on wood studding.

Roof of tar felt on rough boards supported by wood rafters.

Floor of rough boards supported by wood joists.

Door of batten construction.

534 *Oil Barrel Store House (Building # 55).*

	Net construction cost.
Piers—3.75 cu. ft. rubble stone	$4.00
Framing—186.83′ B. M. @ $41.00	8.00
Walls—306.75′ B. M. @ $41.00	13.00
Floors—200′ B. M. @ $41.00	8.00
Supports—73.70′ B. M. @ $41.00	3.00
Roof—807.48′ B. M. @ $41.00	33.00
Supports—40.2′ B. M. @ $41.00	2.00
Tar felt—2.15 sq. — @ $4.50	10.00
Sheathing—215 sq. ft. @ $41.00	9.00
Door—19.5 sq. ft. Batten @ 15¢	3.00
Labor @ 35%	1.00
Total	$94.00

535 *Des Moines Gas Office.*

When the New Building on 7th Avenue, between Locust and Grand was nearing completion, the Des Moines Gas Company made certain additions and improvements in the basement and on the 1st floor, suitable to their requirements, these additions and improvements consisting of partitions, counters, lockers, drawers, stationery desks, cages and certain ornamental work consisting of column casings, wainscoting, baseboards, etc. The greater portion of the wood work is of quartered oak, mission style, the partitions being finished with brass gril-, and chipped glass.

The baseboards are of marbel with brass framed ventilators.

These improvements were made in the years 1909 and 1910.

536 *West Side Office.*

	Net construction cost.
Improvements named on preceding page	$14,000.00

537 EXHIBIT H.

538 *Works Equipment.*

		Net construction cost.
Building # 1 A & B:		
1—Steam hydraulic elevator, 8′ x 8′ plat. (Installed 1893.)		$290.00
4—C. I. purifying boxes—7′ x 20′ x 20′ with cover, hoist and center seal. (Installed 1905.)		19,600.00
1—Link-Belt Engrg. Co. oxide conveyor and 5″ x 6″ vertical engine. (Installed 1905.)		1,050.00
327′6″ C. I. pipe @ 4½¢ per lb.		1,597.00
Building # 3:		
Excavation—27.08 cu. yds. @ $1.25	$30.00	
52,778 Brick @ $19.00	1,003.00	
46.264 cu. yds. concrete @ $10.00	463.00	
Forms @ $3.00 per cu. yd.	139.00	
		1,635.00
1—60″ Goodwin bar photometer	$550.00	
1—American Meter Co. bar photometer	350.00	
1—Goodwin bar, U. G. I. 60″ photometer	350.00	
1 Pentane lamp # 22 (Installed 1900.)	110.00	
		1,360.00
1—Pentane lamp # 22	$110.00	
1—CO_2 apparatus	18.00	
1—18″ x 18″ x 18″ Freezing coil	30.00	
2—stop watches	20.00	
1—5′ Wet meter	55.00	
1—Hygrometer	50.00	
1—Barometer	35.00	
1—Transit	230.00	
2—Tee squares	3.00	
1—Case 5 test tubes	1.00	
1—Medicine chest	25.00	
3—Sulphide tests	80.00	
1—Orsat	30.00	
1—Tar still	30.00	
2—Double metal lockers (Installed 1905.)	20.00	
		737.00

539

		Net construction cost.
1—8′0″ x 8′0″ Goodwin meter with Hinman drum and 10″ connections (Installed —.)		$2,605.00
1—8′0″ x 7′6″ American meter with Hinman drum... (Installed 1905.)		2,405.00
1—16″ Connelly automatic governor with 24″ connections (Installed 1896.)		850.00
1—24″ Connelly automatic governor with 24″ connections (Installed 1903.)		1,650.00
1—Stationary washstand	$20.00	
1—Shower bath	10.00	
1—Flush closet and tank	25.00	
1—3′6″ x 4′6″ Safety blow back	390.00	
1—4″ Stroke hand drip pump	3.00	
(Installed 1905.)		448.00
1—# 8 Wilbraham Green exhauster with 16″ connections and 10″ x 12″ N. Y. Safety engine (Installed 1909.)		2,080.00
1—# 7 Root's exhauster with 16″ connections, Huntoon governor and 40 H. P. 10″ x 9″ N. Y. Safety engine (Installed 1895.)		1,687.00
1—# 7 Root's exhauster, same as above (Installed 1898.)		1,687.00
2—# 5 Wilbraham Green high pressure pushers, 10″ connections and 2 40 H. P., 9″ x 10″ N. Y. Safety engines (Installed 1906.)		2,020.00
1—3′6″ diam. x 6′ 11″ P. & A. tar extractor with 20″ connections (Installed 1905.)		1,716.00

540

1—4′ x 2′ Work bench	$10.00	
1—4″ Vise	4.00	
1—3′0″ diam. x 6′ 0″ tank	45.00	
5—Stationary washstands	100.00	
2—Flush closets	50.00	
14—Double metal lockers	140.00	
1—Enamel bath tub	35.00	
(Installed 1905.)		$384.00
1—7½″ x 5″ x 8″ Buffalo duplex fire pump.. (Installed 1895.)	193.00	
1—10″ x 6″ x 10″ Warren duplex pump...	285.00	
1—Vertical pump (9 x 12 x 9 Davidson).... (Installed 1899.)	320.00	
188′0″— 8″ C. I. pipe @ 4½¢ per lb.	$356.00	

		Net construction cost.
166′0″—10″ " " @ " " "	417.00	
364′0″—16″ " " @ " " "	1,774.00	
19′0″—20″ " " @ " " "	129.00	
48′0″—24″ " " @ " " "	441.00	
		3,117.00
Building # 4:		
Excavation—32 cu. yds. @ $1.25.....	$40.00	
Concrete—34 1/7 cu. yds. @ $10.00.....	340.00	
Forms @ $3.00 per yard.....	102.00	
		482.00
1—40 H. P. 8″ x 19″ horizontal Payne engine ..... (Installed 1899.)	$660.00	
1—15 H. P. 6″ x 8″ horizontal Payne engine (Installed 1887.)	255.00	
Countershafting and belting.....	90.00	
2—# 6 Sturtevant blowers.....	220.00	
		1,125.00
2—6′ x 6′ x 6′ U. G. I. W. G. sets..... (Installed 1899.)		11,791.00
541		
1—Steam hydraulic elevator.....	$450.00	
1—Coke charging buggy..... (Installed 1905.)	60.00	
		$510.00
5—Half-depth benches 6's with 14″ x 23″ retorts..... (Installed 1899.)		10,800.00
Building # 5:		
Excavation—9 cu. yds. @ $1.25.....	$11.00	
14,515 Brick @ $19.00.....	276.00	
2—cu. yds. concrete @ $ 10.00.....	20.00	
Forms @ $3.00.....	6.00	
		313.00
1—# 12 R. H. Switch 140′ of straight and curved track, 1 52″ turntable and connections and 2 roller bearing tip charging cars..... (Installed 1905.)		935.00
Building # 6 A & B:		
Excavation 67 2/3 cu. yds. @ $1.25.....	$75.00	
Concrete 52 cu. yds. @ $10.00.....	520.00	
Forms @ $3.00 per yard.....	156.00	
Brick 1,344 @ $19.00.....	26.00	
Backfilling 7¼ cu. yds. @ 70¢.....	5.00	
		782.00
2—8′6″ diam. x 22′ 0″ condensers with 20″ connections. (Installed —.)		5,074.00
2—55 H. P.,10″ x 10″ American Ball engines	$1,760.00	

		Net construction cost.
1—20 gal. Cross oil filter	50.00	
2—½ pint Detroit lubricators	25.00	
86′0″ Double belt @ $4.50	387.00	
2—# 8 Ex. heavy Sturtevant blowers	800.00	
		3,022.00
138′0″—20″ C. I. @ 4½¢	$912.00	
32′0″—16″ " @ 4½	156.00	
		1,068.00
542		
2—125 H. P. Phœnix H. R. T. boilers—72″ x 18′0″	$3,000.00	
1—Steel stack 34″ x 80′0″	200.00	
1—125 H. P. Murray H. R. T. boiler	1,500.00	
1—Steel stack—34″ x 80′0″	200.00	
1—9″ x 5¼″ x 12″ Davidson simplex boiler feed pump	268.00	
1—Feed water heater	180.00	
1—2″ American injector	95.00	
Boiler supports—3,248# @ 5¢	162.00	
(Installed 1900.)		$5,605.00
Building # 6 C:		
Excavation—15 cu. yds. @ $1.25	$19.00	
Concrete—16 cu. yds. @ $10.00	160.00	
Forms @ $3.00	48.00	
		227.00
1—125 H. P. Phœnix H. R. T. boiler 72″ x 18′0″	$1,500.00	
1—Steel stack—34″ x 80′0″	200.00	
1—American injector	48.00	
(Installed 1905.)		1,748.00
Building # 7:		
Excavation—349.64 cu. yds. @ $1.25	$437.00	
Foundations—129,692 brick @ $17.00	2,205.00	
Concrete—107.73 cu. yds. @ $10.00	1,087.00	
Forms @ $2.00	217.00	
		3,946.00
2—8′6″ D. S. Lowe sets	$17,600.00	
(Rebuilt 1910.)		
1—10′8″ D. S. Lowe set	16,000.00	
1—Vapor extractor 2′6″ x 7′ x 7′0″ and 3′0″ x 6′0″ seal pot	800.00	
		34,400.00
2 Double metal lockers	$14.00	
1—# 500 Fairbanks scale	30.00	
1—# 300 Bristol elec. pyrometer	105.00	
8—McNeill charging barrows	480.00	

		Net construction cost.
1—98 H. P. C. 3 turbine and # 8 Sturtevant blower	3,200.00	
1—# 1,130 Fairbanks scale	120.00	
		3,949.00
543		
Building # 8 A:		
1—Fairbanks 6′ x 5′ plat. scale		$150.00
Building # 8 B:		
1—Steam hydraulic elevator (Installed 1896.)		1,600.00
Building # 10:		
Concrete 1 cu. yd. @ $10.00	$10.00	
Forms @ $3.00	3.00	
Brick 68 @ $19.00	1.00	
		14.00
1—20″ Buffalo Forge blower	$20.00	
1—5″ x 6″ Payne horizontal engine	180.00	
		200.00
1—# 3 Hoefer Co. drill press	$75.00	
1—14″ x 6′0″ Reed auto. lathe	325.00	
1—3″ x 20″ belted grindstone	15.00	
1—2″ x 14″ " emery wheel	15.00	
1—3′ diam. x. 2′6″ Smith forge	25.00	
1—135# anvil	15.00	
1—140# "	15.00	
2—6″ Bench vises	18.00	
1—Gas solder iron heater	4.00	
1—¾″ to 2″ Curtis pipe machine	125.00	
Countershaft and belting (Installed 1905.)	190.00	
		822.00
Building # 12:		
2—6″ x 7″ x 10″ Davidson simplex water pumps	$420.00	
1—4″ x 5″ x 8″ Davidson simplex oil pump.	150.00	
1—6″ x 7″ x 10″ Davidson simplex drip pump (Installed 1909.)	420.00	
		990.00
1—4½″ x 3¼″ x 6″ Davidson simplex oil pump	$105.00	
1—4½″ x 3¼″ x 6″ Davidson simplex tar pump	105.00	
(Installed 1901.)		210.00
544		
1—5¼″ x 3½″ x 5″ Warren duplex tar pump (Installed 1899.)		$125.00

		Net construction cost.
1—3½" x 2½" x 4" Davidson simplex drip pump (Installed 1905.)	70.00	
Building # 13:		
Excavation—.51 cu. yds. @ $1.25	$1.00	
Foundations—485 brick @ $19.00	9.00	
1—6" x 8" x 12" Davidson oil pump		490.00
Building # 14:		
Excavation—24.67 cu. yds. @ $1.25	$31.00	
Foundations—6.05 cu. yds. @ $10.00	61.00	
Forms @ $3.00	18.00	
Brick—3,713 @ $19.00	71.00	
Backfilling—6.5 cu. yds. @ 60¢	4.00	
		185.00
1—14' x 14' American sta. meter		8,400.00
27'9"—24" C. I. @ 4½¢ per lb.	$255.00	
3—24" Valves @ $114.00	342.00	
2—24" Tees @ 6¢ per lb	164.00	
3—24" Bends @ 6¢ per lb	109.00	
		870.00
Building # 16:		
Excavation—12.07 cu. yds. @ $1.25	$16.00	
Foundations—8.29 cu. yds. @ $10.00	83.00	
Forms @ $3.00	25.00	
		124.00
Concrete slab—277.62 sq. ft. @ 12¢	$33.00	
Brick on edge—277.62 sq. ft. @ 13¢	366.00	
		69.00
1—60 H. P. Phœnix H. R. T. boiler 54" x 16', erected 1907	$840.00	
1—27" x 80' steel stack	170.00	
1—# 80 World Injector	45.00	
		1,055.00
545		
Gauges:		
6—Bristol press recording	$300.00	
1—8" U	20.00	
4—6" U	60.00	
6—18" U	60.00	
2—28" U	50.00	
1—120# Steam	45.00	
2—200# "	110.00	
5—20" U	60.00	
9 Thermometers @ $17.50	158.00	
		$863.00

		Net construction cost.
Fire Protection:		
4—Keystone extinguishers	$80.00	
4—Fire pails	4.00	
1—Hose reel	35.00	
1—2" Nozzle 2'6"	20.00	
200'—2" Lined hose @ 75¢	150.00	
100'—2" " " @ 75¢	75.00	
2—2" Nozzles 10"	24.00	
1—Barrel	1.00	
3—Safety fire buckets	6.00	
1—Crest watermeter and flanges	20.00	
1—Fire Alarm box	12.00	
		427.00
Miscellaneous works tools		600.00
Outside Apparatus:		
1—2" x 2¼" x 4" Davidson pump	$60.00	
1—7'6" x 36'0" Fairbanks scales (Installed 1890. Cap. 100 tons.)	950.00	
1—8'0" x 14'0" Standard Scales (Installed 1876. Cap. 2 tons.)	450.00	
1—Stiff leg derrick with winch (Installed 1890.)	180.00	
		1,640.00
Wells, Valve Manholes, Separators, etc.:		
Excavation—327.94 cu. yds. @ $1.25	$410.00	
Backfilling—17.39 cu. yds. @ 60¢	10.00	
Brickwork—55,536 @ $19.00	1,055.00	
Concrete—8.21 cu. yds. @ $10.00	82.00	
Forms @ $3.00	166.00	
C. I. Covers—15,951.92# @ 3½¢	558.00	
546		
W. I. Covers—427.08# @ 3½¢	$15.00	
Wooden Covers—237.30' B. M. @ $41.00	10.00	
I Beams—305.26# @ 6¢	19.00	
Scaffolding @ $1.00	56.00	
2—5' x 7' x 15' Separators	300.00	
1—4' x 16' x 6' "	150.00	
Excavation—106.69 cu. yds. @ $1.25	$133.00	
Backfilling—20.85 cu. yds. @ 60¢	13.00	
Brickwork—15,502 br. @ $19.00	295.00	
Scaffolding @ $1.00 per M	16.00	
Boxes—2,776' B. M. @ $41.00	114.00	
C. I. Covers—2,235.76# @ 3½¢	78.00	
Wood Covers—147' B. M. @ $41.00	6.00	
		$3,486.00

				Net construction cost.
Exhaust Steam Piping:				
21'3"—½"	@	$.13	$3.00	
160'6"—¾"	@	.15	24.00	
1,851'6"—1"	@	.18	333.00	
697'6"—1¼"	@	.24	168.00	
80'6"—1½	@	.30	24.00	
783'5"—2"	@	.39	306.00	
3'3"—2½"	@	.63	2.00	
116'0"—3"	@	.83	96.00	
27'3"—3½"	@	1.04	28.00	
52'9"—8"	@	1.19	63.00	
60'3"—6"	@	2.05	124.00	
67'9"—8"	@	3.60	244.00	
Valves:				
3—¾"	@	$.88	$3.00	
4—1"	@	1.25	5.00	
23—1¼"	@	1.75	40.00	
2—1½"	@	2.50	5.00	
11—2"	@	3.75	41.00	
4—4"	@	8.00	32.00	
1—8"	@	18.00	18.00	
Radiators:				
2—14 Section	@	$5.00	$10.00	
Covering:				
21'3"—½"	@	$.11	$3.00	
84'6"—¾"	@	.12	10.00	
25'6"—1"	@	.14	4.00	

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				Net construction cost.
417'6"—1¼"	@	$.15	$63.00	
36'6"—1½"	@	.17	6.00	
751'5"—2"	@	.18	135.00	
3'3"—2½"	@	.20	1.00	
116'0"—3"	@	.23	27.00	
27'0"—3½"	@	.25	7.00	
52'9"—4"	@	.30	16.00	
70'3"—6"	@	.40	28.00	
67'9"—8"	@	.55	37.00	
Exhaust heads:				
2—8" Connections	@	$54.00	$108.00	
1—1¼" Connections	@	12.00	24.00	

				Net construction cost.
Steam traps:				
2—1½"	@	$36.00	$72.00	
2—¾"	@	15.00	30.00	
1—2"			54.00	
Separators:				
1—2"			$17.00	
2—3"	@	$25.00	50.00	
				$2,261.00
Steam Piping:				
Excavation—362'6"	@	$.20	$73.00	
Pipe:				
60'3"—⅜"	@	$.13	8.00	
90'0"—½"	@	.13	12.00	
410'9"—¾"	@	.15	64.00	
1,687'3"—1"	@	.18	304.00	
333'3"—1¼	@	.24	80.00	
79'3"—1½"	@	.30	24.00	
475'4"—2"	@	.39	186.00	
8'0"—2½"	@	.63	5.00	
292'0"—3"	@	.83	242.00	
185'6"—4"	@	1.19	221.00	
21'6"—6"	@	2.05	45.00	
136'5"—8"	@	3.60	493.00	

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Covering:				
60'3"—⅜"	@	$.11	$7.00	
90'0"—½"	@	.11	10.00	
410'9"—¾"	@	.12	49.00	
1,430'3"—1"	@	.14	200.00	
333'3"—1¼	@	.15	50.00	
79'3"—1½	@	.17	14.00	
475'4"—2"	@	.18	86.00	
8'0"—2½"	@	.20	2.00	
292'0"—3"	@	.23	67.00	
185'6"—4"	@	.30	56.00	
21'6"—6"	@	.40	9.00	
136'3"—8"	@	.55	75.00	
Valves:				
4—⅜"	@	$.63	$3.00	
5—½"	@	.65	3.00	
19—¾"	@	.88	17.00	
48—1"	@	1.25	60.00	
14—1¼"	@	1.75	25.00	

				Net construction cost.
5—1½"	@	2.50	13.00	
29—2"	@	3.75	109.00	
1—2½"	@	7.00	7.00	
13—3"	@	10.00	130.00	
3—4"	@	25.00	75.00	
2—6"	@	60.00	120.00	
5—8"	@	75.00	375.00	
Hose:				
115'66"—½"	@	$.75	$87.00	
In Building # 50:				
Pipe:				
112'—¾"	@	$.15	$17.00	
1,332'—1"	@	.18	240.00	
541'—1¼"	@	.24	130.00	
144'—1½"	@	.30	43.00	
173'—2"	@	.39	67.00	
Valves:				
1—¾"	@	$1.88	$1.00	
12—1"	@	1.25	15.00	
3—1¼"	@	1.75	5.00	
2—1½"	@	2.50	5.00	
2—2"	@	3.75	8.00	
549				
Excavation—331' @ 40¢			$66.00	
Covering—331' @ 15¢			50.00	
Boxing—276' B. M. $41.00			11.00	
				$4,064.00
Circulation Piping:				
Excavation—358' @ 40¢			$143.00	
W. I. Pipe:				
1'6"—1½"	@	$.30	1.00	
99'9"—2"	@	.39	39.00	
55'6"—3"	@	.83	47.00	
324'2"—4"	@	1.19	387.00	
105'0"—6"	@	2.05	215.00	
Tile—84'0"—6"	@	.74	62.00	
W. I.—23'0"—8"	@	3.60	83.00	
Valves:				
4—2"	@	$3.75	$15.00	
7—4"	@	25.00	175.00	
2—6"	@	60.00	120.00	
				1,287.00

				Net construction cost.
Oil Piping:				
Excavation—812′	@	40¢	$325.00	
W. I. Pipe:				
37′—⅜″	@	$.13	5.00	
351′—1″	@	.18	63.00	
67′—1½″	@	.30	20.00	
91′—2″	@	.39	36.00	
374′—3″	@	.83	310.00	
1,041′—4″	@	1.19	1,239.00	
8′—6″	@	2.05	17.00	
C. I. Pipe:				
765′—8″ @ 4½¢ per lb.			$1,480.00	
Valves:				
9—1″	@	$1.25	$11.00	
2—1½″	@	2.50	5.00	
2—2″	@	3.75	8.00	
16—3″	@	10.00	160.00	
12—4″	@	25.00	300.00	
Boxing—168′ B. M.	@	$41.00	$7.00	
Strainers—2	@	$4.00	8.00	
Hand pumps—2	@	3.00	6.00	
				4,200.00
550				
Water piping:				
Excavation—1,469′	@	$.40	$588.00	
W. I. Pipe:				
11′0″—¼″	@	.12	1.00	
18′0″—⅜″	@	.13	2.00	
492′0″—½″	@	.13	64.00	
306′0″—¾″	@	.15	46.00	
609′0″—1″	@	.18	110.00	
294′0″—1¼″	@	.24	71.00	
317′0″—1½″	@	.30	95.00	
1,637′0″—2″	@	.39	638.00	
103′0″—2½″	@	.63	65.00	
176′0″—3″	@	.83	146.00	
429′0″—4″	@	1.19	511.00	
207′0″—6″	@	1.59	329.00	
4′0″—6″	@	2.05	8.00	
Valves:				
3—¼″	@	.63	$2.00	
8—½″	@	.63	4.00	
14—¾″	@	.88	12.00	

				Net construction cost.
13—1"	@	1.25	16.00	
13—1¼"	@	1.75	23.00	
7—1½"	@	2.50	18.00	
57—2"	@	3.75	218.00	
8—3"	@	10.00	80.00	
7—4"	@	25.00	175.00	
2—5"	@	35.00	70.00	
1—6"	@	60.00	60.00	
C. I. Pipe:				
24'0"—4" @ 4½¢ per lb.			$22.00	
20'0"—6" @ 4½¢ per lb.			28.00	
Specials:				
1—4" Tee—5¢ per lb.			5.00	
1—4" Valve			18.00	
1—6" Tee—5¢ per lb.			7.00	
1—6" Valve			26.00	
In Building # 50.				
W. I. Pipe:				
113'—½" @ $.13			15.00	
75'—¾" @ .13			11.00	
Valves:				
9—½" @ .63			6.00	
2—¾" @ .88			2.00	
				$3,492.00
551				
Gas Piping:				
996'—⅜"	@	$.12	$120.00	
442'—½"	@	.13	57.00	
161'—¾"	@	.15	24.00	
722'—1"	@	.18	130.00	
104'—1¼"	@	.24	25.00	
62'—1½"	@	.30	19.00	
13'—2"	@	.39	5.00	
In building # 50:				
196'—⅜"	@	.12	$24.00	
171'—½"	@	.13	22.00	
182'—¾"	@	.15	27.00	
271'—1"	@	.18	49.00	
3'—1¼"	@	.24	1.00	
30'—1½"	@	.30	9.00	
61'—2"	@	.39	24.00	
				$536.00

				Net construction cost.
Electric Wiring:				
# 10 Copper wire—2,299′	@	$.05.....	$115.00	
½″ Conduit—906′6″	@	.05.....	46.00	
Lamps—49—16 C. P.	@	.20.....	10.00	
Junction boxes—40	@	.20.....	8.00	
Perkins switches—6	@	.25.....	2.00	
S. T. Switches—7	@	.75.....	5.00	
Fuse plugs—9	@	.05.....	1.00	
Cut-outs—7	@	.25.....	2.00	
				189.00
Sewer piping:				
Tile—659′—6″	@	.74.....	$488.00	
805′—8″	@	.88.....	708.00	
70′—12″	@	1.25.....	88.00	
W. I. Pipe—36′—2″	@	.39.....	14.00	
90′—10″	@	4.00.....	360.00	
C. I. Soil P. 109′—4″@4½¢ per lb			92.00	
Excavation 1,779′	@	.60.....	1,067.00	
				2,817.00
552				
Drain piping:				
Excavation—386′	@	$.40.....	$154.00	
W. I. Pipes:				
36′0″—½	@	.13.....	5.00	
38′1″—¾″	@	.15.....	6.00	
197′3″—1″	@	.18.....	36.00	
293′3″—1¼″	@	.24.....	70.00	
73′0″—1½″	@	.30.....	22.00	
416′3″—2″	@	.39.....	162.00	
55′6″—3″	@	.83.....	46.00	
Tile:				
13′0″—3″	@	.60.....	8.00	
45′0″—4″	@	.63.....	28.00	
Valves:				
7—½″	@	.63.....	4.00	
4—¾″	@	.88.....	4.00	
10—1″	@	1.25.....	13.00	
6—1¼″	@	1.75.....	11.00	
1—1½″	@	2.50.....	3.00	
				$572.00
Tar piping:				
Excavation—431′	@	$ .40.....	$172.00	
W. I. Pipe:				
12′0″—1½	@	.30.....	4.00	
232′0″—2″	@	.39.....	90.00	
16′0″—2½″	@	.63.....	10.00	
461′0″—3″	@	.83.....	383.00	
26′0″—4″	@	1.19.....	31.00	

				Net construction cost.
Valves:				
1—2″	@	3.75	8.00	
1—3″	@	10.00	30.00	
1—4″	@	25.00	25.00	
Plug cocks:				
2—2″	@	2.50	5.00	
1—3″	@	3.50	4.00	
				782.00
553				
Gas Mains in Works Yard:				
C. I. Pipe:				
20′0″—8″	@	4½¢ per lb		$38.00
101′0″—10″	@	4½¢ " "		254.00
37′0″—14″	@	4½¢ " "		150.00
1,183′6″—16″	@	4½¢ " "		5,768.00
368′0″—20″	@	4½¢ " "		2,484.00
754′6″—24″	@	4½¢ " "		6,933.00
Drips:				
7—16″	@	5¢ per lb		687.00
2—20″	@	5¢ " "		230.00
3—24″	@	5¢ " "		360.00
Valves:				
1—8″	@	$27.00		27.00
1—14″	@	55.00		55.00
12—16″	@	67.00		304.00
4—20″	@	96.00		384.00
2—24″	@	120.00		240.00
Reducers:				
4—20″ x 16″ @ 5¢ per lb				95.00
2—24″ x 16″ @ 5¢ per lb				76.00
3—16″ x 10″ @ 5¢ per lb				54.00
1—24″ x 20″ @ 5¢ per lb				32.00
Crosses:				
2—16″ @ 5¢ per lb				85.00
1—20″ @ 5¢ " "				61.00
1—24″ @ 5¢ " "				84.00
Tees:				
1—10″ @ 5¢ per lb				17.00
13—16″ @ 5¢ " "				442.00
5—20″ @ 5¢ " "				248.00
11—24″ @ 5¢ " "				745.00
1—14″ @ 5¢ " "				34.00

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		Net construction cost.
Quarter Bends:		
2—8" @ 5¢ per lb	$12.00	
1—10" @ 5¢ per lb	8.00	
12—16" @ 5¢ per lb	220.00	
8—24" @ 5¢ per lb	440.00	
Solid sleeves:		
2—16" @ 5¢ per lb	24.00	
1—24" @ 5¢ per lb	24.00	
Plugs:		
1—16" @ 5¢ per lb	4.00	
1—20" @ 5¢ per lb	6.00	
5—24" @ 5¢ per lb	46.00	
Flanges:		
6—24" @ 5¢ per lb	4.00	
Cap. 1—24" @ 5¢ per lb	8.00	
		$21,183.00
Paving:		
Brick on edge on concrete—329 sq. yds. @ $2.60	$855.00	
Brick flat on concrete—269 sq. yds. @ $2.40.	646.00	
Wood block on concrete—105 sq. yds. @ $3.00	315.00	
Brick flat on dirt—2,800 sq. ft. @ $.13	364.00	
Cement sidewalk 1,267 sq. ft. @ $.14	177.00	
Curbing:		
Excavation—21 cu. yds. @ $.80	17.00	
Concrete—21 cu. yds. @ 8.10	170.00	
Forms @ $2.00	42.00	
		2,586.00

555

Fencing and Gates:

344'4"
1,223'10"
89'0"
28'0"
16'8"
16'0"
24'0"
77'0"

1,818'10" @ $1.25 per foot $2,274.00

		Net construction cost.
On leased property:		
439′0″		
10′0″		
10′6″		
16′0″		
475′6″ @ $1.25 per foot	395.00	
		$2,869.00
Rubbish kiln		10.00
Oil unloading device:		
Excavation—3.33 cu. yds. @ $1.20	4.00	
Backfilling 3.33 cu. yds. @ .60	2.00	
Poles and landing—1,025′ @ 41.00	42.00	
Pipe—80′—1¼″ @ .24	19.00	
Chain—160′ @ .35	56.00	
Weights and ladders—279# @ .04	11.00	
		$134.00
Lumber in yard—2,563′ B. M.—Y. Pine @ 26.00		67.00
Fixtures, etc., in building # 50:		
Fixtures	80.00	
Meter dipping outfit	120.00	
" provers—2 @ $160.00	320.00	
		520.00
Relief holder (# 18):		
Two lift—175,000 cu. ft. holder in brick tank—16″ and 20″ connections. Erected 1862.		
Excavation—110′ diam. x 21′ = 7,392 cu. yds. @ $1.00	$7,392.00	
556		
Floor—10,821′ B. M. @ $41.00	$444.00	
Crown support—7,697′ B. M. @ $41.00	316.00	
Concrete floor and footing—838 sq. yds. @ $1.80	1,508.00	
3 Course brick floor—487 sq. yds @ $3.00	1,461.00	
Walls, pilasters and footings 388,800 brick @ $17.00	6,610.00	
Scaffolding @ $1.00	389.00	
Holder = 80′x 80′x 4 2% x 5″ = 130,560# @ $.05	6,528.00	
Guide frame, ladder and connections = 80% @ $.05	5,222.00	
		29,870.00

		Net construction cost.
Storage Holder (# 19):		
Two lift 309,432 cu. ft. holder in brick tank, 16″ connections. Erected 1891.		
Excavation—120′ diam. x 24′ = 10,054 cu. yds. @ $1.10	$11,058.00	
Sheathing—20,376′ B. M. @ $40.00 net	815.00	
Floor—16,342′ B. M. @ $41.00	670.00	
Crown support—13,880′ B. M. @ $41.00	569.00	
Concrete floor and footing—1,245 sq. yds. @ $1.80	2,241.00	
3 Course brick floor—944 sq. yds. @ $3.00	2,832.00	
Walls, pilasters and footings—508,500 brick @ $17.00	8,645.00	
Scaffolding @ $100 per M	509.00	
Holder 100′ x 100′ x 4 2% x 5″ = 204,000# @ $.05	10,200.00	
Guide frame, ladder and connections 80% @ $.05	8,160.00	
		45,699.00
Storage Holder (# 20):		
Three lift, 1,132,000 cu. ft. holder in steel tank, surrounded by brick wall. Connections 20″. Erected 1903.		
Excavation—139′ diam. x 18′ = 6,413 cu. yds. @ $1.00	$6,413.00	
557		
Sheathing—23,598′ B. M. @ $40.00—net	$944.00	
Concrete floor and footing 1,108 cu. yds. @ $8.10	8,975.00	
Walls, pilasters and footing 442,050 brick @ $17.00	7,515.00	
Scaffolding @ $1.00 per M	442.00	
Holder and tank complete 1,132 M @ $79.00	89,428.00	
		$113,717.00
Oil Tank (# 21):		
Capacity—100,000 gals. Erected 1902.		
Excavation—1,045 cu. yds. @ $1.30	$1,359.00	
Backfilling—107 cu. yds. @ $.60	64.00	
Foundations—97 cu. yds. concrete @ $8.10	786.00	
Walls—84,480 brick @ $19.00	1,605.00	
Scaffolding @ $1.00 per M	85.00	
Cement coping—44 cu. ft. @ $1.00	44.00	

		Net construction cost.
Steel tank:		
Bottom = 796 sq. ft.		
Sides = 2,332 " "		
Top = 796 " "		
3,924 sq. ft. x 10.2# @ $.05.....	2,001.00	
		5,944.00
Oil Tank (# 22):		
Capacity—64,000 gals. Erected 1897.		
Excavation—546 cu. yds. @ $1.30.....	$710.00	
Backfilling—61 cu. yds. @ $.60.....	37.00	
Foundations—61 cu. yds. concrete @ $8.10..	49.00	
Walls—30,600 brick @ $19.00.....	581.00	
Scaffolding @ $1.00 per M.....	31.00	
Cement coping—38 cu. ft. @ $1.00.....	38.00	
Steel tank:		
Bottom = 677 sq. ft.		
Sides = 1,403 " "		
Top = 677 " "		
2,757 " " x 10.2# @ $.05...	1,406.00	
		2,852.00
558		
Oil Tank (# 23):		
Capacity 16,000 gals. Erected 1891.		
Excavation—185 cu. yds. @ $1.40.....	$259.00	
Foundations—14 cu. yds. concrete @ $8.10..	113.00	
Walls—22,493 brick @ $19.00.....	427.00	
Scaffolding @ $1.00 per M.....	23.00	
Steel tank:		
Bottom = 235		
Sides = 571		
Top = 235		
Pan = 140		
1,181 sq. ft. x 10.2# @ 5¢.....	602.00	
		$1,424.00
Oil Tanks (# 24 & # 25):		
Capacity 300,000 gals. each. Erected '07 and '10.		
Excavation—1,194 cu. yds. @ $1.00.....	$1,194.00	
Concrete bottom and *fottings* 128 cu. yds. @ $8.10	1,037.00	
Walls—111,585 brick @ $19.00.....	2,120.00	
Scaffolding @ $1.00 per M.....	112.00	

		Net construction cost.
Steel tank:		
Bottom = 1,750		
Sides = 4,310		
Top = 1,750		
7,810 sq. ft. x 10.2# @ 5¢....	3,984.00	
Two tanks @	$8,447.00	$16,894.00
Holder Oil Tank (# 36):		
Capacity 700 gals. Erected 1893.		
Framing—219′ B. M. @ $60.00.....	$13.00	
Steel tank—1,712# @ 5¢.....	86.00	
		$99.00
Holder Oil Tank (# 58):		
Capacity 9,500 gals. Erected 1904.		
Base—171′ B. M. @ $60.00.....	$10.00	
Steel tank—7,954# @ 5¢.....	398.00	
		$408.00
559		
Pipe coating tank (# 60):		
Erected 1900.		
Excavation—1.48 cu. yds. @ $1.00.....	$2.00	
Backfilling—1.37 cu. yds. @ $.50.....	1.00	
Framing—1,373′ B. M. @ $41.00.....	56.00	
		$59.00

EXHIBIT I.

Distribution System.

Street Mains.

Size.	Length in feet.	Kind of pavement.	Net construction cost of pipe laid in unpaved streets.	Net construction cost of tearing up and replacing pavement.	Total net construction cost.
2½" & under	25,527′	None	$5,373.00	.....	$5,373.00
	1,835	Brick on Concrete	386.00	$1,290.00	1,676.00
	3,200	Brick on Sand	674.00	1,552.00	2,226.00
	2,915	Asphalt on Concrete	614.00	1,692.00	2,306.00
	320	Wood Block on concrete	67.00	15.00	82.00
	150	Macadam	32.00	20.00	52.00
	33,947		$7,146.00	$4,569.00	$11,715.00
3" W. I.	4,266′	None	$1,326.00	.....	$1,326.00
	17,205	Brick on Concrete	5,347.00	$13,819.00	19,166.00
	8,960	Brick on Sand	2,785.00	4,345.00	7,130.00
	2,680	Asphalt on Concrete	833.00	1,555.00	2,388.00
	1,990	Wood Block on Concrete	618.00	95.00	713.00
	200	Macadam	62.00	26.00	68.00
	35,301		$10,971.00	$19,840.00	$30,811.00
4" C. I.	350,664′	None	$195,074.00	.....	$195,074.00
	68,083	Brick on Concrete	37,875.00	$47,876.00	85,751.00
	64,370	Brick on Sand	35,809.00	31,213.00	67,022.00

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Size.	Length in feet.	Kind of pavement.	Net construction cost of pipe laid in unpaved street.	Net construction cost of tearing up and replacing pavement.	Total net construction cost.
	82,757	Asphalt on Concrete	46,038.00	48,024.00	94,062.00
	5,020	Wood Block on Concrete	2,793.00	5,258.00	8,051.00
	2,830	Macadam	1,574.00	374.00	1,948.00
	573,724		$319,163.00	$132,745.00	$451,908.00
6″ C. I.	75,719′	None	$57,569.00	.....	$57,569.00
	32,365	Brick on Concrete	24,607.00	$22,759.00	47,366.00
	29,355	Brick on Sand	22,319.00	14,234.00	36,553.00
	21,215	Asphalt on Concrete	16,130.00	12,311.00	28,441.00
	3,350	Wood Block on Concrete	2,547.00	3,509.00	6,056.00
	162,004		$123,172.00	$52,813.00	$175,985.00
8″ C. I.	20,494′	None	$20,969.00	.....	$20,969.00
	15,680	Brick on Concrete	16,044.00	$11,738.00	27,782.00
	9,280	Brick on Sand	9,495.00	4,790.00	14,285.00
	18,070	Asphalt on Concrete	18,489.00	11,442.00	29,931.00
	1,410	Wood Block on Concrete	1,443.00	1,572.00	3,015.00
	673	River Crossing	5,290.00	.....	5,290.00
	65,607		$71,730.00	$29,542.00	$101,272.00

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Street Mains (Cont'd).

10″ C. I.	9,196′	None	$12,211.00	.....	$12,211.00
	7,122	Brick on Concrete	9,477.00	$5,654.00	15,131.00
	11,600	Brick on Sand	15,436.00	6,350.00	21,786.00
	3,250	Asphalt on Concrete	4,324.00	2,229.00	6,553.00
	320	Wood Block on Concrete	426.00	378.00	804.00
	540	Concrete	719.00	188.00	907.00
	32,008		$42,593.00	$14,799.00	$57,392.00
12″ C. I.	19,492′	None	$32,614.00	.....	$32,614.00
	5,837	Brick on Concrete	9,768.00	$4,640.00	14,408.00
	1,120	Brick on Sand	1,874.00	613.00	2,487.00
	3,615	Asphalt on Concrete	6,050.00	2,480.00	8,530.00
	1,285	Wood Block on Concrete	2,150.00	1,520.00	3,670.00
	31,349		$52,456.00	$9,253.00	$61,709.00
14″ C. I.	622′	None	$1,267.00	$.....	$1,267.00
16″ C. I.	13,956′	None	$33,867.00	.....	$33,867.00
	3,690	Brick on Concrete	8,955.00	$3,265.00	12,220.00
	2,840	Brick on Sand	6,892.00	1,732.00	8,624.00
	5,370	Asphalt on Concrete	13,031.00	4,250.00	17,281.00
	1,350	Concrete	3,276.00	544.00	3,820.00
	1,300	River Crossing	22,790.00	.....	22,790.00
	28,506		$88,811.00	$9,791.00	$98,602.00

Number services.		Kind of pavement.	Net construction cost of pipe laid in unpaved street.	Net construction cost of tearing up and replacing pavement.	Total net construction cost.
20″ C. I.	2,236′	None	$7,378.00	.....	$7,378.00
	1,040	Brick on Concrete	3,432.00	$967.00	4,399.00
	1,290	Brick on Sand	4,257.00	827.00	5,084.00
	710	Asphalt on Concrete	2,343.00	599.00	2,942.00
	760	Wood Block on Concrete	2,508.00	1,053.00	3,651.00
	6,036		$19,918.00	$3,446.00	$23,364.00
24″ C. I.	580′	None	$2,576.00	.....	$2,576.00
	400	Brick on Concrete	1,777.00	$445.00	2,222.00
	200	Wood Block on Concrete	888.00	331.00	1,219.00
	639	River Crossing	10,294.00	.....	10,294.00
	1,819		$15,535.00	$776.00	$16,311.00
Grand Total	970,923′		$752,762.00	$277,574.00	$1,030,336.00

563

Street Mains (Cont'd).

House Services.

6,744	None	$94,011.00	.....	$94,011.00
3,757	Brick on Concrete	52,373.00	$17,883.00	70,256.00
2,986	Brick on Sand	41,625.00	9,794.00	51,419.00
3,304	Asphalt on Concrete	46,058.00	18,304.00	64,362.00
309	Wood Block on Concrete	4,307.00	2,194.00	6,501.00

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62	Macadam	864.00	78.00	942.00
8	Concrete	112.00	23.00	135.00
17,170		$239,350.00	$48,276.00	$287,626.00

Lamp Post Services.

Services	1,140	$6,555.00	$4,708.00	$11,263.00
Risers	1,140	1,368.00	.....	1,368.00
Posts	1,140	12,312.00	.....	12,312.00
		$20,235.00	$4,708.00	$24,943.00

564 *Distribution System.*

Line Pot Drips.

Number.	Size.	Net construction cost.
17	3″	$136.00
107	4″	1,284.00
30	6″	570.00
7	8″	56.00
5	10″	50.00
9	12″	108.00
11	16″	176.00
1	20″	20.00
187		$2,400.00

Valves.

5	3″	$50.00
63	4″	1,039.50
30	6″	594.00
8	8″	237.60
8	10″	316.80
3	12″	148.50
10	16″	737.00
3	24″	396.00
130		$3,519.40

Steam R. R. Crossings.

191	@ $20.00	$3,820.00

Street R. R. Crossings.

277	Single track @ $15.00	$3,405.00
109	Double " @ 20.00	2,180.00
		$5,585.00

Tools.

Bicycles, Tool Carts, Ditch pumps, etc	$1,000.00
Main and Service Tools	2,000.00
Fitters and Meter Repair Tools	2,000.00
	$5,000.00

565

Meters in Use.

Size and kind.		Number in use.	Net construction cost.
3	Lt. Ord.	915	$5,883.45
5	"	7,289	55,980.00
10	"	1,008	10,684.80
20	"	106	1,592.12
30	"	72	1,587.60
45	"	18	561.78
60	"	9	367.74
80	"	1	53.74
100	"	3	187.65
150	"	1	92.29
200	"	1	120.83
5	" P. P.	10,201	97,521.56
10	" "	227	2,832.96
10	" "A"	46	487.60
30	" "	4	88.20
60	" "	1	40.86
2,000	" C. I.	1	1,250.00
		19,903	$179,333.00

Meters in Stock.

3	Lt. Ord.	178	$1,055.54
5	"	237	1,670.85
10	"	166	1,635.10
20	"	14	196.28
30	"	4	83.80
45	"	8	240.08
60	"	3	118.68
5	" P. P.	196	1,750.28
10	" "	39	457.47
10	" "A"	6	59.10
30	" "	2	41.90
		853	$7,309.08

(Above prices include cost of meter, freight, connections, test and incidentals as per schedule.)

EXHIBIT J.

Assumed Construction of Distribution System.

Mains in District # 1.

(To be Laid During 1912.)

Size.	Kind of paving.	Length of mains.	Net construction cost.	15% of N.C. cost.	N.C. cost plus engrg., etc.
2½"	Asphalt on concrete	750′	$593.00		
3"	" " "	2,250	2,005.00		
4"	" " "	13,408	15,240.00		
6"	" " "	6,940	9,303.00		
8"	" " "	3,860	6,394.00		
10"	" " "	1,750	3,529.00		
12"	" " "	2,550	6,016.00		
16"	" " "	3,370	10,845.00		
20"	" " "	710	2,942.00		
		35,588′	$56,867.00	$8,530.00	$65,397.00
2½"	Wood Blk. on concrete	320′	$83.00		
3"	" " " "	1,990	713.00		
4"	" " " "	5,020	8,051.00		
6"	" " " "	2,450	4,429.00		
8"	" " " "	1,410	3,015.00		
12"	" " " "	1,285	3,670.00		
20"	" " " "	760	3,561.00		
24"	" " " "	200	1,220.00		
		13,435′	$24,742.00	$3,711.00	$28,453.00

CHARTS

TOO

LARGE

FOR

FILMING

2½"	Brick on Concrete		1,015′	$927.00		
3"	" " "		17,190	1,915.00		
4"	" " "		34,710	43,717.00		
6"	" " "		21,905	32,058.00		
8"	" " "		6,650	11,782.00		
10"	" " "		2,642	5,614.00		
12"	" " "		2,167	5,346.00		
16"	" " "		3,690	12,219.00		
20"	" " "		1,040	4,399.00		
24"	" " "		400	2,221.00		
			91,409′	$120,198.00	$18,030.00	$138,228.00
2½"	Brick on Sand		2,250′	$1,565.00		
3"	" " "		7,620	6,063.00		
4"	" " "		27,445	28,576.00		
6"	" " "		16,315	20,315.00		
10"	" " "		3,630	6,817.00		
16"	" " "		2,840	8,624.00		
20"	" " "		1,290	5,084.00		
			61,390′	$77,044.00	$11,557.00	$88,601.00

571 Mains in District # 1 (Cont'd).

2½"	Macadam		150′	$51.00		
3"	"		200′	89.00		
			350′	$140.00	$21.00	$161.00

Size.	Kind of paving.	Length of mains.	Net construction cost.	15% of N.C. cost.	N.C. cost plus engrg. etc.
2½"	None	11,350′	$2,389.00		
3"	"	1,705	530.00		
4"	"	30,975	17,231.00		
6"	"	6,450	4,904.00		
8"	"	5,670	5,802.00		
10"	"	3,310	4,405.00		
12"	"	928	1,553.00		
14"	"	400	815.00		
16"	"	6,640	16,113.00		
20"	"	2,110	6,963.00		
24"	"	500	2,576.00		
		70,118′	$63,281.00	$9,492.00	$72,773.00
8"	River Crossing	673′	$5,290.00		
16"	" "	1,300	22,790.00		
24"	" "	639	10,294.00		
		2,612′	$38,374.00	$5,756.00	$44,130.00

572

Mains in District # 2.

(To be Laid During 1913.)

2½"	Asphalt	1,915′	$1,514.00		
3"	"	430	383.00		
4"	"	46,287	52,610.00		
6"	"	5,335	7,152.00		

8″	"	.....	4,680	7,752.00		
10″	"	.....	500	1,008.00		
12″	"	.....	105	248.00		
			59,252′	$70,667.00	$10,600.00	$81,267.00
2½″	Brick on concrete	.....	240′	$219.00		
3″	" " "	.....	15	17.00		
4″	" " "	.....	31,793	40,043.00		
6″	" " "	.....	6,620	9,688.00		
8″	" " "	.....	9,030	15,999.00		
10″	" " "	.....	4,480	9,518.00		
12″	" " "	.....	3,670	9,055.00		
			55,848′	$84,539.00	$12,681.00	$97,220.00
10″	Wood Block	.....	320′	$814.00		
4″	Macadam	.....	850	585.00		
10″	Concrete	.....	540	907.00		
16″	"	.....	1,350	3,820.00		
			3,060′	$6,126.00	$919.00	$7,045.00
2½″	Brick on sand	.....	950′	$661.00		
3″	" " "	.....	1,340	1,066.00		
4″	" " "	.....	34,475	38,895.00		
6″	" " "	.....	3,530	4,396.00		
8″	" " "	.....	5,100	7,851.00		

Size.	Kind of paving.	Length of mains.	Net construction cost.	15% of N.C. cost.	N.C. cost plus engrg., etc.
10″	" " "	7,970	14,968.00		
12″	" " "	1,050	2,332.00		
		54,415′	$67,169.00	$10,075.00	$77,244.00
2½″	None	7,357′	$1,549.00		
3″	"	2,065	642.00		
4″	"	94,810	52,743.00		
6″	"	14,055	10,686.00		
8″	"	1,350	1,381.00		
10″	"	1,830	2,435.00		
12″	"	13,950	23,343.00		
16″	"	7,720	18,734.00		
		143,137′	$111,513.00	$16,727.00	$128,240.00

573 Mains in District # 3.

(To be Laid During 1914.)

2½″	Asphalt	250′	$198.00		
4″	"	23,062	26,212.00		
6″	"	8,940	11,985.00		
8″	"	9,530	15,785.00		
10″	"	1,000	2,017.00		
12″	"	960	2,265.00		
		43,742′	$58,462.00	$8,769.00	$67,231.00

2½"	Brick on concrete	860′	$786.00		
4"	" " "	1,300	1,637.00		
6"	" " "	3,840	5,620.00		
		6,000′	$8,043.00	$1,206.00	$9,249.00
4"	Brick on sand	2,450′	$2,551.00		
6"	" " "	10,540	13,124.00		
8"	" " "	3,150	4,849.00		
12"	" " "	70	155.00		
		16,210′	$20,679.00	$3,102.00	$23,781.00
4"	Macadam	1,980′	$1,363.00		
6"	Wood Block	900	1,627.00		
		2,880′	$2,990.00	$449.00	$3,439.00
2½"	None	6,540′	$1,377.00		
3"	"	496	154.00		
4"	"	225,159	125,256.00		
6"	"	54,184	41,196.00		
8"	"	14,504	14,840.00		
10"	"	4,036	5,371.00		
12"	"	4,614	7,721.00		
14"	"	222	452.00		
16"	"	1,596	3,873.00		
20"	"	126	416.00		
		311,477′	$200,656.00	$30,098.00	$230,754.00

Total = 380,309′ = 72.01 Miles in District # 3.
All Districts—Grand Total 183.39 Miles without river mains
River mains = 2,612′.

District # 1.		
Asphalt on Concrete	$65,397.00	
Wood Block on Concrete	28,453.00	
Brick on Concrete	138,228.00	
Brick on Sand	88,601.00	
Macadam	161.00	
None	72,773.00	
River Crossing	44,130.00	
		$437,743.00
District # 2.		
Asphalt	$81,267.00	
Brick on Concrete	97,220.00	
Wood Block, Macadam & Concrete	7,045.00	
Brick on Sand	77,244.00	
None	128,240.00	
	$391,016.00	
Add for discrepancy due to re-scaling of maps as to paving on sub-dividing city in three districts	21,674.00	
		412,690.00
District # 3.		
Asphalt	$67,231.00	
Brick on Concrete	9,249.00	
Brick on Sand	23,781.00	
Macadam & Wood Block	3,439.00	
None	230,754.00	
		334,454.00
		$1,184,887.00

COPY BOUND

Services in District # 1.

(To be Laid in 1912.)

Number house services.	Number lamp services.	Kind of pavement.	Net construction cost.	15% of N.C. cost.	N. C. cost plus engrg., etc.
880	....	Asphalt on Concr.	$17,142.00		
....	34	" " "	744.00		
306	....	Wood blk. on Concr.	6,438.00		
2,245	....	Brick " "	41,982.00		
....	109	" " "	2,385.00		
1,483	....	" " Sand	25,537.00		
....	109	" " "	2,385.00		
1	....	Macadam	15.00		
1,292	....	None	17,980.00		
....	77	"	1,685.00		
6,207	329		$116,293.00	$17,444.00	$133,737.00

Services in District # 2.

(To be Laid in 1913.)

1,397	....	Asphalt on Concr.	$27,214.00		
....	135	" " "	2,954.00		
3	....	Wood blk. on Concr.	63.00		
1,258	....	Brick " "	10,945.00		
....	95	" " "	2,079.00		
985	....	" " Sand	16,962.00		
....	137	" " "	3,018.00		
24	....	Macadam	365.00		
....	2	"	64.00		
2	....	Cement	34.00		

Number house services.	Number lamp services.	Kind of pavement.	Net construction cost.	15% of N.C. cost.	N.C. cost plus engrg., etc.
....	6	"	131.00		
2,573	....	None	35,868.00		
....	159	"	3,479.00		
6,242	534		$103,176.00	$15,476.00	$118,652.00
576					

Services in District # 3.

(To be Laid in 1914.)

665	....	Asphalt on Concr	$12,954.00		
....	92	" " "	2,033.00		
44	....	Brick " "	823.00		
....	5	" " "	109.00		
250	....	Brick on Sand	4,305.00		
35	....	Macadam	532.00		
3,727	....	None	51,954.00		
....	180	"	3,933.00		
4,721	277		$76,648.00		
		Correction for discrepancy due to error in re-subdividing as to pavements	16,452.00		
			$93,100.00	$13,965.00	$107,065.00

Summary of Services.

District # 1	$133,737.00
" # 2	118,652.00
" # 3	107,065.00
	$359,454.00

COPY BOUND

Meters in District # 1.

(To be Installed in 1912.)

Number of meters.	Kind.	Net construction cost.	15% engrg. casualty liability, omissions & contingencies.	Net construction + 15% engineering, etc.
4,995	Ord.	$41,633.00		
4,506	P. P.	43,361.00		
9,501		$84,994.00	$12,749.00	$97,743.00

Meters in District # 2.

(To be Installed in 1913.)

2,990	Ord.	$24,920.00		
3,259	P. P.	31,361.00		
6,249		$56,281.00	$8,442.00	$64,723.00

Meters in District # 3.

(To be Installed in 1914.)

1,380	Ord.	$11,502.00		
2,773	P. P.	26,556.00		
4,153		$38,058.00	$5,709.00	$43,767.00
Meters in Stock		$7,309.00	$1,096.00	$8,405.00
		$45,367.00	$6,805.00	$52,172.00

CLOSE IN CENTER

Summary of Meters.

District # 1	$97,743.00
" # 2	64,723.00
" # 3	52,172.00
	$214,638.00

578 *Reproduction Expenditures.*

Organization & Legal Expense.

	1911.	1912.	1913.	1914.
Preliminary investigation	$3,000.00	.....	.....	.....
Legal expense	3,334.00	$3,333.00	$3,333.00	.....
Incorporation fee	4,000.00	.....	.....	.....
Salary of Manager	7,500.00	7,500.00	7,500.00	.....
Incidental & travelling expenses	1,500.00	1,500.00	1,500.00	.....
Clerical force	4,500.00	4,500.00	4,500.00	.....
Rent & stationery	1,500.00	1,500.00	1,500.00	.....
	25,334.00	18,333.00	18,333.00	.....
Taxes @ 2¼%	0	793.00	(½ yr.)636.00	.....
	25,334.00	19,126.00	18,969.00	.....
Loss of interest @ 6%	(½ yr.)760.00	2,139.00	(½ yr.)1,695.00	.....
	$26,094.00	$21,265.00	$20,664.00	.....

COPY BOUND

CLOSE IN CENTER

Real Estate.

N. C. Cost plus Engrg., etc.	$220,993.00	.....	.....	.....
Taxes @ 2¼%	(½ yr.) 2,486.00	$5,179.00	(½ yr.) $2,805.00	.....
	$223,479.00			
Loss of interest @ 6%	(½ yr.) 6,704.00	13,966.00	(½ yr.) 7,522.00	.....
	$230,183.00	$19,145.00	$10,327.00	.....

Buildings.

N. C. Cost plus Engrg., etc.	.....	$98,581.00	.....	.....
Taxes @ 2¼%	.....	(½ yr.) 1,109.00	(½ yr.) $1,155.00	.....
		99,690.00		
Loss of interest @ 6%	.....	(½ yr.) 2,991.00	(½ yr.) 3,098.00	.....
		$102,681.00	$4,253.00	.....

Works Equipment.

(N. C. Cost plus Engrg., etc.)	.....	.....	.....	.....
In Building # 1 A & B	.....	$25,919.00	.....	.....
" " # 3	.....	14,479.00	$14,479.00	.....
" " # 4	.....	28,415.00	.....	.....
" " # 5	.....	1,435.00	.....	.....
" " # 6	.....	8,941.00	8,942.00	.....
" " # 6 C	.....	.....	2,271.00	.....

	1911.	1912.	1913.	1914.
294,902′ Street mains in District # 1.....	$.....	$437,743.00	.....	.....
315,712′ " " " " # 2.....	.....	.....	$412,690.00	.....
380,309′ " " " " # 3.....	.....	.....	.....	$334,454.00
Miscellaneous Distribution Equipment.....	.....	13,373.00	.....	.....
" " "	.....	.....	5,000.00	.....
" " "	.....	.....	.....	5,000.00
		$682,596.00	$601,065.00	$498,691.00
Taxes @ 2¼%.....	.....	(½ yr.)7,679.00	22,759.00	(½ yr.)18,512.00
		$690,275.00	$623,824.00	$517,203.00
Loss of interest @ 6%.....	.....	(½ yr.)20,708.00	61,374.00	(½ yr.)49,643.00
		$710,983.00	$685,198.00	$566,846.00
Working Capital	$22,000.00	$40,000.00	$80,000.00	.....
Taxes @ 2¼%.....(½ yr.)	248.00	966.00	(½ yr.)1,198.00	.....
	$22,248.00	$40,966.00	$81,198.00	.....
Loss of interest @ 6%.....(½ yr.)	667.00	2,604.00	(½ yr.)3,213.00	.....
	$22,915.00	$43,570.00	$84,411.00	.....
Grand Total of above Expenditures..	$279,192.00	$1,168,792.00	$1,043,884.00	$566,846.00

(Here follow pasters, marked pages 581-593.)

CHARTS

TOO LARGE FOR FILMING

594 COMPLAINANT'S EXHIBIT # 21.

J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

595 *Appraisal on the Basis of Cost of Reproduction New of the Property and Business of the Des Moines Gas Company, Des Moines, Iowa, as of January 1, 1911, Made for the Above-named Company by William A. Baehr, Consulting Engineer, Chicago.*

596 William A. Baehr, Consulting Engineer.

CHICAGO, ILL., *July* 1, 1911.

Des Moines Gas Company, Des Moines, Iowa.

GENTLEMEN: I beg to submit herewith a report covering an appraisal of the property and business of your company as of January 1, 1911, made on the basis of cost of reproduction new, with proper depreciation allowance. This report includes a careful estimate of going value as of same date.

Respectfully submitted,

(Signed) W. A. BAEHR.

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605 *Explanation.*

The Des Moines Gas Company furnished us an inventory of their physical property, including real estate buildings, apparatus piping, street mains, service meters, tools, etc. We checked this inventory sufficiently to satisfy us that it was correct.

Unit costs were fixed for each item to cover the cost of material and wages as of date of appraisal.

Business Development.

In order to develop the business in a logical way, and to enable us to proceed with the construction work in accordance with the probable actual sequence and with speed with which it would be best to carry it out, and, as the two are necessarily correlated, we have decided to divide the territory supplied by the Des Moines Gas Company into three districts as follows:

District Number 1, comprises in a general way the central portion of the city, and embraces the principal commercial and industrial sections, together with a portion of the central residence district.

District Number 2, comprises a residence district rather closely built up and contiguous to and surrounding district number 1.

District Number 3, comprises the outlying residence portions of the city.

These districts have been plotted on a map accompanying this report, from which the outlines of each may be determined.

606 The general development is based upon laying mains and supplying gas to districts number 1 first, then to district number 2, and subsequently district number 3.

It is logical to supply district number 1 first, because the gas plant is so situated that mains supply the other two districts must pass through district number 1, and, furthermore, district number 1, comprises that class of gas consumers who would quickly use gas, and also comprise the portion of the city, in which the greatest consumption of gas occurs. In other words, the greatest immediate revenue is secured in this district.

Subsequently it is logical to assume that mains would next be extended into district number 2 and lastly into number 3.

History and Rate of Construction of the Conceptual Plant.

It is assumed that some mind first conceives the idea of supplying the city of Des Moines with gas on January 1, 1911, which is the date of this valuation of the Des Moines Gas Company. The person conceiving this idea thereupon would logically proceed to conduct a preliminary investigation, and the sequence is assumed in a general way as follows:

A general preliminary investigation, which is assumed to terminate favorably to the scheme, would be followed by a preliminary

engineering investigation and report. Such a report is estimated to require not less than three months of time.

607 During the remainder of the first six months of 1911 the other logical proceedings would be as follows:

Taking steps to secure the franchise.

Arranging to finance the enterprise.

Optioning real estate.

Arranging for the services of a local attorney-at-law.

Outlining a business and engineering organization, and getting into touch with future officers and heads of departments.

It is assumed that these preliminary steps would consume six months at the very least, and it is estimated herein that the actual decision to proceed with the enterprise is reached on July 1, 1911.

During the last six months of 1911 we then estimated the logical sequence of events as follows:

Real Estate purchased July 1, 1911.

Business and engineering departments organized as rapidly as possible.

An office would be rented and equipped and the head men composing the organization would begin to arrive in Des Moines very shortly after July 1, 1911.

The legal and general financial organization is estimated to be completed during this time.

The engineering department would thereupon proceed to make final plans for the plant and distribution system as rapidly as possible, such work being estimated to require not less than three months for sufficient general features to be agreed upon, so that the work to be undertaken first could be determined. Thereupon, it is estimated that the engineering plans and designs would proceed

608 sufficiently rapidly to enable the work to be determined, ordered and completed as hereinafter assumed.

All contracts for the 1912 work are figured as closed not later than March 1, 1912.

On account of the necessity of utilizing the winter months for laying river pipes, it is estimated that all river pipes would be undertaken by November or December, 1911, and completed by March 1, 1912.

The rate of money expenditures are determined, and the features and portions of the work done in each period, are estimated as in the following tables. In order to avoid unnecessary complication it is estimated that the rate of expenditure of money follows a straight line from the beginning to the end of each year, and we estimate this is so nearly true that the final result will not be appreciably changed. For instance, the largest individual expenditure in 1911 is for real estate and this is estimated as purchased July 1, 1911.

It is estimated that gas is turned into the distribution system on January 1, 1913, and constantly thereafter supplied.

Interest is figured at the rate of 6% per year.

Taxes chargeable to capital account are figured on everything, and at 2¼% per year on full valuation. Rate during 1910 was 90. mills on $1.00 on 25% of full valuation.

609 *Items of Additional Cost.*

In addition to the cost of material and wages there are certain other items entering into the cost of this work. These are estimated as follows:

	Real estate. Per cent.	Plant. Per cent.	Mains and services. Per cent.	Meters in use. Per cent.	Meters in stock. Per cent.
1. Contingencies on Base only.	...	10.0	10.0	10.0	...
2. Engineering & Superintendence on Base and Number 1	1.5	5.0	5.0	5.0	...
3. Legal Organization, Liability for Casualty & Fire Insurance. On Base Only	4.0	4.0	4.0	4.0	4.0
4. Taxes during Construction. On Base & Nos. 1, 2 and 3	Figures at 2¼% on full valuation. See explanation on following page.				
5. Interest During Construction. On Base Nos. 1, 2, 3, & 4	Figured at 6% on full valuation. See explanation on following page.				
6. Working Capital	Estimated at $150,000.				
7. Going Value	Figured as hereinafter shown.				

610 *Explanation of Tax and Interest Items.*

Taxes chargeable to capital account during construction period are figured at 2¼% on full valuation, including base and Nos. 1, 2, & 3.

In the Going Value calculation, after the various parts have gone into operation, taxes are computed by dividing same into three classes as follows:

The property tax figured at 2¼% on valuation.

The gross revenue tax of 2%.

The federal corporation net revenue tax.

Inasmuch as taxes are levied one year and paid in the next, and since we estimate same as accruing during the current year, we do not figure interest on the amount of the taxes chargeable to capital account during the current year. Interest on the amount of taxes for prior years however, is so included.

See further explanation hereinafter.

611 *Explanation of Items of Additional Cost.*

Contingencies.

All these items of cost which are unforeseen and can not be estimated.

Omissions.—These are less serious in this case on account of the completeness of the inventory and also because the plant is seen in its completed state, but nevertheless, some allowance for this item is necessary.

Temporary Work. More or less of this is inevitable, and after completion of plant it disappears.

Piece Meal Construction. Very high for certain portion of plant lower in other.

Changes in construction made necessary by encountering unforeseen obstacles during progress of work.

Rise in prices of materials or labor above normal.

Financial panics.

Inclement weather causing delays.

Floods causing both an actual property loss and unavoidable delays.

Failure of Contractors.

Especial unforeseen difficulties encountered in deep excavations.

Strikes.

In general, all costs which experience has shown must be provided for by prudent men engaging in large constructive enterprises over and above those which can be specifically enumerated.

Engineering and Superintendence.

Salaries and expenses of engineering and superintending force.

Preparation of Detailed Plans.

Preparation of Specifications.

612 Receiving all bids.

Preparation for letting of contracts.

Inspection of Work.

Purchase of material and supervision of labor where work is not contracted.

Adjustments of contracts.

Final tests to determine if work fulfills specifications.

Placing of the plant in successful operation.

Investigation of suitable real estate, determination of proper location of plant, investigation of suitability of soil, access to transportation facilities, flood conditions, etc.

Investigation Expenses. Includes preliminary inspection and investigation of territory, also business investigation and negotiations.

Legal and Organization Liability for Casualty and Fire Insurance.

Preliminary engineering, surveys, estimates and reports.

Traveling and other preliminary expenses prior to the actual decision to proceed with the enterprise.

Optioning real estate.
Organization fees.
Legitimate expenditures for acquiring franchise.
Legal expenses during construction period, making and certifying abstracts, not including legal work in connection with preparation of contracts, which latter item is included with, "Engineering and Superintendence."
Administrative expenses, such as salaries of executive officers, office assistants, accounting expenses, rent and office expenses.
Liability for casualty, estimated to cover both employees and public liability, sub-contractors insurance, also general contractors and owners contingent insurance.
Fire Insurance.

613 *Estimate of "Legal and Organization" Item.*

Investigation Expense	$2,500
Preliminary engineering surveys, estimates and reports	17,500
Traveling and other preliminary expenses	1,000
Optioning real estate—approximately ¼ of 1%, say	500
State Incorporation fees ($25.00—1st 10. M plus $1 for each add. M.	5,015
Acquisition of franchise	5,000
Legal Expenses, 3-year retainer	10,000
Stockholders meetings, 2 per year for two years @ $50.00.	200
Directors Meetings, 1 meeting per month, 9 directors and $10.00 fee each, for 2 years (thereafter to "operation").	2,100
Salary President, General Manager @ $7,500 per year.. 2 years	15,000
Salary Secretary @ $2,400	4,800
Salary 6 office men av. $1,000 per year each—2 years	12,000
Office Rent @ $150 per month—2 years	3,600
Janitor and Cleaning Force @ $75.00 per month—2 years.	1,800
Heating and Lighting Office @ $50.00—2 years	1,200
Telephone Service @ $1,000 per year—2 years	2,000
Stationery and sundry supplies—2 years	5,000
Total	89,215
Add for Liability for casualty 1% of $2,256,093	22,561
Add for Fire Insurance @ $2,500 per year	5,000
Grand Total	116,776

(Required 4% of $2,256,093 = $90,244.)

614 Taxes During Construction.

In order to avoid unnecessary complication it is estimated that the rate of expenditure of money follows a straight line from the beginning to the end of each year, and the details confirmed this estimate.

A careful estimate was also made of that portion of the investment which would go into operation during each year, and taxes were not charged to construction after that time on each portion.

The actual rate of taxation of the "Des Moines Gas Company" in 1910 was 2.25% on assessed valuation.

During any current year the taxes were figured at full rate for the complete expenditure for the year, but only for one-half the year. For preceding years they were computed for the entire year.

Interest During Construction.

Assuming a uniform rate of expenditure from beginning to end of each year, interest on the yearly investment is figured on the full valuation at one-half the yearly rate for the first year, and thereafter at the full rate.

Interest is charged to construction up to the time the various portions of the investment are placed in operation, and not thereafter.

Interest is charged at the rate of 6% per year and is compounded annually during the construction period.

Working Capital.

The amount allowed under this heading is figured to include the following items:

Materials and Supplies in Stock.

Cash in sufficient amount to insure the discounting of bills,
615 the purchasing of supplies economically and in large quantities, the tiding over of money stringencies, the ability to care for large repairs on short notice, and the making of extensions to the plant which can usually be more cheaply constructed where there are liberal quick assets available for such purpose.

In addition to these items there should be sufficient cash available to cover gas delivered and not paid for.

The actual working capital of the Des Moines Gas Company as of Dec. 31, 1910, was as follows:

Materials and Supplies	$77,410.00
Accounts Receivable	53,627.46
Cash	49,434.15
Advance Accounts	905.20
Total	181,377.27
Less Accounts Payable	39,607.29
Net	141,769.98

We estimate a fair allowance for this item as follows:

Materials and Supplies	75,000.00
Gas delivered and not paid for, labor only	32,600.00
Cash approx. 10% yearly, gross income	52,400.00
Total	150.000.00

616 Going Value.

"Going Value," or "Going Concern Value," may be defined as the enhancement in the value of the physical property of any concern, due to the business that concern has and is doing. It has also been called the value of a created income.

Going value has been held to include various items at different times by different engineers, among which the following may be enumerated.

Cost of Developing the Business. Under this head may be enumerated.

Advertising.

Solicitation of business.

Gratuitous work, such as free piping, free appliances, selling appliances at cost or less than a fair profit.

Demonstrating old and new devices for utilizing gas.

Educating the public to the advantages of gas, and gas plant products.

Experimental work.

Trial installations of gas consuming devices.

Money and effort spent on prospective business that does not develop.

Loss of interest on cost of extensions into what is at first unprofitable territory, but where such extensions are made perhaps on account of paving, or perhaps for their advertising value.

Cost of development of an organization for the effective handling of business development.

Excess of operating expenses above income during a portion of development period.

Deficit in fair return on the investment during the de-
617 velopment period.

In addition to the foregoing still other features have been enumerated by various engineers. These may be grouped under Other Going Value Items.

Management. It is imperative that high managerial ability and efficiency should be recognized and allowance for same made. Manifestly such a policy, in the last analysis, is in the interest of the consumer.

The possession of real estate of sufficient area and so located as to rapidly care for extensions for some years is an asset of value. Such possessions frequently avoid the necessity of rebuilding a new plant, or of abandoning an older one.

Another feature or item of going value is based on the fact that where connections are made to a consumer's house and business relations established, it requires a special incentive to induce such a consumer to change to a competing company.

The state of preservation of the plant, and the fact that it is rendering good service.

Several Methods of Figuring Going Value.

One method is to base going value on the annual revenue from the sale of gas. This is probably on the theory that the least possi-

ble development period to reproduce the business of any gas company is two years, and assuming a straight line development during such a period, a purchaser would probably reason he would lose one-half of two years' revenue, or in other words, one year's annual income from the sale of gas, if he should elect to build a new plant in the place of buying an existing one. This method in the case
618 of the Des Moines Gas Company as of the date of this valuation, would result in a figure of about $540,000.

Another method is to estimate the going value on the basis of $30.00 per consumer, which figure is estimated to be the average cost per consumer of equipping him with gas consuming appliances and securing his business in a given length of time. Curiously, also, this figure is practically equal to the average annual revenue per consumer. This method of figuring usually contemplates a rapid development period, and in the case of the Des Moines Gas Company results in a figure of $597,090 as of date of this valuation.

Cost of Development Method.

The method we prefer to use, however, and which seems to us to be based on sound logic and which lends itself to accurate calculation is explained as follows:

In the first place, "Going Value" is the enhancement in the value of the physical property based upon the business the concern has acquired and the revenue it enjoys. No argument is required to demonstrate that it costs money to acquire this business, whether as an independent outlay, or in part by stockholders foregoing returns on the investment.

It is not unusual to measure this "Cost of Developing the Business" by the losses incurred during the period of development. In this instance, we measure this item by the losses incurred by the Des Moines Gas Company in developing its business to its present stage and revenue.

619 We also wish to call attention to the fact that "Going Value" may, and probably does vary in amount and from time to time in a private enterprise, but in a regulated public service corporation, this item, once determined on the basis of "Cost of Developing the Business," remains fixed, or practically so. This is because price regulation means adjustment of rates to a point where the return is a practically constant percentage on the investment, and future additions to that investment are figured to earn that constant return,—no more, no less. This is a vital distinction between the "Going Value" of a private and a public service enterprise.

It may be of considerable assistance when analyzing "Cost of Developing the Business" to consider the position of an investor about to purchase an existing company. In estimating the value of the physical property no great difficulties should arise, but when it comes to the foregoing item he would probably secure the clearest ideas on the subject by considering there are two companies situated in exactly similar communities, alike in every particular as to physical property and environment but differing only in the matter of the business connected and developed. One company is the actual going Des Moines Gas Company with its business developed as of date of this valuation, and in receipt of a substantial revenue, and the other

company has only the exact duplicate of the physical property of the first company, "the bare bones of the plant," but without one iota of business.

620 Now, what will it cost to develop the business of the conceptual plant to exactly equal that of the actual going Des Moines Gas Company? The answer to this question is figured in our calculation as herein, and we feel the foregoing view point will serve to greatly simplify the principles that control this question.

621 *Summary of Reproduction New and Present or Depreciated Values.*

Classification.	Cost of reproduction new.	Cond. %	Present or depreciated value.
Real Estate	$229,229.00	100.	$229,229
Plant Buildings	86,924.00	84.8	73,741
Contents of Buildings	190,880.00	86.2	164,450
Outside Apparatus Holders, Tanks and Sundry Equipment	325,871.00	94.2	306,940
Gen'l Office & Stable Equipment	45,549.00	88.0	40,087
Distribution System	1,993,243.00	87.7	1,746,924
Working Capital	150,000.00	....	150,000
Going Value	509,795.00	....	509,795
	3,531,491.00	....	3,221,166

Average Condition Per Cent of Physical Property including Real Estate = 89.2%.

Average Condition Per Cent of Physical Property excluding Real Estate = 88.2%.

622 *Reproduction New Value of the Physical Property and Business.*

Classification.	Base figures.	Items of additional cost.	Total.
Real Estate	$200,000	$29,229	$229,229
Plant Buildings	67,607	19,317	86,924
Contents of Buildings	148,461	42,419	190,880
Outside Apparatus, etc	253,449	72,422	325,871
Mains	1,047,530	299,293	1,346,823
Services	292,020	83,433	375,453
Meters in Use	199,024	56,861	255,885
Meters in Stock	7,448	974	8,422
Distribution Tools	5,180	1,480	6,660
Gen'l Office & Stable Equipment	35,374	10,175	45,549
Working Capital	.....	.....	150,000
Going Value—Cost of Developing the Business	.....	.....	509,795
	2,256,093	615,603	3,531,491

623 *Analysis of Items of Additional Cost Reproduction New Value.*

Classification.	Base.	Items 1, 2 and 3. %	Amount.	Taxes.	Interest.	Total.
Real Estate	$200,000	5.5	$11,000	$4,954	$13,275	$29,229
Plant Buildings	67,607	19.5	13,183	1,668	4,466	19,317
Contents of Buildings	148,461	19.5	28,951	3,659	9,809	42,419
Outside Apparatus, etc	253,449	19.5	49,422	6,251	16,749	72,422
Mains	1,047,530	19.5	204,269	25,827	69,197	299,293
Services	292,020	19.5	56,944	7,199	19,290	83,433
Meters in Use	199,024	19.5	38,810	4,905	13,146	56,861
Meters in Stock	7,448	4.0	298	184	492	974
Distribution Tools	35,180	19.5	1,010	128	342	1,480
Gen'l Office & Stable Equipment	35,374	19.5	6,898	891	2,386	10,175
	2,256,093	....	410,785	55,666	149,152	615,603

624 *Schedule Showing the Portion of Investment in Operation During Each Year.*

	1913.	1914.
Items 1, 2 and 3	1/3 of Total.	2/3 of Total.
Real Estate	1/3 " "	2/3 " "
Gas Plant	1/2 of 1912 Portion.	3/4 " "
Mains, Services and Paving	Total in District # 1.	Total in District # 1 and # 2.
Meters in Use	Total of 1912 Portion.	Total of 1912 and 1913 Portions.
Meters in Stock	.....	.....
Distribution Tools	1/2 of Total.	3/4 of Total.
St. Main Valves and Drips and R. R. Crossings	Total in District # 1.	Total in District # 1 and # 2.
General Office, Stables and Records	1/2 of 1912 Portion.	3/4 of Total.

NOTE.—Gas first turned on Jan. 1, 1913.
Entire physical equipment in operation on and after Jan. 1, 1915.

625 *The Portion of Investment in Operation During Each Year Not Including Taxes and Interest. Reproduction New Value.*

	1913.	1914.
Items 1, 2 and 3	$136,928	$273,857
Base Figures:		
Real Estate	66,667	133,333
Gas Plant	157,353	352,138
Mains	271,533	509,715
Paving Over Mains	123,089	226,646
House Services	87,270	175,033
Lamp Services	5,106	13,394
Paving Over Services	16,316	29,238
Meters in Use	56,004	130,753
Meters in Stock	.....	.....
Distribution Tools, R. R. Crossings, Street Main Valves and Drips	6,912	12,008
General Office, Stable and Records	2,839	26,530
Total	930,017	1,882,645

626 *Summary of Estimated Expenditures by Years Reproduction New Value.*

	1911.	1912.	1913.	1914.
Items 1, 2 and 3	$70,000	$147,560	$118,252	$74,973
Base Figures:				
Real Estate	200,000	.....	.....	.....
Gas Plant	.....	314,707	154,810	.....
Mains Including River Pipes	.....	271,533	238,182	252,699
Paving Over Mains	.....	123,089	103,557	46,307
House Services	.....	87,270	87,763	66,377
Lamp Services	.....	5,106	8,288	4,299
Paving Over Services	.....	16,316	12,922	3,679
Meters in Use	.....	56,004	74,749	68,271
Meters in Stock	.....	.....	.....	7,448
Distribution Tools R. R. Crossings, Street Main Valves and Drips	.....	9,502	3,801	4,040
General Office, Stable and Record	.....	5,679	29,695	.....
Total	270,000	1,036,766	832,019	528,093
Taxes at 2¼% for ½ current period	3,037	11,664	9,360	5,941
Taxes for prior expenditure	.....	6,326	10,215	9,123
Interest at 6% for ½ current period	3,100	31,292	25,207	16,116
Interest for prior expenditure	.....	16,868	27,242	24,327
Total	281,137	1,102,916	904,043	583,600

NOTE.—Interest and taxes are cumulative. See table of Items of

627 *Detail of Method of Figuring Taxes and Interest Portion Charged to Capital Account Only Reproduction New Value.*

$3,037 = 1⅛% of $270,000.
8,100 = 3% of $270,000.
11,664 = 1⅛% of $1,036,766
6,326 = 2¼% of $281,137.
31,292 = 3% of $1,036,766 + $6,326.
16,868 = 6% of $281,137.
9,360 = 1⅛% of $832,019.
10,215 = 2¼% of $281,137 + $1,036,766 — $930,017. Portion in Operation in 1913.
25,207 = 3% of $832,019 + $10,215.
27,242 = 6% of $281,137 + $1,102,916 — $930,017.
5,941 = 1⅛% of $528,093.
9,123 = 2¼% of $281,137 + $1,102,916 + $904,043 — $1,882,645 Portion in Operation in 1914.
16,116 = 3% of $528,093 + $9,123.
24,327 = 6% of ($281,138 + $1,102,916 + $904,043 — $1,882,645).

628 *Computation of Taxes and Interest Shown as Divided Between Capital Account and Operating Expense Reproduction New Value.*

	1911.	1912.	1913.	1914.
Taxes:				
To Capital Account.....	$3,037	$17,990	$19,575	$15,064
To Operating Expense.....	.....	.....	20,925	42,359
Total.....	3,037	17,990	40,500	57,423
Interest:				
To Capital Account.....	8,100	48,160	52,440	40,443
To Operating Expense.....	.....	.....	55,801	112,959
Total.....	8,100	48,160	108,250	153,402

629 *Detail of Method of Figuring Taxes and Interest Portion Charged to Operating Expense Only Reproduction New Value.*

$20,925 = 2¼% of $30,017.
$930,017 = Portion in Operation During 1913.
$24,359 = 2¼% of $1,882,645.
$1,882,645 = Portion in Operation During 1914.
$55,801 = 6% of $930,017.
$112,959 = 6% of $1,882,645.

630 *Estimated Expenditures during the Year* 1911, *not Including Taxes and Interest.*

Item.	1911 Expenditures.
General preliminary investigation, preliminary engineering investigation, securing franchise, investigating and optioning real estate, attorney's fees, and other preliminary work during the first 6 months	$30,000
Real Estate purchased July 1, 1911	200,000
Completing legal, general financial, and engineering organizations, final plans of plant and distribution system, arranging to construct river pipes, renting and equipping office, and other general work of the second six months	40,000
Total	270,000

Explanation of Above.

	First Six months.	Last Six months.
Preliminary Investigation and Engineering	$20,000	.....
Incorporation Fee	.....	$5,015
Making and Certifying Abstracts	.....	250
Investigating (Eng) and Optioning Real Estate	5,500	.....
Securing Franchise	2,830	2,170
Attorney's Fee	1,670	1,665
Stockholders' and Directors' Meetings	.....	1,200
Salary President and General Manager	.....	3,750
" Secretary	.....	1,200
" Clerks	.....	3,000
Office Rent	.....	900
Forward	30,000	19,150

631		First Six months.	Last Six months.
	Forward	30,000	19,150
	Janitor, Light, Telephone, and Sundries	.....	1,500
	Stationery Supplies, Traveling Expense, etc	.....	2,000
	Engineering Department, approx. $40,000 per year	.....	17,350
	Total	30,000	40,000

632 *Estimated Expenditures at Gas Plant—Base Figures Only—Reproduction New Value.*

No work during 1911.

	1912.	1913.
2 small holders (Pits completed by May 1st)	$75,800	.....
All buildings erected	67,607	.....
2-6-foot and 2-8'-6" water gas sets completed by November 1st	36,665	.....
2 Condensers	4,600	.....
3 Boilers complete, F. W. Heater, 1 Pump and Injector	6,770	.....
2 No. 7 Roots Exhausters	3,750	.....
2 Oil Tanks No. 21-22	9,098	.....
1 Tar Tank	1,469	.....
Purifiers	21,024	.....
2 Small Station Meters	5,700	.....
Foundation No. 4 Holder	20,270	.....
2 Connelly Automatic Governors	2,625	.....
Foundation for Exhausters and Meters	1,390	.....
75% of Sundry equipment, yard connections, piping sewers, grading, paving, etc	57,939	.....
1-10'-6" Water Gas Set	.....	$18,680
1 Boiler and Injector, stack and foundation	.....	2,142
1 Large Exhauster	.....	2,055
2 Positive Rotary "Pusher" Units	.....	3,400
1-14' Station Meter	.....	8,996
Forward	314,707	35,273

	1912.	1913.
633 Forward	$314,707	$35,273
2 Oil Tanks No. 24-25	.....	15,174
No. 4 Holder, not including foundation, but including brick wall	.....	85,050
25% of Sundry Equipment, etc	.....	19,313
Total	314,707	154,810

634 *Estimated Expenditures, General Office—Base Figures Only—Reproduction New Value.*

	1912.	1913.
Office Furniture and Fixtures	.....	$14,015
Records not including engineering data, which is estimated under "Engineering and Superintendence"	.....	10,000
Stable Equipment	$5,679	5,680
Total	5,679	29,695

635 *Estimated Expenditures, Main and Cost Due to Cutting & Replacing Paving Over Same, District No. 1—Base Figures Only—Reproduction New Value.*

		1912.
Mains:		
2-16" River Pipes		$23,000
1-24" " "		10,000
1-8" " "		5,500
15,825 feet 2½" Street Mains		5,539
30,955 " 3" " "		12,382
111,558 " 4" " "		61,357
54,060 " 6" " "		42,167
17,590 " 8" " "		18,118
11,332 " 10" " "		15,072
6,930 " 12" " "		11,642
400 " 14" " "		840
16,540 " 16" " "		40,689
5,910 " 20" " "		19,858
1,180 " 24" " "		5,369
Total.. 272,290		271,533

Paving Over Mains:

Sq. yards.	Kind of paving.	Replacement cost.
9,875.2	Asphalt	$31,942
17,971.8	Brick on Sand	21,086
4,236.0	Wood Block	9,405
58.3	Macadam	57
26,584.7	Brick on Concrete	60,599
58,726.0		123,089

636 *Estimated Expenditures, Mains and Cost Due to Cutting and Replacing Paving Over Same, District No. 2—Base Figures Only—Reproduction New Value.*

	1913.
Mains:	
10,462 feet 2½" Street Mains	$3,662
3,850 " 3" " "	1,540
208,215 " 4" " "	114,519
29,540 " 6" " "	23,041
20,160 " 8" " "	20,765
15,640 " 10" " "	20,801
18,775 " 12" " "	31,542
9,070 " 16" " "	22,312
Total.. 315,712 "	$238,182

Paving Over Mains:

Sq. yards.	Kind of paving.	
14,548.2	Asphalt	$47,049
118.5	Wood Block	267
16,117.1	Brick on Concrete	36,662
15,783.5	" " Sand	18,484
157.4	Macadam	152
565.0	Concrete (Cement)	943
Total.. 47,289.7		103,557

637 *Estimated Expenditures, Mains and Cost Due to Cutting and Replacing Over Same, District No. 3—Base Figures Only—Reproduction New Value.*

		1914.
Mains:		
7,650	feet 2½" Street Mains	$2,677
496	" 3" " "	198
253,951	" 4" " "	139,674
78,404	" 6" " "	61,155
27,184	" 8" " "	28,000
5,036	" 10" " "	6,698
5,644	" 12" " "	9,482
222	" 14" " "	466
1,596	" 16" " "	3,926
126	" 20" " "	423
Total.. 330,309		252,699

Paving Over Mains:

Square yds.	Kind of paving.	
11,243.7	Asphalt	36,325
266.6	Wood Block	596
1,666.7	Brick on Concrete	3,737
4,507.9	" " Sand	5,294
366.7	Macadam	355
Total.. 18,051.6		46,307

638 *Estimated Expenditures, House Services and Cost Due to Cutting and Replacing Paving Over Same, District No. 1—Base Figures Only—Reproduction New Value.*

		1912.
Services:		
6,207	House Services	$87,270
329	Lamp "	5,106
Total.. 6,536		**92,376**

Paving Over Services:

Square yds.	Kind of paving.	Replacement cost.
1,240.5	Asphalt	4,053
499.0	Wood Block	1,116
3,598.0	Brick on Concrete	8,234
2,465.8	" " Sand	2,912
0.9	Macadam	1
7,804.2		16,316

639 *Estimated Expenditures, House Services and Cost Due to Cutting and Replacing Paving Over Same, District No. 2—Base Figures Only—Reproduction New Value.*

		1913.
Services:		
6,242	House Services	$87,763
534	" "	8,288
Total.. 6,776		96,051

Paving Over Services:

Square yds.	Kind of paving.	Replacement cost.
1,872.3	Asphalt	6,127
5.0	Wood Block	11
2,067.0	Brick on Concrete	4,728
1,713.9	" " Sand	2,019
23.9	Macadam	24
7.3	Cement	13
Total.. 5,689.4		12,922

640 *Estimated Expenditures, House Services and Cost Due to Cutting and Replacing Paving Over Same, District No. 3—Base Figures Only—Reproduction New Value.*

		1914.
Services:		
4,721	House Services	$66,377
277	Lamp "	4,299
Total.... 4,998		70,676

Paving Over Services:

Square yds.	Kind of paving.	
925.2	Asphalt	3,024
75.0	Brick on Concrete	171
332.3	" " Sand	452
32.2	Macadam	32
Total.. 1,414.7		3,679

641 *Estimated Expenditures, Meters in Use, District No. 1—Base Figures Only—Reproduction New Value.*

	1912.	1913.
Regular Meters	$24,850	$16,567
Prepayment Meters	31,154	20,770
Total	56,004	37,337

642 *Estimated Expenditures, Meters in Use, District No. 2—Base Figures Only—Reproduction New Value.*

	1913.	1914.
Regular Meters	$14,919	$9,946
Prepayment Meters	22,493	14,995
Total	37,412	24,941

643 *Estimated Expenditures, Meters in Use, District No. 3—Base Figures Only—Reproduction New Value.*

	1914.
Regular Meters	$11,423
Prepayment Meters	31,907
Total	43,330

644 *Estimated Expenditures, Miscellaneous Distribution Equipment—Base Figures Only—Reproduction New Value.*

	1912.	1913.	1914.
Meters in Stock	.....	.....	$4,448
Distribution Tools	$5,180	.....	.....
Street Main Valves and Drips	1,820	$1,600	1,700
Steam and Street R. R. Crossings	2,502	2,201	2,340
Total	9,502	3,801	11,488

645 *Number of Feet of Each Size of Street Mains by Districts.*

Size.	District No. 1. Feet.	District No. 2. Feet.	District No. 3. Feet.	Total feet.
2½"	15,835	10,462	7,650	33,947
3"	30,955	3,850	496	35,301
4"	111,558	208,215	253,951	573,724
6"	54,060	29,540	78,404	162,004
8"	17,590	20,160	27,184	64,934
10"	11,332	15,640	5,036	32,008
12"	6,930	18,775	5,644	31,349
14"	400	.....	222	622
16"	16,540	9,070	1,596	27,206
20"	5,910	.....	126	6,036
24"	1,180	.....	.....	1,180
Total	272,290	315,712	380,309	968,311

646 *Number of Feet of Each Size of Main under Each Kind of Pavement and in Unimproved Streets by Districts.*

District No. 1.

Size of main.	Paving.	Lineal feet.
2½"	Asphalt	750
3"	"	2,250
4"	"	13,408
6"	"	6,940
8"	"	3,860
10"	"	1,750
12"	"	2,550
16"	"	3,370
20"	"	710
Total		35,588
2½"	Wood Block	320
3"	" "	1,990
4"	" "	5,020
6"	" "	2,450
8"	" "	1,410
12"	" "	1,285
20"	" "	760
24"	" "	200
Total		13,435
2½"	Brick Concrete Base	1,015
3"	" " "	17,190
4"	" " "	34,710
6"	" " "	21,905
8"	" " "	6,650
10"	" " "	2,642
12"	" " "	2,167
16"	" " "	3,690
20"	" " "	1,040
24"	" " "	400
Total		91,409
2½"	Brick Sand Base	2,250
3"	" " "	7,620
4"	" " "	27,445
6"	" " "	16,315
10"	" " "	3,630
16"	" " "	2,840
20"	" " "	1,290
Total		61,390

647

Size of main.	Paving.	Lineal feet.
2½"	Macadam	150
3"	"	200
	Total	350
2½"	No Paving	11,350
3"	" "	1,705
4"	" "	30,975
6"	" "	6,450
8"	" "	5,670
10"	" "	3,310
12"	" "	928
14"	" "	400
16"	" "	6,640
20"	" "	2,110
24"	" "	580
	Total	70,118
	Total	272,290 feet = 51.58 miles

648 *Number of Feet of Each Size of Main under Each Kind of Pavement and in Unimproved Streets by Districts.*

District No. 2.

Size of main.	Paving.	Lineal feet.
2½"	Asphalt	1,915
3"	"	430
4"	"	46,287
6"	"	5,335
8"	"	4,680
10"	"	500
12"	"	105
	Total	59,252
2½"	Brick Concrete Base	240
3"	" " "	15
4"	" " "	31,793
6"	" " "	6,620
8"	" " "	9,030
10"	" " "	4,480
12"	" " "	3,670
	Total	55,848
10"	Wood Block	320
4"	Macadam	850
10"	Concrete (cement)	540
16"	" "	1,350
	Total	1,890

2½"	Brick Sand Base	950
3"	" " "	1,340
4"	" " "	34,475
6"	" " "	3,530
8"	" " "	5,100
10"	" " "	7,970
12"	" " "	1,050
	Total	54,415

2½"	No Paving	7,357
3"	" "	2,065
4"	" "	94,810
6"	" "	14,055
8"	" "	1,350
	Total	119,637

649

Size of main.	Paving.	Lineal feet.
	Forward	119,637
10"	No Paving	1,830
12"	" "	13,950
16"	" "	7,720
	Total	143,137

Total..... 315,712 feet = 59.80 miles

650 *Number of Feet of Each Size of Main under Each Kind of Pavement and in Unimproved Streets by Districts.*

District No. 3.

Size of main.	Paving.	Lineal feet.
2½"	Asphalt	250
4"	"	23,062
6"	"	8,940
8"	"	9,530
10"	"	1,000
12"	"	960
	Total	43,742

2½"	Brick Concrete Base	860
4"	" " "	1,300
6"	" " "	3,840
	Total	6,000

		2,450
4″	Brick Sand Base	10,540
6″	" " "	3,150
8″	" " "	70
12″	" " "	
		16,210
Total		
		1,980
4″	Macadam	900
6″	Wood Block	6,540
2½″	No Paving	496
3″	" "	225,159
4″	" "	54,184
6″	" "	14,504
8″	" "	4,036
10″	" "	4,614
12″	" "	222
14″	" "	1,596
16″	" "	126
20″	" "	
		311,477
Total		

Total	380,309 Ft. = 72.01 miles.
Grand Total	183.39 Miles except river mains.
River Mains	2,612 ft.

651 *Square Yards of Various Pavements Over Mains by Districts.*

Kind of paving.	District No. 1.	District No. 2.	District No. 3.	Total.
Asphalt	9,875.2	14,548.2	11,243.7	35,667.1
Wood Block	4,236.0	118.5	266.6	4,621.1
Brick on Concrete	26,584.7	16,117.1	1,666.7	44,368.5
Brick on Sand	17,971.8	15,783.5	4,507.9	38,263.2
Macadam	58.3	157.4	366.7	582.4
Concrete (cement)	.....	565.0	.....	565.0

Lineal Feet of Pavement Cuts Over Mains by Districts.

Kind of paving.	District No. 1.	District No. 2.	District No. 3.	Total.
Asphalt	35,588	59,252	43,742	138,582
Wood Block	13,435	320	900	14,655
Brick on Concrete	91,409	55,848	6,000	153,257
Brick on Sand	61,390	54,415	16,210	132,015
Macadam	350	850	1,980	3,180
Concrete (cement)	.....	1,890	.....	1,890

652 *Number of Services under Each Kind of Pavement and in Unimproved Streets by Districts.*

District.	Kind of paving.	Number. House.	Lamp.	Total.
1	Asphalt	981	34	1,015
	Wood Block	306	0	306
	Brick, Concrete Base	2,246	109	2,355
	Brick, Sand Base	1,505	109	1,614
	Macadam	1	0	1
	No Paving	1,168	77	1,245
	Total	6,207	329	6,536
2	Asphalt	1,397	135	1,532
	Wood Block	3	0	3
	Brick, Concrete Base	1,258	95	1,353
	Brick, Sand Base	985	137	1,122
	Macadam	24	2	26
	Cement	2	6	8
	No Paving	2,573	159	2,732
	Total	6,242	534	6,776
3	Asphalt	665	92	757
	Brick, Concrete Base	44	5	49
	Brick, Sand Base	250	0	250
	Macadam	35	0	35
	No Paving	3,727	180	3,907
	Total	4,721	277	4,998
	Grand Total	17,170	1,140	18,310

653 *Statement of Meters in Use in Each District.*

Counted from Route Books of March 1, 1911, and adjusted to December 31, 1910, by records of meters set and removed.

District.	Standard meters.	Prepayment meters.	Total.
1	4,986	4,515	9,501
2	2,990	3,259	6,249
3	1,380	2,773	4,153
Total	9,356	10,547	19,903

Determination of Composite Life—Value on Reproduction New Basis.

Classification.	Reproduction New value.	Life.	Times renewed in 45.5 yrs.	Total expenditures in 45.5 yrs.	Total dollar years.
Plant Buildings	$86,924	45.5	1.0	86,924	3,955,042
Contents of Buildings	190,880	30.7	1.482	282,884	8,684,539
Outside Apparatus	.....	....	.....	.....	.....
Holders, Tanks and Sundry Equipment	325,871	44.6	1.021	332,714	14,839,044
Gen'l Office & Stable Equipment	45,549	28.6	1.591	72,468	2,072,585
Distribution System	1,993,243	37.4	1.218	2,427,770	90,798,598
Total	2,642,467	....	.....	3,202,760	120,349,808

$$\text{Composite Life} = \frac{120,349,808}{3,202,760} = 37.6 \text{ Yrs.}$$

655 *General Summary.*

Determination of Composite Age—Reproduction New Value.

Classification.	Value.	Age.	Age dollars.
Plant Buildings	$86,924	18.23	$1,584,625
Contents of Buildings	190,880	7.83	1,494,590
Outside Apparatus, Holders, Tanks, etc.	325,871	11.5	3,747,517
Gen'l Office & Stable Equipment	45,549	4.26	194,039
Distribution System	1,993,243	8.6	17,141,890
Total	2,642,467	.....	24,162,661

$$\text{Composite Age} = \frac{24,162,661}{2,642,467} = 9.14 \text{ Yrs.}$$

656 *Summary of Contents of Buildings, Condition Per Cent, Reproduction New and Present or Depreciated Values.*

Classification.	Cost of reproduction new.	Cond. %	Present or depreciated values.
Building # 1-A & B	$27,032	91.5	$24,736
" # 3	32,483	89.5	29,019
" # 4	30,157	42.0	12,655
" # 5	1,398	80.0	1,118
" # 6-A & B	19,475	91.5	17,816
" # 6-C	2,755	97.1	2,673
" # 7	58,693	99.0	58,002
" # 8-A & B	2,154	85.6	1,847
" # 10	1,287	96.7	1,245
" # 12	1,581	96.7	1,531
" # 13	373	95.0	354
" # 14	11,565	100.0	11,565
" # 16	1,928	98.0	1,889
Total	190,881	86.2	164,450

Summary of Outside Apparatus.

Holders	232,875	95.0	221,437
Tar, Oil and Pipe Coating Tanks	33,993	98.7	33,519
Outside Apparatus	2,552	63.3	1,614
Sundry Equipment	56,451	89.2	50,370
Total	325,871	94.2	306,940

Classification.	Material.	Value.	Life.	Times renewed in 50 yrs.	Total expenditures in 50 yrs.	Total dollar years.
# 1—A & B Purifying House	Brick	$12,217	50	1	$12,217	$610,850
# 1—C Fire Brick Shed	Corrugated Iron	117	30	1⅔	195	5,850
# 3—Meter, Gov. Exhauster and Wash Rooms	Brick	9,950	50	1	9,950	497,500
# 4—A-B-C Retort, Gen. and Blow House	Brick	6,482	50	1	6,482	324,100
# 5—A & B Coal Shed, Scrubber and condenser Rooms	Brick	2,665	50	1	2,665	133,250
# 6—A & B Boiler & Engine Rooms	Brick & Steel	8,435	50	1	8,435	421,750
# 6—C Boiler House Extension	Brick & Steel	1,432	50	1	1,432	71,600
# 7—Generator House	Brick & Steel	17,900	50	1	17,900	895,000
# 8—Coal Shed	Frame	8,823	30	1⅔	14,705	441,150
# 8—Coal Runway	Frame	417	30	1⅔	695	20,850
#10—Smith Carpenter Shop Store Room	Brick & Wood	10,325	50	1	10,325	516,250
#11—Bbl. Oil Store House	Reinforced Concrete	309	50	1	309	15,450
#12—Pump House	Brick, Steel & Concrete	998	50	1	998	49,900
#13—Oil Pump House	Brick	270	50	1	270	13,500
#14—Meter House	Brick, Steel & Concrete	1,944	50	1	1,944	97,200
#15—Stable	Frame	2,487	30	1⅔	4,145	124,350
#16—Boiler House	Steel & Galv. Iron	983	50	1	983	49,150
#17—Fire Brick Storage House	Frame	138	30	1⅔	230	6,900
#35—Fire Hose House	Frame	47	30	1⅔	78	2,340
#53—Coke Sued	Frame	758	30	1⅔	1,263	37,890
#54—Coke Rack	Frame	105	30	1⅔	175	5,250
#55—Oil Bbl. Store House	Frame	122	30	1⅔	203	6,090
Total		86,924	..	..	95,599	4,346,170

$$\text{Composite Life} = \frac{4,346,170}{95,599} = 45.5 \text{ Yrs.}$$

658 *Determination of Composite Age of Plant Buildings—Value on Reproduction Basis.*

Classification.	Age.	Value.	Age dollars.
# 1—A & B Purifying House	18	$12,217	$219,906
# 1—C Fire Brick Shed	1	117	117
# 3—Meter Gov. Exhauster & Wash Rooms	34	9,950	338,300
# 4—A. B. & C. Retort Gas & Blower House	34	6,482	220,388
# 5—A & B Coal Shed, Scrubber & Condenser Rooms	34	2,665	90,610
# 6—A & B Boiler & Engine Rooms	8	8,435	67,480
# 6—C Boiler House Extension	1	1,432	1,432
# 7—Generator House	5	17,900	89,500
# 8—A Coal Shed	14	8,823	123,522
# 8—B Coal Runway	9	417	3,753
#10—Smith, Carpenter Shop & Store Room	34	10,325	351,050
#11—Barrel Oil Store House	1	309	309
#12—Pump House	1	998	998
#13—Oil Pump House	3	270	810
#14—Meter House	1	1,944	1,944
#15—Stable	20	2,487	49,740
#16—Boiler House	4	983	3,932
#17—Fire Brick Storage House	5	138	690
#35—Fire Hose House	5	47	235
#53—Coke Shed	23	758	17,434
#54—Coke Rack	5	105	315
#55—Oil Barrel Store House	18	122	2,196
Total	..	86,924	1,584,661

Composite Age = 1,584,661 = 18.23 Yrs.
86,924

659 *Determination of Composite Life of Contents of Buildings—Value on Reproduction New Basis.*

Classification,			Value.	Life.	Times renewed in 50 yrs.	Total expenditures in 50 yrs.	Total dollar years.
Contents	Bldg.	# 1—A & B	$27,032	50	1	$27,032	$1,351,600
"	"	# 3	32,482	30	1⅔	54,137	1,624,910
"	"	# 4—A. B. & C	30,156	30	1⅔	50,260	1,507,800
"	"	# 5—A & B	1,399	30	1⅔	2,332	69,960
"	"	# 6—A & B	19,474	25	2	38,948	973,700
"	"	# 6—C	2,755	25	2	5,510	137,750
"	"	# 7	58,693	30	1⅔	97,822	2,934,660
"	"	# 8—A & B	2,154	30	1⅔	3,589	107,670
"	"	#10	1,289	20	2½	3,222	64,440
"	"	#12	1,581	20	2½	3,952	79,040
"	"	#13	373	20	2½	933	18,660
"	"	#14	11,565	30	1⅔	19,275	578,250
"	"	#16	1,927	25	2	3,854	96,350
Total			190,880	..	...	130,866	9,544,790

Composite Life = $\frac{9,544,790}{310,866}$ = 30.7 Yrs.

660 *Determination of Composite Age of Contents of Buildings—Reproduction New Value.*

Classification.	Age.	Value.	Age dollars.
Contents Bldg. # 1—A & B.....	17	$27,032	$459,544
" " # 3.....	7.1	32,482	230,622
" " # 4.....	18	30,156	542,808
" " # 5.....	6	1,399	8,394
" " # 6—A & B.....	7	19,474	136,318
" " # 6—C.....	1	2,755	2,755
" " # 7.....	1	58,693	58,693
" " # 8—A & B.....	12	2,154	25,848
" " #10.....	5	1,289	6,445
" " #12.....	3.5	1,581	5,534
" " #13.....	3	373	1,119
" " #14.....	1	11,565	11,565
" " #16.....	3	1,927	5,781
Total.....	..	190,880	1,495,426

Composite Age = $\frac{1,495,426}{190,880} = 7.83.$

661 *Determination of Composite Life of Outside Apparatus, Holders, Tanks & Sundry Equipment—Value on Reproduction New Basis.*

Classification.	Value.	Life.	Times renewed in 50 yrs.	Total expenditure in 50 yrs.	Total dollar years.
Relief Holder # 18	$38,572	50	1	$38,572	$1,928,600
Storage Holder # 19	58,887	50	1	58,887	2,944,350
Storage Holder # 20	135,416	50	1	135,416	6,770,800
Old Storage Holder # 21	7,488	50	1	7,488	374,400
Old Storage Holder # 22	4,209	50	1	4,209	210,450
Tar Evaporator # 23	1,889	50	1	1,889	94,450
Oil Tanks # 24 # 25	19,509	50	1	19,509	975,450
Old Holder Oil Tank # 36	193	50	1	193	9,650
Pipe Coating Tank # 60	78	50	1	78	3,900
Holder Oil Tank # 58	627	50	1	627	31,350
Wells, Valves, Boxes, etc	3,170	30	1⅔	5,283	158,490
Pine Lumber in Yard	90	20	2½	225	4,500
Fencing & Gates	3,041	20	2½	7,602	152,040
Yard Paving	3,664	50	1	3,664	183,200
Small Piping	15,723	30	1⅔	26,205	786,150
Gas Mains in Works Yard	20,535	50	1	20,535	1,026,750
Electric Wiring	212	30	1⅔	353	10,590
Works, Tools	3,215	10	5	16,075	160,750
Fire Protection	407	20	2½	1,017	20,340
Works Fixtures	5,583	30	1⅔	9,305	279,150
Gauges	812	20	2½	2,030	40,600
Misc. Outside Apparatus	2,551	20	2½	6,377	127,540
Total	325,871	..	..	365,539	16,293,500

Composite Life = 16,293,500 / 325,871 = 44.6 Yrs.

662 *Determination of Composite Age of Outside Apparatus, Holders, Tanks & Sundry Equipment—Reproduction New Value.*

Classification.	Age.	Value.	Age dollars.
Relief Holder #18	28	$38,572	$1,080,016
Storage " #19	18	58,887	1,059,966
" " #20	7	135,416	947,912
Oil Storage Tank #21	8	7,488	59,904
" " " #22	13	4,209	54,717
Tar Evaporator #23	19	1,889	35,891
Oil Tanks #24 & #25	2	19,509	39,018
Old Holder Oil Tank #36	17	193	3,281
Pipe Coating Tank #60	10	78	780
Holder Oil Tank #58	6	627	3,762
Wells, Valve, Boxes, etc	15	3,170	47,550
Pine in Lumber Yard	0	90	.....
Fences and Gates	5	3,041	15,205
Yard Paving	9	3,664	32,976
Small Piping	5	15,723	78,615
Gas Mains in Works Yards	10	20,535	205,350
Electric Wiring	5	212	1,060
Works Tools	2	3,215	6,430
Fire Protection	5	407	2,035
Works Fixtures	8	5,583	44,664
Gauges	5	812	4,060
Mis'l. Outside Apparatus	10	2,551	25,510
Total	..	325,871	3.748,702

Composite Age = $\frac{3,748,702}{325,871}$ = 11.5 Yrs.

663 *Determination of Composite Life of General Office & Stable Equipment—Value on Reproduction New Basis.*

Classification.	Value.	Life.	Times renewed in 50 yrs.	Total expenditures in 50 yrs.	Total dollar years.
Furniture & Fixtures	$18,047	30	1 2/3	$30,078	$902,340
Book Records	12,877	50	1	12,877	643,850
Stable Equipment	14,625	20	2½	36,562	731,240
Total	45,549	..	....	79,517	2,277,430

Composite Life = $\frac{2,277,430}{79,517}$ = 28.6 Yrs.

664 *Determination of Composite Age of General Office & Stable Equipment—Value on Reproduction New Basis.*

Classification.	Value.	Age.	Age dollars.
Furniture & Fixtures	$12,047	1	$18,047
Book Records	12,877	8	103,016
Stable Equipment	14,625	5	73,125
Total	45,549	..	194,188

Composite Age = $\frac{194,188}{45,549} = 4.26$ Yrs.

665 *Distribution System, Condition Per Cent, and Reproduction New and Present or Depreciated Values.*

Classification.	Reproduction New value.	Cond. %	Present or depreciated value.
Street Mains	$930,746	95.2	$886,070
Paving Over Mains	350,939	95.2	334,094
River Pipes	49,500	95.2	47,124
Street Main Valves & Drips	6,582	95.2	6,266
Steam & Street R. R. Crossings	9,056	95.2	8,621
Services—House	310,383	68.0	211,060
Services—Lamp	22,748	68.0	15,469
Paving Over Services	42,322	68.0	28,779
Meters in Use	255,885	77.1	197,287
" " Stock	8,422	77.1	6,493
Distribution Tools	6,660	85.0	5,661
Total	1,993,243	87.7	1,746,924

The above condition per cents, with the exception of the one on distribution tools, were figured from the following formula:—

$$\text{Condition Per Cent} = 1 - \frac{(1+r)^m - 1}{(1+r)^n - 1}$$

Where m = Age in years.
" n = Life " "
" r = Rate of Interest = 4%

666 *Determination of Composite Life of Distribution System—Value on Reproduction, New Basis.*

Classification.	Value.	Times renewed in 58.1 yrs.	Life.	Total expenditures in 58.1 yrs.	Total dollar years.
Street Mains	$930,746	1.0	58.1	$930,746	$54,076,343
Paving Over Mains	350,989	1.0	58.1	350,939	20,389,556
River Pipes	49,500	1.162	50.0	57,519	2,875,950
Street Mains, Valves and Drips	6,582	1.0	58.1	6,582	382,414
Steam & Street R. R. Crossings	9,056	1.0	58.1	9,056	526,154
Services—House	310,383	2.905	20.0	901,663	18,033,260
Services—Lamp	22,748	2.905	20.0	66,083	1,321,660
Services Paving	42,322	2.905	20.0	122,945	2,458,900
Meters in Use	255,885	2.324	25.0	594,677	14,866,925
Meters in Stock	8,422	2.324	25.0	19,573	489,325
Distribution Tools	6,660	5.810	10.0	38,695	386,950
Total	1,993,243	.....	....	3,098,478	115,807,437

Composite Life $= \frac{115,807,437}{3,098,478} = 37.4$ Yrs.

667 *Determination of Composite Age of Distribution System—Value on Reproduction, New Basis.*

Classification.	Value.	Age.	Age dollars.
Street Mains	$930,746	8.9	$8,263,659
River Pipes	49,500	6.6	326,700
Paving Over Mains	350,939	8.9	3,123,357
Street Mains, Valves & Drips	6,582	8.9	58,580
Steam & Street R. R. Crossings	9,056	8.9	80,598
House Services	310,383	8.23	2,554,452
Lamp Services	22,748	8.23	187,216
Paving Over Services	42,322	8.23	348,310
Meters in Use	255,885	8.23	2,105,934
Meters in Stock	8,422	8.23	69,313
Distribution Tools	6,660	2.0	13,320
Total	1,993,243	....	17,131,439

$$\text{Composite Age} = \frac{17,131,439}{1,993,243} = 8.6 \text{ Yrs.}$$

668 *Determination of Composite Life of Street Mains on the Investment Basis, Not Including River Pipe.*

Size.	Reproduction. New value.	Life.	Times renewed in 75 yrs.	Total expenditures in 75 yrs.	Total dollar years.
2½" and under.	$15,275	20	3¾	$57,281	$1,145,620
3"	18,154	30	2½	45,385	1,361,550
4"	405,699	50	1½	608,549	30,427,450
6"	162,466	75	1	162,466	12,184,950
8"	85,991	75	1	85,991	6,449,325
10"	54,736	75	1	54,736	4,105,200
12"	67,716	75	1	67,716	5,078,700
14"	1,678	75	1	1,678	125,850
16"	86,052	75	1	86,052	6,453,900
20"	26,076	75	1	26,076	1,955,700
24"	6,903	75	1	6,903	517,725
Total	930,746	..	...	1,202,833	69,805,970

$$\text{Composite Life} = \frac{69,805,970}{1,202,833} = 58.1 \text{ Yrs.}$$

669 *Determination of Average Age of Mains on Investment Basis Not Including River Pipes—Base Figures Only.*

Laid in year	Investment.	Years in service.		Investment years.
1910	$61,520	0		.....
1909	44,618	1		$44,618
1908	32,487	2		64,974
1907	55,398	3		166,194
1906	124,317	4		497,268
1905	101,365	5		506,825
1904	34,951	6		209,706
1903	65,887	7		461,209
1902	39,325	8		314,600
1901	65,284	9		587,556
1900	12,312	10		123,120
1899	29,372	11		323,092
1898	31,642	12		379,704
1897	46,776	13		607,088
1896	46,477	14		650,678
1895	7,418	15		111,270
1894	490	16		7,840
1893	5,708	17		97,036
1892	2,224	18		40,032
1891	23,325	19		443,175
1890	14,245	20		284,900
1889	22,167	21		465,507
1888	2,603	22	(Average 7.41 yrs.)	57,266
1888–1864	60,835	30		1,825,050
Total	930,746	..		8,269,708

22 : 7.41 :: 24 : x x = 8.08

Average Age = $\frac{8,269,708}{930,746}$ = 8.9 Years.

Laid in year	Age or No. of years in service.	2⅛″ and under.	3″.	4″.	6″.	8″.	10″.	12″.	14″.	16″.	20″.	24″.
1910	0	1,640	.....	55,719	11,382	6,854	543	.....	.....	.....	.....	.....
1909	1	265	.....	40,809	2,159	2,875	3,377	159	.....	1,132	.....	.....
1908	2	.....	.....	32,017	158	1,522	.....	372	.....	.....	.....	1,180
1907	3	414	.....	26,374	4,876	3,122	1,851	4,750	.....	4,456	.....	.....
1906	4	11,432	1,317	47,841	40,248	5,567	1,256	3,525	.....	294	6,036	.....
1905	5	281	.....	50,864	17,618	7,506	2,661	4,930	.....	7,107	.....	.....
1904	6	.....	.....	18,143	3,951	.....	587	5,055	.....	1,974	.....	.....
1903	7	.....	.....	29,423	4,345	5,844	4,880	4,308	.....	4,853	.....	.....
1902	8	.....	439	19,101	5,537	7,787	4,015	1,329	.....	.....	.....	.....
1901	9	13,008	.....	24,461	7,520	6,514	4,733	2,793	.....	3,741	.....	.....
1900	10	.....	1,174	10,354	2,437	1,500	.....	.....	.....	.....	.....	.....
1899	11	.....	.....	18,016	3,324	2,382	4,751	.....	.....	634	.....	.....
1898	12	.....	954	26,136	3,370	6,603	314	.....	.....	.....	.....	.....
1897	13	.....	.....	34,853	13,118	1,204	2,354	1,565	.....	.....	.....	.....
1896	14	.....	1,971	47,119	11,188	.....	.....	433	.....	.....	.....	.....
1895	15	.....	392	3,078	2,810	516	.....	712	.....	.....	.....	.....
1894	16	.....	.....	692	.....	.....	.....	.....	.....	.....	.....	.....
1893	17	.....	.....	5,135	2,076	.....	.....	.....	.....	.....	.....	.....
1892	18	.....	.....	431	1,915	.....	.....	.....	.....	.....	.....	.....
1891	19	1,020	340	9,989	3,026	.....	.....	1,418	.....	3,015	.....	.....
1890	20	642	1,940	11,422	4,856	.....	.....	.....	.....	.....	.....	.....
1889	21	472	1,810	25,021	3,325	.....	.....	.....	.....	.....	.....	.....
1888	22	.....	.....	3,685	.....	.....	.....	.....	.....	.....	.....	.....
1864 to 1888	30.1	4,772	24,964	33,041	12,765	5,138	686	.....	622	.....	.....	.....
Totals	....	33,947	35,301	573,724	162,004	64,934	32,008	31,349	622	27,206	6,036	1,180

NOTE.—All mains abandoned or taken up is figured as having been laid prior to 1888. The average age of all mains in use on Jan. 1, 1888, is figured at 8.1 years. There are no records available of feet of each size main laid in each year from 1864 to 1888. We therefore proceeded on the assumption that the age ratio of the mains laid during 1864–1888 on Jan. 1, 1888, was the same as the age ratio of the mains laid during 1888–1911 on Jan. 1, 1911.

We figured the average age from 1888 to date, on the investment basis, which we found to be 7.4 years. Then the ratio was figured as follows:

$$7.4 : 22 :: x : (1888–1864 = 24)$$
$$x = 8.1$$

Year.	2¾″ and under.	3″.	4″.	6″.	8″.	10″.	12″.	14″ and 16″.	20″ and 24″.	Total.
1910	738	.....	39,368	11,406	9,079	929	.....	.....	.....	61,520
1909	120	.....	28,836	2,164	3,804	5,770	344	3,580	.....	44,618
1908	.....	.....	22,604	159	2,016	.....	805	.....	6,903	32,487
1907	186	.....	18,644	4,892	4,131	3,161	10,264	14,120	.....	55,398
1906	5,145	677	33,930	40,420	7,384	2,145	7,610	930	26,076	124,317
1905	126	.....	35,970	17,659	9,945	4,550	10,655	22,460	.....	101,365
1904	.....	.....	12,820	3,963	.....	1,003	10,915	6,250	.....	34,951
1903	.....	.....	20,804	4,354	7,740	8,349	9,300	15,340	.....	65,887
1902	.....	236	13,508	5,552	10,299	6,860	2,870	.....	.....	39,325
1901	5,851	.....	17,286	7,548	8,629	8,100	6,040	11,830	.....	65,284
1900	.....	552	7,334	2,441	1,985	.....	.....	.....	.....	12,312
1899	.....	.....	12,740	3,332	3,158	8,140	.....	2,002	.....	29,372
1898	.....	490	18,486	3,381	8,748	537	.....	.....	.....	31,642
1897	.....	.....	24,640	13,146	1,590	4,020	3,380	.....	.....	46,776
1896	.....	1,016	33,320	11,206	.....	.....	935	.....	.....	46,477
1895	.....	202	2,176	2,819	683	.....	1,538	.....	.....	7,418
1894	.....	.....	490	.....	.....	.....	.....	.....	.....	490
1893	.....	.....	3,627	2,081	.....	.....	.....	.....	.....	5,708
1892	.....	.....	304	1,920	.....	.....	.....	.....	.....	2,224
1891	459	175	7,054	3,037	.....	.....	3,060	9,540	.....	23,325
1890	288	1,000	8,094	4,863	.....	.....	.....	.....	.....	14,245
1889	212	933	17,690	3,332	.....	.....	.....	.....	.....	22,167
1888	.....	.....	2,603	.....	.....	.....	.....	.....	.....	2,603
1864 to 1888	2,150	12,873	23,371	12,791	6,800	1,172	.....	1,678	.....	60,835
								1,678	6,903	
Total	15,275	18,154	405,699	162,466	85,991	54,736	67,716	86,052	26,076	930,746

(Here follows paster, marked page 671.)

672 *Determination of Average Age of River Pipes on Investment Basis—Reproduction New Value.*

Laid.	Investment.	Years in service.	Investment years.
March, 1908	$12,856	2.5	$32,140
Dec., 1906	7,072	4.0	28,288
Sept., 1901	29,572	9.0	266,148
	49,500		326,576

Average Age = 326,576 / 49,500 = 6.6 Yrs.

Average Life = 50 Yrs.

673 *Determination of Average Age of Meters on Investment Basis, Base Figures Only—Reproduction New Value.*

Installed in year	Investment.	Years in service.	Investment years.
1910	$18,819	0	$0
1909	17,206	1	17,206
1908	13,209	2	26,418
1907	18,423	3	55,369
1906	21,667	4	87,468
1905	19,343	5	96,715
1904	13,372	6	80,232
1903	19,244	7	134,708
1902	15,628	8	125,024
1901	16,157	9	145,413
1900	14,352	10	143,520
1899	15,188	11	167,088
1898	8,339	12	100,068
1897	7,864	13	102,232
1896	4,888	14	68,432
1895	3,383	15	50,745
1894	2,292	16	36,672
1893	2,223	17	37,791
1892	1,979	18	35,622
1891	2,338	19	44,422
1890	2,572	20	51,440
1889	219	21	4,599
1888	219	22	4,818
1887	553	23 (Average 6.8 yrs.)	12,759
1864–1886	16,208	29.5	478,136
Total	255,885	23 : 6.8 :: 22 : x = 6.5 yrs.	2,106,797

Average Age of Meters Installed before 1886.

Average Age = 2,106,797 / 255,855 = 8.23 Yrs.

Average Life = 25 Yrs.

701 *Sundry Equipment Showing Additional Cost Items—Circulation Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Excavation	$76	$14.82	$1.86	$5.02	$97.70
Wrought Iron Pipe	417	81.32	10.20	27.50	536.02
Valves	140	27.30	3.43	9.25	179.98
Terra Cotta Tile Pipe	19	3.71	0.47	1.25	24.43
Total	652	127.	16.	43.	838.

702 *Sundry Equipment Showing Additional Cost Items—Steam Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Excavation	$78	$15.21	$1.93	$5.15	$100.29
Wrought Iron Pipe	925	180.38	22.95	61.00	1,189.33
Pipe Covering	863	168.48	21.40	57.00	1,109.88
Valves	596	116.22	14.80	39.30	766.32
Steam Hose	35	6.83	0.88	2.31	45.02
Total Steam Piping	2,497	487.	62.	165.	3,211.

703 *Sundry Equipment Showing Additional Cost Items—Steam Piping, Leased Property—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Wrought Pipe	$87.24	$17.02	$2.14	$5.76	$112.16
Covering	65.00	12.50	1.59	4.29	83.38
Boxing	12.00	2.34	0.29	0.79	15.42
Excavation & Backfilling	60.00	11.70	1.47	3.96	77.13

698 *Paving in Yard Showing Additional Cost Items—Reproduction New Value.*

Amount.	Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
329 sq. yds.	Brick on edge on Concrete	$987	$192.47	$24.22	$65.10	$1,268.79
269 sq. yds.	Brick flat on Concrete	673	131.23	16.52	44.35	865.10
105 sq. yds.	Wood Block	315	61.43	7.75	20.76	404.94
2,800 sq. ft.	Brick Laid flat	420	81.90	10.32	27.70	539.92
1,267 sq. ft.	Cement Sidewalk	188	36.66	4.62	12.40	241.68
21 cu. yds.	Curbing	267	52.07	6.56	17.62	343.25
	Total	2,850	556.	70.	188.	3,664.

699 *Sundry Equipment Showing Additional Cost Items—Water Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Excavation	$311	$60.65	$7.61	$20.55	$399.81
Wrought Iron Pipe	1,239	241.60	30.30	81.80	1,592.70
Valves	546	106.47	13.40	36.00	701.87
Cast Iron Pipe	31	6.05	0.76	2.05	39.86
" " Specials	33	6.44	0.81	2.18	42.43
Total	2,160	421.	53.	143.	2,777.

700 *Sundry Equipment Showing Additional Cost Items—Water Piping, Leased Property—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Wrought Pipe	$13.32	$2.60	$0.33	$0.88	$17.13
Valves	9.46	1.85	0.23	0.63	12.17
Total	23.	4.	1.	2.	30.

696 *Plant Apparatus Showing Additional Cost Items—Outside Apparatus—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1—Davidson Pump 2"x2½"x4"	$45	$8.78	$1.11	$2.97	$57.86
1—Fairbanks Scales (Track)	950	185.25	23.45	62.75	1,221.45
1—Standard Scales	275	53.63	6.80	18.20	353.63
1—Stiff Leg Derrick	150	29.25	3.71	9.90	192.86
4—Oil Unloading Devices	114	22.22	2.82	7.52	146.56
3—Tar Separators	450	87.75	11.10	29.70	578.55
Total	1,984	387.	49.	131.	2,551.

697 *Sundry Equipment Showing Additional Cost Items—Wells, Fencing, and Gates—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Wells, Valve Boxes, etc.	$1,876	$365.82	$46.30	$124.00	$2,412.12
" " " "	589	114.86	14.58	38.90	757.34
2,563' B. M. Pine Lumber T & G	70	13.65	1.73	4.62	90.00
Fencing and Gates	1,864	363.48	46.10	123.00	2,396.58
" " " leased property	501	97.70	12.38	33.05	644.13
Total	4,900	955.	121.	324.	6,300.

693 *Plant Apparatus Showing Additional Cost Items—Building No. 16—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$164	$32.00	$4.02	$10.38	$210.85
1—60 H. P. Phœnix Boiler	1,000	195.00	24.50	66.00	1,285.50
1—Steel Stack 27"x80"–0"	300	58.50	7.35	19.80	385.65
1—#80 World Injector	35	6.83	0.86	2.31	45.00
Total	1,499	292.	37.	99.	1,927.

694 *Plant Apparatus Showing Additional Cost Items—Holders—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1—Relief Holder No. 18	$30,000	$5,850	$740	$1,982	$38,572
1—Storage " " 19	45,800	8,931	1,130	3,026	58,887
1— " " " 20	105,320	20,537	2,597	6,962	135,416
Total	181,120	35,318	4,467	11,970	232,875

695 *Plant Apparatus Showing Additional Cost Items Tar and Oil Tanks and Pipe Coating Tank—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1—Oil Storage Tank #21	$5,824	$1,135.68	$143.55	$385.00	$7,488.00
1— " " " #22	3,274	638.43	80.60	216.20	4,209.23
1—Tar Evaporator #23	1,469	286.46	36.20	97.00	1,888.66
2—Oil Tanks #24 & #25	15,174	2,958.93	373.90	1,002.00	19,508.83
1—Old Holder Oil Tank #36	150	29.25	3.69	9.90	192.84
1—Pipe Coating Tank #60	61	11.90	1.50	4.03	78.43
1—Holder Oil Tank #58	488	95.16	12.10	32.20	627.46
Total	26,440	5,156.	652.	1,746.	33,894.

690 *Plant Apparatus Showing Additional Cost Items—Building No. 12—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
2—Davidson Simplex Water Pumps 6"x7"x10"	$440	$85.80	$10.97	$29.05	$565.64
1—Davidson Oil Pump 4½"x3¼"x6"	110	21.45	2.70	7.26	141.41
1—Davidson Oil Pump 4"x5"x8"	150	29.30	3.68	9.90	192.88
1—Warren Tar Pump 5¼"x3½"x5"	110	21.45	2.70	7.26	141.41
1—Davidson Tar Pump 4½"x3¼"x6"	110	21.45	2.70	7.26	141.41
1—Davidson Drip Pump 3½"x2½"x4	90	17.55	2.25	5.94	115.74
1—Davidson Drip " 6"x7"x10"	220	42.90	5.39	14.55	282.84
Total	1,230	240.	30.	81.	1,581.

691 *Plant Apparatus Showing Additional Cost Items—Building No. 13—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Foundations	$10	$1.95	$0.24	$0.66	$12.85
1—Davidosn Oil Pump 6"x8"x12"	280	54.60	6.85	18.50	359.95
Total	290	57.	7.	19.	373.

692 *Plant Apparatus Showing Additional Cost Items—Building No. 14—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Meter Foundations	$140	$27.30	$3.43	$9.23	$179.96
1—14'-0"x14'-0" Sta. Meter	8,000	1,560.00	196.50	528.50	10,285.00
Piping	856	166.92	21.05	56.50	1,100.47
Total	8,996	1,754.	221.	594.	11,565.

689 *Plant Apparatus Showing Additional Cost Items—Building No. 10—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$12	$2.34	$0.30	$0.79	$15.43
1—20″ Blower	15	2.93	0.37	0.99	19.29
1—Payne Engine 5″ x 6″	200	39.00	4.98	13.20	257.18
1—Drill Press	75	14.65	1.87	4.95	96.47
1—Screw Cutting Lathe	275	53.60	6.85	18.15	353.60
1—Grind Stone	20	3.90	0.50	1.32	25.72
1—Emery Wheel	20	3.90	0.50	1.32	25.72
1—Smith Forge	25	4.88	0.62	1.65	32.15
1—Anvil 135#	15	2.93	0.37	0.99	19.29
1— " 140#	15	2.93	0.37	0.99	19.29
2—Bench Vise 6″ Jaws	15	2.93	0.37	0.99	19.29
1—Pipe Vise	10	1.95	0.25	0.66	12.86
1—Gas Solder Iron Heater	5	.98	0.12	0.33	6.43
1—Curtis Thread Cutting Machine	150	29.30	3.74	9.90	192.94
Countershaft & Belting	150	29.30	3.74	9.90	192.94
Total	1,002	196.	25.	66.	1,289.

687 *Plant Apparatus Showing Additional Cost Items—Building No. 7—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$3,541	$690.50	$87.40	$233.90	$4,552.80
2—8′-6″ Lowe Water Gas Sets	22,000	4,290.00	542.20	1,453.00	28,285.20
1—10′-6″ " " " "	17,500	3,412.50	430.90	1,156.00	22,499.40
1—Vapor Extractor	450	87.75	11.10	29.70	578.55
1—Fairbanks Scales	25	4.88	0.62	1.65	32.15
1—Electric Pyrometer	150	29.30	3.70	9.90	192.90
8—Charging Barrows	520	101.40	12.80	34.30	668.50
1—98 H. P. Turbine Unit and Blower	1,450	282.75	35.75	95.75	1,864.25
1—Fairbanks Scales	15	2.93	0.37	0.99	19.29
Total	45,651	8,902.	1,125.	3,015.	58,693.

688 *Plant Apparatus Showing Additional Cost Items—Building 8 A & B—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1—Fairbanks Std. Scales	$175	$34	$4	$12	$225
1—Steam Hydraulic Elevator	1,500	293	37	99	1,929
Total	1,675	327	41	111	2,154

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685 *Plant Apparatus Showing Additional Cost Items—Building 6 A & B—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$510	$99.45	$12.56	$33.70	$655.71
Piping	692	134.94	17.05	45.70	889.69
2—8′–6″ x 22′–0″ Condensers	4,500	877.50	110.90	297.50	5,785.90
2—Am. Ball Engines 10″ x 10″	1,950	380.25	48.00	128.90	2,507.15
1—20 Gal. Oil Filter	40	7.80	0.99	2.65	51.44
2—½ Pint Detroit Lubricators	25	4.88	0.62	1.65	32.15
1—12″ Belt, Double 86′–0″ long	160	31.20	3.94	10.57	205.71
2—#8 Sturtevant Blowers	900	175.50	22.15	59.40	1,157.05
2—125 H. P. Phœnix Tubular Boilers	3,000	585.00	73.90	198.10	3,857.00
2—Steel Stacks 34″ x 80′–0″	800	156.00	19.70	52.80	1,028.50
1—125 H. P. Murray Boiler	1,500	292.50	37.00	99.00	1,928.50
1—Steel Stack 34″ x 80′–0″	400	78.00	9.89	26.40	514.29
1—Davidson Pump 9 x 5¼″ x 12″	250	48.75	6.16	16.50	321.41
1—Feed Water Heater	200	39.00	9.93	13.21	257.14
1—American Injector	90	17.55	2.22	5.94	115.71
Boiler Supports 3,248#	130	25.35	3.20	8.58	167.13
Total	15,147	2,954.	373.	1,000.	19,474.

686 *Plant Apparatus Showing Additional Cost Items—Building No. 6 C—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$152	$29.61	$3.75	$10.15	$195.51
1—125 H. P. Phœnix Boiler	1,500	293.00	37.10	99.00	1,929.10
1—Steel Stack 34″ x 80′–0″	400	78.00	9.89	26.40	514.29
1—American Injector	90	17.55	2.22	5.94	115.71
Total	2,142	418.	53.	142.	2,755.

683 *Plant Apparatus Showing Additional Cost Items—Building No. 4—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$304	$59.20	$7.50	$20.10	$390.80
1—Payne Engine 8" x 10"	800	156.00	19.75	52.80	1,028.55
1— " " 6" x 8"	275	53.60	6.79	18.20	353.59
Countershafting & Belting	150	29.22	3.70	9.90	192.82
2—#6 Sturtevant Blowers	500	97.50	12.35	33.00	642.85
2—6'-0" Water Gas Sets including washers, scrubber and condenser	12,000	2,340.00	296.00	793.00	15,429.00
1—Steam Hydraulic elevator	375	73.13	9.25	24.80	482.18
1—Charging Coke Buggy	50	9.75	1.23	3.30	64.28
5—Benches of 6's	9,000	1,755.00	222.00	594.95	11,571.95
Total	23,454	4,573.00	579.00	1,550.00	30,156.00

684 *Plant Apparatus Showing Additional Cost Items—Building No. 5—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$288	$56.16	$7.05	$19.00	$370.21
1—Track and Charging Cars	800	156.00	19.60	52.80	1,028.40
Total	1,088	212.	27.	72.	1,399.

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Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Forward	$11,338	$2,210.87	$279.31	$749.52	$14,577.70

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1—Stationary Wash Stand	5	0.98	0.12	0.33	6.43
1—Shower Bath	8	1.56	0.20	0.53	10.29
1—Flush Closet & Tank	16	3.12	0.39	1.06	20.57
1—Safety Blow Back	475	92.63	11.70	31.40	610.73
1—Drip Hand Pump	3	0.58	0.07	0.20	3.85
1—#8 Exhauster with 10″ x 12″ Engine	2,055	400.72	51.60	135.90	2,643.22
2—#7 Exhausters with 10″ x 9″ Engines	3,750	731.25	92.50	248.00	4,821.75
2—#5 H. P. Pushers with 9″ x 10″ Engines	3,400	663.00	83.50	225.00	4,371.50
1—P. & A. Tar Extractor	775	151.13	19.05	51.20	996.38
1—Work Bench 4′–0″ x 2′–0″	10	1.95	0.24	0.66	12.85
1—4″ Vise	7	1.37	0.17	0.46	9.00
1—Tank 3′–0″—Diam. x6′–0″	35	6.83	0.86	2.31	45.00
5—Stationary Wash Stands	25	4.88	0.62	1.65	32.15
2—Flush Closets	20	3.90	0.49	1.32	25.71
14—Metal Lockers	119	23.20	2.93	7.85	152.98
1—Enamel Bath Tub	25	4.88	0.62	1.65	32.15
1—Duplex Pump 7½″ x 5″ x 8″	175	34.13	4.31	11.57	225.01
1—Warren Duplex Pump 10″ x 6″ x 10″	240	46.80	5.91	15.90	308.61
1—Vertical Pump	325	63.38	8.00	21.50	417.88
Piping	2,457	479.12	60.50	162.10	3,158.72
Total	**25,263**	**4,926.00**	**623.00**	**1,670.00**	**32,482.00**

681 *Plant Apparatus Showing Additional Cost Items—Building No. 3—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Apparatus Foundations	$1,390	$271.00	$34.20	$91.95	$1,787.15
1—60″ Bar Photometer	500	97.50	12.30	33.00	642.80
1—Reserve Bar Photometer	350	68.25	8.62	23.10	449.97
2—Pontane Lamps	200	39.00	4.92	13.21	257.13
1—CO_2 Apparatus	20	3.90	0.49	1.32	25.71
1—Freezing Coil	38	7.41	0.94	2.51	48.86
2—Stop Watches	20	3.90	0.49	1.32	25.71
1—5′ 0″ Wet Meter	50	9.75	1.23	3.30	64.28
1—Hygrometer	50	9.75	1.23	3.30	64.28
1—Barometer	25	4.88	0.62	1.65	32.15
1—Transit, Complete	210	40.95	5.17	13.90	270.02
2—Tee Squares	5	0.98	0.12	0.33	6.43
1—Case 5 Test Tubes	1	.19	.03	.07	1.29
1—Medicine Chest	17	3.31	0.42	1.12	21.85
3—Sulphide Tests	75	14.63	1.85	4.95	96.43
1—Orsaat Apparatus	25	4.88	0.62	1.65	32.15
1—Still (Tar or Oil)	20	3.90	0.49	1.32	25.71
2—Double Metal Lockers	17	3.31	0.42	1.12	21.85
1—8′–0″ x 8′–0″ Sta. Meter	2,900	656.50	71.50	192.00	3,729.00
1—8′–0″ x 7′–6″ " "	2,800	546.00	69.00	185.00	3,600.00
1—16″ Connelly Automatic Governor	775	151.13	19.05	51.20	996.38
1—24″ Connelly Automatic Governor	1,850	360.75	45.60	122.20	2,378.55
Forward	11,338	2,210.87	279.31	749.52	14,577.70

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Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Forward	$67,430	$13,148	$1,664	$4,455	$86,697
No. 54 Coke Rack	82	16	2	5	105
No. 55 Oil Barrel Store House	95	19	2	6	122
Total	67,607	13,183	1,668	4,466	86,924

680 *Plant Apparatus Showing Additional Cost Items in Building No. 1 A & B—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1—Steam Hydraulic Elevator	$475	$93	$12	$31	$611
4—Purifying Boxes—7′ x 20′ x 20′	18,000	3,510	443	1,190	23,143
1—Bucket Oxide Conveyor with Engine	1,325	258	33	88	1,704
Piping	1,224	239	30	81	1,574
Total	21,024	4,100	518	1,390	27,032

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
# 1—A & B Purifying House	$9,501	$1,853	$235	$628	$12,217
# 1—C Fire Brick Shed	91	18	2	6	117
# 3—Meter Gov., Exhauster and Wash Room	7,739	1,509	191	511	9,950
# 4—A, B & C Retort, Gen., & Blower House	5,042	983	124	333	6,482
# 5—A & B Coal Shed, Scrubber and Condenser Room	2,073	404	51	137	2,665
# 6—A & B Boiler and Engine Rooms	6,561	1,279	162	433	8,435
# 6—C Boiler House Extension	1,114	217	27	74	1,432
# 7—Generator House	13,921	2,715	344	920	17,900
# 8—A Coal Shed	6,862	1,338	169	454	8,823
# 8—B Coal Runway	325	63	8	21	417
#10—Smith, Carpenter Shop and Store Room	8,031	1,566	198	530	10,325
#11—Barrel Oil Store House	240	47	6	16	309
#12—Pump House	777	151	19	51	998
#13—Oil Pump House	210	41	5	14	270
#14—Meter House	1,512	295	37	100	1,944
#15—Stable	1,934	377	48	128	2,487
#16—Boiler House	764	149	19	51	983
#17—Fire Brick Storage House	107	21	3	7	138
#35—Fire Hose House	37	7	1	2	47
#53—Coke Shed	589	115	15	39	758
Total	67,430	13,148	1,664	4,455	86,697

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Forward	$435,545	$84,931	$10,740	$28,779	$559,995
Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Circulating Piping	652	127	16	43	838
Steam Piping	2,497	487	62	165	3,211
" " Leased Property	498	97	12	33	640
Exhaust Steam Piping	1,837	358	45	122	2,362
Oil Piping	2,189	427	54	145	2,815
Gas "	206	40	5	13	264
" " Leased Property	88	17	2	6	113
Tar Piping	402	78	10	26	516
Drain Piping	342	67	8	22	439
Sewer Piping	1,336	261	33	88	1,718
Gas Mains at Works	15,971	3,114	394	1,056	20,535
Electric Wiring	165	32	4	11	212
Works Tools	2,500	488	62	165	3,215
Fire Protection	316	62	8	21	407
Works Fixtures	4,342	847	107	287	5,583
Gauges	631	123	16	42	812
Total Plant	469,517	91,556	11,578	31,024	603,675

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Buildings	$67,607	$13,183	$1,668	$4,466	$86,924
Contents Bldg. # 1 A & B	21,024	4,100	518	1,390	27,032
" " # 3	25,263	4,926	623	1,670	32,482
" " # 4	23,454	4,573	579	1,550	30,156
" " # 5	1,088	212	27	72	1,399
" " # 6 A & B	15,147	2,954	373	1,000	19,474
" " # 6 C	2,142	418	53	142	2,755
" " # 7	45,651	8,902	1,125	3,015	58,693
" " # 8 A	175	34	4	12	225
" " # 8 B	1,500	293	37	99	1,929
" " #10	1,002	195	25	66	1,289
" " #12	1,230	240	30	81	1,581
" " #13	290	57	7	19	373
" " #14	8,993	1,754	221	594	11,565
" " #16	1,499	292	37	99	1,927
Relief Holder #.18	30,000	5,850	740	1,982	38,572
Storage Holder #19	45,800	8,931	1,130	3,026	58,887
" " #20	105,320	20,537	2,597	6,962	135,416
Tar, Oil, Pipe Coating Tanks	26,440	5,156	652	1,746	33,994
Outside Apparatus	1,984	387	49	131	2,551
Wells, Fencing & Gates	4,900	955	121	324	6,300
Works Paving	2,850	556	70	188	3,664
Water Piping	2,160	421	53	143	2,777
" " Leased Property	23	4	1	2	30
Total	435,545	84,931	10,740	28,779	559,995

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674 *General Summary on Basis of Reproduction New Value Showing Additional Cost Items.*

Classification.	Base.	1, 2 and 3.	Taxes	Interest.	Total.
Real Estate	$200,000	$11,000	$4,954	$13,275	$229,229
Plant	469,517	91,556	11,578	31,024	603,675
Distribution	1,551,202	301,331	38,243	102,467	1,993,243
Gen. Office and Stable Equipment	35,374	6,898	891	2,386	45,549
Total	2,256,093	410,785	55,666	149,152	2,871,693

675 *General Summary of Plant Showing Additional Cost Items—Reproduction New Value.*

Classification.	Base.	1, 2 and 3.	Taxes.	Interest.	Total
Buildings	67,607	$13,183	$1,668	$4,466	$86,924
Contents of Bldgs	148,461	28,951	3,659	9,809	190,880
Outside Apparatus, Holders Tanks and Sundry Equipment	253,449	49,422	6,251	16,749	325,871
Total	469,517	91,556	11,578	31,024	603,375

In Building No. 50:					
Wrought Pipe	234.00	45.63	5.74	15.45	300.82
Valves	40.00	7.69	0.98	2.64	51.31
Total	498.	97.	12.	33.	640.

704 *Sundry Equipment Showing Additional Cost Items—Exhaust Steam Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Wrought Iron Pipe	$842	$164.19	$20.60	$55.80	$1,082.59
Valves	173	33.74	4.24	11.42	222.40
Radiators	28	5.46	0.69	1.85	36.00
Pipe Covering	474	92.43	11.60	31.30	609.33
Exhaust Heads	126	24.57	3.09	8.32	161.98
Steam Traps	124	24.18	3.04	8.18	159.40
Separators	70	13.65	1.72	4.62	89.99
Total	1,837	358.	45.	122.	2,362.

705 *Sundry Equipment Showing Additional Cost Items—Oil Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Wrought Iron Pipe	$945	$184.28	$23.15	$62.40	$1,214.83
Cast Iron Pipe	527	102.76	12.90	34.80	677.46
Joints and Profit	307	59.86	7.52	20.30	394.68
Valves	262	51.09	6.42	17.30	336.81
Excavation & Backfilling	148	28.86	3.63	9.75	190.24
Total	2,189	427.	54.	145.	2,815.

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706 *Sundry Equipment Showing Additional Cost Items—Gas Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Piping for Lighting Plant Buildings	$206	$40	$5	$13	$264
Leased Property in Building #50:					
Gas Piping	88	17	2	6	113
Total Gas Piping	294	57	7	19	377

707 *Sundry Equipment Showing Additional Cost Items—Tar Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Wrought Pipe	$289	$56.36	$7.08	$19.10	$371.54
Valves	25	4.38	0.61	1.65	32.14
Plug Cocks	9	1.76	0.22	0.59	11.57
Excavations	79	15.41	1.94	5.22	101.57
Total	402	78.	10.	26.	516.

708 *Sundry Equipment Showing Additional Cost Items—Drain Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Excavation	$ 70	$13.65	$1.72	$4.62	$89.99
Wrought Iron Pipe	223	43.48	5.46	14.70	286.64
Terra Cotta Tile	9	1.76	0.22	0.59	11.57
Valves	40	7.80	0.98	2.64	51.42
Total	342	67.	8.	22.	439.

709 *Sundry Equipment Showing Additional Cost Items—Sewer Piping—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Excavation	$519	$101.20	$12.70	$34.30	$667.20
Terra Cotta Tile	492	95.94	12.10	32.45	632.49
Wrought Iron Pipe	241	47.00	5.90	15.90	309.80
Cast Iron Soil Pipe	84	16.38	2.08	5.54	108.00
Total	1,336	261.	33.	88.	1,718.

710 *Sundry Equipment Showing Additional Cost Items—Gas Mains in Works' Yard—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Excavation & Backfilling	$1,590	$310.05	$39.20	$105.00	$2,044.25
Cast Iron Pipe	6,820	1,329.90	168.10	450.70	8,768.70
Lead Joints	2,489	485.36	61.50	164.50	3,200.36
Specials:					
Drips	661	128.90	16.30	43.70	849.90
Valves	1,746	340.47	43.10	115.40	2,244.97
Other Specials	2,665	519.68	65.80	176.20	3,426.68
Total	15,971	3,114.	394.	1,056.	20,535.

711 *Sundry Equipment Showing Additional Cost Items—Electric Wiring—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Copper Wire	$31.00	$6.05	$0.76	$2.05	$39.81
½" Conduit	109.00	21.26	2.67	7.20	140.13
Lamps	8.80	1.72	0.22	0.58	11.32
Junction Boxes	6.00	1.17	0.15	0.40	7.72
Switches (Perkins)	1.08	0.21	0.30	0.07	1.39
" (Single Throw)	7.00	1.37	0.17	0.46	9.00
Fuse Plugs	.36	.07	0.01	0.03	0.47
Cut Outs	1.54	.30	0.04	0.10	1.98
Total	165.	32.	4.	11.	212.

712 *Sundry Equipment Showing Additional Cost Items—Works' Tools—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Works Tools	$2,500	$448.	$62.	$165.	$3,215
Total	2,500	488.	62.	165.	3,215

713 *Sundry Equipment Showing Additional Cost Items—Fire Protection—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
4 Keystone Fire Extinguishers	$40	$7.80	$0.98	$2.64	$51.42
4 Fire Pails	4	.78	0.10	0.26	5.14
1 Hose Reel	18	3.51	0.44	1.19	23.14
1 2″ Nozzle, 2′ 6″ long	13	2.53	0.32	0.86	16.71
4 50″ 0″ lengths 2″ hose	80	15.60	1.96	5.28	102.84
2 50′ 0″ " 2″ hose	40	7.80	0.98	2.64	51.42
2 2″ Nozzle 10″ long	12	2.34	0.29	0.79	15.42
1 Barrel	1	.19	0.03	0.07	1.29
3 Safety Fire Buckets	3	.59	0.07	0.20	3.86
1 Crest Water Meter	80	15.60	1.96	5.28	102.84
1 Fire Alarm Box	25	4.88	0.61	1.65	32.14
Total	316.	62.	8.	21.	407.

714 *Sundry Equipment Showing Additional Cost Items—Works' Fixtures—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Furniture, etc. (3rd & Vine)	$401	$78.20	$9.90	$26.45	$515.55
Fixtures in Bldg. #50	3,920	764.40	96.70	259.00	5,040.10
Rubbish Kiln	21	4.09	0.52	1.39	27.00
Total	4,342	847.	107.	287.	5,583.00

715 *Sundry Equipment Showing Additional Cost Items—Gauges—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
1 8″ U Gauge	$4	$ .78	$0.10	$0.26	$5.14
4 6″ U "	14	2.73	0.34	0.92	17.99
6 18″ " "	45	8.78	1.14	2.97	57.89
5 20″ " "	60	11.70	1.52	3.96	77.18
2 28″ " "	40	7.80	1.01	2.64	51.45
1 Steam "	3	.58	0.07	0.20	3.85
2 " "	9	1.76	0.22	0.59	11.57
6 Bristol Recording Pressure Gauges	330	64.35	8.36	21.80	424.51
9 Thermometers	90	17.55	2.28	5.93	115.76
Labor erecting gauges	36	7.02	0.89	2.38	46.29
Total	631	123.	16.	42.	812.

716 *Summary of Distribution System Showing Additional Cost Items, Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Street Mains	$723,914	$141,163	$17,849	$47,820	$930,746
River Pipes	38,500	7,508	949	2,543	49,500
Paving over Mains	272,953	53,226	6,729	18,031	350,939
Street Mains, Valves and Drips	5,120	998	126	338	6,582
Steam, Street R. R. Crossings	7,043	1,374	174	465	9,056
House Services	241,410	47,075	5,951	15,947	310,383
Lamp "	17,693	3,450	436	1,169	22,748
Paving over Services	32,917	6,419	812	2,174	42,322
Meters in use	199,024	38,810	4,905	13,146	255,885
Meters in Stock	7,448	298	184	492	8,422
Distribution Tools	5,180	1,010	128	342	6,660
Total	1,551,202	301,331	38,243	102,467	1,993,243

717 *Street Mains Showing Additional Cost Items, Reproduction New Value.*

Size.	No. of ft.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
2½" & Under	33,947	11,881	$2,317	$292	$785	$15,275
3"	35,301	14,120	2,753	348	933	18,154
4"	573,724	315,548	61,532	7,774	20,845	405,699
6"	162,004	126,363	24,641	3,116	8,346	162,466
8"	64,934	66,882	13,042	1,649	4,418	85,991
10"	32,008	42,571	8,301	1,052	2,812	54,736
12"	31,349	52,666	10,270	1,301	3,479	67,716
14"	622	1,306	254	32	86	1,678
16"	27,206	66,927	13,051	1,653	4,421	86,052
20"	6,036	20,281	3,955	500	1,340	26,076
24"	1,180	5,369	1,047	132	355	6,903
Total	968,311	723,914	141,163	17,849	47,820	930,746

718 *River Pipes Showing Additional Cost Items, Reproduction New Value.*

Size.	No. of ft.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
8"	673	$5,500	$1,073	137	$363	$7,073
16"	1,300	23,000	4,485	566	1,520	29,571
24"	639	10,000	1,950	246	660	12,856
Total	2,612	38,500	7,508	949	2,543	49,500

719 *Cost Due to Cutting and Replacing Paving Over Mains, Showing Additional Cost Items—Reproduction New Value.*

Sq. yds.	Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
35,667.1	Asphalt on Concrete Base	115,316	22,487	2,842	7,617	148,262
4,621.1	Wood Block on Concrete Base	10,268	2,002	253	679	13,202
44,368.5	Brick on Concrete Base	100,998	19,695	2,491	6,672	129,856
38,263.2	Brick on Sand Base	44,864	8,747	1,106	2,964	57,682
582.4	Macadam	564	110	14	37	725
565.0	Concrete (Cement)	943	184	23	62	1,212
124,067.3		272,953	53,226	6,729	18,031	350,939

720 *Street Main Valves and Drips Showing Additional Cost Items—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Line Pot Drips	$2,987	$582	$74	$197	$3,840
Valves	2,133	416	52	141	2,742
Total	5,120	998	126	338	6,582

721 *Railroad Crossings Showing Additional Cost Items—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Steam R. R. Crossings	$2,865	$559	$71	$189	$3,684
Street Car Crossings (Single)	2,270	443	56	150	2,919
" " " (Double)	1,908	372	47	126	2,453
Total	7,043	1,374	174	465	9,056

722 *Services Showing Additional Cost Items—Reproduction New Value.*

Number.	Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
17,170	House Services	$241,410	$47,075	$5,951	$15,947	$310,383
1,140	Lamp "	17,693	3,450	436	1,169	22,748
18,310	Total	259,103	50,525	6,387	17,116	333,131

723 *Cost Due to Cutting and Replacing Paving Over Services Showing Additional Cost Items—Reproduction New Value.*

Sq. yds.	Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
4,038.	Asphalt on Concrete	$13,204	$2,574	$326	$872	$16,976
504.	Wood Block on Concrete	1,127	220	28	74	1,449
57.	Macadam	57	11	1	4	73
7.3	Concrete (Cement)	13	3	0	1	17
4,562.	Brick on Sand	5,383	1,050	133	356	6,922
5,740.	" " Concrete	13,133	2,561	324	867	16,885
14,908.3	Total	32,917	6,419	812	2,174	42,322

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Meters in Use Showing Additional Cost Items—Reproduction New Value.

Number.	Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
915	3—Lt. Ordinary	$6,130	$1,195	$151	$405	$7,881
7,170	5—" "	54,492	10,626	1,345	3,600	70,063
1,008	10—" "	10,917	2,129	269	721	14,036
106	20—" "	1,540	300	38	102	1,080
72	30—" "	1,603	313	39	106	2,061
18	45—" "	581	113	14	38	746
9	60—" "	371	72	9	25	477
1	80—" "	54	11	1	4	70
3	100—" "	198	39	5	13	255
1	150—" "	95	18	2	6	121
1	200—" "	125	24	3	8	160
9,304	Total Regular	76,106	14,840	1,876	5,028	97,850
10,320	5—Lt. Prepayment	118,061	23,023	2,911	7,798	151,792
227	10—" "	3,258	635	80	215	4,188
10,547	Total	121,319	23,657	2,991	8,013	155,980
46	10—Lt. "A" Meters	548	107	13	36	704
4	30—" " "	96	19	2	6	123
1	60—" " "	55	11	1	4	71
51	Total	699	137	16	46	898
1	2000—Lt. Sta. Meter	900	176	22	59	1,157
19,903	Total of all Meters In Use	199,024	38,810	4,905	13,146	255,885

Number.	Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
178	3—Lt. Ordinary	$863	$34.52	$21.30	$57.00	$975.82
319	5—" "	1,835	73.40	45.44	121.47	2,075.31
166	10—" "	1,323	52.92	32.70	87.40	496.02
14	20—" "	160	6.40	3.92	10.57	180.89
4	30—" "	70	2.80	1.72	4.62	79.14
8	45—" "	211	8.44	5.17	13.95	238.56
3	60—" "	104	4.16	2.55	6.87	117.58
692	Total Regulars	4,566	182.64	112.80	301.88	5,163.32
248	5—Lt. Prepayment	2,346	93.84	58.00	155.00	2,652.34
39	10—" "	443	17.72	10.93	29.30	500.95
287	Total "	2,789	111.56	68.93	184.30	3,153.29
6	10—Lt. "A" Meters	54	2.16	1.32	3.56	61.04
2	30—" " "	39	1.56	0.96	2.57	44.09
8	Total "A" Meters	93	3.72	2.28	6.13	105.13
987	Total Meters Out of Use	7,448	298.	184.	492.	8,422.

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726 *Distribution Tools Showing Additional Cost Items—Reproduction New Value.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Distribution Tools	$5,180	$1,010	$128	$342	$6,660
Total	5,180	1,010	128	342	6,660

727 *Summary of General Office and Stable Equipment.*

Classification.	Base.	1, 2 & 3.	Taxes.	Interest.	Total.
Furniture & Fixtures	$14,015	$2,733	$353	$946	$18,047
Book Records	10,000	1,950	252	675	12,877
Stable Equipment	11,359	2,215	286	765	14,625
Total	35,374	6,898	891	2,386	45,549

728 *Detail of Method of Determining Condition Per Cent.*

The condition per cents used in the following tables, with the exception of those applied to the distribution system, were determined by inspection. A very careful inspection of the plant, buildings, apparatus etc., was made and the condition per cents were applied with full cognizance of the items, physical decay, supercession, inadequacy, obsolescence and scrap value.

Inasmuch as the various parts of the distribution system were not available for inspection, their condition per cents were arrived at by means of composite age and life tables, depreciation being figured on a sinking fund basis.

729 *Real Estate and Plant Buildings, Condition Per Cent, Reproduction New, and Present or Depreciated Values, Including Items* 1, 2 & 3—*Taxes and Interest.*

Classification.	Cost of reproduction new.	Cond. %.	Present or depreciated value.
Real Estate	$229,229	100	$229,229
Plant Buildings:			
No. 1 A & B. Purifying House	12,217	93	11,362
" 1 C. Fire Brick Shed	117	91	106
" 3. Meter, Gov., Exhauster & Wash Rooms	9,950	81	8,060
" 4 A, B & C. Retort, Gen., & Blower House	6,482	45	2,917
" 5 A & B. Coal Shed, Scrubber & Cond. Room	2,665	73	1,945
" 6 A & B. Boiler & Engine Rooms	8,435	96	8,098
" 6 C. Boiler House Extension	1,432	99	1,418
" 7. Generator House	17,900	97	17,363
" 8. Coal Shed	8,823	90	7,941
" 8 B. Coal Runway	417	90	375
" 10. Smith, Carpenter Shop & Store Room	10,325	74	7,641
" 11. Barrel Oil Store House	309	100	309
" 12. Pump House	998	100	998
" 13. Oil Pump House	270	99	267
" 14. Meter House	1,944	100	1,944
" 15. Stable	2,487	65	1,617
" 16. Boiler House	983	98	963
" 17. Fire Brick Storage House	138	50	69
" 35. Fire Hose House	47	90	42
Forward	85,939	...	73,435

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730	Forward	$85,939	...	$73,435
No. 53.	Coke Shed	758	25	189
No. 54.	Coke Rack	105	25	26
No. 55.	Oil Barrel Store House	122	75	91
	Total Plant Bldg's	86,924	84.8	73,741

731 *Plant Apparatus, Condition Per Cent, Reproduction New, and Present or Depreciated Values, Including Items* 1, 2 & 3—*Taxes and Interest.*

Classification.	Cost of reproduction new.	Cond. %.	Present or depreciated value.
Contents of Bldg. No. 1 A & B	.....	..	.....
Steam Hydraulic Elevator	$611	85	$520
4—Purifying Boxes	23,143	96	21,257
Oxide Conveyor with Engine	1,704	85	1,448
Piping for Boxes	1,574	96	1,511
Total Bldg. No. 1 A & B	27,032	91.5	24,736
Contents Bldg. No. 3:			
Apparatus Foundations	1,787	89	1,592
60" Bar Photometer	643	92	592
Reserve Photometer	450	92	414
2—Pentane Lamps	257	87	224
1—CO_2 Apparatus	26	87	23
1—Freezing Coil	49	87	43
2—Stop Watches	26	90	23
1—5'-0" Wet Meter	64	86	55
1—Hygrometer	64	92	59
1—Barometer	32	92	29
1—Transit-Complete	270	88	238
2—Tee Squares	6	86	5
1—Case 5 test tubes	1	100	1
1—Medicine Chest	22	85	19
3—Sulphide Tests	96	80	77
Forward	3,793	...	3,394
732 Forward	$3,793	...	$3,394
1—Orsat Apparatus	32	83	27
1—Still (Tar or Oil)	26	85	22
2—Metal Lockers	22	92	19
1—8'-0" x 8'-0" Station Meters	3,729	95	3,543
1—8'-0" x 7'-6" " "	3,600	95	3,420
1—16" Connelly Governor	996	85	846
1—24" " "	2,379	93	2,212

1—Stationary Wash Stand	6	80	5
1—Shower Bath	10	75	8
1—Flush Closet and Tank	21	75	16
1—Safety Blow Back	611	90	550
1—Drip Hand Pump	4	85	3
1—No. 8 Exhauster with 10″ x 12″ Engine	2,643	93	2,456
2—No. 7 Exhausters with 10″ x 9″ Engine	4,822	85	4,099
2—No. 5 H. P. Pushers with 9″ x 10″ Engines	4,372	82	3,585
1—P. & A. Tar Extractor	996	78	777
1—Work Bench 4′-0″ x 2′-0″	13	75	10
1—4″ Vase	9	86	8
1—Tank 3′-0″ Diam. x 6′-0″	45	86	39
5—Stationary Wash Stands	32	70	22
2—Flush Closets	26	60	16
14—Metal Lockers	153	80	112
1—Enamel Bath Tub	32	76	24
1—Duplex Pump 7½″ x 5″ x 8″	225	82	185
1—Warren Duplex Pump 10″ x 6″ x 10″	309	85	263
Forward	28,906	...	25,663
733 Forward	$28,906	70.4	$25,663
1—Vertical Pump	418	85	355
Piping	3,159	95	3,001
Total Contents Bldg. #3	32,483	89.5	29,019

734 *Plant Apparatus, Condition Per Cent, Reproduction New and Present or Depreciated Values, Including Items* 1, 2 & 3—*Taxes and Interest.*

Classification.	Cost of reproduction new.	Cond. %.	Present or depreciated value.
Contents Bldg. No. 4:			
Apparatus Foundations	$391	60	$235
1—Payne Engine 8″ x 10″	1,029	60	617
1— " " 6″ x 8″	354	60	212
Counter Shafting and Belting	193	60	116
2—#6 Sturtevant Blowers	643	60	386
2—6′-0″ Sets including Washers Scrubber and Condenser	15,429	70	10,800
1—Steam Hydraulic Elevator	482	50	241
1—Charging Coke Buggy	64	75	48
5—Benches of 6's	11,572	0	0
Total in Bldg. #4	30,157	42	12,655

Contents Bldg. #5:			
Apparatus Foundations.....	370	80	296
Track and Charging Cars.....	1,028	80	822
Total in Bldg. #5.....	1,398	80	1,118
Contents Bldg. #6 A & B:			
Apparatus Foundations.....	656	95	623
Piping	890	97	864
2—8′-6″ x 22′-0″ Condensers.....	5,786	98	5,670
2—Am. Ball Engines 10″ x 10″....	2,507	95	2,382
1—20 Gallon Oil Filter.....	51	93	47
Forward	9,890	...	9,586
735 Forward	$9,890	...	$9,585
2—½ Pt. Detroit Lubricators.....	32	95	30
1—12″ Double Belt 86′-0″ long....	206	95	196
2—No. 8 Sturtevant Blowers.....	1,157	95	1,099
2—125 H. P. Phœnix Boilers.....	3,857	86	3,317
2—Steel Stacks 34″ x 80′-0″.....	1,029	86	885
1—125 H. P. Phœnix Boiler.....	1,929	87	1,678
1—Steel Stack 34″ x 80′-0″.....	514	87	448
1—Davidson Pump 9″ x 5¼″ x 12″.	321	82	264
1—Feed Water Heater.....	257	25	64
1—American Injector.....	116	87	101
Boiler Supports—3,248#.....	167	89	149
Total Contents Bldg. No. 6 A & B.....	19,475	91.5	17,816
Contents Bldg. No. 6 C:			
1—125 H. P. Phœnix Boiler.....	1,929	97	1,871
Foundations	196	97	190
1—Steel Stack.....	514	97	499
1—American Injector.....	116	97	113
Total Contents Bldg. No. 6 C.	2,755	97.1	2,673
Contents Bldg. No. 7:			
Apparatus Foundations.....	4,553	99	4,508
2—8′-6″ Lowe W. G. Sets.....	28,285	98	27,719
1—10′-6″ " " "	22,499	100	22,499
1—Vapor Extractor.....	579	99	573
1—Fairbanks Scales.....	32	92	29
Forward	55,948	...	55,328

736 Forward	$55,948	...	$55,328
1—Electric Pyrometer	193	97	188
8—Charging Barrows	669	96	642
1—98 H. P. Turbine & Blower	1,864	98	1,827
1—Fairbanks Scales	19	92	17
Total Contents Bldg. #7	58,693	99	58,002
Contents Bldg. No. 8 A & 8 B:			
1—Fairbanks Scales	225	75	169
1—Steam Hydraulic Elevator	1,929	87	1,678
Total Contents Bldg. 8 A & 8 B	2,154	85.6	1,847
Contents Bldg. #10:			
Apparatus Foundations	15	98	15
1—20" Blower	19	97	17
1—Payne Engine 5" x 6"	257	99	254
1—Drill Press	96	96	92
1—Screw Cutting Lathe	354	96	340
1—Grind Stone	26	95	25
1—Emery Wheel	26	95	25
1—Smith Forge	32	98	31
1—Anvil 135#	19	98	19
1— " 140#	19	98	19
2—Bench Vises 6" Jaws	19	97	18
1—Pipe Vise	13	98	13
1—Gas Solder Iron Heater	6	96	6
1—Curtis Thread Cutting Machine	193	94	181
Forward	1,094	...	1,056
737 Forward	$1,094	...	$1,056
Counter Shafting & Belting	193	98	189
Total Contents Bldg. #10	1,287	96.6	1,245
Contents Bldg. #12:			
2—Davidson Water Pumps 6" x 7" x 10"	566	97	549
1—Davidson Oil Pumps 4½" x 3¼" x 6"	141	97	137
1—Davidson Oil Pumps 4" x 5" x 8"	193	98	189
1—Warren Tar Pump 5¼" x 3½" x 5"	141	96	135
1—Davidson Tar Pump 4½" x 3¼" x 6"	141	97	137

1—Davidson Drip Pump 3½" x 2½" x 4"	116	94	109
1—Davidson Drip Pump 6" x 7" x 10"	283	97	275
Total Contents Bldg. #12...	1,581	96.7	1,531
Contents Bldg. #13:			
1—Davidson Oil Pump 6"x 8" x 12"	360	95	342
Foundations	13	95	12
Total Contents Bldg. #13...	373	95	354
Contents Bldg. #14:			
Meter Foundations	180	100	180
1—14' Station Meter	10,285	100	10,285
Piping	1,100	100	1,100
Total Contents Bldg. #14..	11,565	100	11,565
Contents Bldg. #16:			
Apparatus Foundation	211	98	207
1—60 H. P. Phœnix Boiler	1,286	98	1,260
1—Steel Stack 27" x 80'-0"	386	98	378
1—No. 80 World Injector	45	98	44
Total Contents Bldg. #16..	1,928	98	1,889

738 *Plant Apparatus, Condition Per Cent, Reproduction New and Present or Depreciated Values, Including Items* 1, 2, & 3—*Taxes and Interest.*

Classification.	Cost of reproduction new.	Cond. %.	Present or depreciated value.
Holders:			
1—Relief Holder No. 18	$38,572	85	$32,786
1—Storage " " 19	58,887	95	55,943
1— " " " 20	135,416	98	132,708
Total Holders	232,875	95	221,437
Tar and Oil Tanks and Pipe Coating Tank:			
1—Oil Storage Tank No. 21	7,488	98	7,338
1—" " "b " 22	4,209	98	4,125
1—Tar Evaporator No. 23	1,889	94	1,776
2—Oil Tanks No. 24 & No. 25	19,509	100	19,509
1—Old Holder Oil Tank No. 36	193	82	158
1—Pipe Coating Tank No. 60	78	85	66
1—Holder Oil Tank No. 58	627	87	547
Total Tanks	33,993	98.7	33,519

Outside Apparatus:			
1—Davidson Pump 2″ x 2½″ x 4″..	58	90	52
1—Fairbanks Track Scales.....	1,221	35	428
1—Standard Scales.....	354	90	319
1—Stiff Leg Derrick.....	193	87	168
4—Oil Unloading Devices.....	147	93	137
3—Tar Separators.....	579	88	510
Total Outside Apparatus....	2,552	63.3	1,614

739 *Sundry Equipment, Condition Per Cent, Reproduction New and Present or Depreciated Values, Including Items* 1, 2 *&* 3—*Taxes and Interest.*

Classification.	Cost of reproduction new.	Cond. %.	Present or depreciated value.
Wells, Valve Boxes, etc.....	$3,169	85	$2,694
Pine Lumber in Yard.....	90	98	88
Fencing and Gates.....	2,397	95	2,277
" " " leased property..	644	95	612
Paving in Yard.....	3,664	79	2,895
Water Piping.....	2,807	87	2,442
Circulation Piping.....	838	84	704
Steam Piping.....	3,851	83	3,196
Exhaust Steam Piping.....	2,362	84	1,984
Oil Piping.....	2,815	89	2,505
Gas "	377	95	359
Tar "	516	81	418
Drain Piping.....	439	90	395
Sewer "	1,718	90	1,546
Gas Mains in Works Yard.....	20,535	95	19,508
Electric Wiring.....	212	90	191
Works Tools.....	3,215	85	2,733
Fire Protection.....	407	85	346
Works Fixtures.....	5,583	85	4,746
Gauges	812	90	731
Total Sundry Equipment...	56,451	89.2	50,370

740 *General Office and Stable Equipment, Condition Per Cent, Reproduction New and Present or Depreciated Value, Including Items* 1, 2 *&* 3—*Taxes and Interest.*

Classification.	Cost of reproduction new.	Cond. %.	Present or depreciated value.
Furniture & Fixtures.....	$18,047	98	$17,686
Book Records.....	12,877	99	12,748
Stable Equipment	14,625	66	9,653
Total General Office and Stable.	45,549	88	40,087

741 *Past and Estimated Future Gas Sales of Going Plant During the Development Period—M Cubic Feet.*

Year.	Sales in Des Moines.	Sales in Valley Junction.	Total sales both places.	Increase in cu. ft. in total over previous yrs.	Per cent increase in total over previous yr.
1900.....	.....	.....	141,929	32,108	29.2
1901.....	.....	.....	160,990	19,061	13.4
1902.....	.....	.....	206,764	45,774	28.4
1903.....	.....	.....	244,246	37,482	18.2
1904.....	.....	.....	292,407	48,161	19.7
1905.....	.....	.....	334,405	31,998	14.4
1906.....	.....	.....	372,102	37,697	11.3
1907.....	.....	.....	429,519	57,417	15.4
1908.....	.....	.....	461,178	31,659	7.3
1909.....	.....	.....	497,245	36,067	7.8
1910.....	525,102	6,889	531,991	34,746	7.0
		Future.			
1911.....	558,670	7,330	566,000	34,009	6.4
1912.....	592,230	7,770	600,000	34,000	6.02
1913.....	624,800	8,200	633,000	33,000	5.50
1914.....	656,385	8,615	665,000	32,000	5.06
1915.....	686,980	9,020	696,000	31,000	4.67
1916.....	716,590	9,410	726,000	30,000	4.32
1917.....	746,200	9,800	756,000	30,000	4.13

Parallel.

NOTE.—The future sales in Valley Junction are estimated to grow at approximately the same rate per cent as in Des Moines.

742 *Method of Calculating the Gas Consumption by Districts of the Comparative Plant.*

From data of consumption of meters in the three districts in 1910 we have the average sales per meter as follows:

Regular Meters:

District No. 1..... 39,085 cu. ft.
" " 2..... 27,454 " "
" " 3..... 25,451 " "

For pre-payment meters average of entire city..... 18,374 cu. ft.

Table to Determine Relative Sales by Districts—M Cu. Ft.

Regular Meters.

Dist. No.	No. of meters.	Dist. #1.	Dist. #2.	Dist. #3.	Total.
1.....	4,986	194,878	.....	.....	.....
2.....	2,990	.....	82,087	.....	.....
3.....	1,380	.....	.....	35,122	.....
Prepayment Meters.					
1.....	4,515	87,473	.....	.....	.....
2.....	3,259	.....	63,140	.....	.....
3.....	2,773	.....	.....	53,724	.....
Total.....	19,902	282,351	145,227	88,846	516,424
Per Cent Each District to Total..	54.8	28.1		17.1	

NOTE.—These percentages are used throughout the development period.

743 *Estimated Gas Consumption of Comparative Plant by Districts.*

Year.	District number.	Per cent consumption comparative plant.	Consumption of going plant—M cu. ft.	Consumption of comparative plant—M cu. ft.
1913.....	1	36.0	342,390	123,260
"	2	6.75	175,569	11,851
"	3	0.0	106,841	.....
Total.....		.....	624,800	135,111
1914.....	1	82.5	359,699	296,752
"	2	54.0	184,444	99,600
"	3	18.75	112,242	21,045
Total.....		.....	656,385	417,397
1915.....	1	92.5	375,465	348,230
"	2	92.5	193,041	178,563
"	3	82.5	117,474	96,916
Total.....		.....	686,980	623,709
1916.....	1	97.5	392,691	382,874
"	2	97.5	201,362	196,328
"	3	92.5	122,537	113,347
Total.....		.....	716,590	692,549
1917.....	1	100.	408,918	408,918
"	2	100.	209,682	209,682
"	3	97.5	127,600	124,410
Total.....		.....	746,200	743,010

744 *Physical Rate of Installing Meters in Use Expressed in Per Cent.*

	Year.	Jan. 1.	July 1.	Dec. 31.
District No. 1:				
All mains and services laid.....	1912	0	15	60
	1913	60	80	100
Parallel to Going Plant.....	1914	100	100	100
District No. 2:				
All mains and services laid.....	1913	0	30	60
	1914	60	80	100
Parallel to Going Plant.....	1915	100	100	100
District No. 3:				
All mains and services laid.....	1914	0	50	100
Parallel to Going Plant.....	1915	100	100	100

745 *Rate of Consumption of Gas of the Hypothetical Plant at Different Periods of Each Year in Each District as Compared to That of the Going Plant Expressed in Per Cent.*

	Year.	Jan. 1.	July 1.	Dec. 31.
District No. 1:				
Gas on Jan. 1, 1913.....	1913	25	45	75
	1914	75	82½	90
	1915	90	92½	95
	1916	95	97½	100
Parallel to Going Plant.....	1917	100	....	...
District No. 2:				
Gas on Jan. 1, 1913.....	1913	0	22½	75
	1914	75	67½	90
	1915	90	92½	95
	1916	95	97½	100
Parallel to Going Plant.....	1917	100	....	...
District No. 3:				
Gas Already On.....	1914	0	37½	75
	1915	75	82½	90
	1916	90	92½	95
	1917	95	97½	100
Parallel to Going Plant.....	1918	100	....	...

FORMULA.—At beginning and end of each year, multiply above percentages by per cent of meters installed at same time. Add. Divide by 2.

746 *Record of Send Out of Cu. Ft. of Gas—Des Moines Gas Co.*

Year.	Maximum day.	Minimum week.	Yearly send out.
1904	1,227,000	7,700,000	305,327,167
1905	1,362,000	8,915,000	353,611,891
1906	1,685,000	10,369,000	405,778,655
1907	2,012,000	11,494,000	461,809,546
1908	1,935,000	11,989,000	487,578,116
1909	2,019,000	12,790,000	522,325,879
1910	2,228,000	14,030,000	556,117,412

747 *Unaccounted for Gas in Past Years—The Des Moines Gas Company.*

Year.	Send out—Cu. Ft.	Sales—Cu. Ft.	Unaccounted for gas. Cu. Ft.	Unaccounted for gas. per cent.
1904	305,327,167	292,407,382	12,919,785	4.24
1905	353,611,811	334,404,840	19,206,971	5.44
1906	405,778,655	372,101,839	33,676,816	8.33
1907	461,809,546	429,519,162	32,290,384	7.00
1908	487,578,116	461,177,956	26,400,160	5.42
1909	522,325,879	497,244,529	25,081,350	4.82
1910	556,117,412	531,991,054	24,126,358	4.31

748 *Revenue Per Thousand Net—Des Moines Only.*

Based on 1910 results.

Total revenue Des Moines per M	$1.0587
Less Discount " "	.0519
Net Revenue	1.0068

NOTE.—Include miscellaneous sales at $0.0005 per M sold (Sep. Col.).

749 *Estimate of Future Taxes for Going Value Calculation.*

For 1911:

Assessment	$1,350,000
Property Tax—2¼% of $1,350,000	$30,375
Gross Income Tax—2% of $562,748 (gas sales)	11,255
" " " —2% of 279.34 (Mis. ")	5.59
Fed. Corp. Tax 1% on $84,523—$5000	795.29
Total	42,431

For 1912:

Assessment—$1,500,000 @ 2¼%	33,750
Gross Income—596,553 @ 2%	11,931
Federal Tax	824
	46,505

For 1913:

Assessment—$1,500,000 @ 2¼%	33,750
Gross Income—629,361 @ 2%	12,587
Federal Tax	874
	47,211

For 1914:

Assessment—1,500,000 @ 2¼%	33,750
Gross Income—661,196 @ 2%	13,223
Federal Tax	984
	47,957

For 1915:

Assessment—1,500,000 @ 2¼%	33,750
Gross Income—691,996 @ 2%	13,840
Federal Tax	1,084
	48,674

750 **For 1916:**

Assessment—$2,500,000	$56,250
Gross Income—721,821	14,436
Federal Tax	959
	71,645

For 1917:

Assessment—$2,500,000	56,250
Gross Income—751,647 @ 2%	15,033
Federal Tax	1,059
	72,342

751 *Comparative Plant Taxes.*

1911.			None.
1912.			None.
1913.	See p. 26		$20,925
1914.	See p. 26		42,359
1915.	Assessment, 1,500,000 @ 2¼%	33,750	
	Gross Revenue, 628,262 @ 2%	12,565	
	Federal Tax	577	
			46,892
1916.	Assessment, 2,500,000 @ 2¼%	58,250	
	Gross Revenue, 697,604 @ 2%	13,952	
	Federal Tax	671	
			70,873
1917.	Assessment, 2,500,000 @ 2¼%	56,250	
	Gross Revenue, 748,434 @ 2%	14,969	
	Federal Tax	976	
			72,195

Classification	Reproduction value.	Composite life.	Straight line basis.	Depreciation per year. 4% sinking fund basis.	Depreciation per year. With varied rate of interest.
Plant Buildings	$86,924	45.5	$1,910	$701	$919
Contents of Bldgs	190,880	30.7	6,218	3,272	3,716
Outside Apparatus, etc	325,871	44.6	7,307	2,744	3,572
Gen'l Office and Stable Equipment	45,549	28.6	1,593	880	952
Street Mains and Paving	1,297,323	58.1	22,329	5,920	8,517
River Pipes	49,500	50.0	990	324	439
Services and Paving	375,453	20.0	18,773	12,608	13,276
Meters	264,307	25.0*n*	10,572	6,346	6,786
Distribution Tools	6,660	10.0	660	556	556
Total	2,642,467	....	76,352	33,359	38,733

Depreciation per year on the sinking fund basis was computed from the following formula:

$$\text{Depreciation per year} = \frac{r}{(1+r)^n - 1} \times \text{Remaining year.}$$

Where n = Remaining life.
and r = rate of interest.

THIS PAGE BOUND

753 *Future Depreciation on Sinking Fund Basis, with Varied Rates of Interest.*

Classification.	Reproduction new value.	Life yrs.	Sinking fund rate.	Depreciation per year.
Plant Buildings	$86,924	45.5	3%	919
Contents of Bldgs	190,880	30.7	3¾%	3,716
Outside Apparatus, etc	325,871	44.6	3%	3,572
Gen'l Office and Stable Equipment	45,549	28.6	3½%	952
Street Mains and Paving	1,297,323	58.1	3%	8,517
River Pipes	49,500	50.0	3%	439
Services and Paving	375,453	20.0	3½%	13,276
Meters	264,307	25.0	3½%	6,786
Distribution Tools	6,660	10.0	4%	556
Total	2,642,467	....	....	38,733

(Here follow pasters, marked pages 754-758.)

CHARTS

TOO

LARGE

FOR

FILMING

759 William W. Randolph, M. E. City Investing Building, 165 Broadway, New York.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Copy.

COMPLAINANT'S EXHIBIT 22.

J. P. B.

Appraisal of the Property of the Des Moines Gas Company as of December 31, 1910, by Wm. W. Randolph.

760 Summary and Totals.

	Estimated cost new.	Estimated physical decay.
Buildings—Page 5—this appraisal..	93,960.00	8,282.00
Machinery—Page 12—this appraisal	534,058.00	84,810.00
Distribution System—Page 13—this Appraisal.....	1,892,496.00	189,249.00
Land Value.....	240,000.00	.....
Working Capital.....	160,000.00	.....
Cost to develop Gas Sales from Zero over 510,000,000 cu. ft. per year..	500,000.00	.....
	$3,420,514.00	$282,331.00

NOTE.—The following page and sketch reference are to pages (Exhibit 15) and sketches (Exhibit 16) found in Complainants' Exhibits 15 and 16.

Buildings:

	Estimated cost new.	Estimated physical decay.
Purifier House..... 101′ 4″ x 30′ 9″ x 27′ 0″ high basement floor to truss chord with elevator shaft addition; brick walls, roof monitor type slate on wood on wood trusses. (Papes 16 to 24 Inclusive—Sketches 4 to 8 Inclusive—Buildings A and B.)	$10,500.00	$600.00
Fire Brick Shed (lean to)..... 12′ 0″ x 19′ 0″ x 12′ 0″ high at back and 8′ 0″ high at front; sides and roof corrugated iron on steel framing. (Pages 26 and 27—Sketch 9—Building C.)	120.00	12.00
Meter, Governor, Exhauster, and Wash Rooms..... 98′ 6″ x 29′ 4″ x 23′ 4″ high basement floor to truss chord; brick walls, gable roof slate on wood on wood trusses. (Pages 28 to 39 Inclusive—Sketches 11 to 18 Inclusive—Buildings A, B, C & D.)	9,552.00	660.00
Retort, Generator, Engine & Blower Rooms..... 84′ 1″ x 32′ 0″ x 19′ 6″ high floor to truss chord with wing 13′ 0″ x 28′ 8″ x 14′ 0″ high at front and 16′ 6″ high at back; brick walls, roof main building monitor type corrugated iron on steel on steel trusses, roof of wing corrugated iron on pipe frame with wood rafters. (Pages 43 to 51 Inclusive—Sketches 19 to 24 Inclusive.)	6,480.00	1,860.00
Coal Shed, Scrubber and Condenser Rooms..... 83′ 11″ x 19′ 3″ x average height of 19′ 0″ floor to rafters; brick walls, shed roof corrugated iron on wood on wood rafters. (Pages 53 to 57 Incl.—Sketches 25 to 27 Incl.)	2,820.00	504.00

Buildings—(Continued):

	Estimated cost new.	Estimated physical decay.
Boiler & Engine Rooms..... 77′ 11″ x 36′ 4″ x boiler room 18′ 0″ high and engine room 22′ 6″ high floor to truss chord brick walls, gable roof monitor type part slate on steel on steel trusses and part corrugated iron on steel on steel trusses. (Pages 59 to 65 Inclusive—Sketches 28 to 31 Inclusive.)	$8,628.00	$408.00
Boiler House Extension..... 30′ 0″ x 17′ 4″ x 16′ 0″ average height; wall part brick and part corrugated iron on steel framing; shed roof corrugated iron on steel on steel rafters. (Pages 68 to 72 Inclusive—Sketch 33.)	1,560.00	.....
Generator House..... 60′ 0″ x 63′ 0″ x 28′ 9″ high floor to truss chord; walls part brick and part corrugated iron on wood studding; roof monitor type part slate on steel on steel trusses and part corrugated iron on steel on steel trusses. (Pages 74 to 82 Incl.—Sketches 35 to 37 Incl.)	16,368.00	.....
Coal Shed..... 75′ 0″ x 75′ 0″ x 21′ 6″ high at low side and 27′ 6″ high at high side; brick and frame construction, roof tar felt and gravel on wood. (Pages 84 to 86 Incl.—Sketch 39.)	10,056.00	600.00
Runway for Coal Shed..... Siding and roof corrugated iron on wood framing. (Pages 88 to 90 Incl. Sketch 40.)	420.00	36.00
Smith, Carpenter Shop & Store Room 109′ 7″ x 58′ 10″ x 16′ 8″ high basement floor to truss chord in store room & 13′ 7″ high floor to truss chord in carpenter shop; brick walls, gable roof part tin on wood on wood trusses and part tar felt on wood on wood trusses. (Pages 92 to 102—Sketches 41 to 44 inclusive.)	12,744.00	1,274.00

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Buildings—(Continued):

	Estimated cost new.	Estimated physical decay.
Smith, Carpenter Shop & Store Room—(Cont'd):		
Barrel Oil Store House..... 16′ 0″ x 11′ 0″ x 7′ 4″ high on low side and 8′ 6″ high on high side; walls and roof reinforced concrete. (Page 104—Sketch 45.)	$660.00	.....
Pump House..... 22′ 0″ x 14′ 0″ x 8′ 6″ high floor to eaves brick walls, reinforced concrete roof covered with slag. (Pages 107 to 110 Inclusive—Sketch 46.)	1,020.00	.....
Oil Pump House..... 12′ 9″ x 9′ 6″ x 10′ 0″ high floor to roof on high side; brick walls, shed roof, slate on pipe purlins. (Page 112—Sketch 47.)	300.00	.....
Meter House..... 28′ 8″ x 20′ 8″ x 20′ 0″ high ground level to eaves; brick walls, roof reinforced concrete covered with tar and gravel. (Pages 116 to 119 Inclusive—Sketch 48.)	2,064.00	.....
Stable ..... 102′ 6″ x 33′ 0″ one part and 22′ 3″ the other part x 9′ 0″ high to eaves one part and 14′ 0″ high other part. Frame construction; gable roof part shingles on wood on wood framing and part rubberoid on wood on wood framing. (Pages 121 to — Inclusive—Sketches 51 to 52.)	2,844.00	1,140.00
Boiler House..... 40′ 4″ x 14′ 4″ x 12′ 1″ high ground to eaves. Sides and roof corrugated iron on steel framing. (Pages 126 to 128 inclusive—Sketch 53.)	1,548.00	84.00

Buildings—(Continued):

	Estimated cost new.	Estimated physical decay.
Fire Brick Store House..... 24′ 4″ x 16′ 3″ x 7′ 6″ high on low end and 8′ 6″ high on high end; sides and roof tar felt on wood framing. (Pages 130 and 131—Sketch 55.)	$132.00	$12.00
Fire Hose House..... 7′ 3″ x 6° 4″ x 5′ 2″ high to eaves, frame construction, roof tar felt on wood. (Pages 132 and 133—Sketch 60.)	60.00	.....
Coke Shed..... 49′ 9″ x 25′ 0″ x 14′ 3″ high to eaves extension 22′ 0″ x 12′ 0″ wide; frame construction, gable roof shingles on wood on wood framing. (Pages 134 and 135. Sketch 65.)	1,200.00	600.00
Coke Rack..... 74′ 9″ x 52′ 0″ wide frame enclosure. (Pages 154 and 155. Sketch 66.)	192.00	24.00
Oil Barrel Store House..... 20′ 0″ x 10′ 0″ x 6′ 6″ high on low side and 7′ 9″ high on high side floor to eaves; frame construction, shed roof tar felt on wood. (Pages 195 and 196. Sketch 122.)	156.00	.....
Yard Paving: (Pages 164 & 165, Sketch 67).....	2,568.00	264.00
Fences: Pages 166 & 167—Sketch 68).....	1,968.00	204.00
Total buildings.....	$93,960.00	$8,282.00

765 *Appraisal of Des Moines Gas Company.*

	Estimated cost new.	Estimated physical decay.
Machinery:		
Boilers:		
2—125 H. P. Phœnix horizontal tubular boilers with steel stack 34″ dia. x 80′ 0″ high, including foundations. (Page 66.)	$4,800.00	$960.00
1—125 H. P. Murray horizontal tubular boilers with steel stack 34″ dia. x 80′ 0″ high, including foundations. (Pages 66 and 67.)	2,700.00	480.00
1—125 H. P. Phœnix horizontal tubular boiler with steel stack 34″ dia. x 80′ 0″ high, including foundations. (Page 73.)	2,700.00	300.00
1—60 H. P. Phœnix horizontal tubular boiler with steel stack 27″ dia. x 80′ 0″ high, including foundations. (Page 129.)	1,500.00	180.00
Coal Gas Benches:		
5—Benches of six's including foundations. (Page 52.)	20,640.00	20,640.00
Condensers:		
2—8′ 6″ dia. x 22′ 0″ condensers with 20″ connections, including foundations. (Page 66.)	6,840.00	600.00
Conveying Machinery:		
1—Bucket oxide conveyor including one 5 H. P. engine, housing, etc. (Page 25.)	1,320.00	300.00
1—Charging coke buggy capacity 500 lbs. (Page 52.)	120.00	.....
Industrial track switch, turn table and charging cars. (Page 58.)	780.00	72.00
8—McNeill charging barrows. (Page 83.)	960.00	120.00
1—Derrick, stiff leg type, consisting of mast, boom, bracing, hand winch, cable, shieves and guy wires and foundations. (Page 162.)	264.00	24.00

	Estimated cost new.	Estimated physical decay.
Machinery—(Continued):		
Electric Wiring:		
Electric Wiring in Meter House, Boiler House Stable, Purifying House, Meter Exhauster and Pump House, Condenser House and Generator House. (Page 188.)	$420.00	$60.00
Elevators:		
1—Steam hydraulic elevator with 8′ 0″ x 8′ 0″ platform, in purifier house. (Page 25.)	1,200.00	120.00
1—Steam hydraulic elevator in Generator House. (Page 52.)	960.00	480.00
1—Steam Hydraulic elevator in runway for coal shed. (Page 91.)	1,200.00	250.00
Engines:		
1—8″ x 10″—40 H. P. Payne horizontal engine. 1—6″ x 8″—15 H. P. Payne horizontal engine. Foundations, counter shafting and belting. (Page 52.)	1,350.00	300.00
2—10″ x 10″—55 H. P. American Ball engines including foundations and belting. (Page 66.)	2,640.00	240.00
1—5″ x 6″—5 H. P. Payne horizontal engine. (Page 103.)	210.00	36.00
Exhausters & Blowers:		
1—# 8 Wilbraham Green exhauster and one 10″ x 12″ New York Safety vertical engine, including foundations. (Page 42.)	1,620.00	.....
2—# 7 Root's exhausters and two 40 H. P. New York Safety vertical engines, including foundations. (Page 42.)	3,420.00	360.00
2—# 5 Wilbraham Green high pressure pushers and two New York Safety engines 40 H. P. each, including foundations. (Page 42.)	2,640.00	120.00

	Estimated cost new.	Estimated physical decay.
Machinery—(Continued):		
Exhausters & Blowers—(Continued):		
2—# 6 Sturtevant blowers and foundations. (Page 52.)	$420.00	$36.00
2—# 8 Extra heavy Sturtevant blowers with beds and foundations. (Page 66.)	1,080.00	60.00
1—# 8 Sturtevant blower and one 98 H. P. C-3 turbine, including foundations. (Page 83.)	2,040.00	.....
Fire Apparatus:		
Fire extinguishers, pails, hose and nozzles, etc. (Page 190.)	210.00	30.00
Furniture:		
Furniture and fixtures in West Side office and Meter and Fitting Shop. (Pages 239 to 243 Inclusive.)	15,000.00	1,200.00
Guages and Thermometers:		
Miscellaneous guages and theremometers. (Page 157.)	300.00	30.00
Governors:		
1—16″ Connelly automatic governor with 24″ connections. (Page 41.)	720.00	.....
1—24″ Connelly automatic governor with 24″ connections. (Page 42.)	1,800.00	.....
Holders:		
1—2 lift relief holder, capacity 175,000 cu. ft. in brick tank. (Page 138.)	39,600.00	7,200.00
1—2 lift storage holder, capacity 309,432 cu. ft. in brick tank. (Page 140.)	55,200.00	6,000.00
1—3 lift storage holder, capacity 1,132,000 cu. ft. in steel tank with brick retaining wall. (Page 142.)	135,600.00	9,600.00
Laboratory Apparatus:		
Miscellaneous Laboratory apparatus. (Page 41.)	$840.00	$120.00
Meter Provers:		
2—Meter provers and outfit for dipping meters. (Page 194.)	390.00	.....

Machinery—(Continued):

	Estimated cost new.	Estimated physical decay.
Oil Filter:		
1—20 gallon Cross oil filter. (Page 66.)	72.00	.....
Oil Unloading Device:		
Oil unloading device. (Page 184.)	180.00	.....
Photometers:		
1—60″ Goodwin bar photometer.		
1—American Meter Co. bar photometer.		
2—Pentane lamps. (Page 41.)		
Yard Connections:		
Gas Mains in building. (Pages 25, 42, 66 and 120.)	7,440.00	
Gas Mains in yard. (Pages 185, 6 and 187)	30,000.00	4,320.00
Miscellaneous piping. Pages 168 to 183.)	6,000.00	
Pumps:		
1—Hand drip Pump. Page 41.		
1—10″ x 6″ x 10″ Warren Duplex. (Page 41.)		
1—7½″ x 5″ x 8″ Buffalo Duplex. (Page 41.)		
1—Vertical pump. (Page 41.)		
1—9″ x 5¼″ x 12″ Davidson simplex. (P. 67.)		
1—6″ x 7″ x 10″ Davidson simplex. (Page 111.)		
1—6″ x 7″ x 10″ Davidson simplex. (Page 111.)		
1—4½″ x 3¼ x 6″ Davidson simples. (Page 111.)	3,120.00	360.00
1—4″ x 5″ x 8″ Davidson simplex. (Page 111.)		
1—5¼″ x 3½″ x 5″ Warren duplex. (Page 111.)		
1—4½″ x 3¼″ x 6″ Davidson Simplex. (Page 111.)		
1—3½″ x 2½″ x 4″ Davidson Simplex. (Page 111.)		
1—6″ x 7″ x 10″ Davidson Simplex. (Page 111.)		
1—6″ x 8″ x 12″ Davidson. (Page 115.)		
1—2″ x 2½″ x 4″ Davidson simples. Page 163.) Including foundations.		

Machinery—(Continued):

	Estimated cost new.	Estimated physical decay.
Purifiers:		
4 boxes 20′ 0″ x 20′ 0″ x 7′ 0″ including center seal, hoist and foundations. (Page 25.)	$21,600.00	$600.00
Pyrometers:		
1—Bristol electric pyrometer. (Page 83.)	288.00	30.00
1—Rubbish kiln for cremating rubbish. (Page 199.)	36.00	12.00
Scales:		
1—Fairbanks scales 100 lbs. capacity. (P. 83.)		
1—Fairbanks standard scales 400 lbs. cap. P. 83.		
1—Fairbanks standard platform scales—platform 6′ 0″ x 4′ 11″—(Page 87.)	1,920.00	1,380.00
1—Wagon scales capacity 2 tons—platform 8′ 0″ x 14′ 0″. (Page 163.)		
1—Track scales, capacity 100 tons—platform 7′ 6″ x 36′ 0″. (Page 163.)		
Station Meters:		
1—8′ 0″ x 8′ 0″ Goodwin with Hinman drum, including foundations. (Page 41.)	3,576.00	390.00
1—8′ 0″ x 7′ 6″ American Meter Co., with Hinman drum, including foundations. (Page 41.)	3,336.00	330.00
1—14′ 0″ x 14′ 0″ American Meter Co., with Hinman drum, including foundations. (Page 120.)	9,888.00	.....
Tanks and Wells:		
1—30′ 0″ dia. x 20′ 0″ high oil tank, including foundations (Page 143.)	8,040.00	480.00
1—28′ 0″ dia. x 14′ 0″ high oil tank, including foundations. (Page 145.)	4,680.000	240.00
1—16′ 6″ dia. x 10′ 0″ high tar tank. (Page 147.)	1,920.00	960.00

	Estimated cost new.	Estimated physical decay.
Machinery—(Continued):		
Tanks and Wells—(Continued):		
2—45′ 0″ dia. x 27′ 0″ high oil tanks including foundations. (Page 150.)	$22,800.00	$.....
1—3′ 4″ dia. x 10′ 9″ long oil tank including foundations. (Page 152.)	168.00	48.00
1—9′ 0″ dia. x 20′ 0″ high holder oil tank, including foundations. (Page 197.)	720.00	360.00
Miscellaneous valve and junction boxes, sewer manholes, tar separators, water, tar and blow-off wells, etc. (Page 158.)	3,000.00	300.00
1—Pipe coating tank. (Page 201 & 202.)	120.00	12.00
Tar Extractors:		
1—P. & A.. 3′ 6″ dia. x 6′ 11″ including foundations. (Page 42.)	1,200.00	120.00
Toilet Accommodations:		
Toilet accommodations in Wash Room—(Pages 41 and 42)	600.00	120.00
Tools:		
Machine, Blacksmith and Carpenter Shop tools. (Page 42 and 103.)	1,344.00	1,800.00
Miscellaneous Work tools. (Pages 245 to 250 Inclusive.)	1,200.00	
Distribution tools. (Pages 253 to 265 Incl.)	6,216.00	
Water Gas Apparatus:		
2—6′ sets of Water Gas Apparatus to outlet of condensers, including foundations. (Page 52.)	16,800.00	15,600.00
2—8′ 6″ sets of Water Gas Apparatus to outlet of scrubbers, including foundations. (Page 83.)	29,760.00	1,200.00
1—10′ 6″ set of Water Gas Apparatus to outlet of washer, including foundations. (Page 83.)	21,360.00	

771 *Appraisal of Des Moines Gas Company.*

	Estimated cost new.	Estimated physical decay.
Machinery—(Continued):		
Water Heaters:		
1—Feed Water Heater. (Page 67.)	$480.00	$420.00
Stable Equipment:		
Horses, wagons, harness, automobiles, motor cycles, etc. (Page 265.)	13,630.00	5,590.00
Total machinery	$534,058.00	84,710.00

772 *Appraisal of Des Moines Gas Company.*

		Estimated cost new.	Estimated physical decay.
Distribution System:			
Mains (Pages 209 to 216 Inclusive):			
Size.	No. of feet.	Amount.	Amount
2½" and under	33,947	$17,873.00	
3"	35,301	42,237.00	
4"	573,734	544,073.00	
6"	162,004	207,502.00	
8"	65,607	121,476.00	
10"	32,008	66,094.00	
12"	31,349	75,883.00	
14"	622	1,493.00	
16"	28,506	105,427.00	
20"	6,036	28,633.00	
24"	1,819	16,921.00	
Total mains		$1,227,612.00	
House Services (Pages 220 to 225 Inclusive):			
17,170 Services Nov. 1, 1910		393,647.00	
Lamp Services & Posts (Page 218):			
1,140 Services Nov. 1, 1910		23,256.00	
Meters in Use (Page 227):			
19,742 Meters Nov. 1, 1910		240,057.00	
Meters in Stock (Page 228):			
853 Meters Nov. 1, 1910		7,924.00	
Total distribution system		$1,892,496.00	$189,249.

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COMPLAINANT'S EX. 23.

J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Report on Financial Conditions of the Des Moines Gas Company, Des Moines, Iowa, December 31, 1910, by William J. Hagenah.

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CHICAGO, ILLINOIS, *March* 8, 1911.

Des Moines Gas Company, Des Moines, Iowa.

DEAR SIRS: Pursuant to your instructions I have made an audit and analysis of your books and financial records covering, for the plant account, the period from 1886 to 1910 and the profit and loss accounts over the three twelve months' periods ending September 30, 1908, September 30, 1909, and September 30 1910, these being the periods embraced in the exhibits submitted to the court in the legal proceedings now pending for the determination of a reasonable rate to be charged by your company for gas, and also covering the calendar year ending December 31, 1910, together with the preparation of a statement of assets and liabilities as of that date.

The schedules and exhibits are as follows:

Schedule I. Statement of Assets and Liabilities, December 31, 1910.

Exhibit A. Plant Investment less Working Capital.
" B. Additions to Plant, 1886–1910, and Opening Balance Sheet.
" C. Inventories.
" D. Accounts Receivable.
" E. Cash.
" F. Capital Stock.
" G. Bonds.
" H. Preferred Stock Contracts.
" I. Accrued Accounts.
" J. Profit and Loss, December 31, 1910.
" K. Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies.

Schedule II. Statement of Profit and Loss, Twelve Months Ending Sept. 30, 1909.

Exhibit A. Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies.

Schedule III. Statement of Profit and Loss, Twelve Months Ending Sept. 30, 1909.

Exhibit A. Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies.

Schedule IV. Statement of Profit and Loss, Twelve Months Ending Sept. 30, 1910.

Exhibit A. Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies.

Schedule V. Statement of Gross Revenue and Net Income as per Company's Books and as Corrected, for Years Ending Sept. 30, 1908; Sept. 30, 1909; Sept. 30, 1910, and Dec. 31, 1910.

775 SCHEDULE I.

Statement of Assets and Liabilities, Dec. 31, 1910.

Exhibits.	Assets.		
A & B.	Plant	$3,853,975.22	
C.	Inventories	77,410.46	
D.	Accounts Receivable	53,627.46	
	Unearned Insurance	905.20	
E.	Cash	49,434.15	
	Total		$4,035,352.49
	Liabilities.		
F.	Capital Stock	$2,250,000.00	
G.	Bonds	1,097,000.00	
H.	Preferred Stock Contracts	411,000.00	
	Bills Payable	14,000.00	
	Accounts Payable	39,607.29	
I.	Accrued Accounts	58,817.07	
J.	Profit and Loss	164,928.13	
	Total		$4,035,352.49

776 SCHEDULE 1.—EXHIBIT A.

Plant Investment and Opening Balance Sheet, March 1, 1906.

Plant Investment.

Property Purchased March 1, 1906		$3,592,723.24
Capital Expenditures from March 1, 1906, to December 31, 1910, as follows:		
Extension and Improvements	$97,254.70	
Street Main Extensions	242,686.12	
Services	72,493.28	
Meters	68,364.93	
Street Lamp Extension	2,039.65	
Real Estate	5,699.26	
Plant	36,822.82	
		525,360.76
Total		4,118,084.00
Less Amount Credited to Plant Account June 30, 1909, and Charged to Profit and Loss Account		264,108.78
Investment December 31, 1910, as per Company's Books		3,853,975.22

Opening Balance Sheet, March 1, 1906.

Assets.

Property Purchased	$3,592,723.24	
Inventory Accounts	128,790.72	
Accounts Receivable	41,593.18	
Bills Receivable	356.25	
Advance Accounts	993.38	
Cash	10,788.24	
Total Assets		3,775,245.01

Liabilities.

Capital Stock	2,250,000.00	
Bonds Payable	685,000.00	
Preferred Stock Contracts	800,000.00	
Accounts Payable	19,229.16	
Accrued Accounts	21,015.85	
Total Liabilities		3,775,245.01

SCHEDULE 1.—EXHIBIT B.

Additions to Plant, 1886–1910.

Period.	Extension & improvement.	Street lamp extension.	Extension of street mains.	Meters.	Services.	Totals.
Capital City Gas Light Company:						
Capital Expend. to June 30, 1886	189,423.33	11,135.03	62,618.82	83,248.80	18,957.10	295,383.08
12 Months ending June 30, 1887	559.05	635.10	9,733.61	107.69	2,358.07	13,393.52
" " " " " 1888	28,642.43	.....	541.57	23.25	1,380.84	30,588.09
" " " " " 1889	1,483.65	1,214.97	9,171.79	2,864.93	2,601.08	11,606.56
6 " " Dec. 31, 1889	181.44	2,719.80	3,550.27	158.79	852.22	7,462.52
12 " " " " 1890	19,000.75	529.79	9,672.08	1,579.13	1,783.49	32,565.24
" " " " " 1891	61,892.14	374.14	3,192.26	809.47	2,134.35	68,402.36
" " " " " 1892	588.20	880.90	2,847.37	1,964.68	2,272.07	5,615.02
" " " " " 1893	606.92	416.86	2,842.35	576.18	1,548.68	5,157.27
" " " " " 1894	2,991.08	465.20	443.93	1,246.11	1,616.92	149.32
" " " " " 1895	759.53	73.72	3,819.39	1,907.67	2,364.04	8,924.35
" " " " " 1896	6,683.28	2,253.99	23,139.46	3,633.28	6,878.75	42,588.76
" " " " " 1897	28,008.89	1,097.51	20,124.25	5,008.82	6,901.35	61,140.82
" " " " " 1898	3,998.85	757.70	12,967.43	5,705.91	7,715.55	31,145.44
" " " " " 1899	8,815.99	184.45	13,917.29	12,762.77	10,897.10	46,577.60
" " " " " 1900	1,066.01	313.91	7,934.00	8,244.95	16,944.01	34,502.88
" " " " " 1901	38,935.60	1,190.81	38,824.34	9,917.55	23,339.32	112,207.62
" " " " " 1902	11,427.19	702.11	40,871.36	8,266.88	17,842.59	56,255.75
" " " " " 1903	5,779.93	35.91	51,024.09	17,205.25	23,045.18	85,530.50
" " " " " 1904	1,853.21	54.43	23,998.35	5,221.91	14,913.00	45,932.04
" " " " " 1905	8,450.51	1,805.52	65,473.12	20,530.80	19,306.48	115,566.43
2 " " Feb. 28, 1906	2,028.50	88.71	357.41	4,136.04	648.70	7,259.36
Des Moines Gas Company:						
12 Months ending Feb. 28, 1907	289,943.78	1,587.60	87,672.28	24,972.51	14,738.11	418,914.28
" " " " " 1908	32,781.82	144.31	52,716.86	12,457.74	12,537.90	110,638.63
" " " " " 1909	13,881.29	268.61	21,273.23	5,858.42	12,636.45	53,918.00
10 " " Dec. 31, 1909	44,699.80	39.13	30,816.97	12,361.21	14,001.87	101,918.98
12 " " " " 1910	43,470.09	.....	50,206.78	12,715.05	18,578.95	124,970.87
Totals	806,380.46	25,335.43	649,750.66	187,755.93	258,794.17	1,928,016.65

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SCHEDULE 1.—EXHIBIT C.

Inventories

Store Room	$40,251.89	
Tar	1,235.34	
Gas Stock	811.44	
Boiler Fuel Stock	737.95	
Generator Fuel Stock	10,449.98	
Gas Coal Stock	1,222.16	
Oil (Water Gas) Stock	9,301.80	
Purification Supply Stock	4,113.30	
Stable Supplies	5,805.40	
Gas Arc Lamps	3,481.20	
Total		$77,410.46

SCHEDULE 1.—EXHIBIT D.

Accounts Receivable.

Gas Sales—From Users of Gas	$34,092.34	
Sundry Sales—Appliances, Fittings, Mdse., etc.	17,851.80	
City of Des Moines	126.40	
Sundry Debtors—Other than Gas Appliance Sales	1,556.92	
Total		$53,627.46

SCHEDULE 1.—EXHIBIT E.

Cash.

Represents Cash in Bank and Working Funds	$49,434.15

SCHEDULE 1.—EXHIBIT F.

Capital Stock.

Authorized and Issued 22,500 Shares @ $100 par		$2,250,000.00
Issued as follows:		
1906.		
Mar. 1. For Cash (10 shares @ $100)	1,000.00	
Mar. 1. In part payment for the entire plants, property, real and personal, business, rights, privileges and franchises of Capital City Gas Light Company, a Company operating in Des Moines, Iowa, and Jansen Haines and W. B. Keffer individuals, operating in Valley Junction, Iowa—22,490 shares @ $100	$2,249,000.00	
Total		$2,250,000.00

779 SCHEDULE 1.—EXHIBIT G.

Bonds.

Authorized	$1,500,000.00
Unissued	403,000.00
Issued	1,097,000.00

Name of Bond: First Mortgage 5% Twenty Year Gold Bonds.
Dated: March 1st, 1906.
Maturity: March 1st, 1926.
Interest Rate: 5%.
Interest Payable: September and March 1st.
Where Payable: Commercial Trust Company, Philadelphia.
Trustee: Commercial Trust Company.
Callable: On any interest date @ 105 and accrued Interest.
Provisions for Bonding Betterments: 100%.
Sinking Fund Provisions: None.
How Issued: (See following pages.)

NOTE: Underlying Bonds of Capital City Gas Light Company, amounting to $400,000 were retired January 1st, 1907, and bonds of Des Moines Gas Company issued in their stead, as provided for in Article I, Section 2, of Mortgage dated March 1st, 1906.

780 *Analysis of Bond Account.*

Date.	Covering		Amount.
1906.			
Mar. 1.	In part payment for the entire plants, property, real and personal, business, rights privileges and franchises of the Capital City Gas Light Company, a Company operating in Des Moines Iowa, and Jansen Haines and W. B. Keffer, individuals, operating in Valley Junction.....		$285,000.00
Oct. 31.	Issued in accordance with Resolutions of Board of Directors, at meeting held August 15th, 1906, and Article 1, Section 3 of Mortgage dated March 1, 1906, for additions, etc., to plant—Bonds Nos. 286 to 343, inclusive.....		58,000.00
	Extensions and Improvements at Works	757.64	
	Street Lamp Extension.....	676.93	
	Extension of Street Mains.....	38,627.63	
	Meters	11,877.92	
	Services	6,790.65	
	Total.....	58,730.77	
Dec. 31.	Issued in accordance with Resolutions of Board of Directors, at meeting held December 26, 1906, and Article 1, Section 2 of Mortgage dated March 1st, 1906. Bonds Nos. 344 to 743 inclusive, to retire bonds outstanding of the Capital City Gas Light Company, due January 1, 1907, to the amount of $400,000.....		400,000.00
1907.			
Apr. 30.	Issued in Accordance with Resolutions of Board of Directors at meeting held March 20, 1907, and Article 1, Section 3 of Mortgage dated March 1, 1906; bonds Nos. 744 to 814, inclusive, for additions, etc., to plant, as follows.....		71,000.00
	Extensions and Improvements at Works.....	4,644.30	
	Street Lamp Extension.....	1,511.59	
	Extension of Street Mains.....	84,209.66	
	Meters	24,674.84	
	Services	14,241.72	
	Total.....	129,282.11	
	Less amount of bonds heretofore issued on account of same...	58,000.00	
	Total.....	71,282.11	
	Forward.....		**$814,000.00**

781 *Analysis of Bond Account*—(Continued).

Date.	Covering		Amount.
1907.	Forward		$814,000.00
Oct. 31.	Issued in accordance with resolutions of Board of Directors, at meeting held March 20, 1907, and Article 1, Section 3 of Mortgage dated March 1, 1906; bonds Nos. 815 to 852, inclusive, for additions, etc., to plant as follows		38,000.00
	Extensions and Improvements at Works	14,880.31	
	Street Lamp Extension	1,685.02	
	Extension of Street Mains	103,153.27	
	Meters	26,780.93	
	Services	20,976.85	
	Total	167,476.38	
	Less amount heretofore issued on account of same	129,000.00	
		38,476.38	
1908.			
Mar. 31.	Issued in accordance with resolutions of Board of Directors, at meeting held February 19th, 1908, and Article 1, Section 3 of Mortgage dated March 1, 1906, bonds 853 to 906, inclusive, for additions to plant, etc., as follows		54,000.00
	Extensions and Improvements at Works	20,669.92	
	Street Lamp Extension	1,709.51	
	Extension of Street Mains	135,816.53	
	Meters	36,919.27	
	Services	26,565.18	
	Total	221,680.41	
	Less amount of bonds heretofore issued on account of same	167,000.00	
	Total	54,680.41	
Sep. 30.	Issued in accordance with resolutions of Board of Directors, at meeting held August 19, 1908, and Article 1, Section 3 of Mortgage dated March 1, 1906; bonds 907 to 924, inclusive, for additions to plant, etc., as follows		18,000.00
	Extension- and Improvement- at Works	21,582.07	
	Street Lamp Extension	1,731.91	

Extension of Street Mains	146,728.40	
Meters	37,789.04	
Services	31,222.00	
Total	239,053.42	
Less amount of bonds heretofore issued on account of same	221,000.00	
Total	18,053.42	
Forward		$924,000.00

782 *Analysis of Bond Account*—(Continued).

Date.	Covering		Amount.
1909.	Forward		$924,000.00
Mar. 31.	Issued in accordance with resolutions of Board of Directors, at meeting held February 10,1909, and Article 1, Section 3, of mortgage dated March 1, 1906; bonds Nos. 925 to 952, inclusive, for additions to plant, etc., as follows		28,000.00
	Extension- and Improvement-at Works	25,291.23	
	Street Lamp Extension	1,894.02	
	Extension of Street Mains	162,273.87	
	Meters	38,716.53	
	Services	39,155.20	
	Total	267,330.85	
	Less amount of bonds heretofore issued on account of same	239,000.00	
	Total	26,330.85	
Oct. 31.	Issued in accordance with resolutions of Board of Directors at meeting held October 20, 1909, and Article 1, Section 3, of Mortgage dated March 1, 1906; bonds Nos. 953 to 1016 inclusive, for additions to plant, etc., as follows		64,000.00
	Extension- and Improvement-at Works	46,860.34	
	Street Lamp Extension	2,039.65	
	Extension of Street Mains	181,655.43	
	Meters	51,237.10	
	Services	49,389.51	
	Total	331,182.03	
	Less amount of bonds heretofore issued on account of same	267,000.00	
	Total	**64,182.03**	

1910.			
Apr. 30.	Issued in accordance with resolutions of Board of Directors at meeting held March 28, 1910, and Article 1, Section 3, of Mortagage dated March 1, 1906; bonds Nos. 1017 to 1048, inclusive, for additions to plant, etc., as follows		32,000.00
	Real Estate	438.61	
	Extension- and Improvement- at Works	59,045.26	
	Street Lamp Extension	2,039.65	
	Extension of Street Mains	192,479.34	
	Meters	55,649.88	
	Services	53,914.33	
	Total	363,567.07	
	Less amount of bonds heretofore issued on account of same	331,000.00	
	Total	32,567.07	
	Forward		$1,048,000.00

783 *Analysis of Bond Account*—(Continued).

Date.	Covering		Amount.
1910.	Forward		$1,048,000.00
Aug. 31.	Issued in accordance with resolutions of Board of Directors at meeting held August 15, 1910, and Article 1, Section 3 of Mortgage dated March 1st, 1906; bonds Nos. 1049 to 1097, inclusive, for additions to plant, etc., as follows		49,000.00
	Real Estate	472.11	
	Extension - and Improvement- at Works	79,562.53	
	Street Lamp Extension	2,039.65	
	Extension of Street Mains	207,821.78	
	Meters	60,420.07	
	Services	62,388.37	
	Total	412,704.51	
	Less amount of bonds heretofore issued on account of same	363,000.00	
		49,704.51	
	Total		$1,097,000.00

784 SCHEDULE 1.—EXHIBIT H.

Preferred Stock Contracts, September 30, 1910.

1906.
Mar. 1. In part payment for the entire plants, property, real and personal, business, rights, privileges and franchises of Capital City Gas Light Co., a Company operating in Des Moines, Iowa, and Jansen Haines and W. B. Keffer, individuals, operating in Valley Junction, Iowa..... $800,000.00

(8000 shares par $100—$800,000 bearing interest at the rate of 6% per annum, payable September 15th, and March 15th, in each year, commencing March 1, 1906.)

1908.
Jun. 30. Treasurer's Cash Account..... $108,000.00

For amount paid pursuant to resolutions adopted by the Board of Directors at meeting held May 20, 1908, on surrender for cancellation of Preferred Stock Contracts representing 13½% of the total outstanding amount thereof or 1080 shares, viz:

Cont. 1—12½% 1000 shares..... $100,000
Cont. 9—1% 80 shares, 8,000

Par $100—1080 shares, $108,000

1909.
Mar. 31. Treasurer's Cash Account..... 103,800.00

For amount paid pursuant to resolution adopted by Board of Directors at meeting held February 10, 1909, on surrender for cancellation of Preferred Stock Contracts representing 15% of the total outstanding amount thereof, or 1038 shares, viz:

Cont. 11—1000 shares. $100,000
Cont. 19— 38 shares. 3,800

Par $100—1038 shares, $103,800

Oct. 31.	Treasurer's Cash Account.....	114,110.80	
	For amount paid pursuant to resolutions adopted by Board of Directors at meeting held Oct. 20, 1909, on surrender for cancellation of Preferred Stock Contract, representing 19 4/10% of total outstanding amount thereof, $588,200 or $114,110.80.		
1910.			
Sep. 30.	Treasurer's Cash Account.....	63,089.20	
	For amount paid pursuant to resolutions adopted by Board of Directors at meeting held Aug. 15, 1910, on surrender for cancellation of Preferred Stock Contracts, representing 13.307453% of the total outstanding amount thereof, viz: $474,089.20 or $63,089.20.		
	Totals.....	389,000.00	
	Balance September 30, 1910....	411,000.00	
	Totals.....	$800,000.00	$800,000.00

785 SCHEDULE 1.—EXHIBIT I.

Accrued Accounts.

Accrued Taxes.....	$26,643.49	
Accrued Special Taxes.....	5,250.25	
Accrued Interest on Bonds.....	18,283.33	
Accrued Interest on Floating Debt.....	420.00	
Accrued Interest on Preferred Stock Contracts.....	8,220.00	
Total.....		$58,817.07

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SCHEDULE 1.—EXHIBIT J.

Statement of Profit and Loss, Twelve Months Ending December 31, 1910.

Gross Revenue from Sales of Gas (531,991,054 cubic feet)		538,893.00
Operating Expenditures:		
Manufacturing:		
Manufacturing	3,718.76	
Boiler Fuel	15,988.99	
Expense Works	7,611.67	
Generator Fuel	57,297.79	
Manufacturing Labor	10,682.68	
Oil	63,949.96	
Purification Labor	511.88	
Purification Supplies	737.83	
Repairs Works	14,193.78	
Water Tax	1,006.12	
	175,699.46	
Residuals	10,233.02	
Total Manufacturing		165,466.44
Distribution:		
Distribution	3,803.38	
Complaint Expense	3,372.94	
Distribution Office Expense	6,066.58	
Gratuitous Work	6,643.77	
Repairs Mains	9,347.30	
Repairs Services	5,224.76	
Repairs Meters	5,211.63	
Setting & Removing Meters	5,387.46	
Street Mains Abandoned	129.20	
Total Distribution		45,187.02
Commercial Expense:		
Commercial Expense	1,890.01	
Expense Collection	6,374.63	
Expense Office	15,177.30	
Office Salaries	24,509.10	
Total Commercial Expense		47,951.04
New Business:		
New Business	3,154.58	
Advertising	6,853.03	
Appliance Demonstrations	1,711.85	
Expense Soliciting	9,646.65	
Gas Appliances	2,188.14	
Gas Engine Expense	60.02	
House Fitting Expense	178.77	
Gas Arc Rental and Maintenance	5,005.86	
Gas Stove Depreciation	108.15	
Total New Business		24,173.23

Expenses:		
Accidents and Damages	2,616.71	
Association Meetings	1,164.92	
Expense General	1,488.08	
Expense Extraordinary	3,964.78	
Insurance	1,841.95	
Interest	75.05	
Litigation	999.96	
Salaries General	10,000.00	
Uncollectible Bills	3,329.34	
Replacement Values	.....	
Rate Regulation Expense	5,602.00	
Street Lamp Operating	618.35	
Total Expense	31,551.04	
Taxes	38,580.81	
Total Operating Expenditures		352,909.58
Net Earnings		185,983.42
Miscellaneous Sales		437.04
Gross Corporate Income		186,420.46
Deductions from Gross Corporate Income—Fixed Charges		80,014.10
Net Profit per Books		106,406.36
Add Balance January 1, 1910		58,521.77
Balance December 31, 1910		164,928.13

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787 SCHEDULE 1.—EXHIBIT K.

Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies, Year Ending Dec. 31, 1910.

Revenue.	Cubic feet.	Amount.
Gas Sales:		
Des Moines:		
General Consumers (regular)	308,594,800	$339,454.28
General Consumers (prepayment)	204,330,000	204,330.00
Street Lamps	8,561,554	8,561.57
Company	3,615,600	3,615.60
Total Des Moines	525,101,954	555,961.45
Valley Junction:		
General Consumers (regular)	2,453,700	3,925.92
General Consumers (prepayment)	4,435,400	6,653.10
Total Valley Junction	6,889,100	10,579.02
Total Des Moines and Valley Junction	531,991,054	566,540.47
Less Discount		27,647.47
Total Revenue from Gas		538,893.00

Sundry Sales:	
Gas Appliances:	
Sales for Year	34,122.30
Cost of Appliances and Expense Connecting	31,934.16
Net Profit	2,188.14
House Fitting:	
Sales for Year	23,980.87
Cost of Material and Labor	23,802.10
Net Profit	178.77
Merchandise Sales:	
Sales for Year	2,596.19
Cost of Material	2,159.15
Net Profit	437.04

Cost of Manufacturing Materials and Supplies.

Accounts.	Quantity.	Rate.	Amount.
Boiler Fuel:			
Coal, Tons	6,371	$2.50926	$15,988.99
Tar, Gals	.....	.....	.....
Total			$15,988.99
Generator Fuel, Tons	8,760	6.541	57,297.79
Oil, Gals	2,264,891	.028235	63,949.96
Purification Supplies, Bu	4,000	.18445	737.83

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SCHEDULE II.

Statement of Profit and Loss, Twelve Months Ending September 30, 1908.

Gross Revenue from Sales of Gas (451,962,495 C. F.)		457,105.95
Operating Expenditures:		
Manufacturing:		
Manufacturing	2,473.12	
Boiler Fuel	10,019.91	
Expense Works	5,317.97	
Generator Fuel	53,951.81	
Manufacturing Labor	8,772.99	
Oil	83,967.52	
Purification Labor	401.49	
Purification Supplies	246.39	
Repairs Works	6,748.07	
Water Tax	972.49	
	172,871.76	
Residuals	3,646.16	
Total Manufacturing		169,225.60

Distribution:			
Distribution	2,603.63		
Complaint Expense	1,995.93		
Distribution Office Expense	2,977.58		
Gratuitous Work	2,322.33		
Repairs Mains	3,828.48		
Repairs Services	529.84		
Repairs Meters	5,598.40		
Setting and Removing Meters	5,110.67		
Street Mains Abandoned	83.60		
Total Distribution		25,050.46	
Commercial Expense:			
Commercial Expense	1,390.17		
Expense Collection	4,344.95		
Expense Office	8,645.22		
Office Salaries	19,671.20		
Total Commercial Expense		34,051.54	
New Business:			
New Business	1,389.99		
Advertising	4,191.99		
Appliance Demonstrations	1,298.44		
Expense Soliciting	4,293.97		
Gas Appliances	19.96		
Gas Engine Expense	181.72		
Housefitting Expense	2,527.29		
Gas Arc Rental & Maintenance	1,467.38		
Total New Business		15,370.74	
Expense:			
Accidents and Damages	494.24		
Association Meetings	580.17		
Expense General	1,324.85		
Expense Extraordinary	1,749.52		
Insurance	1,938.84		
Interest	168.18		
Litigation	325.00		
Uncollectible Bills	2,117.53		
Street Lamp Operating	276.62		
Total Expense		8,638.59	
Taxes		29,276.55	
Total Operating Expenditures			281,613.48
Net Earnings			175,492.47
Miscellaneous Sales			131.99
Gross Corporate Income			175,624.46
Deductions from Gross Corporate Income, Fixed Charges			87,675.49
Net Profits per Books			87,948.97

[Bold-face figures in red ink in copy.]

789 SCHEDULE II.—EXHIBIT A.

Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies, Year Ending Sept. 30, 1908.

Revenue.	Cubic feet.	Amount.
Gas Sales:		
Des Moines:		
General Consumers (regular)	279,792,900	$307,772.19
General Consumers (prepayment)	155,674,100	155,674.10
Street Lamps	8,706,295	8,706.29
Company	2,221,900	1,605.35
Total Des Moines	446,395,195	473,757.93
Valley Junction:		
General Consumers (regular)	2,574,200	4,118.72
General Consumers (prepayment)	2,993,100	4,489.65
Total Valley Junction	5,567,300	8,608.37
Total Des Moines and Valley Junction	451,962,495	482,366.30
Less Discount		25,260.35
Total Revenue from Gas		$457,105.95
Sundry Sales:		
Gas Appliances:		
Sales for Year		$21,901.13
Cost of Appliances and Expense Connecting		21,921.09
Net Loss		19.96
House Fitting:		
Sales for Year		18,671.87
Cost of Material and Labor		21,199.16
Net Loss		2,527.29
Merchandise Sales:		
Sales for Year		1,189.10
Cost of Material		1,057.11
Net Profit		131.99

Cost of Manufacturing Materials and Supplies.

Account.	Quantity.	Rate.	Amount.
Boiler Fuel:			
Coal, Tons	5,321	$1.82198	$9,693.30
Tar, Gals	21,774	.015	326.61
Total			10,019.91
Generator Fuel, Tons	7,482	7.2102	53,951.81
Oil, Gals	1,947,371	.043118	83,967.52
Purification Supplies, Bu	1,300	.1895	246.39

790 SCHEDULE III.

Statement of Profit and Loss, Twelve Months Ending September 30, 1909.

Gross Revenue from Sale of Gas (486,169,525 Cubic Feet)		$491,944.49
Operating Expenditures:		
Manufacturing:		
Manufacturing	3,044.69	
Boiler Fuel	10,869.97	
Expense Works	5,765.39	
Generator Fuel	56,413.18	
Manufacturing Labor	9,520.39	
Oil	65,383.55	
Purification Labor	654.25	
Purification Supplies	1,289.81	
Repairs Works	6,558.02	
Water Tax	1,047.07	
	160,546.32	
Residuals	6,100.21	
Total Manufacturing		154,446.11
Distribution:		
Distribution	3,044.63	
Complaint Expense	2,224.74	
Distribution Office Expense	4,717.00	
Gratuitous Work	1,801.47	
Repairs Mains	4,101.17	
Repairs Services	1,087.65	
Repairs Meters	4,379.65	
Setting & Removing Meters	6,420.28	
Street Mains Abandoned	693.00	
Total Distribution		28,469.59
Commercial Expense:		
Commercial Expense	1,483.80	
Expense Collection	4,445.41	
Expense Office	10,995.17	
Office Salaries	20,801.52	
Total Commercial Expense		37,725.90

New Business:		
New Business	2,398.51	
Advertising	4,142.23	
Appliance Demonstrations	1,611.54	
Expense Soliciting	6,862.90	
Gas Appliances	1,927.26	
Gas Engine Expense	204.71	
Housefitting Expense	382.12	
Gas Arc Rental & Maintenance	3,838.07	
Total New Business		16,748.58
Expense:		
Accidents and Damages	3,990.74	
Association Meetings	1,031.30	
Expense General	1,553.75	
Expense Extraordinary	2,667.19	
Insurance	1,491.49	
Interest	1,054.08	
Litigation	824.97	
Uncollectible Bills	2,824.56	
Street Lamp Operating	181.47	
Total Expense		13,511.39
Taxes		32,437.49
Total Operating Expenditures		283,339.06
Net Earnings		208,605.43
Miscellaneous Sales		95.24
Gross Corporate Income		208,700.67
Deductions from Gross Corporate Income—Fixed Charges		84,439.23
Net Profit per Books		124,261.44

[Bold-face figures in red ink in copy.]

791 SCHEDULE III.—EXHIBIT A.

Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies, Year Ending Sept. 30, 1909.

Revenue.	Cubic feet.	Amount.
Gas Sales:		
Des Moines:		
General Consumers (regular)	290,957,300	$320,053.03
General Consumers (prepayment)	177,523,600	177,523.60
Street Lamps	8,740,525	8,740.49
Company	2,791,300	2,791.30
Total Des Moines	480,012,725	509,108.42

Valley Junction:		
General Consumers (regular).....	2,438,700	3,901.92
General Consumers (prepayment)....	3,718,100	5,577.15
Total Valley Junction.....	6,156,800	9,479.07
Total Des Moines and Valley Junction.....	486,169,525	518,587.49
Less Discount.....		26,643.00
Total Revenue from Gas.....		$491,944.49
Sundry Sales:		
Gas Appliances:		
Sales for Year.....		$26,441.62
Cost of Appliances and Expense Connecting.....		24,514.36
Net Profit.....		1,927.26
House Fitting:		
Sales for Year.....		17,468.24
Cost of Material and Labor.....		17,086.12
Net Profit.....		382.12
Merchandise Sales:		
Sales for Year.....		1,502.09
Cost of Material.....		1,406.85
Net Profit.....		95.24

Cost of Manufacturing Materials and Supplies.

Account.	Quantity.	Rate.	Amount.
Boiler Fuel:			
Coal, Tons.....	6,027	$1.17203	$10,317.04
Tar, Gals.....	36,862	.015	552.93
Total.....			10,869.97
Generator Fuel, Tons.....	8,164	6.9095	56,413.18
Oil, Gals.....	2,104,531	.031067	65,383.55
Purification Supplies, Bu.....	6,900	.1869	1,289.81

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SCHEDULE IV.

Statement of Profit and Loss, Twelve Months Ending September 30, 1910.

Gross Revenue from Sales of Gas (519,763,172 C. F.)		526,293.50
Operating Expenditures:		
Manufacturing:		
Manufacturing	3,986.27	
Boiler Fuel	16,657.04	
Expense Works	8,201.76	
Generator Fuel	57,198.26	
Manufacturing Labor	10,858.84	
Oil	63,260.24	
Purification Labor	488.99	
Purification Supplies	1,511.34	
Repairs Works	14,588.34	
Water Tax	1,038.04	
	177,789.12	
Residuals	7,994.51	
Total Manufacturing		169,794.61
Distribution:		
Distribution	3,877.48	
Complaint Expense	3,434.41	
Distribution Office Expense	6,514.47	
Gratuitous Work	5,655.39	
Repairs Mains	7,581.60	
Repairs Services	3,917.84	
Repairs Meters	5,551.15	
Setting and Removing Meters	5,439.09	
Street Mains Abandoned	288.20	
Total Distribution		42,259.63
Commercial Expense:		
Commercial Expense	1,796.26	
Expense Collection	5,692.99	
Expense Office	14,049.35	
Office Salaries	23,622.36	
Total Commercial Expense		45,160.96
New Business:		
New Business	3,111.00	
Advertising	6,777.15	
Appliance Demonstrations	1,475.00	
Expense Soliciting	9,430.33	
Gas Appliances	1,814.35	
Gas Engine Expense	47.71	
Housefitting Expense	679.11	
Gas Arc Rental & Maintenance	5,406.15	
Total New Business		25,112.10

Expense:		
Accidents and Damages	2,143.93	
Association Meetings	1,367.77	
Expense General	1,257.89	
Expense Extraordinary	4,258.69	
Insurance	2,025.74	
Interest	154.20	
Litigation	1,000.71	
Salaries General	9,166.66	
Uncollectible Bills	3,068.16	
Replacement Values	348.18	
Street Lamp Operating	604.86	
Total Expense	25,088.39	
Taxes	37,866.74	
Total Operating Expenditures		345,282.43
Net Earnings		181,011.07
Miscellaneous Sales		371.49
Gross Corporate Income		181,382.56
Deductions from Gross Corporate Income—Fixed Charges		79,981.07
Net Profit per Books		101,401.49

[Bold-face figures in red ink in copy.]

793 SCHEDULE IV.—EXHIBIT A.

Statement of Revenue from Gas and Sundry Sales and Cost of Manufacturing Materials and Supplies, Year Ending Sept. 30, 1910.

Revenue.	Cubic feet.	Amount.
Gas Sales:		
Des Moines:		
General Consumers (regular)	303,620,000	$333,980.85
General Consumers (prepayment)	197,300,200	197,300.20
Street Lamps	8,508,172	8,508.18
Company	3,605,700	3,605.70
Total Des Moines	513,034,072	543,394.93
Valley Junction:		
General Consumers (regular)	2,516,300	4,026.08
General Consumers (prepayment)	4,212,800	6,319.20
Total Valley Junction	6,729,100	10,345.28
Total Des Moines and Valley Junction	519,763,172	553,740.21
Less Discount		27,446.71
Total Revenue from Gas		526,293.50

Sundry Sales:

Gas Appliances:	
Sales for Year	31,744.31
Cost of Appliances and Expense Connecting	29,929.96
Net Profit	1,814.35
House Fitting:	
Sales for Year	21,210.31
Cost of Material and Labor	21,889.42
Net Loss	679.11
Merchandise Sales:	
Sales for Year	2,613.35
Cost of Material	2,241.86
Net Profit	371.49

Cost of Manufacturing Materials and Supplies.

Account.	Quantity.	Rate.	Amount.
Boiler Fuel:			
Coal, Tons	6,465	$2.5763	$16,657.04
Tar, Gals	.....	.....	.....
Total			16,657.04
Generator Fuel, Tons	8,654	6.6088	57,198.26
Oil, Gals	2,250,940	.028355	63,260.24
Purification Supplies, Bu	8,250	.18319	1,511.34

Gross Revenue and Net Income as per Company's Books and as Corrected for Years Ending Sept. 30, 1908, 1909, 1910, *and Dec.* 31, 1910.

	Company books.	Adjustments. Debit.	Adjustments. Credit.	Actual surplus.
Year Ending Sept. 30, 1908:				
Gross Revenue	$457,237.94	.....	.....	$457,237.94
Operating Expenses	281,613.48	$40,320.00	$135.07	321,798.41
Net Earnings	175,624.46	40,320.00	135.07	135,439.53
Fixed Charges	87,675.49	.....	.....	87,675.49
Net Income	87,948.97	40,320.00	135.07	47,764.04
Year Ending Sept. 30, 1909:				
Gross Revenue	492,039.73	.....	.....	492,039.73
Operating Expenses	283,339.06	41,668.00	1,957.34	323,049.72
Net Earnings	208,700.67	41,668.00	1,957.34	168,990.01
Fixed Charges	84,439.23	.....	.....	84,439.23
Net Income	124,261.44	41,668.00	1,957.34	84,550.78
Year Ending Sept. 30, 1910:				
Gross Revenue	526,664.99	.....	.....	526,664.99
Operating Expenses	345,282.43	47,198.00	7,351.92	385,128.51
Net Earnings	181,382.56	47,198.00	7,351.92	141,536.48

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Fixed Charges	79,981.07	.....	.....	79,981.07
Net Income	101,401.49	47,198.00	7,351.92	61,555.41
Year Ending Dec. 31, 1910:				
Gross Revenue	539,330.04	.....	.....	539,330.04
Operating Expenses	352,909.58	47,198.00	7,351.92	392,755.66
Net Earnings	186,420.46	47,198.00	7,351.92	146,574.38
Fixed Charges	80,014.10	.....	.....	80,014.10
Net Income	106,406.36	47,198.00	7,351.92	66,560.28

795 *Analysis of Accounts.*

Methods Pursued.

Before engaging in any work of checking your accounts and records a study was made of the classification of accounts adopted by your company, and upon which distribution charges is based. The classification used in your business is that prescribed by the American Gas Light Association in 1902 and was compared with the classification prescribed by the Public Service Commission of New York and the Railroad Commission of Wisconsin. While the number of accounts and certain distributions in your classification do not follow the method pursued in those states where a uniform classification is prescribed by state authorities, the difference consists principally in the method of grouping in order to ascertain departmental costs. Your classification does not direct any charges into the operating expenses or the construction account which would not meet with the sanction of the states of Wisconsin and New York.

A study was made of the forms and blanks used in the conduct of your business, both at the office of the company in Des Moines and for the transaction of business between your Company and the controlling company, the United Gas Improvement Company of Philadelphia. The system followed commends itself because of its simplicity and thoroughness and the checks which it affords as against any irregularity It is impossible for the Des Moines office to incur any expenditure for the purchase of materials and supplies in excess of $50.00 without written authority being obtained from the Board of Directors. This method of supervision and audit insures accuracy in details, economy and rigid responsibility. The authorizations were examined and checked with the books covering the five year period from 1906 to 1910, inclusive. Owing to the fact that the ledger accounts are not closed until all steps under the author-
796 ity are completed the analysis of the authorities permits of a separation between maintenance, replacements and capital expenditures.

In the course of the audit all the vouchers covering the periods embraced in the three twelve months statements ending September 30, 1908, 1909 and 1910, and also the calendar year 1910, were thoroughly examined and found to be properly recorded on your books. The vouchers were numbered consecutively for each year and invoices and other evidences of purchase were found attached. There were no missing vouchers. Under your system every voucher is checked at the Des Moines office and should any clerical errors escape detection there they are found in the periodical inspection and audit made at the direction of the Board of Directors. The construction account was analyzed from 1886 to 1910, inclusive, there being no records available to show transactions prior to 1886. Each charge to construction during these years was examined and traced through the various books of record until it was closed into the plant account.

Profit and Loss Accounts.

In the analysis of your statements of operating expenses several matters presented themselves which affect the final profit and loss and therefore call for special mention. These conditions serve in part to show a more favorable financial condition of the Company and in other respects show that the profit indicated in the profit and loss statements is not actual because not all the operating expenses properly chargeable to the years in question have been met.

The financial position of the company is strengthened because of its affiliation with the United Gas Improvement Company of Philadelphia. This company supplies the Des Moines Gas Company with services of a very substantial character. These services consist of administrative, financial and engineering skill to the full requirements of the company. The United Gas Improvement Com-
797 pany maintains expensive accounting, legal and engineering stations, equipped to solve all the problems with which the subsidiary companies are confronted and through this relationship such controlled companies are furnished with services and facilities of a character which their own size and financial condition would, in most instances, make it impossible to obtain. The purchasing agent of the parent company also acts as a purchasing agent for the controlled companies and by virtue of his position as such agent for a large number of corporations and his close contact with the market he is enabled to purchase most favorably. The prices paid are the same as those charged to subsidiary companies and are therefore much less than the prices such companies would be compelled to pay if acting independently in the open market. In all purchases of large quantities of supplies, such as coal, gas pipe, stoves, meters, etc., the purchasing agent of the parent company purchases for all the controlled properties at one time and thus secures very favorable prices, delivery being made directly to the several companies.

An examination of the vouchers and authorizations of your company shows that it has benefitted very materially by such purchases. When it is considered that the accounts of the company have been charged with costs based upon such favorable conditions of purchase the benefit resulting to the construction account and to the operating accounts is apparent. For these services your company has until recently paid no compensation, except several small payments incurred for drafting services on particular assignments. During the last year, however, your company has paid for these services at the rate of $10,000 per year. Through the payment of this charge your company is spared the expense of maintaining a large engineering department and increasing its office staff for executive, accounting and auditing purposes. It also continues to receive substantial bene-
fits in the purchase of all its supplies. Considering the size
798 of your company, and also the current administrative and technical service which is furnished, the payment above referred to cannot be regarded as unreasonable. The value of the service furnished could not be duplicated by your Company for the same money. The relationship governing the payment of such

services is in line with established practice, but is considerable less than the charges exacted for similar work in other industries. Such relationships are mutually beneficial. The only danger is the liability to abuse the power, and such payments should always call for the closest scrutiny. There is no evidence in this case of the abuse of such power, since the charge made is from all points of consideration a reasonable one and beneficial to the company.

Construction Account.

The analysis of the construction account reveals that you have not charged that account with all the expenses with which it should properly be charged. The account as at present carried on your books shows but little more than the actual cost of the labor and material expended for construction purposes, leaving each year a considerable amount of overhead charges to be included in operating expenses. Such overhead charges embrace expenditures for engineering and supervision during construction, interest, insurance and taxes during construction, salaries of general officers during construction, etc. Much engineering work has been done in connection with construction for which the company has never been charged at all. In many instances regular employees of the company have been employed on construction work, but in the distribution of the pay roll and expense vouchers no proper proportion has been charged against the plant. Interest on money borrowed for construction purposes has been included in current expenses. The result of this practice is that the value accruing to the property because of these expenditures is in the physical property, but through such charges having been made to operating expenses the construction account
799 now does not show the actual cost of the additions to plant.

Depreciation.

Your records further show that the property is not being adequately protected against depreciation. As a general rule public service corporations have not made sufficient provisions for depreciation. No proper distinction has been made between current maintenance and replacements. In some utility fields, and doubtless such is true in this case, the necessity for making proper provision for depreciation has not been fully understood, so that the insufficient charges for this purpose may be attributed to a lack of proper statistical data rather than to a studied effort to avoid it Whatever may have been the attitude of the company towards this subject in the past it is necessary that proper adjustment be made at this time, when the reasonableness of the present rate schedule is under determination, in order to insure the protection of the interests of both the stockholder and the customer for service.

In the past years property replacements have been charged directly to appropriate maintenance accounts, thus increasing the expenditure of maintenance, but providing only for the current replacements for the year in question. In charging no more than this your company has made no provision for depreciation on all the property

of the plant which it is necessary to replace at the end of its life in service. In other words, the company has provided for only the current replacements without provision for obsolescence and inadequacy, both forces which materially reduce the value of the property and unless provided for through the gradual building up of a reserve for that purpose, result in the impairment of the investment. The policy pursued by your company will eventually lead to impairment unless the depreciation is increased to an amount equal to that which experience shows is necessary. Not to recognize this condition and to fail to create a reserve covering also the obsolescence and inadequacy of the plant due to invention and municipal growth,
800 but to consider as profit the net earnings from which no deductions for these purposes have been made, is a delusion which time will certainly reveal.

The subject of depreciation is closely connected with maintenance and is often confused with it. In a general sense maintenance embraces depreciation. Maintenance may be said to consist of both current repairs and depreciation, and doubtless it is in this sense that the terms have been used by your company. Used as a term for repairs in its proper definition maintenance means the "up keep" of the property as distinguished from its "use" in operation and should be considered to cover the expenditures for current or ordinary repairs, renewals or replacements of property resulting through wear and tear or other casualties which are incidental to the nature of the operation, and which expenditures are necessary in order to keep up the productive capacity of the plant to its original or equivalent state of efficiency. When, however, through wear and tear, inadequacy, obsolescence, supersession, or public requirements, the unit of equipment becomes economically irreparable, the uncurrent or extraordinary repairs, renewals, or replacements made necessary should be charged to a depreciation reserve accumulated for this purpose through charges to operating expenses.

Depreciation can be provided for in another manner, which is to credit the construction account and charge surplus at stated intervals with an amount representing the estimated depreciation during the year, or so much thereof as the finances of the company will permit. By this method the plant account will be reduced on account of the declining efficiency of the various units in service and will be charged again when such units are replaced. This method defeats the primary function of bookkeeping, which is to show at all times what the plant has cost. Under the former method this can be seen by referring to the construction account in the general ledger,
801 the estimated depreciation and the provisions made therefor being shown by the depreciation reserve balance.

A third method of accounting for depreciation consists in charging all replacements to the appropriate maintenance account, or distributing them over a group of maintenance accounts, thus merging such charges with those of current "Up keep." This method destroys all possibility of determining the amount expended on current "up keep" and the amount spent on replacements, and since it deals only

with actual expenditures, takes no cognizance of the much wider influence and expense of depreciation.

You inform me that the composite life of the plant and the actual annual depreciation requirement would be computed by your engineers. In the absence of other findings at this time I refer to the generally accepted depreciation rate of 3 per cent per year on gas plant and use this rate in my deductions. This figure is the result of many actual tests and the use of it here will probably lead to no material error. When your engineers have computed the proper rate under the conditions affecting your plant such rate can easily be substituted for the one in question.

Assuming 3 per cent per year to be the proper rate, this amount applied on the depreciable property of the plant represents the proper annual charge against earnings to take care of the depreciation of the property. In this instance the company has been meeting these current replacements by charges to maintenance. From an analysis of the maintenance accounts for each period, schedules and exhibits herewith presented, it appears that the following items have been incorrectly charged as current maintenance and which are either depreciation, replacements or capital charges.

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Year.	Replacements in maintenance.	Capital charges in maintenance.	Total deductions.
Sept. 30th, 1908.....	4.57	130.50	135.07
Sept. 30th, 1909.....	1,282.24	675.10	1,957.34
Sept. 30th, 1910.....	6,087.17	1,264.75	7,351.92
Dec. 31st, 1910.....	6,087.17	1,264.75	7,351.92

The amount spent for replacements as shown above applies only to the actual expenditures without provision for obsolescence and inadequacy. The amount is also small because owing to the rapid growth of your city and the expansion of your plant, units of large capacity have been installed. This results in a lower expenditure for replacements because the large units have a longer life in service and because with the large additions during the last ten years the composite age of the plant is comparatively low. The replacement expenditures now being made, therefore, really date back to the plant of the size of twenty-five or thirty years ago. They do not recognize that each unit, even though rendering sufficient service, has depreciated considerably below the basis of the 100 per cent represented by this cost.

The depreciation rate to be used here applies only on the depreciable property. This amount is equal to the value of the total property less the land and working capital, with adjustments where possible for salvage value. The value of the depreciable property each year for the purpose of this analysis has been determined by taking the cost of the property in 1886, less land and working capital, and adding thereto for each year the additions of depreciable property.

In order to show the actual net earnings each year as opposed to the apparent net earnings now shown by your books I have prepared

a schedule showing the condensed profit and loss accounts for the years covered, crediting the operating expenses with the amounts not properly chargeable there and charging operating expenses with a depreciation allowance of 2½ per cent on the depreciable property. The rate here used is very conservative when it is considered that the depreciable property is carried forward at its cost price, whereas the present value of the property must be used in determining
803 the reasonableness of a rate for service and since the depreciation rate is much lower than that generally used for gas plants, which is approximately 3 per cent. The rate here used is practically equal to a rate computed on the so called sinking fund plan. Even though your engineers found that a somewhat higher rate is necessary, this computation will still serve to show the effect on your net earnings of properly caring for depreciation. It will be observed that the actual net earnings compare with the book net earnings as follows:

	Net earnings per books.	Actual net earnings after depreciation.
Yr. ending Sept. 30, 1908.....	$175,624.46	$135,439.53
Yr. ending Sept. 30, 1909.....	208,700.67	168,990.01
Yr. ending Sept. 30, 1910.....	181,382.56	141,536.48
Yr. ending Dec. 31, 1910.....	186,420.46	146,574.38

Value of Investment.

In the foregoing tables and discussions material has been presented to show the cost of the plant to the stockholders, the revenue from the operation of the plant and the cost of such operation, together with the net earnings from operation. The investment of the stockholder, however, is more than the mere bare cost of the physical plant. He is entitled to a reasonable return on all the money which he has reasonably, legitimately and honestly invested in the business, and this includes the involuntary investment necessary to conduct the business, as well as the voluntary investment. To arrive at this valuation it is not enough to consider the cost of the plant alone. Such valuation must be arrived at from a consideration of all the elements making for value, of which the principal ones are the original cost of the plant, its reproduction cost new, its reproduction cost new less depreciation, the value of its established business, the amount of stock and bonds outstanding against the property and its earning capacity. No formula or mathematical rule can be blindly followed, but from all the facts and elements of value it is
804 necessary to apply a reasonable judgment in order that substantial justice may be secured as between the public and the stockholder.

The amount shown by the construction account does not necessarily represent the value of your investment, even excluding the question of unearned increment. Your records do not show the cost of building up your business and making it a live, active, producing and profit-yielding organization. A gas works complete in all its physical requirements and standing ready to serve the public is not

a going business until by one method or another, all of which call for investment, it has induced a sufficient number of customers to take advantage of its service which will produce sufficient revenue to meet the operating expenses, depreciation and a reasonable return on the investment. Without an established going business the plant is a dead mass of iron, steel, brick and lumber, regardless of its state of physical perfection.

New plants seldom yield a return on the investment during the first year of operation. In fact it is more likely to require a number of years of continuous effort to establish a business on a firm foundation, while the history of the gas industry clearly shows that many of such plants have not reached a position of profit to the investor until very many years after their construction. An examination of your records bearing on this subject shows that for various reasons the plant has not yet reached the stage of development which justifies the investors in the belief that the property would yield them a reasonable average annual return.

The Des Moines Gas Company was organized under the laws of the State of Iowa on February 28, 1906. The Company's corporate existence dates from March 1, 1906, and continues for a term of twenty years, with a right of renewal or dissolution as provided by the statutes of your state. The company was incorporated to own property and maintain gas plants in the city of Des Moines, Iowa, and in any other place or places in the State of Iowa,
805 and to do all such acts as may be necessary for the operation and maintenance of a company in the gas business.

Under date of March 1, 1906, your Company acquired by purchase the entire plant, property, real and personal, business, rights, privileges and franchises of the Capital City Gas Light Company, then operating in Des Moines, Iowa, and also acquired by purchase the entire property, real and personal, business, rights, privileges and franchises of certain individuals operating in the town of Valley Junction, Iowa. The records showing the construction of your plant and the cost of operating such plant, together with its earnings for the period from 1886 were submitted and analyzed for the determination of your investment value.

During this period the rates charged for gas in the City of Des Moines have been frequently changed. Prior to January 1, 1896, the price of gas for all purposes was $1.80 per thousand cu. ft., gross, with a discount of 10¢ per thousand cu. ft. for illuminating gas and a discount on fuel gas to the amount of 30¢ per thousand cu. ft. on consumption exceeding 10,000 cu. ft. per month, and a discount of 55¢ per thousand cu. ft. on all consumption in excess of 10,000 cu. ft.

By City Ordinance passed February 7, 1896, the price of gas for all purposes was fixed as follows:

1896 to 1897.....	$1.40	gross	with	10¢	discount	per	m.	c. f.
1898 to 1899.....	1.35	"	"	"	"	"	"	"
1900 to 1901.....	1.30	"	"	"	"	"	"	"
1902, 1903, 1904.....	1.25	"	"	"	"	"	"	"
1905.....	1.20	"	"	"	"	"	"	"
1906 to 1910 incl.....	1.10	"	"	"	"	"	"	"

The rate of $1.10 per thousand cu. ft. with 10¢ per thousand cu. ft. discount is the rate at present in force.

From 1886, at which time the plant represented an investment of less than $300,000, to 1910, regardless of the high rates for gas which were in effect during the earlier years, the plant has not returned to the investor that amount to which he is reasonably entitled. During practically all of this time the gross earnings
806 have not bee- sufficient to pay the operating expenses, depreciation and a reasonable return on the investment. During the earlier years a large amount of money was expended in the development of the business, a practice which is still being pursued. Where a company is in possession of adequate capital expenditures of this character can be made without serious loss to the stockholders, but where, as is almost universally the case, the business is developed out of the earnings at the expense of interest and dividend payments on the investment, a deficit will result. When the company is earning less than its operating expenses it is absolutely necessary that the stockholders make further payments for development purposes. Where a small surplus is earned such amount may be used for development purposes, but it is at the expense of the stockholders' rights, unless such development expenditures are recognized in the capital. If the development cost is not met out of the earnings it must be met directly by the sale of securities, which become a liability against the plant.

The amount by which the earnings fail to meet the operating expenses and the return on the stockholders' investment creates deficits which constitute the cost of building up the business. Just as supervision, interest and insurance during construction are expenditures to be added to the construction cost of the plant, so the deficit representing the amounts by which the stockholders have failed to receive their reasonable return are costs to be added to the value of the physical plant in order to show the complete investment which has been made in the plant as a live going concern.

The cost of developing the gas business consists of expenditures for advertising, soliciting, demonstrating, the selling of gas appliances at less than cost in order to secure their introduction, free house piping, etc. Concessions in rates may also be made below the actual cost to stimulate a large and general use of gas. Development
807 expenditures may also be incurred because of the failure of the plant to earn even its current operating charges for a year or more when the stockholders must supply additional capital to keep the plant in operation. Such expenditures are additional investments upon which the stockholder is entitled to a return, as well as upon expenditures for physical plant. The cost of securing a paying business can best be computed from the analysis of the deficits over the years of development.

The investor has a right to expect reimbursement for such losses. They are legitimate costs of business. The public has a right to exclude from the valuation of utility properties upon which it is compelled to pay reasonable returns all amounts representing unneces-

reasonable rate today may have been an unreasonably low rate twenty years ago, and conversely, what was a reasonable rate twenty or thirty years ago may be an unreasonably high rate today. An analysis must be based upon conditions which existed at the time under investigation. However, the principal should hold that excessive returns should apply to reduce unavoidable losses in building up the business.

811 This method of arriving at the fair present investment value to be used as the basis of rate adjustments was suggested by the court in the case of Mo., Kas. & Tex. Ry. Co. v. Love (177 Fed. 493, 496, as follows:

"An established railroad system may be worth more than its original cost and more than the mere cost of its physical reproduction. It has passed the initial period of little or no return to its owners which, of greater or less duration, almost always follows construction and is not infrequently marked by default and bankruptcy. The inevitable errors in its building, which finite minds and hands cannot avoid have been measurably corrected, time and effect have produced a commercial adjustment between it and the country it was intended to serve, relations have been established with patrons, and sources of traffic have been opened up and made tributary. In other words, the railroad, unlike one newly constructed, is fully equipped and is doing business as a going concern. It has attained a position after many experiences common to railroad enterprises which entail loss and cost not paid from current earnings, and which correspondingly make for value."

This method has been extensively applied by the Railroad Commission of Wisconsin in the leading utility rate cases which have come before that body. The rule was stated in Hill, et al. v. Antigo Water Company (3 W. R. R. C., 623) as follows:

In other words, the plant was losing money while it developed its business. These losses or deficits had to be met by the owners and may be said to constitute the additional investment necessary to build up the business. These deficits therefore represent the cost of the business in very much the same way as that in which the cost of construction represents the cost of the physical plant. In fact, the one appears to be as legitimate and necessary a part of the cost of the enterprise as a whole as the other, or of that cost upon which a reasonable amount for interest and profits should be earned. This appears to hold at least until the deficits or the investments occasioned by them have been made good and restored to the investors, either through surplus profits or in some other form. Such treatment of the cost of building up the business is equitable as between the investors and the consumers in this case. In the long run such treatment or its equivalent to the investors is also necessary in undertakings of this character in order to obtain the capital that is required.

The same principal was adhered to in re Investigation of Menomonie Light and Traction Company (3 W. R. R. C. 778) and in the

case of City of Madison v. Madison Gas and Electric Company (4 W. R. C., 501).

The logic of this reasoning has recently been approved by the Supreme Court of the State of Oklahoma in the case of the Pioneer Telephone and Telegraph Company v. Westenhaver in the following language:

812 Few industries, if any, * * * can be made selfsustaining from the first day of their operation. The uncontradicted evidence in this case discloses that appellant's plant for the years preceding the first hearing, failed to produce revenue sufficient for operating expenses, current repair, and lay aside an amount for depreciation. During the time of development there is a loss of money actually expended and of dividends upon the property invested. How shall this be taken care of? Must it be borne by the owner of the plant? Or by the initial customers? Or shall it be treated as part of the investment or value of the plant constituting the basis upon which charges shall be made to all customers who receive the benefits from the increased service rendering power of the plant by reason of these expenditures? It seems that the last solution is the logical, just and correct one. If rates were to be charged from the beginning so as to cover these expenditures and earn a dividend from the time the plant is first operated, the rate to the first customers would be in many instances, if not in all, so exhorbitant as to be prohibitive, and would be so at the time when the plant could be of least service to them. On the other hand, the public cannot expect as a business proposition, or demand as a legal right, that this loss shall be borne by him who furnishes the service; for, investors in public service property make such investments for the return they will yield; and if the law required that a portion of the investments shall never yield any return, but shall be a total loss to the investor, capital would unwillingly be placed into such class of investments; but the law in our opinion does not so require. Private property can no more be taken in this method for public use without compensation, than by any other method. When the use of the property and the expenditures made during the non-expense paying and non-dividend paying period of the plant are treated as an element of the value of the property upon which fair returns shall be allowed, then the burden is distributed among those who receive the benefits of the expenditures and the use of the property in its enhanced value.

In order to determine the investment value of your property I have analyzed your construction records and the profit and loss accounts from 1886 to 1910, inclusive. I have prepared a table in which the plant and working capital is entered at the book cost in 1886 and showing the actual additions for each year. Assuming that 8 per cent is a reasonable return, the requirement for this purpose is shown in column 2. Column 3 shows the additions to the physical property and to the working capital and in the following column is shown the annual requirement for earnings on these additions. Since the additions are made in the period covering twelve months the interest rate is applied over only six months, or one half of the time, since very little construction was completed during the

Annual Investment on an 8% Earning Basis—Depreciation 2¾%.

						Value of plant at beginning of year.	8% on value of plant.	Additions to plant including work cap.	8% on additions to plant, inc. work. cap. for 6 mos.	Operating expenses.	Depreciation @ 2¾% on depre'ble prop.	Total.	Gross earnings.	Value of plant at close of yr.
12	Mos.	ending	June	30,	1887...	308,983	24,719	18,894	756	51,753	8,246	413,351	78,793	334,558
"	"	"	"	"	1888...	334,558	26,765	36,088	1,444	50,887	9,087	458,829	74,291	384,538
"	"	"	"	"	1889...	384,538	30,763	17,107	684	45,427	9,407	487,926	70,630	417,296
6	"	"	Dec.	31,	1889. .	417,296	16,692	10,212	204	22,848	4,809	472,061	38,449	433,612
12	"	"	"	"	1890...	433,612	34,689	38,065	1,523	52,293	10,507	570,689	82,069	488,620
"	"	"	"	"	1891...	488,620	39,090	73,902	2,956	55,956	12,388	672,912	79,508	593,404
"	"	"	"	"	1892...	593,404	47,472	11,115	445	64,154	12,543	729,133	79,556	649,577
"	"	"	"	"	1893...	649,577	51,966	10,657	426	63,595	12,685	788,906	81,803	707,103
"	"	"	"	"	1894...	707,103	56,568	5,351	214	52,712	12,680	834,628	88,855	745,773
"	"	"	"	"	1895...	745,773	59,662	14,424	577	63,976	12,930	897,342	95,414	801,487
"	"	"	"	"	1896...	801,487	64,119	48,089	1,924	66,673	14,097	996,389	97,636	898,753
"	"	"	"	"	1897...	898,753	71,900	66,641	2,666	77,881	15,091	1,132,932	109,901	1,023,031
"	"	"	"	"	1898...	1,023,031	82,842	36,645	1,466	80,460	15,948	1,240,392	118,117	1,122,275
"	"	"	"	"	1899...	1,122,275	89,780	52,078	2,083	106,934	17,228	1,390,378	138,521	1,251,857
"	"	"	"	"	1900...	1,251,857	100,149	40,003	1,600	120,118	18,177	1,531,904	173,158	1,358,746
"	"	"	"	"	1901...	1,358,746	108,700	117,708	4,708	135,211	21,249	1,746,322	197,623	1,548,699
"	"	"	"	"	1902...	1,548,699	123,895	61,756	2,470	166,883	22,796	1,926,499	242,610	1,683,889
"	"	"	"	"	1903...	1,683,889	134,711	91,031	3,641	204,314	25,148	2,142,734	289,486	1,853,248
"	"	"	"	"	1904...	1,853,248	148,260	51,432	2,057	212,105	26,411	2,293,513	337,205	1,956,308
"	"	"	"	"	1905...	1,956,308	156,505	121,066	4,843	224,349	29,589	2,492,660	368,840	2,123,820
2	"	"	Feb.	28,	1906...	2,123,820	28,318	8,175	55	43,791	4,964	2,209,123	59,168	2,149,955
12	"	"	"	"	1907...	2,149,955	171,996	424,414	16,977	255,968	41,309	3,060,619	391,006	2,669,613
"	"	"	"	"	1908...	2,669,613	213,569	116,139	4,646	282,802	44,352	3,331,121	446,541	2,884,580
"	"	"	"	"	1909...	2,884,580	230,766	59,418	2,377	277,746	45,835	3,500,722	471,931	3,028,791
10	"	"	Dec.	31,	1909...	3,028,791	201,920	106,499	3,550	252,915	40,520	3,634,195	409,412	3,224,783
12	"	"	"	"	1910...	3,224,783	257,926	130,471	5,219	353,600	51,917	4,023,916	539,330	3,484,586

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816 The above tables show that the deficits from operation when carried forward at a reasonable interest rate have not been reduced by surplus earnings. In fact, the tables show that your company has failed to earn its operating expenses, depreciation and 8 per cent on the investment. Your records are complete and admit of detailed analysis. It is believed that where the records covering the early transactions are available, the investment value should be determined in this manner rather than to base it upon the experience of some other plant in some other city under entirely different conditions. When the early records are not available such investment must be determined from other sources, more particularly on the cost of reproduction basis. This method was not necessary here, so that the tables show actual costs and investments in Des Moines unaffected by conditions making for higher or lower values in other cities.

It is obviously impossible to say with absolute accuracy what the investment valuation amounts to for any plant. The tables are open to argument on the basis that the assumed depreciation rates used are too high or too low. Any reasonable conclusion must be that they are low rather than high. For the purpose of this table the rates used are conservative, especially when it is known that much property has been replaced because of the progress in the art. The tables have been based upon the most complete data available and are constructed along the lines which I have followed in my work with the Wisconsin Railroad Commission on rate adjustment proceedings. In any event, because of the many conditions, the final figure must be analyzed by those best equipped by experience and it would appear from all the facts which can be gathered from your records that an investment valuation of approximately $3,450,000 is correct. This amount, used as the valuation on which the rate of return should be computed, is consistent with sound
817 economics, and is just to the public for whose ultimate benefit the business was conducted through the period of unavoidable losses, and it is just to the investor in that it secures to him a return upon his investment honestly made for the development of the business.

Respectfully submitted,

WILLIAM J. HAGENAH.

(Here follow pasters, marked pages 818-824.)

825 COMPLAINANT'S EXHIBIT #31.

8/8/11. F. C. W.

Des Moines Gas Company.

Working Capital—December 31, 1910.

Materials and Supplies:		
Storeroom	40,251.89	
Tar	1,235.34	
Gas Stock	811.44	
Boiler Fuel Stock	737.95	
Generator Fuel Stock	10,449.98	
Gas Coal Stock	1,222.16	
Oil (W. G.) Stock	9,301.80	
Purification Supplies Stock	4,114.30	
Stable	5,805.40	
Gas Arc Lamps	3,481.20	
		77,410.46
Accounts Receivable:		
Gas Sales	34,092.34	
Sundry Sales	17,851.80	
City of Des Moines	126.40	
Sundry Debtors	1,556.92	
		53,627.46
Cash		49,434.15
Advance Insurance		905.20
Total		181,377.27
Less Accounts Payable		39,607.29
Total		$141,769.98

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

(Here follow pasters, marked pages 826-828.)

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829 COMPLAINANT'S EX. 35.

J. P. B.

Des Moines Gas Company.

Statement of Active Meters in Service.

December 31, 1886, to December 31, 1910.

December 31st: Year.	Meters. Regular.	Prepayment.	Total.	Increase	% of increase.
1886	.....	.....	1,261	.....	.....
1887	.....	.....	1,304	43	3.41
1888	.....	.....	1,321	17	1.30
1889	.....	.....	1,338	17	1.29
1890	.....	.....	1,538	200	14.95
1891	.....	.....	1,720	182	11.83
1892	.....	.....	1,874	154	8.95
1893	.....	.....	2,047	173	9.23
1894	.....	.....	2,225	178	8.69
1895	.....	.....	2,488	263	11.82
1896	.....	.....	2,868	380	15.27
1897	.....	.....	3,479	611	21.30
1898	.....	.....	4,127	648	18.62
1899	.....	.....	5,308	1,181	28.61
1900	.....	.....	6,425	1,117	21.04
1901	.....	.....	7,682	1,257	19.56
1902	.....	.....	8,898	1,216	15.83
1903	.....	.....	10,395	1,497	16.82
1904	.....	.....	11,436	1,041	10.01
1905	8,728	4,212	12,940	1,504	13.15
1906	8,864	5,776	14,640	1,700	13.14
1907	8,758	7,315	16,073	1,433	9.79
1908	8,654	8,446	17,100	1,027	6.39
1909	9,396	9,045	18,439	1,339	7.83
1910	9,246	10,490	19,736	1,297	7.03

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk, by Louis J. Adelman, Deputy.

(Here follows paster, marked page 830.)

831–857 COMPLAINANT'S EX. 69.

J. P. B.

The United Gas Improvement Company.

Synopsis of Transactions.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Feb. 28, 1907:

Credits.

Expenses, &c., charged by U. G. I. Co.		2,365.1
Repairs, Stores & Auths., &c.....		7,527.0
Interest		453.3
		10,345.4
Cash to meet exceptional a/cs (C. I. Pipe)..		44,000.0
		54,345.4

Debits.

Cash	9,141.14	
Bills payable	44,635.47	
		53,776.6
		568.8

Feb. 29, 1908:

Credits.

Expenses, &c., charged by U. G. I. Co.		1,729.0
Repairs, Stores, & Auths., &c.		667.3
		2,965.2
Cash		3,138.0
Treasurer		8,985.2
		15,088.5

Debits.

Bills Payable	15,000.0
	88.5

Feb. 28, 1909:

Credits.

Expenses, &c., charged by U. G. I. Co.		1,944.7
Repairs, Stores, Auths., &c.....		622.6
		2,656.0

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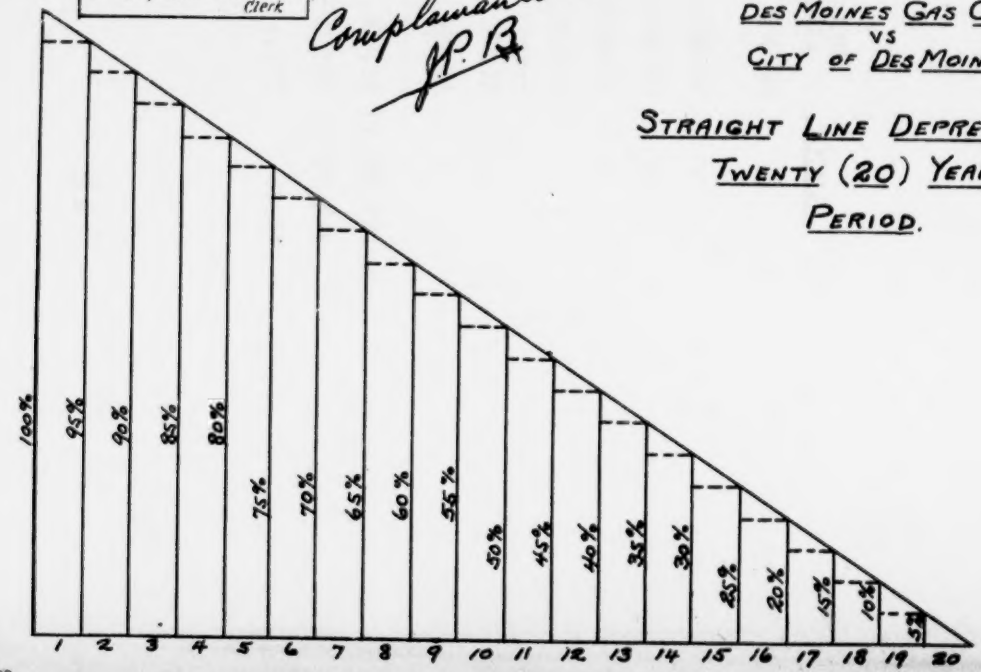
APR 5 1912
Wm. C. McArthur
Clerk

Complainants Ex 64
J.P.B.

EXHIBIT 64

DES MOINES GAS CO
VS
CITY OF DES MOINES

STRAIGHT LINE DEPRECIATION
TWENTY (20) YEAR
PERIOD.



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Debits.

ash	1,885.63	.....
ccounts Payable	57.20	.....
		1,942.83
		713.18

Dec. 31, 1909:

Credits.

xpenses, &c., charged by U. G. I. Co.	.....	3,344.83
epairs, Stores, Auths., &c.	.....	4,147.39
		8,205.40

Credits.

ash	6,112.77	.....
ccou-ts Payable	33.80	.....
		6,146.57
(Forward)	.....	2,058.83
8 & 859 (Forward)	.....	2,058.83

Dec. 31, 1910:

Credits.

xpenses, &c., charged by U. G. I. Co.	.....	2,622.41
epairs, Stores, Auths., &c.	.....	5,651.19
		10,332.43
reasurer (to meet int. on Pref. Stock Contracts)	.....	19,000.00
		29,332.43

Debits.

ash	5,879.01	.....
ccounts Payable	19,000.00	.....
undry Sales	50.80	.....
		24,929.81
		4,402.62

(Here insert lithographs, pp. 845-851, 854-856.)

860 COMPLAINANT'S EX. #72.

10/4/11.

Complainant's Exhibit No. 72.

10/4/11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

FEB. 11, 1911

Prof. Wm. D. Marks, Park Row Building, New York City.

MY DEAR PROFESSOR MARKS: I have your letter of Feb. 9th closing bill for service and expenses. I will take the matter up w the council within a few days. We shall have to allow the bill then provide some way to pay for it later as I told you, probably making a levy to cover this and some other unexpected charges.

I suppose you have mailed me a statement advising the pro action as to regulation and rates in our gas situation, but for s reason it has miscarried and I have not received it. I very m want this statement from you as a basis for our proposed action. called the company up the day after you left and signified my p able course whereupon they asked for a written proposition from This they still have under consideration. Why it is requiring much deliberation I do not know but at any rate they are more i mood to treat than they were before you came.

If you will also give me what you found as to the power hous will be of great value to me in our street railway negotiations.

I want to assure you that I appreciate very much your assist in our gas controversy so far and that unless we succeed in worl out a settlement we shall want you to return for a fuller invest tion and testimony later.

Very truly yours, —— ——, *Mayo*

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861-869 COMPLAINANT'S EX. #73.

10/4/11.

Complainant's Exhibit No. 73.

10/4/11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

THE CITY OF DES MOINES, IOWA,
Feb. 9th, 1911.

To Wm. D. Marks, Dr.

For professional service and opinions in the matter of a fair and reasonable price for gas, February 1, 2, 3, 4, 5, 6, 7—7 days @ $50.00 per day		$350.00
Traveling expenses:		
February 1st	$45.60	
" 2nd	4.90	
" 3rd	2.65	
" 4th	32.00	
" 5th	21.10	
" 6th	9.10	
" 7th	6.11	
		121.46
		$471.46

HORACE SUSONG,
City Clerk.

(Here follow pasters, marked pages 870-880.)

881 COMPLAINANT'S EX. 89.

J. P. B.

Cost per Foot of Water Mains Laid in Buffalo, 1902–1906, Inclusive.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Size of pipe.	Feet of pipe laid.	Cost of pipe.	Specials.	Lead, coke, etc.	Carting.	Misc.	Labor.	Total.
4".....	7,744	$.266	$.064	$.057	$.003	$.004	$.373	$.767
6".....	70,806	.417	.074	.073	.004	.002	.421	.991
8".....	325	.618	.283	.118	....	.002	.506	1.527
10".....	2,097	.772	.101	.098	....	....	.483	1.454

Average cost of trenching and backfilling for above five year period was 57¢ per cu. yd.

882 COMPLAINANT'S EX. 90. 10/14/11.

Liability Insurance on Basis of 1910 *Pay Rolls and Sales of* 532,000,000 *Cubic Feet.*

	Pay rolls.		Premium rate.	Total annual premium.
I. Operating Works and Distribution System.	$62,625.48	@	$9.90	$6,199.92
II. Clerical Force.....	50,490.64	@	1.16	585.69
III. Vehicles:				
4 Motor Cycles.....	.....	@	42.00	168.00
2 Tri-Cars.....	.....	@	84.00	168.00
18 Teams.....	.....	@	15.00	270.00
1 Automobile.....	.....	@	56.25	128.75
1 Automobile.....	.....	@	72.50	
IV. Elevators:				
4 Factory Elevators.....	.....	@	12.50	50.00
				$7,570.36
V. Property Damage Outside of Plant..... Distribution Pay Roll Only 1910.....	37,943.91			

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

883 I—Operating works and distribution system:

Maximum liability for injuries to one person.	Maximum liability for any one accident.	Rate per $100.00 of pay roll. Employees' liability.	Public liability.	Total rate.	Page, liability manual.
$5,000.	$10,000.	$.75	$4.50	$5.25	90
7,500	35,000.	Add 60% to above.		3.15	11

a Workman's Collective Insurance based on limit of year's wages not to exceed $1,500.
b Loss of two limbs, or two eyes same as death limit.
c Loss of one limb, one-third death limit.
d Loss of one eye, one-eighth death limit.
e Temporary total disability, one-half wages for twenty-six weeks, limit $750. 1.50 1.50 40

$9.90

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884 II—Clerical force:

Maximum liability one person.	Maximum liability one accident.	Rate per $100.00 of pay roll. Employees liability.	Public liability.	Total rate.	Page, liability manual.
$5,000.	$10,000.	$.10		$.10	10
7,500.	35,000.	Add 60% to above.		.06	11
Workman's Collective Insurance the same as "I."		1.00		1.00	40
				$1.16	

885 III—Vehicles:

Annual Premium.

Maximum liability. One person.	Maximum liability. One accident.	Personal liability.	Property liability.	Total.	Page, automobile manual.
$5,000	$10,000				
4 Motor Cycles—Schedule III..		$30.00	$12.00	$42.00	25
2 Tri-Cars—Schedule III.....		60.00	24.00	84.00	23
9 Teams—(Outside of Chicago).		12.50	20% added	15.00	31-35 Liab. Manual
9 Tool Carts—(Same as teams—See letter of 9-16-11—Witmer & Kauffman).					
1 Automobile—35 H.P.—Schedule III.....		58.00	14.50	72.50	17 Auto. Manual.
1 Automobile—36 H.P.—Schedule III.....		45.00	11.25	56.25	17 " "

Property Liability limited to $1,000 on all vehicles—

(For limit of $7,500 and $35,000 on teams add 60%—
" " " $10,000 and $30,000 on Automobiles add 55%—
" " " $10,000 and $30,000 on Motor Cycles and Tri-Car Motor Cycles add 55%—See Page 11 Automobile Manual.)

NOTE.—Schedule III is for operating vehicles other than in the cities of Chicago, New York, Boston and Philadelphia, which takes a higher rate.

886 IV—Elevators:

Maximum liability, one person.	Maximum liability, one accident.	Annual premium, personal liability only.	Page, liability manual.
$5,000	$10,000	.....	..
Factory elevators.....		$12.50	18

(For limits of $7,500 and $35,000, add 60%.)

887 CONSTRUCTION.

Liability Insurance on Basis of 1910 *Pay Rolls and Sales of* 532,000,000 *Cubic Feet.*

	Pay roll.	Premium rate.	Total premium.	Page, liability manual.
Laying mains and services...	$28,736.43	$14.50	$4,166.78	57
Additions, alterations, and repairs to works.....	5,866.32	7.30	428.24	48
			$4,595.02	

(Excluding structural steel, sewers, tunneling, shafts, and subways.)

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888 *Laying Mains and Services.*

Maximum liability for injuries to one person.	Maximum liability for any one accident.	Rate per $100.00 of pay roll. Employees' liability.	Public liability.	Total rate.	Page, liability manual.
$5,000	$10,000	$3.00	$4.50	$7.50	57
7,500	35,000	Add 60% to above.		4.50	11
Workman's collective insurance.....		2.50	....	2.50	40
				$14.50	

889 & 890 *Additions, Alterations, and Repairs to Works.*

(Excluding structural steel, sewers, tunnelling, shafts, or subways.)

Maximum liability for injuries to one person.	Maximum liability for any one accident.	Rate per $100.00 of pay roll. Employees' liability.	Public liability.	Total rate.	Page, liability manual.
$5,000	$10,000	$2.50	$ .50	$3.00	48
7,500	35,000	Add 60% to above		1.80	11
Workman's collective insurance..	....	2.50		2.50	40
				$7.30	

(Here follows table, p. 890.)

891 COMPLAINANT'S EXHIBIT No. 92.

11-4-11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Capital City Gas Light Company
to
Des Moines Gas Company.

Warranty Deed.

Know all Men by These Presents, That Capital City Gas Light Company of Des Moines, Iowa, a corporation organized under the laws of the State of Iowa, in consideration of the sum of one dollar ($1) and other valuable considerations to it paid by Des Moines Gas Company, of Des Moines, Iowa, a corporation organized under the laws of the State of Iowa, does hereby Sell and Convey unto the said Des Moines Gas Company, its successors and assigns, all its right, title and interest in and to the following described real estate situate in the County of Polk, and State of Iowa, towit:

Lots numbered three (3), four (4), five (5), six (6), seven (7), eight (8), nine (9), and ten (10) in Block "B"; also lots numbered one (1), two (2), three (3), four (4), five (5), six (6), seven (7), eight (8), nine (9), and ten (10) in Block "C"; also lots numbered three (3), four (4), five (5), six (6) and seven (7), in Block "T"

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all in Scott & Dean's Addition to the Town of Fort Des Moines, now included in the corporate limits of the City of Des Moines.

Also, the complete system of gas works of the Grantor, and everything connected therewith located upon the real estate aforesaid, together with all mains and pipes of said Grantor, and all appurtenances thereunto belonging, situate in the streets, alleys and other public or private grounds and places in said City of Des Moines, Polk County, Iowa, and in said Polk County, Iowa, outside the limits of said city. The intent hereof being to, and said Grantor does hereby bargain, sell, convey and confirm unto the said Grantee, its successors and assigns, the entire system of gas works of said Grantor, and all real estate, which it may own or be in any manner interested or entitled to in whole or in part, whether herein particularly
892 described or otherwise, situate in said City of Des Moines, and in said County of Polk, State of Iowa.

And said Grantor hereby covenants with the said Grantee that it holds said premises by good and perfect title; that it has good right and lawful authority to sell and convey the same, that they are free and clear from all incumbrances whatsoever, excepting a mortgage dated January 1, 1897, given to the Union Trust Company, of New York, as Trustee to secure an issue of four hundred thousand dollars ($400,000), at par, of bonds.

And said Grantor covenants to warrant and defend the said premises against the lawful claims of all persons whomsoever, excepting said mortgage aforesaid.

In witness whereof, the said Capital City Gas Light Company has hereunto caused its name to be signed by its President and its corporate seal to be hereunto affixed by its Assistant Secretary, by virtue of a resolution of all the stockholders of said corporation, and by virtue of an order of its Board of Directors heretofore duly adopted and passed this first day of March, A. D. 1906.

CAPITAL CITY GAS LIGHT COMPANY,
By S. T. BODINE, *President.*

Attest:
[CORPORATE SEAL.] JAMES BALL,
Assistant Secretary.

STATE OF PENNSYLVANIA,
County of Philadelphia, ss:

On the first day of March, A. D. 1906, before me Edwin J. Mole, a notary public in and for said county, personally came Samuel T. Bodine and James Ball, to me personally known to be the President and Assistant Secretary respectively of the Capital City Gas Light Company, and said Samuel T. Bodine, being by me first duly sworn, did say that he is the President of the Capital City Gas Light Company, and that the seal affixed to the foregoing instrument
893 is the corporate seal of said corporation; and that said instrument was signed and sealed in behalf of said corporation by authority of its stockholders and Board of Directors, and the said Samuel T. Bodine, President, and James Ball, Assistant Secre-

tary, acknowledged said instrument to be the voluntary act and deed of said corporation.

In Witness Whereof, I have hereunto subscribed my name and affixed my notarial seal on the day and date above written.

[NOTARIAL SEAL.] EDWIN J. MOLE,
Notary Public in and for the County of Philadelphia,
State of Pennsylvania.

My Commission expires January 19, 1907.

Filed for Record March 6, A. D. 1906, at 2:52 o'clock P. M.

MRS. FRANK W. DODSON, *Recorder,*
By GEO. B. HEPBURN, *Deputy.*

STATE OF IOWA,
Polk County, ss:

I, Mrs. Frank W. Dodson, Recorder of said County, hereby certify that the foregoing writing is a copy from the original record in my office, and of the whole thereof, and recorded in Book 475, page 457.

Dated at Des Moines, Iowa, in said County, this 14th day of November, A. D. 1911.

(Signed) MRS. FRANK W. DODSON, *Recorder.*

(Here follows pasters, marked pages 894-898.)

CHARTS

TOO LARGE FOR FILMING

899 E. O. Kretsinger, Attorney at Law, 408 Court Street.

BEATRICE, NEBRASKA, *February 3rd,* 1911.

Mr. Frank E. Lenhart, City Council Committee, Beatrice, Nebraska.

DEAR SIR: In accord with your acceptance on the 25th ultimo of my proposal of the 13th ultimo, I have made an examination of the property of the Gage County Gas Light & Power Company in your City, with a view of determining a fair rate for gas in your City, and beg to submit the following as my report:

The replacement values of each of the items entering into the physical equipment of the above Company, I find to be as follows:

Real estate:		
6 lots	$900.00	
Value of lease on 80′ x 300′	1,600.00	
		$2,500.00
Buildings:		
Laboratory	$1,210.00	
Retort House	3,555.00	
Condensing Room	905.00	
Purifying House	1,373.00	
Coal Shed	1,459.00	
		$8,502.00
Works Equipment:		
Bar Photometer	$300.00	
Balance	150.00	
Laboratory benches and hood	200.00	
" supplies	600.00	
40 H. P. Boiler and stack	560.00	
½ depth bench 8's	2,400.00	
½ " " arch for 8's	1,800.00	
Overhead steel tank (25 bbls.)	70.00	
3′6″ Water Gas Set complete	4,455.00	
Westinghouse Engine and hoist	225.00	
8″ K. M. Exhauster and B. P.	756.00	
3′0″ x 16′0″ Condenser and B. P.	594.00	
4′ x 4′ x 3′0″ Washer and B. P.	405.00	
3′0″ x 16′0″ Scrubber and B. P.	464.00	
54″ x 54″ Station Meter	774.00	
2 8′ x 10′ x 5′ C. I. Boxes on beams	2,520.00	
3 ½″ x 7″ Engine and Oxide Belt	144.00	
50 M Holder in concrete pit	11,580.00	
900 Brick tar well 7,000 gals	$360.00	
14′ Diam. x 10′ Steel oil tank	150.00	
8,000 Gal. steel oil tank	630.00	
6′ Diam. x 10′ brick tar well	270.00	
5″ x 3½″ x 3½″ Deane pump	120.00	
3′0″ x 16′0″ Sec. Cond. & B. P.	580.00	
4 Extra mouthpieces	160.00	

Main Gas Piping	180.00	
Sewer Piping	89.00	
Misc. Oil, steam and water piping	280.00	
1,000# scale	180.00	
Wall drill press	54.00	
Fire brick and shapes	200.00	
Band saw	150.00	
		$31,400.00

Distribution System.

Mains:

2" W. I. under pavement	1,425'	923.00	
2" " " dirt	44,700'	9,665.00	
3" " " pavement	1,200'	923.00	
3" " " dirt	23,750'	7,567.00	
4" C. I " pavement	3,535'	4,350.00	
4" " " dirt	3,450'	1,959.00	
6" " " pavement	1,150'	1,699.00	
6" " " dirt	1,175'	916.00	
8" " " pavement	1,925'	3,339.00	
10" " " "	825'	1,666.00	
10" " " dirt	700'	867.00	
	83,825'		33,874.00

(1¼") (50') Services:

Under pavement (assumed 30%) = 255 at $24.55		$5,634.00	
Under dirt (assumed 70%) = 595 at $10.15		5,436.00	
	850		11,070.00
Drips—75 at $7.50			563.00

Meters:

89	3 lt. P. P.	at	$8.37	745.00	
13	5 " "	at	9.63	125.00	
985	5 " Ord.	at	7.83	7,713.00	
1	10 " "	at	11.02	11.00	
3	20 " "	at	15.42	46.00	
6	45 " "	at	31.64	190.00	
1,097					$8,830.00
901	Arc lamps in use—170				$2,040.00

Summary Distribution System..	$33,874.00	
	11,070.00	
	563.00	
	8,830.00	
	2,040.00	
		56,377.00

Office Equipment:		
Partitions, table, etc	300.00	
Glassware cabinet	70.00	
Junkers calorimeter	150.00	
Shelving	120.00	
5′ Meter Prover	150.00	
Bench and Misc. tools	300.00	
Steel safe and cabinet	300.00	
Typewriter and desk	125.00	
Burroughs adding machine	200.00	
Standing desk	50.00	
Table	10.00	
Letter press and cabinet	30.00	
Chairs and miscellaneous	75.00	
Double desk	40.00	
		$1,920.00

To the replacement value of all of the foregoing, with the exception of the Real Estate and the lease, must be added 15% to cover the following items:

Engineering	5%
Interest during construction	5%
Legal and organization expense	3%
Casualty liability	2%
Total	15%

There must also be added certain amounts for working capital, represented by stock of gas manufacturing material, gas consuming appliances, accounts outstanding and a margin allowing of the advantageous purchase of materials.

The total amount of working capital necessary, I find to be as follows:

Stock:			
25 Crane heaters	300.00		
32 Gas Ranges	540.00		
6 Portables	44.00		
Mantles, glassware, etc	320.00		
8,000 Gals. Oil	260.00		
902			
150 tons coke	$1,077.00		
10 tons steam coal	29.00		
7,000 gals. Tar	105.00		
800 bu. oxide	200.00		
	$2,875.00		
Two months' Gas Sales—say	4,000.00		
Margin for advantageous purchases and contingencies—say	2,125.00		
			10,000.00

There must also be added to the physical equipment certain amounts which make up the difference between the value of the physical equipment alone and the value of that same equipment when actually connected up with the consumers' appliances and in actual use as a going concern.

This difference is known as Going Value and is made up as follows:

1,097 meters at $22.00	$24,134.00	
Estimated beginning losses for three years	9,000.00	
		$33,134.00

You will notice that there is no allowance whatever for good will nor franchise value.

I therefore find the total present replacement value of the property and business of the Gage County Gas, Light & Power Company to be as follows:

Real Estate		2,500.00
Buildings	8,502.00	
Works Equipment	31,400.00	
Distribution System	56,377.00	
Office Equipment	1,920.00	
	$98,199.00	
Engineering, etc., at 15%	14,730.00	
		112,929.00
Going Value		33,134.00
Working Capital		10,000.00
		158,563.00

I have copies of the income and operating expense as submitted by the Gas Company, and as examined and approved by your Committee and I have used these figures with, however, the following exceptions:

903 There should be no allowance made under operating expense for either advertising or soliciting, as these items represent investments in the getting of business and are properly charged only into capital.

The current repairs, whether to plant or to distribution system, are an operative charge and I have left these items as submitted, but have added an allowance for depreciation of the entire equipment, which is, of course, absolutely necessary in protecting the capital.

It has been general to neglect this item, but the close study given the matter in the last few years by the Public Service Commissions of the several states having them, has made it clear that the actual cost of gas sold cannot be arrived at without this allowance, nor can a fair rate be ascertained until this allowance has been charged off as an operating expense.

The figures submitted by the Gas Company cover a period of eleven months, from January 1st to December 1st, 1910.

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Assuming the results for one year will be twelve times the average monthly results shown by the records, I find the present operating expenses per year to be as follows:

Cost of Manufacture:		
Labor at works	$2,413.00	
" " " Repairs	27.60	
Material " "	76.80	
City Water	130.08	
Expense at Works	508.44	
Purifying Material Works	43.32	
Boiler Fuel "	1,034.04	
Generator Fuel " Coke	4,767.96	
" " " Oil	3,222.48	
		$12,224.04
Cost of Distribution:		
Registering and collecting	555.48	
Complaints (Gratuitous Work)	747.60	
Setting and removing meters	117.60	
Street loss at 50.9¢ per M	825.36	
		2,246.04
Cost and Management and General Expense:		
General office expense	721.08	
Manager's salary	1,161.84	
Incidental expense	46.20	
Clerical salaries	532.20	
Rent, taxes and insurance	2,857.20	
Legal expense	15.36	
Maintenance of Mains	84.60	
" " Services	123.48	
Depreciation at 2½% on $146,065.00	4,864.00	
		10,405.96
Total		$24,876.04

904 To the above operating costs must, of course, be added a fair return on the value of the property represented.

If we assume that 8% is a fair return, we must add to the foregoing expenses $12,685.00 which together with the operating expenses will make a total income of $37,561.04 per year necessary.

Deducting from this total income the amount which should be received from street lamps, ($1,362.24) we have $36,198.80 as the total income to be collected from consumers.

With an annual meter consumption of 21,006,900 cu. ft. as shown by the records of the Company, the annual income of $36,198.80 will mean a net income of $1.72⅓ per thousand cu. ft. of gas sold private consumers.

A flat rate of $1.72⅓, however, is not fair to all the consumers. Quite regardless of consumption there are certain fixed elements of cost entering into the supply of gas to a given consumer.

CLOSE IN CENTER

The Company must stand ready at all times to supply the maximum demand of each consumer for such time as the consumer may elect and without notice or warning.

In other words, a consumer using only 1,000 ft. of gas per year may elect to use that 1,000 ft. within a period of two or three days.

It is also a fact that a great majority of consumers using less than $1.00 worth of gas per month do represent an actual loss to the Company.

It is therefore proper that in a schedule of rates there should be included first a fixed amount per month which should be paid by every consumer regardless of amount of gas used, and determined by the maximum capacity which he compels the Gas Company to maintain for his particular use.

An average of $.50 per meter per month to cover this readiness to serve charge, is altogether fair to the Gas Company and to the consumer.

905 I would therefore deduct from the foregoing total of $36,198.80 a service charge of $.50 per meter per month or $6,582.00 per year, which leaves $29,616.80 to be derived from the sale of gas itself.

With sales of 21,006,900 cu. ft. of gas per year, this means that the Gas Company must average a net return of $1.41 per thousand cu. ft.

It is therefore my opinion that a fair schedule to cover the sale of gas to the City of Beatrice, Nebraska, under the conditions shown by your Committee is as follows:

1. A readiness to serve charge of $.50 per meter per month regardless of amount of gas consumed.

2. A graduated scale of prices for gas as follows:

Less than	2,000 cu. ft. per month	$1.50	per M.
2,000 to	3,000 cu. ft. " "	1.45	" "
3,000 to	4,000 " " " "	1.40	" "
4,000 to	5,000 " " " "	1.35	" "
5,000 to	10,000 " " " "	1.30	" "
Above	10,000 " " " "	1.25	" "

From each of the above prices per thousand cubic feet there should be allowed a discount of 10¢ per thousand cubic feet for payment within 10 days after rendering the bill.

3. It has become the custom of the Public Service Commission to allow an additional charge of $1.00 for the re-setting of a meter for a given consumer in a given building within a period of one year from the time of removal and this is an eminently fair charge and should be allowed.

Respectfully submitted,

(Signed) HENRY I. LEA.

DEFENDANT'S EXHIBIT 8. 8/1/11. F. C. W.
Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.
W. A. Baehr, p. 31, No. Meters per Year.

Des Moines Valuation—Notes on Depreciation.

907 *Des Moines Valuation, Showing Material and Labor, Contingencies and Insurance, Engineering and Supervision, Preliminary Expense, Interest, Taxes, and Working Capital.*

Item.				
1	Real Estate	$200,000.00		
2	Manufacturing Plant	480,114.56		
3	Distribution System less Meters	1,301,265.89		
4	Meters	166,074.38		
			$2,147,454.83	
5	Contingencies, Insurance, etc.: 10% on Items 2 and 3, $1,781,380.45	178,138.05		
6	Engineering and Supervision, etc.: 5% on Items 1, 2, 3, 4 and 5, $2,325,592.88	116,279.64		
			294,417.69	
7	Preliminary Expense: 2% on Items 1, 2, 3, 4, 5 and 6, $2,441,872.52			$2,441,872.52
				48,837.45
				2,490,709.97
8	Interest During Construction: Rate 6% per year for ½ time, except for Real Estate Preliminary:			
	On Item 1	200,000.00 × .12 =	24,000.00	
	" " 2	480,114.56 × .06 =	28,806.87	
	" " 3	1,301,265.89 × .09 =	117,113.93	
	" " 4	166,074.38 × .03 =	4,982.23	

" " 5	178,138.05 × .06 =	10,688.28		
" " 6	116,279.64 × .06 =	6,976.78		
" " 7	48,837.45 × .18 =	8,790.74		
			201,358.83	
Carried forward				$2,692,068.80

Brought forward				$2,692,068.80
Item.				
9 Taxes:				
Prevailing rate 2¼%.				
On Item 1 @ 2 yr.	$200,000.00 ×	$9,000.00		
" " 2 @ 1 "	480,114.56 ×	10,802.58		
" " 3 @ 1½ "				
less paving and taking up paving ($1,301,265.89—266,237.51)	1,035,028.38 ×	34,932.21		
On Item 4 @ ½ yr.	166,074.38 ×	1,868.34		
" " 5 @ 1 "	178,138.05 ×	4,008.11		
" " 6 @ 1 "	116,279.64 ×	2,616.29		
			$63,227.53	
				2,755,296.33
10 Working Capital:				
Cash on hand		20,000.00		
1½ months' bills outstanding		60,000.00		
Inventory stock appliance		50,000.00		
Mfg. Materials on hand		25,000.00		
			155,000.00	
				$2,910,296.33

909 *Item* # 5.

Contingencies, Omissions and Insurance.

In constructing a property similar to that of the Des Moines Gas Company's plant, it is practically impossible to make such complete plans as will foresee and include every construction detail. The general location of the structures and the main features can usually all be included, but many changes will be necessary that appear only after the construction of the plant has progressed. Those changes occur through unforeseen conditions encountered, such as an unusual character of soil, necessitating extra expenditures for foundations, shoring and draining of excavations; thereby rendering much temporary work necessary. Labor troubles, panics and combinations in restraint of trade are additional emergencies that must be provided for. Damages by floods and acts of God account for other unusual expenditures that must always be included in engineering estimates, especially so when the construction of the property is prolonged over a period of time that would be necessary to produce the gas manufacturing plant and distribution system of the Des Moines Gas Company.

During the construction of any large undertaking the constructor runs a liability risk that he must always guard against to protect himself from loss due to personal injury of employees or non-employees. Such losses must either be insured against or settled by the constructor, and he must protect himself by taking out insurance and charging it into the cost of construction, or else he
910 himself must assume these losses, which likewise must be borne in the cost of construction.

The construction of a gas main distributive system, whereby practically every street in the city is opened throughout its entire length for the purpose of laying mains, and a cross ditch before every house, for services, makes this risk an unusually heavy one.

The cost of insurance against fire damage to all parts of the plant during construction must be included also in the cost of construction.

In general contracting work, it has been customary for contractors to estimate the cost of all labor and material, and then place on this a figure for contingencies and omissions and insurance that runs from 10 to 20 per cent., independent of contractor's profit and superintendence. In my estimate of the construction value of this property I would add 10 per cent. over the bare cost of material and labor to cover this figure of contingency and omissions. This 10% is based on the total of Items #2 and #3 and will be found recorded as Item #5.

911 *Item* # 6.

Engineering and Superintendence.

A gas plant such as the property now owned by the Des Moines Gas Company represents a piece of engineering and construction of

the most intricate nature and the general design of such a property demands the attention of the best equipped and experienced engineers, and it is only through the employment of such experience and skill that has developed this complete works and distribution system. The plant is compact and designed so as to produce a good quality of gas of the most uniform product, and the main system is so laid out over the city that the pressure delivered to the nearest as well as the most distant consumer is eminently satisfactory, and delivers the gas under such conditions that it can be used to the best advantage for all purposes.

The costs arising under this head cover the location and surveying of the real estate, the preparation of detailed plans, and specifications; the setting of lines and grades; the inspection of the probable gas consumption in the city, and designing and laying out of the gas main distribution system; supervision of work done under contract, final testing of plant and placing in successful operation.

To cover such engineering costs, I have adopted the usual figure of 5%, assumed by many engineers and architects. This figure has been allowed by the Railroad Commission of Wisconsin in its Order No. U–58, Regulating the Rate of the Madison Gas & Electric Company, decided March 8, 1910, on page 541, where it
912 allowed 5% of the total physical value of the plant for engineering.

This 5% is based on Items Nos. 1, 2, 3, 4, 5 and is enumerated on Item #6.

913 *Item* # 7.

Preliminary and Legal Expenditures.

The preliminary expense should include inspection of the property, legal advice, organization expense, options on real estate, acquisition of franchise, and all additional costs that are necessary to develop the general plans before the actual construction of the property begins; and is a figure that is variously estimated at from one to five per cent., dependent upon the character of the undertaking and the research necessary to determine whether the venture will be a success. Apparently there is no method of determining the cost of such organization except by the percentage basis, and with a properly constructed plant it is only fair to assume a figure that should be at least two per cent. of the value of the property, as represented by Items Nos. 1, 2, 3, 4, 5 and 6.

This item of preliminary expense will be found enumerated as Item #7.

914 *Item* # 8.

Interest During Construction.

The interest to be allowed during the construction of the manufacturing plant and the distribution system of the Des Moines Gas

Company consists of such amount as would pay for the use of the money during the time that it is employed in the development of the property, before the plant itself is on an operating basis, figured at 6%. The plant of the Des Moines Company, if constructed under the best conditions, would require to complete the manufacturing plant at least two years. The mains, services, meters and paving would occupy a time of at least three years, as such work cannot be undertaken, practically, more than nine months of the year. Therefore the interest on the real estate would be 6% for two years, or 12% total. Preliminary and legal expense, being an expenditure occuring with the starting of the organization, should be covered by an interest charge of 6% for the three years, or 18% of the total.

On the manufacturing plant, which I have assumed would take two years to construct, the money employed in its construction would be obtained as needed, and the interest charges would thus cover a period of half the time for the total amount or one year at 6%, while for the construction of mains, services and meters, which would take three years to install, the same conditions should be allowed, and the interest charges would be for one and one-half years at 6%, or 9% on the total. Interest on meters at one-half a year, or 3%.

915 Interest should be charged on moneys expended in Contingencies and Omissions, and also in all charges for Engineering and Superintendence. It will be a fair assumption to average these costs as existing for one year, in which case the interest charges will be 6% on Items Nos. 5 and 6.

This total interest charge will be denoted as Item #8.

916 *Item* # 9.

Taxes During Construction.

The taxes during construction should be assumed at the prevailing rate, being applied each year to the average amount invested in the plant for that year. This would represent a tax on the real estate covering a period of two years, and on the general works, buildings and apparatus an amount that would cover their entire cost over a period of a year, on the Distribution system for 1½ years and on meters for one-half year.

Taxes are omitted in cost of all paving over mains and services.

The prevailing rate of taxes is 90 mills on $1.00 on one-fourth the valuation, which is equivalent to 2¼%. This is shown as Item #9.

917 *Item* # 10.

Working Capital.

The working capital necessary for the operation of an undertaking of the nature of the Des Moines Gas Company is that capital that is necessary to be held as a quick asset, either as cash on hand or general stores and supplies for the manufacture of gas. It includes that amount of ready money which is necessary to enable the Com-

pany to affect many economies in operation that are represented by discount of bills and purchase of materials in quantity. It also includes that investment to provide for that quantity of gas which has been consumed and which still remains unpaid. There are many various claims as to the quantity invested for such purposes, and it is exceedingly difficult to estimate on a percentage basis, although a fair estimate may often be obtained by assuming a certain percentage of the gross yearly business. This figure, however, is dependent upon the nature of the undertaking and its general location due to the convenience for the purchase of materials and supplies.

For a property such as the Des Moines Gas Company, it is fair to assume that a storeroom account covering all materials necessary for the extension of the manufacturing plant and distribution system as well as stock of consumers' appliances must be kept on hand in an amount that experience has lead me to estimate at a value of at least $50,000.00.

918 The stock of manufacturing materials on hand would be represented by an amount approximately equal to $25,000.00. The cash on hand necessary for the daily operation and purchase of materials should be represented by an amount of at least $20,000.00, while the moneys invested in gas delivered and not paid for would represent an average of one and one-half month's business, which is represented by about $60.000.00, or a total of $155,000.00, which is shown as Item #10.

919 *Item* # 11.

The Going Value.

The going value is that expenditure which comes upon the Company in the development of its business. It varies greatly with character of the business, whether it is supplying a commodity which is an absolute necessity of life, or whether it is supplying a commodity having competition with another commodity. The intangibility of such a value renders it most difficult for an absolute determination to be made of its worth.

In many cases it has been represented by a certain percentage of the gross business obtained yearly, while in other cases it has been represented as a fraction of the total moneys invested in the undertaking. It may be represented by a sum of money on which the profits of the undertaking will enable a specific rate of interest to be paid; in other words, it may be represented by such a sum as will enable the earnings from the property to be capitalized.

This method, however, has been criticised as the earnings might be based on those obtained by extortionate rates being charged for the gas.

However, that the going value is a substantial value has not been denied, and in view of the many various guesses or statements made as to its derivation, it behooves us to make some definite plan as to the determination of its worth.

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920 I think one of the best methods of obtaining the worth of such a going value or business development should be based upon a certain cost per thousand cubic feet of gas sold, which should be compared to the opportunities of the Company, in the city in question, and in its efforts to obtain and hold competitive business from other companies supplying a utility that can be used in its stead.

Under normal conditions, I believe the going value should be represented by a figure covering the total business obtained by that company over a period of years, giving ten years as a fair length of time, as in a well developed community this time should suffice for a complete development of the business in view, and place the company in a position to obtain any new business.

I believe that for a well developed company, a charge of 10¢ per thousand cubic feet of gas sold for the last year of its development is a very fair charge, although during the first few years of its entry into the business, there would be necessitated an expenditure much greater, and this may approximately be placed at 19¢ or 20¢ per thousand cubic feet of gas sold. If such amount be applied to the sales of the Des Moines Gas Compasy covering a period of 1901 of 19¢ per thousand and gradually reduced to 10¢ per thousand 1910 would represent a total going value of $502,250, which, averaging over a period of ten years represents a charge of 13.5¢ per
921 thousand cubic feet of gas sold. This I consider a fair going value for the Des Moines Gas Company and I have enumerated it in the schedule as Item #11.

LOSE IN CENTER

Value, Age and Life—Manufacturing Plant.

Item No.	Description.	Kind of material.	Amount.	Life yrs.	Age yrs.
	Real estate		$200,000.00	..	..
	Buildings:				
1	Purifying house	Brick	8,736.01	50	18
2	Fire brick shed	Corrug. Iron	94.53	30	1
3	Meter, Governor, Exhauster and Wash Room	Brick	6,176.47	50	34
4	Retort, Generator, Engine and Blower House	Brick	4,320.32	50	34
5	Coal Shed, Scrubber and Condenser Room	Brick	1,782.38	50	34
6	Boiler and Engine Room	Brick & Steel	6,497.09	50	8
7	Boiler House Extension	" "	1,172.63	50	1
8	Generator House	" "	13,288.79	50	5
9	Coal Shed	Frame	5,639.37	30	14
10	Runway and Coal Shed	"	769.46	30	9
11	Smith, Carpenter Shop and Store Room	Brick & Wood	7,689.70	50	34
12	Barrel Oil Storage House	Reinf'd Concrete	265.97	50	1
13	Pump House	Brick, Steel & Concrete	638.71	50	1
14	Pump House	Brick	203.38	50	3
15	Meter House	Brick, Steel & Concrete	1,359.09	50	1
16	Stable	Frame	1,848.85	30	20

COPY BOUND

Value, Age and Life—Manufacturing Plant—(Continued).

Item No.	Description.	Kind of material.	Amount.	Life yrs.	Age yrs.
	Buildings—(Cont'd):				
17	Boiler House	Steel & Galv. Iron	$725.24	50	4
18	Fire Brick Store House	Frame	87.01	30	5
19	Hose House	"	33.38	30	5
20	Coke Shed	"	557.36	30	23
	Total Buildings		$61,885.74	..	..
	Contents:				
1	Purifying House		20,954.42	50	17
2	Meter, Governor, Exhauster and Wash Room		21,951.03	30	5
3	Retort, Generator, Engine and Blower House		28,105.45	30	18
4	Coal Shed, Scrubber and Condenser Room		1,348.25	30	6
5	Boiler and Engine Room		14,563.69	25	7
6	Boiler House Extension		1,918.79	25	1
7	Generator House		45,398.37	30	1
8	Coal Shed		123.48	30	12
9	Runway and Coal Shed		1,497.84	30	9
10	Smith, Carpenter Shop and Store Room		1,011.43	20	5
11	Pump House		1,075.88	20	5
12	Pump House		252.14	20	3
13	Meter House		8,753.37	30	1

Value, Age and Life—Manufacturing Plant—(Continued)

Item No.	Description.	Amount.	Life yrs.	Age yrs.
	Contents Building—(Continued):			
14	Boiler House	$1,472.28	25	3
	Total Contents	$148,426.42	..	..
	Outside Apparatus:			
1	Relief Holder #18	28,441.00	50	28
2	Storage Holder #19	46,111.56	50	18
3	Storage Holder #20	105,417.50	50	7
4	Oil Tank #21	5,573.21	50	8
5	Oil Tank #22	3,119.07	50	13
6	Tar Tank #23	1,295.17	50	19
7	Oil Tanks Nos. 24 and 25	16,275.62	50	2
8	Old Holder Tank #36	78.44	50	17
9	Coke Rack #54	68.27	20	3
10	Lumber in Yard	73.05	20	New
11	Wells, Valve Boxes, Tar Separators, etc	2,512.35	30	15
12	Wells, Valve Boxes, etc	614.85	30	15
13	Small Piping	13,754.07	30	5
14	Oil Unloading Device	164.03	30	3
15	Gas Mains in Works Yard	16,064.38	50	10
16	Electric Wiring	170.08	30	5
17	Paving	2,305.49	50	9
18	Gauges	627.25	20	5

Des Moines Gas Company.

Value, Age and Life—Manufacturing Plant—(Continued).

Item No.	Description.	Amount.	Life yrs.	Age yrs.
	Outside Apparatus—(Continued):			
19	Fire Protection	$570.04	20	5
20	Fences and Gates	1,804.46	20	5
21	Miscellaneous Apparatus	2,260.50	20	10
22	Works Tools	2,500.00	10	2
	Total Outside Apparatus	$249,800.39	..	..
23	Improvements on Leased Property	20,002.01	20	2
	Total, Outside Apparatus and Improvements on Leased Property	$269,802.40	..	..

Summary.

Real Etate	$200,000.00
Buildings	61,885.74
Contents	148,426.42
Outside	269,802.40
	$680,114.56
Distribution	1,467,340.27
	$2,147,454.83

Buildings—Determination of Averages.

Item No.	Age. (1)	Life. (2)	Fractional depreciation. (3)	Value. (4)	Depreciation. (5)	(4) x (2) (6)	(4) x (1) (7)
1	18	50	18/50 = .36	8,700	$3,132	$435,000	$156,600
2	1	30	4/30 = .03	100	23	3,000	100
3	34	50	34/50 = .68	6,200	4,216	310,000	210,800
4	34	50	34/50 = .68	4,300	2,924	215,000	146,200
5	34	50	34/50 = .68	1,800	1,224	90,000	61,200
6	8	50	8/50 = .16	6,500	1,040	325,000	52,000
7	1	50	1/50 = .02	1,200	24	60,000	1,200
8	5	50	5/50 = .10	13,300	1,330	665,000	66,500
9	14	30	14/30 = .47	5,600	2,632	168,000	78,400
10	9	30	9/30 = .30	800	240	24,000	7,200
11	34	50	34/50 = .68	7,700	5,236	385,000	261,800
12	1	50	1/50 = .02	300	6	15,000	300
13	1	50	1/50 = .02	600	12	30,000	600
14	3	50	3/50 = .06	200	12	10,000	600
15	1	50	1/50 = .02	1,400	28	70,000	1,400
16	20	30	20/30 = .50	1,800	900	54,000	36,000
17	4	50	4/50 = .08	700	56	35,000	2,800
18	5	30	5/30 = .17	100	17	3,000	500
19	5	30	5/30 = .17	50	8	1,500	250
20	23	30	23/30 = .43	600	258	18,000	13,800
Totals				61,950	23,318	2,916,500	1,098,250

Des Moines Gas Company.

Buildings—Determination of Averages—(Cont'd).

$$\text{Average age} = \frac{\text{Total (7)}}{\text{Total (4)}} = \frac{1{,}098{,}250}{61{,}950} = 17.7 \text{ Say } 18 \text{ Years.}$$

$$\text{Average life} = \frac{\text{Total (6)}}{\text{Total (4)}} = \frac{2{,}916{,}500}{61{,}950} = 47.1 \text{ Years.}$$

$$\text{Average Depreciation} = \frac{\text{Total (5)}}{\text{Total (4)}} = \frac{23{,}318}{61{,}950} = 37.6\%.$$

Determination of Averages.

Average age ..... = $\frac{\text{Total (7)}}{\text{Total (4)}}$ $\frac{2,781,396}{269.737}$ = 10.3 years.

Average life ..... = $\frac{\text{Total (6)}}{\text{Total (4)}}$ $\frac{12,280.80}{269.737}$ = 45.5 Years.

Average Depreciation ..... = $\frac{\text{Total (5)}}{\text{Total (4)}}$ $\frac{59,974}{269.737}$ = 22.2%.

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931 Des Moines Gas Company.

Value, Age and Life—Distribution System.

Item.	Description.	Amount.	Life, years.	Age, years.
1	Street Mains	678,520.13	50	8.97
2	Mains Under River	38,375.07 √	50 30	6.56
3	Paving Over Mains	196,477.24	50	8.97
4	Taking Up Paving Over Mains	30,209.66	50	....
5	Street Main Valves	3,226.76	50	8.97
6	Street Main Drips	3,950.79	50	8.97
7	Steam Railroad Crossings	1,910.00	50	8.97
8	Street Railway Crossings	2,225.00	50	8.97
9	Domestic Services & Setting Meters	284,946.88	25	8.94
10	Lamp Services & Posts	17,692.80	25	8.94
11	Paving Over Services	34,161.75	25	8.94
12	Taking Up Paving Over Services	5,388.86	25	8.94
13	Meters in Use	159,457.36	25	7.70
14	Meters Out of Use	6,617.02	25	7.70
15	Distribution Tools	5,180.95	10	2.00
		1,467,340.27		

Average Age of Mains Installation Basis 10.3
" " " Meters " " 8.27
" " " Services " " 8.27

932 Des Moines Gas Company.

Average Age of Mains—On Investment Basis.

Year.	Investment.	Years in service.	Investment years.
1910	50,207	0	0
1909—10 mo	29,733	5/6	24,778
1909—12 mo	22,356	1 5/6	40,986
1908	52,717	2 5/6	149,365
1907	87,672	3 5/6	336,076
1906—2 mo	345	4	1,380
1905	65,485	5	327,425
1904	23,998	6	143,988
1903	50,997	7	356,979
1902	40,890	8	327,120
1901	38,833	9	349,497
1900	7,934	10	79,340
1899	13,917	11	153,087
1898	12,967	12	155,604
1897	20,124	13	261,612
1896	23,139	14	323,946
1895	3,819	15	57,285

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GE BOUND

Des Moines Gas Company.

Average Age of Mains—On Investment Basis—Cont'd).

Year.	Investment.	Years in service.		Investment years.
1894	444	16		7,104
1893	2,842	17		48,314
1892	975	18		17,550
1891	5,064	19		96,216
1890	9,672	20		193,440
1889—6 mo	3,550	20.5		72,775
1889	9,172	21.5		197,198
1888	542	22.5		12,195
933				
1887	9,734	23.5		228,749
1886—6 mo	59	24.		1,416
1885	5,504	25.		137,600
1884	3,928	26.		102,128
1883	3,152	27.		85,104
1882	21,990	28.		615,720
1881	561	29.		16,269
1880	1,142	30.		34,260
1879	409	31.		12,679
1878	16,516	32.	(5,495,697) (Ave. 8.6)	528,512
Jan. 26, 1878 (1878-1864) (14 yrs.)	9,357	35.7 x		334,045
	649,746			5,829,742

$$\text{Average Age} = \frac{5,829,742}{649,746} = 8.97 \text{ Years.}$$

Against 10.30 years on Mileage Basis.
x = (32: 14: : 6.6: x).

COPY BOU

934 Des Moines Gas Co.

Average Age of Mains. (Installation Basis.)

Year.	Total miles end of year.	Number miles installed during year.		Years in service.		Total year—miles.
1910.....	183.89	6.73	x	0	=	0
1909.....	167.16	9.28	x	1	=	9.28
1908.....	157.88	6.70	x	2	=	13.40
1907.....	151.18	8.17	x	3	=	24.51
1906.....	143.01	21.71	x	4	=	86.84
1905.....	121.30	16.91	x	5	=	84.55
1904.....	104.39	5.48	x	6	=	32.88
1903.....	98.91	10.16	x	7	=	71.12
1902.....	88.75	7.24	x	8	=	57.92
1901.....	81.51	9.16	x	9	=	82.44
1900.....	72.35	2.93	x	10	=	29.30
1899.....	69.42	4.91	x	11	=	54.01
1898.....	64.51	6.84	x	12	=	82.08
1897.....	57.67	8.84	x	13	=	114.92
1896.....	48.43	10.47	x	14	=	146.58
1895.....	38.36	.92	x	15	=	13.80
1894.....	37.44	.13	x	16	=	2.08
1893.....	37.31	1.04	x	17	=	17.68
1892.....	36.27	.40	x	18 Av. 6.29		7.20
1891.....	35.87	35.87	x	27		968.49
1890–1864.... 26 yrs.	0	183.89*				1,899.08
Average age.....						10.3 yrs.

*18: 26: : 6.29: x
x = 9.08.

935 Des Moines Gas Co.

Meters—Average Age (On Investment Basis).

Year.	Investment.		Years service.	Dollars—years.
1910.....	$12,715	x	0	0
1909 (10 Mos.)....	12,361		5/6	10,301
1909 (12 Mos.)....	5,858		1 5/6	10,740
1908.....	12,458		2 5/6	35,298
1907.....	24,973		3 5/6	95,730
1906 (2 Mos.).....	4,136		4	16,544
1905.....	20,531		5	102,655
1904.....	5,222		6	31,332
1903.....	17,205		7	120,435
1902.....	8,267		8	66,136

D CLOSE IN CENTER

Des Moines Gas Co.

Meters—Average Age (On Investment Basis).—Continued.

Year.	Investment.		Years service.	Dollars—years.
1901	9,918		9	89,262
1900	8,245		10	82,450
1899	12,763		11	140,398
1898	5,706		12	68,472
1897	5,009		13	65,117
1896	3,633		14	50,862
1895	1,908		15	28,620
1894	1,246		16	19,936
1893	576		17	9,792
1892	1,965		18	35,370
1891	809		19	15,371
936				
1890	1,579	x	20	$31,580
1889 (6 mos.)	159		20.5	3,260
1889 (12 mos.)	*2,865		21.5	*61,598
1888	23		22.5	518
1887	108		23.5	2,538
1886 (6 mos.)	784		24	18,816
1885	1,192		25	29,800
1884	1,264		26	32,864
1883	1,206		27	32,562
1882	5,263		28	147,364
1881	933		29	27,057
1880	330		30	9,900
1879	507		31	15,717
1878	351		32 Av.=7.49 Yrs.	11,232
	186,348			1,396,426
Jan. 26, 1878	1,418		35.3 x	50,055
1878–1864, 14 years.	.....		.. 1,396,426	1,446,481
	187,756			

$$\text{Average Age} = \frac{1,446,481}{187,756} = 7.70 \text{ years.}$$

(32 : 14 :: 7.49 : x
x = 3.3
Against 8.27.

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937

Des Moines Gas Co.

Average Age of Meters (Installation Basis).

Ink Figures by W. A. B.

Year.	Total number of meters end of year.	Number of meters installed during year.	Years in service.			Total meters, Years.
	*19,903	*1,464				
Nov. 1, 1910.....	†[19,742]	[1,303]	x	0	=	0
Dec. 31, 1909.....	18,439	1,339	x	1	=	1,339
1908.....	17,100	1,027	x	2	=	2,054
1907.....	16,073	1,433	x	3	=	4,299
1906.....	14,640	1,700	x	4	=	6,800
1905.....	12,940	1,504	x	5	=	7,520
1904.....	11,436	1,041	x	6	=	6,246
1903.....	10,395	1,497	x	7	=	10,479
1902.....	8,898	1,216	x	8	=	9,728
1901.....	7,682	1,257	x	9	=	11,313
1900.....	6,425	1,117	x	10	=	11,170
1899.....	5,308	1,181	x	11	=	12,991
1898.....	4,127	648	x	12	=	7,776
1897.....	3,479	611	x	13	=	7,943
1896.....	2,868	380	x	14	=	5,320
1895.....	2,488	263	x	15	=	3,945
1894.....	2,225	178	x	16	=	2,848
1893.....	2,047	173	x	17	=	2,941
1892.....	1,874	154	x	18	=	2,772
1891.....	1,720	182	x	19	=	3,458
1890.....	1,538	200	x	20	=	4,000
1889.....	1,338	17	x	21	=	357
F'w'd.....		*18,582				

938

Des Moines Gas Co.

Average Age of Meters (Installation Basis)—Continued.

Ink Figures by W. A. B.

F'w'd.....		*18,582				
1888.....	1,321	17	x	22		374
1887.....	1,304	43	x	23 (Av. 6.85)		989
1886.....	1,261	1,261	x	29.1		36,695
1886–1864 23 yrs...	0	[19,742]† * 19,903		....		163,357

$$\frac{163,357}{19,742} = 8.27 \text{ years (average age of meters).}$$

*In ink in copy.

†Figures enclosed in brackets erased in copy.

D CLOSE IN CENTER

939

Des Moines Gas Co.

Services—Average Age (On Investment Basis).

Year.	Investment.	Years service.	Dollars—years.
1910	$18,579	0	0
1909 (10 mos.)	14,002	5/6	11,668
1909 (12 mos.)	12,636	1 5/6	23,166
1908	12,538	2 5/6	35,524
1907	14,738	3 5/6	56,496
1906 (2 mos.)	649	4	2,596
1905	19,306	5	96,530
1904	14,913	6	89,478
1903	23,045	7	161,315
1902	17,843	8	142,744
1901	23,339	9	210,051
1900	16,944	10	169,440
1899	10,897	11	119,867
1898	7,716	12	92,592
1897	6,901	13	89,713
1896	6,879	14	96,306
1895	2,364	15	35,460
1894	1,617	16	25,872
1893	1,548	17	26,316
1892	2,272	18	40,896
1891	2,134	19	40,546
940			
1890	1,783	20	35,660
1889 (6 Mos.)	852	20.5	17,466
1889 (12 Mos.)	2,601	21.5	35,921
1888	1,381	22.5	31,072
1887	2,358	23.5	55,413
1886 (6 Mos.)	599	24	14,376
1885	2.776	25	69,400
1884	1,439	26	37,414
1883	1,604	27	43,308
1882	3,183	28	89,124
1881	1,174	29	34,046
1880	617	30	18,510
1879	428	31	13,268
		Av. 8.26	
1878	725 252,380	32 2,084.754	23,200
Jan. 26, 1878	6,411	35.6	228,232
1878–1864, 14 Y'rs.	258,791	....	2,312,986

$$\text{Av. age} = \frac{2,312,986}{258,791} = 8.94 \text{ years.}$$

x(32 : 14 :: 8.26 : x)

x = 3.6.

Against 8.27.

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941 Des Moines Gas Company.

Value, Age, and Life.

	Average life. (1)	Age. (2)	Value. (3)	Age—Dollars. (3) x (2) (4)	Life—Dollars. (3) x (1) (5)
Buildings	47.1	17.7	61,950	1,096,515	2,917,845
Contents	32.0	7.9	148,625	1,174,138	4,756,000
Outside Apparatus	45.5	10.3	269,737	2,778,291	12,273,034
			480,312	5,048,944	19,946,879

$$\text{Average Age of Plant} = \frac{4}{3} \frac{5{,}048{,}944}{480{,}312} = 10.5$$

$$\text{Average Life of Plant} = \frac{5}{3} \frac{19{,}946{,}879}{480{,}312.} = 41.5$$

942 Des Moines Gas Company.

Value, Age, and Life Distribution System.

Items.	Amount.	Life dollars.
2	38,375.07 x 50	1,918,753.50
1, 3, 4, 5, 6, 7, 8	915,519.58 x 50	45,775,979.00
9, 10, 11, 12	342,190.29 x 25	8,554,757.25
13, 14	166,074.38 x 25	4,151,859.50
15	5,180.95 x 10	51,809.50
	1,467,340.27	60,453,158.75

$$\text{Average Life} = \frac{60{,}453{,}158.75}{1{,}467{,}340.27} = 41.2 \text{ Years.}$$

		Age dollars.
River Mains	38,375.07 x 6.56	251,740.46
Mains & Paving	915,519.58 x 8.97	8,212,210.63
Services & Paving	342,190.29 x 8.94	3,059,181.19
Meters	166,074.38 x 7.70	1,278,772.73
Tools	5,180.95 x 2.00	10,361.90
	1,467,340.27	12,812,266.91

$$\text{Average Age} = \frac{12{,}812{,}266.91}{1{,}467{,}340.27} = 8.73 \text{ Years.}$$

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943 Des Moines Gas Company.

Value, Age, and Life Distribution System.

Less Meters.

Amount.		Years.	Total.
38,375.07	x	50	1,918,753.50
915,519.58	x	50	45,775,979.00
342,190.29	x	25	8,554,757.25
5,180.95	x	10	51,809.50
1,301,265.89			56,301,299.25

$$\text{Average Life} = \frac{56,301,299.25}{1,301,265.89} = 43.3 \text{ Years.}$$

38,375.07	x	6.56	251,740.46
915,519.58	x	8.97	8,212,210.63
342,190.29	x	8.94	3,059,181.19
5,180.95	x	2.00	10,361.90
1,301,265.89			11,533,494.18

$$\text{Average Age} = \frac{11,523,494.16}{1,301,265.89} = 8.86 \text{ Years.}$$

944 Des Moines Gas Company.

River Mains.

1 Laid.	2 Age.	3 Life.	4 Size.	5 Length.	6 Amount.
3/12/08	2.5	50	24	639	10,294.29
12/ /06	4	50	8	673	5,289.78
9/ /01	9	50	16	1,300	22,791.00
					38,375.07

7 Fractional depreciation.	8 Amount depreciation.	9 6 x 2
2.5/50 = .05	514.70	25,735,725
4/50 = .08	423.20	21,159,120
9/50 = .18	4,102.38	205,119,000
	5,040.28	252,013,845

Average Life = 50 Years.

$$\text{Per Cent Depreciation} = \frac{5,040.28}{38,375.07} = 13.13$$

$$\text{Average Age} = \frac{252,013,845}{38,375.07} = 6.57$$

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945 Des Moines Gas Company.

Value, Age, and Life.

	Average Life. (1.)	Age. (2.)	Value. (3.)	Age dollars. (4.) 3 x 2.	Life dollars. (5.) 1 x 3.
Buildings	47.1	17.7	61,950	1,096,515	2,917,845
Contents	32.0	7.9	148,625	1,174,138	4,756,000
Outside Apparatus.	45.5	10.3	269,737	2,778,291	12,273,034
River Mains	50.0	6.56	38,375	251,740	1,918,754
Mains & Paving	50.0	8.97	915,520	8,212,211	45,775,979
Services & Paving.	25.0	8.94	342,190	3,059,181	8,554,757
Meters	25.0	7.70	166,074	1,278,773	4,151,860
Tools	10.0	2.00	5,181	10,362	51,810
			1,947,652	17,861,211	80,400.39
Composite Age			4	17,661,211	
			3	1,947,652	9.2
" Life			5	80,400,039	
			3	1,947,652	41.3

946 Des Moines Gas Company.

Composite Age and Life Table.

	Life.		Age.
Real Estate	....		....
Manufacturing Plant:			
Buildings	47.1		17.7
Contents	32.0		7.9
Outside Apparatus	45.5		10.3
Total Manufacturing	41.5		10.5
Distribution System:			
Mains & Paving 50	....	8.97	....
River Mains 50	50	6.56	8.87
Services & Paving	25		8.94
Tools	10		2.00
	43.3		8.86
Meters	25		7.70
Total Distribution	41.2		8.73
Total Averages	41.3		9.2

UND CLOSE IN CENTER

947 **Des Moines Gas Company.**

	Value.	Average depreciation.	
Buildings	61,950	37.6	23,318
Contents	148,625	22.2	33,833
Outside App.	268,737	22.2	59,974
	480,312		117,125

Average Depreciation Plant 34.4%.

	Value.	Fractional depreciation.		
River Mains	38,375	6.56	.1312	5,035
		50.00		
Mains & Paving	915,520	8.97	.1794	164,244
		50.00		
Services & Paving	342,190	8.94	.3576	122,367
		25.00		
Meters	166,074	7.70	.308	51,151
		25.00		
Tools	5,181	2	.2	1,036
	1,467,340	10		343,833

Average Distribution Depreciation = 23.4%.
Average Distribution Depreciation less Meters = 22.5%.

948 **Des Moines Gas Company.**

Real Estate.

Total Value of Real Estate With Its Proportions of Engineering and Preliminary Expense, Interest, and Taxes.

Value	$200,000.00
Add Engineering and Supervision 5%	10,000.00
	$210,000.00
Add Preliminary Expense, 2%	4,200.00
	$214,200.00
Add Interest, 2 years at 6% = 12%	25,704.00
	$239,904.00
Add Taxes, 2 years at 2% = 4.5%	10,795.68
	$250,599.68

No Depreciation on Real Estate.

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949 Des Moines Gas Company.

Manufacturing Plant.

Value of Manufacturing Plant with Its Proportions of Contingencies, Engineering, Preliminary Expenses, Interest, and Taxes, Less a Depreciation on Total Amount.

Value	$480,114.56
Add Contingency Insurance 10%	48,011.46
	$528,126.02
Add Engineering and Superintendence 5%	26,406.30
	$554,532.32
Add Preliminary Expense 2%	11,090.65
	$565,622.97
Add Interest one year 6%	33,937.38
	$599,560.35
Add Taxes One year 2.25%	13,490.11
Total	$613,050.46
Less Depreciation 24.4%	149,584.31
	$463,466.15

950 Des Moines Gas Company.

Distribution System Without Meters.

Value of Distribution System, Without Meters, with Its Proportions of Contingencies, Engineering, Preliminary Expenses, and Interest. Taxes are Included on All Except Paving and Taking Up Paving Over Mains and Services. Depreciation is Then Taken on Entire Amount.

Value	$1,301,265.89
Add Contingency Insurance 10%	130,126.59
	$1,431,392.48
Add Engineering and Superintendence 5%	71,569.62
	$1,502,962.10
Add Preliminary Expense 2%	30,059.24
	$1,533,021.34
Add Interest 1½ years at 6% = 9%	137,971.92
	$1,670,993.26
Add Taxes (Total Distribution less paving; see following page)	44,857.46
Total Value	$1,715,850.72
Less Depreciation 22.5%	386,066.41
	$1,329,784.31

ND CLOSE IN CENTER

951 Des Moines Gas Company.

Paving.

Total Value of Paving with Its Proportions of Contingencies, Engineering, Preliminary Expense, and Interest, but No Taxes.

Value	$266 237.51
Add Contingencies 10%	26,623.75
	$292,861.26
Add Engineering 5%	14,643.06
	$307,504.32
Add Preliminary Expense 2%	6,150.09
	$313,654.41
Add Interest 9%	28,228.90
	$341,883.31
Distribution less Meters after adding for Contingencies, etc.	1,670,993.26
Subtract Paving	341,883.31
Total on which Taxes are taken	$1,329,109.95
Taxes on above at 1½ years at 2½% = 3.375%	44,857.46

952 Des Moines Gas Company.

Meters.

Total Value of Meters, With Their Proportion of Engineering, Preliminary Expense, Interest, and Taxes With Depreciation as Shown Below:

Value	$166,074.38
Add Engineering and Superintendence, 5%	8,303.72
	$174,378.10
Add Preliminary Expense, 2%	3,487.56
	$177,865.66
Add Interest ½ year at 6% = 3%	5,335.97
	$183,201.63
Add Taxes ½ year at 2½% = 1.125%	2,061.02
Total Value	$185,262.65
Less Depreciation, 30.80%	57,060.90
	$128,201.75

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53 Des Moines Gas Company.

Summary of Total Valuations and Depreciations.

Based on Straight Plus Line Depreciation and No Scrap or Minimum Service Value, Contingencies, Engineering, Supt. Preliminary Expense, Interest and Taxes Being Compounded.

	Value and con., ins., eng., supt. prelim. exp., int. and taxes.	Depreciation.	Depreciated value.
Real Estate.....	$250,699.68	0	$250,699.68
Works	613,050.46	$149,584.31	463,466.15
Distribution Less Meters	1,715,850.72	386,066.41	1,329,784.31
Meters	185,262.65	57,060.90	128,201.75
	$2,764,863.51	$592,711.62	$2,172,151.89

Average Depreciation = 21.4%.

954 Des Moines Gas Company.

Total Depreciation.

Straight Line Depreciation.

	Replacement value.	Per cent dep.	Depreciation amount.	Depreciated value.
Real Estate	$200,000.00	0	0	$200,000.00
Plant:				
Buildings	61,885.74	37.6	$23,269.04	38,616.70
Contents	148,426.42	22.8	33,841.22	114,585.20
Outside App.	269,802.40	22.2	59,896.13	209,906.27
	$480,114.56	24.4	$117,006.39	$363,108.17
Distribution System:				
River Mains.....	38,375.07	13.12	5,034.81	33,340.26
Mains & Paving..	915,519.58	17.94	164,244.21	751,275.37
Services & Paving.	342,190.29	35.76	122,367.25	219,823.04
Tools	5,180.95	20.00	1,036.19	4,144.76
	$1,301,265.89	22.5	$292,682.46	$1,008,583.43
Meters	166,074.38	30.8	51,150.91	114,923.47

Depreciation on Material and Labor used to determine the per cent. depreciation of entire plant = 23.66.

Average Depreciation on Distribution System including Meters = 23.4.

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955 Des Moines Gas Company.

Future Depreciation.

Basing Future Depreciation on Life of Plant as Estimated and Applied to the Past.

	Life years.	Age.	Depreciation per cent.	Yearly.
Real Estate	....	.....	....	....
Plant	41.5	10.5	24.4	2.32
Distribution System	43.3	8.86	22.5	2.54
Meters	25.0	7.70	30.8	4.00
Total	41.3	9.2		

Applying to Revaluation of Entire Plant, based on Material and Labor plus Contingencies, Engineering, Preliminary Costs, Interest and Taxes, will give the Yearly Depreciation as follows:

Real Estate	250,699.68	x	0 =	0
Mfg. Plant	613,050.46	x	.0232 =	14,222.77
Distribution System	1,715,850.72	x	.0254 =	43,582.61
Meters	185,262.65	x	.04 =	7,410.51
Total	$2,764,863.51			$65,215.89

Depreciated Value of Plant =	2,172,151.89
Add Working Capital =	155,000.00
Above Yearly Depreciation = 2.8 Add "For Going Value"	350,000.00
	$2,677,151.89

Yearly Depreciation on basis of last figure = 2.44.

956 Des Moines Gas Company.

4% Sinking Fund Basis.

$$x = \frac{(1+i)^m - 1}{(1+i)^n - 1}$$

Given $n = \begin{cases} 41.5 \\ 43.3 \\ 25.0 \end{cases}$

m = Age
n = Life

$m = \begin{cases} 10.5 \\ 8.86 \\ 7.70 \end{cases}$

Log. of $1.04 = .0170333$

$$x = \frac{(1+.04)^{10.5} - 1}{(1+.04)^{41.5} - 1} = \frac{(1.04)^{10.5} - 1}{(1.04)^{41.5} - 1} = \frac{1.50956 - 1}{5.09193 - 1}$$

COPY BO

$$\frac{.50956}{4.09193} = .1245 = 12.45\%$$

$$x = \frac{(1+.04)^{8.86}-1}{(1+.04)^{43.3}-1} = \frac{(1.04)^{8.86}-1}{(1.04)^{43.3}-1} = \frac{1.41552-1}{5.46438-1}$$

$$\frac{.41552}{4.46438} = .0931 = 9.31\%$$

$$x = \frac{(1+.04)^{7.7}-1}{(1+.04)^{25.0}-1} = \frac{(1.04)^{7.7}-1}{(1.04)^{25.0}-1} = \frac{1.35256-1}{2.66563-1}$$

$$\frac{.35256}{1.66583} = .2116 = 21.16\%$$

957 Des Moines Gas Company.

3½% Sinking Fund Basis.

Log. of $1.035 = .0149403$.

$$x = \frac{(1+.035)^{10.5}-1}{(1+.035)^{41.5}-1} = \frac{(1.035)^{10.5}-1}{(1.035)^{41.5}-1} = \frac{1.4357-1}{4.16891-1}$$

$$\frac{.4357}{3.16891} = .137 = 13.7\%$$

$$x = \frac{(1+.035)^{8.86}-1}{(1+.035)^{43.3}-1} = \frac{(1.035)^{8.86}-1}{(1.035)^{43.3}-1} = \frac{1.35635-1}{4.43522-1}$$

$$\frac{.35635}{3.43522} = .104 = 10.4\%$$

$$x = \frac{(1+.035)^{7.7}-1}{(1+.035)^{25.0}-1} = \frac{(1.035)^{7.7}-1}{(1.035)^{25.0}-1} = \frac{1.30329-1}{2.36324-1}$$

$$\frac{.30329}{1.36324} = .2225 = 22.25\%$$

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958 Des Moines Gas Company.

Depreciation by Compound Sinking Fund.

Applying Compound Interest, 4%, Sinking Fund, Depreciation Rates, With No Scrap or Minimum Service Value, We Got a Depreciation for the Plant as Follows:

Real Estate	250,699.68	x	——		250,699.68
Plant	613,050.46	x	12.45 =	76,423.78	536,725.68
Distribution System.....	1,715,850.72	x	9.31 =	159,745.70	1,556,105.02
Meters	185,262.65	x	21.16 =	39,201.58	146,061.97
	2,764,863.51		9.96	276,272.06	$2,489,591.45

Total Depreciation on entire Plant = 9.96 or $275,272.06 or a depreciated value of $2,489,591.45 as compared with "Straight Line" depreciation $592,711.62 and a depreciated value of $2,172,151.89.

959 Des Moines Gas Company.

Depreciation by Compound Sinking Fund.

Applying Compound Interest, 3½%, Sinking Fund, Depreciation Rates, with no Scrap or Minimum Service Value, we get a Depreciation for the Plant as Follows:

Real Estate.....	250,699.68	x	——		250,699.68
Plant	613,050.46	x	13.7 —	83,987.91	529,062.55
Distribution System.....	1,715,830.72	x	10.04 =	172,271.41	1,543,579.31
Meters	185,262.65	x	22.25 =	41,220.94	144,041.71
	2,764,863.51	x	10.76 =	297,480.26	$2,467,383.25

Total Depreciation on entire Plant = 10.76 or $297,480.26 or a depreciated value of $2,467,383.25 as compared with "Straight Line" depreciation $592,711.62 and a depreciated value of $2,172,151.89.

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60 Des Moines Gas Company.

Depreciation.

Applying Sinking Fund Compounded, Allowing for Scrap or Minimum Value, 4% Basis.

	Value.	Depreciation.	Depreciated value.
Real Estate	250,699.68	.....	250,699.68
No Scrap.			
Plant	613,050.46	.....	.....
5% Scrap = 85% on value.			
5% = $521,092.89	.....	.....	91,957.57
2.45% Depreciation.....	.....	64,876.06	.....
			485,968.83
Distribution	1,715,850.72	.....	.....
No Scrap.			
9.31% Depreciation	.....	159,745.70	.....
			1,556,105.02
Meters	185,262.65	.....	.....
10% Scrap = 90% on value.			
90% = $166,736.38	.....	.....	18,526.27
21.16% Depreciation	.....	35,281.42	131,454.96
	2,764,863.51	259,903.18	2,534,712.33

This gives a depreciated value of 2,534,712.33 which is a depreciation of 8.32%.

UND CLOSE IN CENTER

961 Des Moines Gas Company.

Depreciation.

Applying Sinking Fund Compounded, Allowing for Scrap or Minimum Value, 3½% Basis.

	Value.	Depreciation.	Depreciated value.
Real Estate	250,699.68	.....	250,699.68
Plant	613,050.46	.....	.....
15% Scrap = 85% on value.			
85% = $521,092.87	.....	.....	91,957.57
13.7% Depreciation	.....	71,389.73	449,703.16
Distribution	1,715,850.72	.....	.....
No Scrap.			
10.4% Depreciation	.....	178,448.47	1,537,402.25
Meters	185,262.65	.....	.....
10% Scrap = 90% on value.			
90% = 166,736.38	.....	.....	18,526.27
22.25% Depreciation	.....	37,098.84	129,637.54
	2,764,863.51	286,937.04	2,477,926.47

This gives a depreciated value of $2,477,926.47 which is a depreciation of 10.38%.

962 Des Moines Gas Company.

Estimated Scrap Value.

	Per cent.
Real Estate	100
Works Buildings	15
Contents	15
Outside	15
Mains and Paving	0
Services and Paving	0
Tools	0
Meters	10

Per Cent Charges Covering Interest, Engineering, Preliminary Expense, Interest, and Taxes.

Principal.	Interest.	Engineering.	Preliminary.	Interest.	Taxes.
Real Estate	0	5	2	(2x6) 12	(2x2½) 4.5
Works	10	5	2	(1x6) 6	(1x2½) 2.25
Distribution	10	5	2	(1½x6) 9	(1½x2½ less paving) 3.375
Meters	..	5	2	(½x6) 3	(½x2½) 1.125

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CHARTS

TOO

LARGE

FOR

FILMING

966 DEFENDANTS' EXHIBIT 18—J. P. B.

D.—18.

Filed April 5, 1912. Wm. C. McArthur, Clerk.

APRIL 8, 1911.

Mr. Rollin Norris, for Walton Clark, 2d V.-P., Philadelphia, Pa.

DEAR SIR: In your Annual Estimate letter of December 15, 1910, I note that you ask for an appropriation to cover foundations for a new holder. I have sent in I. & R. Req. No. 187, under date of March 22, 1911, for $30,000 to cover this item.

I have been studying over this situation to see if we could not eliminate the erection of this holder for another year, but I am afraid to take this chance unless our sendout should be more disappointing than I now anticipate.

For the first three months, our sendout shows an increase of about 8%, and if this same percentage were carried on to our maximum week, it would give an average daily sendout of 2,160 M.

While our available storage is only 1,400 M., of this available storage there is only 700 M. available for the peak loads. This is because the upper lift of the No. 4 holder and the entire No. 3 holder are too light to give sufficient pressure, although I realize that they act as a safeguard against the gas going out on the town within their capacity of 700 M.

I am satisfied that this holder foundation should be commenced not later than September first unless we find that the conditions as to sendout have radically changed. The plans for this
967 foundation will have to be prepared in ample time and this brings me down to the question of the location.

I have prepared and enclose a blue print of the property in Block "A," the purchase of which I recommended in my Annual Estimate letter. In this print I show in the upper sketch the available ground provided we were to make an arrangement with the C. B. & Q. Railway to square up the property by giving and taking an equal number of square feet so that the east and west lines on the north of the property would then be parallel to the east and west line of the south line of the property. I find, however, that if this arrangement were made, while it would have the advantage of squaring the property up, it would limit the diameter of each of the two holders which could be built in it, to 150′.

In the lower part of the print I show a diagram of Block "A" in which the subdivisions of the block, or lots, are shown by dotted lines. Lots No-. 1, 2, 3, 4, 5, 7, 8, 9, 10 and 12 and the N½ of Lot No. 11 are immediately available for purchase and the S½ of Lot No. 11 can be purchased if desired for about $5,000, or $6,000, but I have not seen the owners recently as I do not wish to stir them up.

With the property available as above a new holder could be erected as shown by the solid line circle within a diameter of 151′ and an additional holder could be erected as shown by the broken

line circle on the same size at some future time. It would not be necessary, therefore, to purchase the S½ of Lot No. 11 immediately. I would recommend, however, that an appropriation be made available for the purchase of the S½ of Lot No. 11
968 and that it be left open in event of the owners making a proposition to sell at some future time that would be attractive to us.

The C. B. & Q. Railway have advised me that they would not object to condemning the alley on which they own the frontage of Lot No. 13.

I would recommend the purchase of Lots Nos. 1, 2, 3, 4, 5, 7, 8, 9, 10, 11, and 12 for the erection of this new holder and that the foundations and holder be erected of a capacity of two and one-half million feet. This block with the exception of Lots Nos. 6 and 13 can be bought for $35,000, but I do not wish to approach the owners of the S½ of Lot No. 11 with a view to purchasing unless it is decided to purchase the block, as I think that they will probably raise their price and if some of the old buildings that are on this block were torn down before they were approached I believe that they would be more willing to sell.

In reviewing the general real estate situation at the plant the real estate now owned will not all be available because all the lots in Block "T" will have to be abandoned or sold for park purposes and we will have to provide storage room for which the lots in Block "K" are most valuable by reason of their trackage facilities.

In my judgment the NE quarter of Block "B" is much too valuable property under the circumstances on which to build a holder on account of its proximity to the rest of the plant where it should be available for other internal improvements to take care of the growth of the business. In addition to this the railroad tracks on the north line of Block "B" run very close to the fence and
969 while it would be possible to construct the proper foundations for a holder and a masonry retaining wall, it would require pretty expensive construction to hold up this railroad track while we were doing the work on account of the holder occupying all of this quarter block.

I wish you would give this matter careful consideration because in planning the foundations for the holder the additional 11′ in diameter available on Block "A" should, I believe, by all means be taken advantage of.

Awaiting your reply, I am,

Yours very truly,

—— ——, *Manager.*

J. H.—E. D.

970 MARCH 9th, 1911.

Mr. Jansen Haines, Manager, Des Moines Gas Company.

DEAR SIR: I have carefully read the annual estimate as attached to Mr. Norris' letter of January 6th, and beg to make the following comments:

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I believe that Mr. Norris has covered nearly everything that we will need in his letter, but I note that he has omitted the Kennicott Water Weigher which we asked for in a letter sent in subsequent to our Annual Estimate under date of September 20th 1910. It is possible that this has been omitted because, I understand, the Weigher has not been entirely satisfactory in Omaha on account of the scale depositing in the mechanism of the Weigher and interfering with its action. With our new feed water purifier, there will be no hard scale thrown down beyond the outlet of the purifier, which will overcome this objection.

I would like very much to have a weigher in this situation because, as you know, the boiler fuel consumption has always been considered high here, and while I have given a good deal of personal attention to it and succeeded in reducing it somewhat, I am still of the opinion that a further reduction is possible, and believe that this water Weigher would very greatly assist in the work.

971 Mr. Norris has again taken up the question of real estate, and states that our present real estate consists of slightly over five acres. I give below a list of the real estate now owned by this Company:

Block "C," all	78,205,518	sq. ft.	1.795	acres
" "B," "	77,840,000	"	1.786	"
" "T," Lots 3-4-5-6-7	9,600,000	"	0.220	"
" "K," Lots 2-3-4-5-6	54,978,000	"	1.262	"
5/6ths of Lot 1				
½ of alleys				
" "M," Lots 9 and 10	17,358,000	"	0.398	"
	236,529,518	"	5.461	"

Of this property, about two-thirds of the portion owned in Block "K" is used for distribution storage and shop.

On Block "B" is located our stable and horse lot, and the area occupied by the stable is barely sufficient for our present needs. While there is no question in my mind but that in the future the stable equipment will be replaced by some form of motor vehicles, these vehicles will have to be stored and cared for in some location adjacent to the distribution storage and shop. The distribution storage should for economical reasons be located as nearly as possible to the center of distribution, and while this does not quite hold in our present case, I do not believe that there is any other property which could be obtained for the purpose anywhere near the center of distribution except at a prohibitory price, and I think that this also applies to property not so favorably located.

972 I think therefore that it is a safe assumption to make that as Block "B" becomes occupied with works extensions, that we will probably want to more our transportation storage to Block "K" and that Block "K" should be reserved for that purpose, possibly reserving a portion of the west end of it for reserve fuel storage.

The lots owned on Block "T" are no longer available for works use, as they are located on the river bank and will ultimately be taken by the City for Park purposes.

Deducting, therefore, Block "T" and Block "K" from the real estate for Works purposes, it narrows down to a trifle less than four acres, which will be sufficient to send out 4,000,000 ft. It must be kept in mind, however, that our property is not contiguous, being separated by streets, which there is no possibility of closing.

Block "A" which adjoins Block "B" at the south, can be purchased as Mr. Norris says for about $35,000.00 with the exception of the two lots owned by the C. B. & Q. Railroad on the north. I believe that there will be no difficulty in having the C. B. & Q. Ry square up their lots by trading foot for foot, as shown on Print A-14 attached hereto. This will give a block 280′ x 230′ 4″, and the lots owned by the C. B. & Q. on the north would be of no material detriment as the property is at any rate separated from Block "B" by a 66′ street.

I do not anticipate any difficulty in having the alleys closed in this block, and I would personally undertake to have this done at the proper time.

A 4,000,000 ft. holder can be very satisfactorily located
973 on this lot.

Mr. Norris touches on the point that coke oven gas has been suggested for Des Moines, and suggests that even if Block "A" were acquired that there would still not be enough property available for a coke oven plant.

I have very carefully gone over the Des Moines situation with the idea of locating a coke oven plant, and I do not find any property which I consider available that would so nearly answer our purposes as the property adjoining Block "A" on the south. I enclose, herewith, a sketch showing this property consisting of Blocks "P," "Q," "N," 7, 8, 9, 79 and 80 of Scott & Dean's Add. This property being off any present lines of railroad is not nearly as valuable as railroad frontage. It is bounded on the long side of the triangle by the Des Moines River and on the other sides by gas works property and poor residential properties. It is divided into small lots held by a large number of owners, but a whole or a portion of it could undoubtedly be purchased at a fairly reasonable figure. I am of the opinion that the alleys and streets in the property could be closed, although compensation would have to be paid to the City for the streets. There would be no difficulty whatever in extending railroad sidings to this property, and to my mind it represents an admirable location for a coke oven plant in this city.

Of course, I do not for a moment recommend the purchase of any of this property at this time, but I merely call attention to its availability for future extensions.

974 I strongly recommend, however, that the purchase of Block "A" be seriously considered at once and that the contemplated new holder be installed upon it.

Very truly yours,

G. I. VINCENT, *Engineer.*

G. I. V. / N. J.

(Here follows diagram marked page 975.)

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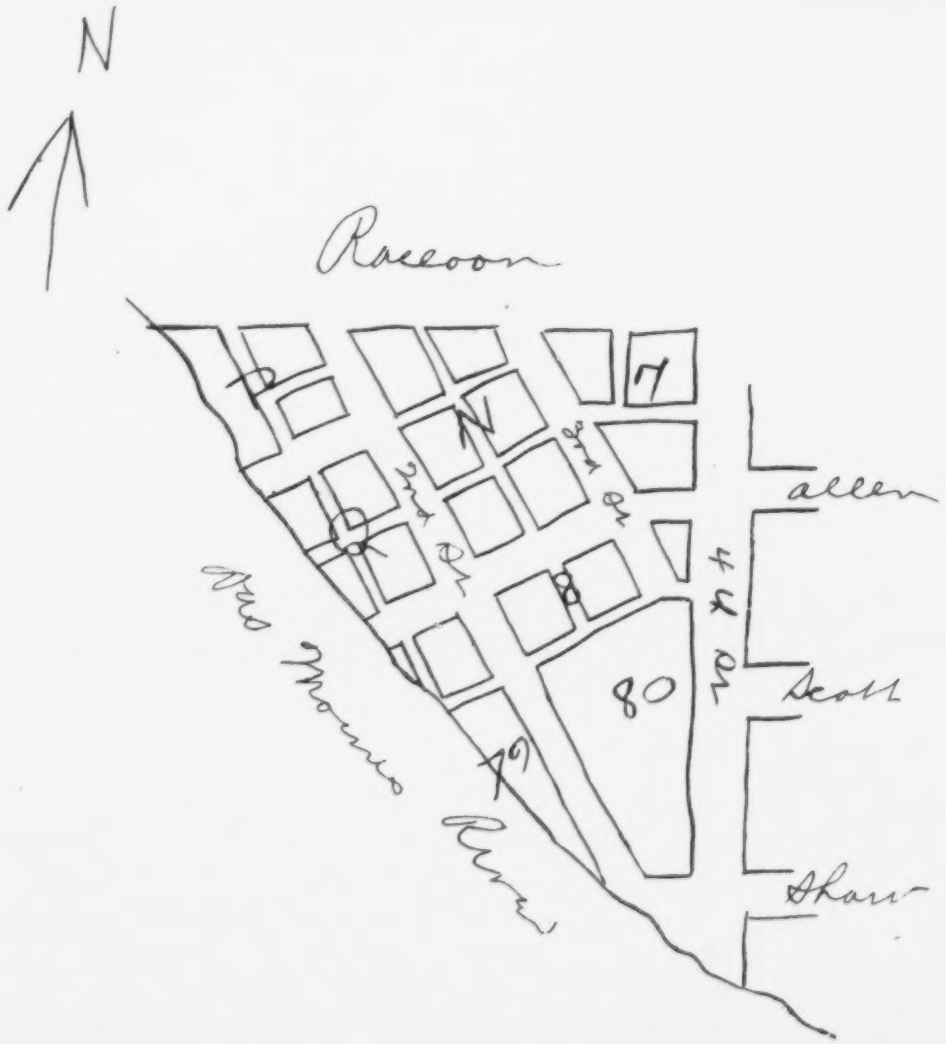
N
Raccoon
7
N
2nd St
allen
4th St
8
80
Des Moines
Scott
79
River
Shaw

976 *Annual Estimate* 1911.

JAN. 6TH, 1911.

Mr. Jansen Haines, Manager, Des Moines, Ia.

DEAR SIR: I enclose herewith for your files a copy of a proposed Annual Estimate letter to Mr. Clark. I shall be glad to have you go over this letter and let me know whether you wish any alterations made in it.

You will note that I have included a small amount for additional laboratory equipment, and I think this is all that you will need. If later we wish to make additions to our equipment, we can cover it by requisition and charge it against our item of $3,500 for Miscellaneous Works Improvements.

Yours truly,

ROLLIN NORRIS,
For Walton Clark, Second Vice-President.

(Enc.)

977 *Des Moines Annual Estimate* 1911.

DEC. 15TH, 1910.

Mr. Walton Clark, Second Vice-President.

DEAR SIR: I give below a summary of the conditions at Des Moines:

		Increase in gas accounted for.		Increase in gas sent out.	
Year	1909.	7.5%		7.2%	
January	1910.	5.8%		5.8%	
February	"	7.3%		7.7%	
March	"	8.5%		5.6%	
April	"	7.7%		6.4%	
May	"	15.4%		13.3%	
June	"	12.9%	6 Mos. 8.9%	4.6%	6 Mos. 7.2%
July	"	5.8%		2.5%	
August	"	.5%		11.3%	
September	"	8.5%		4.5%	
October	"	8.3%		4.5%	
November	"	7.1%		5.2%	
December	"	3.0%	12 Mos. 7.6%	7.0%	12 Mos. 6.4%

Maximum daily output:

	Actual.	Local estimate.	C. W. Hare's estimate.
Dec. 1909.....	2013 M		
Dec. 1910.....	2228 M		
Dec. 1911.....		2451 M—10%	2451 M—10%

978 Maximum output:

			Per day.
Actual	1909-10		2013 M
"	1910-11		2228 M
Estimated	1911-12	10% increase—	2451 M

Plant.	Capacity per day.	Present net cap.	Net cap after changes.
Generators:			
Reserve ..... 1800 M			
Net	1200 M		
	1200 M		
	300 M		
	300 M		
		3000 M	
Purifiers:			
4 Boxes 20′ x 20′ x 8′			
		3360 M	
Station Meters:			
		5000 M	
Oil Storage:			
	64,000 g.		
	300,000 g.		
	300,000 g.		
	664,000 g.—	68 days.	
Holders:			
Relief ..... 160 M			
Storage	300 M		
	1100 M		
		1400 M	

979 Works: An examination of the preceding page shows that we have ample manufacturing capacity to carry us safely through the winter of 1911-12, but that our purified storage is getting rather small in comparison with our sendout. It is possible that the sendout for the winter of 1912-13 may require an additional holder by that time. In order to have such a holder in time, it would be necessary to start the foundations for the holder in 1911, but it would not be necessary to start these foundations until late in 1911.

We therefore ask an appropriation of $30,000 for the foundation and connections for a new 2,000,000 cu. ft. holder, with the understanding that if this expenditure be authorized, no money will be spent until late in 1911, and then only if we shall satisfy you that the sendout at that time indicates that we may expect a considerable increase in the winter of 1912-13.

Req. # —. Holder Foundations, etc..... $30,000.

Purification: Our purifiers at Des Moines, are 8′ deep, with water seals, and are so arranged that the gas enters the boxes in the middle and divides, part going up and part going down through the oxide. We find that this arrangement causes trouble from deposition of tar on top of the oxide of the lower layer, and the gases do not
980 flow evenly through the two halves of the boxes. We wish, therefore, to rearrange our connections so that gas will enter

COPY BOUND C

the bottom of each box, which will also give us the opportunity of using a tar-catcher in the bottom of each box to supplement the work of the P. & A. extractor. This, however, will result in a considerable increase in back pressure through these boxes, and therefore, in addition to altering the connections, we wish to replace the present water seals with dry lutes. The water seals of a purifying box not only act as a seal for the box, but also as a safety valve for the escape of gas in the event of any stoppage beyond the purifiers and the replacement of these seals with the dry lute type of construction will make it necessary to install some sort of blow-back device which will relieve the pressure in case of stoppage. We therefore include in our summary an item covering the rearrangement of the purifier seals, the changing of the seals from water seals to dry lutes, and the installation of a safety blow-back. This work is covered by—

Req. #183. Changes to Purifiers, etc. (Rep. $3,000) $5,000

Works office: The Des Moines situation has grown to a point where our present office facilities are cramped and insufficient. The room used for the Works Office contains also two station meters the photometer room and the governors, and we recommend the addition of a second story to this building, in which can be placed
981 our office photometer room and additional laboratory apparatus, which we need but for which we have at present no satisfactory room. The estimated cost of this extension to our Works Office is covered by—

Req. #184. Works Office Extension $3,000

To cover the shifting of the present photometer room and the fitting up of the Laboratory with apparatus for the simpler grades of work, we include—

Req. #190. Photometer & Laboratory Equipment (Rep. $250) $500

Boiler Fuel Scales: Our boiler fuel at Des Moines consists principally of a local coal which is so high in sulphur that it can be stored only in small quantities, and not for any length of time, and consequently is used practically from the cars to the boilers. This gives us a constant check on our boiler fuel consumption, and for our daily consumptions we have been depending upon keeping track of the number of barrow loads of coal brought in. This however, is not satisfactory, and we wish to purchase and install scales for weighing the boiler fuel, these scales to be located in the industrial railway which is now used for handling boiler fuel. This improvement is covered by—

Req. #161. Boiler Fuel Scales $500

982 Real Estate: Mr. Haines again calls our attention to the question of the possible purchase of additional real estate ad-

OSE IN CENTER

joining our present gas works. The greater part of the block adjoining our holder lot could probably be purchased for in the neighborhood of $35,000 and it would undoubtedly be to the advantage of the Company to own such additional property, as it would enable us to locate our proposed new holder on it. If we do not acquire this additional property, we expect to locate the holder on the present holder lot, where the available ground is so small that the holder will have to be rather smaller than we otherwise would make it, or of rather unusual dimensions; that is, it would be very tall for its diameter. If we had the property suggested by Mr. Haines, it would leave this other land for normal works extensions.

Our real estate at present consists of slightly over five acres, and on this land we can get, with a fair degree of ease, a manufacturing capacity of from five million to seven million feet of gas, of which about one-quarter could be coal gas. Our present output is something over two million feet per day, and I believe the amount of plant that can be put on the present land is sufficiently large to justify us in not purchasing any additional land at this time, although I recognize that if not purchased at this time, it probably cannot be purchased at all in the future, except at an increase in cost that would probably be prohibitory.

983 In this connection it should be borne in mind that coke oven gas has been suggested for Des Moines. If the conditions should ever make it wise or necessary for us to install a large coke oven plant at Des Moines, the present site, even with the additional land suggested by Mr. Haines, would not, in my opinion, be large enough, as a coke oven plant requires ample room for the handling of the large amount of coal and coke involved in this process. In view of the above facts, I mention this recommendation of Mr. Haines, and submit it to your consideration without recommendation, but I have not included in my summary any money for additional real estate.

Waste Heat Boiler: We recommend the installation of a waste heat boiler on the 10′ 6″ set. The estimated cost of this apparatus would be $11,000 and the estimated saving in boiler fuel, etc., per year would amount to $6,016 or a gross return on the investment of 54.7%. This is covered by—

Req. #185. Waste Heat Boiler on 10′ 6″ set..... $11,000.

Miscellaneous Works Improvement: To cover miscellaneous works improvements the need for which may be shown during the year, we include an item of—

No Req'n. Misc. Works Improvements..... $3,500.

984 Distribution:

Pressure Mains: To cover the estimated needs for trunk mains, which will be taken up in detail later, we include an item of—

No Req'n. Misc. Pressure Mains..... $20,000

COPY BOUND CL

Small Mains, Meters & Services: It is estimated that Des Moines will need in 1911 for—

Small Mains	$40,000	
Meters and Services	27,000	
		$67,000

985 *Summary.*

Works:

Req. #——.	Holder Foundations, etc.	$30,000	
Req. #183.	Changes to Purifiers, etc. (Rep. $3,000)	5,000	
Req. #184.	Works Office Extension	3,000	
Req. #190.	Photometer and Laboratory Equipment (Rep. $250)	500	
Req. #161.	Boiler Fuel Scales	500	
Req. #185.	Waste Heat Boiler on 10′ 6″ Set.	11,000	
No Req'n.	Misc. Works Improvement	3,500	
			$53,500

Distribution:

No. Req.	Misc. Pressure Mains		20,000	
	Small Mains	$40,000		
	Meters and Services	27,000		
			67,000	
				87,000
	Improvements	$137,250		
	Repairs	3,250		
	Total	$140,500		140,500

Yours truly,

ROLLIN NORRIS.

Recommended for Approval:

——— ———,
Second Vice-President.

986 *Annual Estimate*—1911.

AUGUST 31, '-0.

Mr. Rollin Norris, for Walton Clark, 2d Vice-President, Philadelphia, Pa.

DEAR SIR: I did not include in my Annual Estimate an appropriation for a waste heat boiler to be attached to our 10′ 6″ machine.

From what little data I have on this subject, I am under the impression that the installation of this boiler would be a paying proposition but that the matter is still in the experimental stage and that a permanent design has not been decided upon.

I would be very glad indeed to have a waste heat boiler installed in Des Moines, and if the situation is such that you feel justified in including it in our Annual Estimate, I would be pleased to have you do so.

Very truly yours,

——— ———, *Manager.*

G. I. V.—N. J.

987 August 1, 1910.

Annual Estimate—1911.

SEPT. 1, '10.

Mr. Rollin Norris, for Walton Clark, 2d Vice-President, Philadelphia, Pa.

DEAR SIR: I give below a summary of the condition at Des Moines:

Percentage of Increase in "Gas Send-out":

Year 1909			6.6%
Year 1910, Estimated			10.0%
January	1919	5.80%	Gain
February	"	8.10	"
March	"	5.58	"
April	"	6.35	"
May	"	13.33	"
June	"	4.57	"
½ Year	"	7.21	"
July	"	2.53	"
August	"	3.86	"

I enclose herewith copy of the form enclosed in your letter of above date, which I have filled out as requested.

988 Works: An examination of the apparatus at the Works shows that we have ample capacity in all departments with possible exception of purified storage.

In the winter of 1911 and 1912, we will probably have a maximum daily send out of 2400 M, and in the winter of 1912 and '13 it will probably be 2600 M. This will be very nearly double our purified storage, and I therefore recommend the installation of a two-million foot holder in 1912, the foundation to be built in 1911.

Holder foundations..... $40,000.00

Tar Extraction: The removal of tar from the gas at the works is extremely unsatisfactory, as the P. & A. Extractor installed five years ago does not work. Our purifiers being divided-flow, it is impractical to use any portion of them for tar catch. You have now on file a requisition to change the position of the tar extractor, which we believe will make the apparatus do the work for which it is designed. There is, however, no absolute certainty about this, and I therefore wish to install some auxiliary apparatus to complete the removal of the tar, or to alter the purifiers making them continuous flow, so that a portion of each bottom layer can be successfully used for a tar catch.

This latter alternative is preferable as we have ample purifying capacity, or at least we will have with the through-flow boxes. I do not think that you can count on the rated capacity of boxes when they are divided flow.

COPY BOUND CL

989 I am therefore recommending the alterations to the purifiers making them continuous flow with dry lutes instead of water seals.

Alterations to purifiers..... $2,000.00

Works Office: The room used for the Works office contains also #1 and #2 Station Meters, the photometer room and the governors, and is crowded. I recommend the addition of a second story to this building, in which could be placed our office, photometer room and other laboratory apparatus used at the Works.

Works Office Extension..... $3,000.00

Real Estate: The Des Moines Works' property consists of the following land:

Block C, Works, 280′ x 280′.....	78,400	sq. ft.	
Block "B," Holders & Stable Lot, 280′ x 280′	78,400	" "	
Block "K," Lots 2, 3, 4, 5, 6, and Part of Lot 1	50,820	" "	
Block "M," Lots 9 & 10, 132′ x 132′.....	17,424	" "	
	225,044	" "	5.1 Acres
Block "T," 5 lots on River Front used for Storage, 200′ x 40′.....	8,000	" "	
	233,044	" "	

This is a total of a little over five acres, but the five lots in Block "T" will probably in the near future be absorbed by the Park
990 System, and eliminating this will leave 5.1 acres of available property.

The block of land situated just south of our holder lot and west of our oil storage lot is known as Block "A" and is 280′ x 280′. It is the only available piece of property of any size near the Works. You already have a map of this property on file. Two o . e lots in this block are owned by the C. B. & Q. Railway, that is, L. . #6 and #13. It is not likely that these lots can be purchased as the C. B. & Q. Railway will want them for a right-of-way, should they be required by legislation to remove from the public streets and they already have almost all the right-of-way parallel with the street to the city limits. However, should the City Council agree to condemn the alleys in this block, to which the C. B. & Q. Railway have no objection, I believe that some arrangement could be made with the C. B. & Q. Railway to so adjust their property line with the present owners of the rest of the block as to give them a parallel right-of-way and in this manner square out the block in the one piece of property.

The rest of the lots in this block, which are not owned by the C. B. & Q. Railway, can be purchased for $31,400, or possibly a

LOSE IN CENTER

little less and I believe it is very much to the advantage of the Company to buy this property in the near future. All of it is now collected and title in one person with the exception of the South one-half of Lot No. 11, which I estimate could be purchased, with the buildings, for $7,000. The buildings on this half lot consist
991 of one two story brick residence and one two story brick grocery store, and it might be possible to purchase them for less than $7,000. at this time. The balance of the property contains about fourteen small houses, which rent for about $100. a month and would tend to off set the interest on the investment, without estimating any additional income from rents of the buildings on the south half of Lot No. 11, which are occupied by their owners and whom I have not seen personally in regard to continuing the occupancy in case they should sell out.

I believe that it would be very much to the Company's advantage to acquire as much of this block as can be bought at the present time. While it may not be absolutely necessary for a year or so to own any additional real estate, it is very obvious that ultimately we will have to acquire more, and, should the ownership of this block become dissipated again in small lots, it is more than likely that it would be more expensive to accumulate it from diversified owners, particularly as Des Moines is growing rapidly and traffic facilities are becoming more valuable all the time. I therefore recommend an appropriation of $31,400. for the purchase of this real estate.

992 Additional Real Estate $35,000.00
For Miscellaneous Works Improvement I will ask 3,500.00

Distribution: A careful inspection of our distribution system indicates that the only points where we will probably have low pressure is in the eastern section of the City east of E. 18th. We have already made one extensive addition to the small mains east of this point and have another under way. The northeastern addition, that supplied by Easton Boulevard, can be boosted by connecting the 12" main from Lyon to Walker on E. 18th. The 12" on 18th will then be fed from the 12" on 15th by five strings of 4" pipe of an average length of about 2500', and each one carrying considerable load. That this load amounts to a heavy pull is shown by the loss in pressure last fall of *of* 9/10ths (net 7/10ths) between E. 15th Street and Court, and E. 18th and Walnut.

A rough calculation indicates that the pressure at E. 30th and Walnut will be down to 19/10ths this fall, and will probably be lower than this in the fall of 1911. The pressure at E. 18th and Easton will probably be down to not lower than 22/10ths this fall without the connecting main on 18th between Walker and Lyon, as the business on the extension N. E. of this point will not be fully developed this fall. If the connecting main were not put in next year, I calculate that the pressure at 18th and Easton would be down to 17/10ths in the fall of 1911, which is much too low for a point of supply of an extension.

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I therefore recommend that the following trunk mains be laid this year:

993	E. Court—15th to 18th (Partly Laid)	1200′ 16″.	$3,200.00
	E. 18th—Court to Walnut,	1300′ 12″.	2,500.00
	E. 18th—Lyon to Walker,	700′ 12″.	1,300.00

As I said above, I do not anticipate any other trunk mains will be needed next year, but to cover contingencies, the item for miscellaneous trunk mains should be ample, and I therefore ask,—

Miscellaneous Trunk Mains $5,000.00

For Small Mains, Meters & Services, the following will be sufficient:

Small Mains 40,000.00
Meters & Services 15,000.00

Very truly yours,

—— ——,
Manager.

G. I. V./N. J.

994 *Annual Estimate*—1911.

SEPTEMBER 15, 1910.

Mr. Rollin Norris, for Walton Clark, 2d V.-P., Philadelphia, Pa.

DEAR SIR: Referring again to my annual estimate for 1911, under date of September 1, 1910, I should like to correct an error in the estimate of Small Mains, Meters and Services. The figures given on page seven read—

Small Mains $40,000.00
Meters & Services 15,000.00

$55,000.00

and they should read—

Small Mains $40,000.00
Meters & Services 27,000.00

$67,000.00

Kindly correct my letter accordingly and oblige.

Yours very truly,

—— ——,
Manager.

J. H./E. D.

OSE IN CENTER

995 SEPTEMBER 20*th*, —10.

Mr. Rollin Norris, for Walton Clark, 2d Vice-Pres., Philadelphia, Pa.

DEAR SIR: Confirming my conversation with your- of yesterday, I wish to include in my Annual Estimate one Kennicott Water Weigher.

My understanding is that two of these are now being purchased for installation in two of the U. G. I. plants for trial, and that if these prove successful, that the installation of one for Des Moines will be recommended.

Very truly yours,

——— ———,
Manager.

G. I. V.-N. J.

996 *Memo.*

E. 15th and Court pressure.....	39/10	89	Elevation 7/10
E. 18th and Walnut	30/10	56	" 3/10
East 30th and Walnut	25/10	22	"

4 Strings of 4" 850 yards long, 15th to 18th 9/10 loss 6,000 ft. in hr.
1 String of 6" 2,500 yards long 18th to 30th 3/10 loss 1,600 ft.
Add 800 ft. per hour on Walnut.
" " " " " " Easton Blvd.
Connect E. 18th and Walker to Lyon.
Making 5 strings of 4" pipe which will still give the same pressure at E. 18th with 1600 cu. ft. added delivery.
Adding 800 cubic feet to the 1600=2400
For the delivery out Walnut St. from 18th to 30th.
The pressure at 15th and Court was 39/10 and at 15th and Fremont 34/10 last year same elevation. Mean pressure along 15th St. main say 37/10.
With 18th from Walker to Lyon connected the mean pressure along the 18th Street main should be 28/10.
The pressure at E. 30th and Walnut for delivery of 2400 cubic feet as above and 28/10 at 18th St. is 21/10 gross, 19/10 net.
East 15th to E. 18th on Walker 900 yards.
Loss in pressure fall of 1909 6/10 net.
Delivery 1400 ft. per hour.
Add 500 cubic feet per hour (800 in 1911) gives a loss of 13/10 net.
Pressure at E 18th and Easton will probably be 22/10.
Add 800 cubic feet per hour gives a loss of 17/10 net or the pressure at 18th and Easton would be 17/10.

997 *Annual Estimates.*

PHILADELPHIA, PA., *Aug. 1st*, 1910.

Mr. Jansen Haines, Manager, Des Moines, Iowa.

DEAR SIR: The time is approaching for the preparation of the Annual Estimates for 1911, and I shall be obliged if you will get in your Annual Estimate letter by the first of September, or earlier.

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In order to simplify the getting up of this letter by you, I enclose herewith a blank copy of the same form we used last year for this purpose.

On this form please give the present capacity of your manufacturing plant, as indicated. It also provides a place for you to fill in your estimate of the maximum daily output which will have to be provided for this coming winter and for the winter of 1911-12.

Please fill in on the first page a brief memorandum of what improvements or large repairs you anticipate for 1911, and in the letter which you will send here with the filled-in blank, give such further detail as may be necessary.

In the case of the trunk mains as covered on page 2 of the blank, you will of course be unable to give accurate detailed figures, but please do the best you can and especially call attention to any districts where you expect low pressure areas to develop, and give a lump sum estimate of how much money you expect to need for pressure mains.

Actual determination of the trunk mains needed for 1911 will have to wait until pressures have been taken during the heavy consumption next autumn.

Please estimate the capacity of your purifiers by taking the number of cubic feet of oxide in the boxes between where the foul gas enters and the point where the gas is tested, and multiplying this by 600 ft. per day. This gives the normal daily capacity of the boxes. For instance, if you have a regular 4-box system with 3 boxes in use, you test on the outlet of the second box, and the capacity of the boxes would be the number of cubic feet of oxide in the first two boxes multiplied by 600 cu. ft. of gas per day. For mixed gas use a factor of 500 ft. instead of 600 ft., and for coal gas use 400 ft.

You have a copy of the Annual Estimate letter for 1910 as it went forward to Mr. Clark, and you- letter for 1911 should follow the same general plan, and give detailed explanations of your recommendations.

Yours truly,

ROLLIN NORRIS.

(Enc.)

998

Annual Estimate for 1911.

Des Moines, Iowa. Works.

Maximum Daily Output:

Actual—Winter of 1909-10 = 2013 M
Est'd " " 1910-11 = 2214 M = 10% increase
Est'd " " 1911-12 = 2435 M = 10% increase

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Daily capacity of Present Plant:

Generators.		Purifiers.	Stotion meters.	Oil storage.	Holders.	
Reserue.	Net.				Relief.	Storage.
1800 M	1200 M	3360 M	5000 M	64 M g	160 M	300 M
	1200 M	....	....	300 M g	...	1100 M
	300 M	....	....	300 M g	...	....
	300 M	....	....	...	...	....
	3000 M	....	....	65 days	...	1400 M

Purifiers:

Number of boxes	4
Inside dimensions of box	20 x 20 x 8
Depth of oxide in each box	6'
Maximum rate per hr. actual	125 M

List of new apparatus, etc., needed to take care of the above est'd Output:

1.	—.		
2.	Real Estate	$35,000.00	
3.	Holder Foundations	40,000.00	
4.	Alterations to Purifiers	2,000.00	
5.	Works Office Extension	3,000.00	
6.	Miscellaneous Works Imp't	3,500.00	5,000.00

999

How many tons of generator fuel can you store	1520 tons.
How many days will this last in winter of 1911-12	30 days.
Do you recommend additional storage	No.
How many tons of boiler fuel can you store	300 tons.
How many days will this last in the winter of 1911-12.	12 days.
Do you recommend additional storage	No.
Have your exhausters sufficient capacity to take care of your make, even if the largest one should break down	Yes.

Distribution:

Trunk Mains: What pressure mains will you probably need? Give list and approximate cost:

E Court 15th to 18th, 1200' of 16"	$3,200.00
E 18th Court to Walnut, 1300' of 12"	2,500.00
E 18th Lyon to Walker, 700' of 12"	1,300.00
Miscellaneous Pressure Mains	5,000.00
Give estimated cost for 1911 of Small Mains (in addition to trunk mains given above)	40,000.00
Meters & Services	15,000.00

—— ——, *Sup't.*

COPY BOUND C

1000 DEF'TS' EX. 22.

J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Capital City Gas Light Company. Des Moines Gas Company.

Analysis of Real Estate Account, 6-30-1886, *to* 12-31-1910.

June 30, 1886, Balance		$8,916.00
Ledger No. 4, Folio 154, Capital City Gas Lt. Co.:		
1897.		
Feb. 28—Cost of land located in Fourth district (Des Moines) Polk County, Scott & Dean's Addition, comprising lots 3, 4, 5, 6, 7, 8, 9 and 10, Block B		25,000.00
Ledger No. 5, Folio 117, Capital City Gas Lt. Co.:		
1901.		
Sept. 30—Cost of Lots 3 and 4, Block T, Scott & Dean's Addition to Des Moines		500.00
Ledger No. 2, Folio 219, Des Moines Gas Company:		
1909.		
Dec. 31—Cost of laying sidewalk		438.61
1910.		
Sept. 30—Cost of surveying on E. First St		33.50
Dec. 31—Cost of Curb and Street Paving at Southwest corner of East 3rd and Vine Street		1,117.15
		$36,065.26
Less:		
Ledger No. 6, Folio 118, Capital City Gas. Lt. Co.:		
1902.		
Oct. 31—Credit	$175.00	
Ledger No. 7, Folio 191, Capital City Gas Lt. Co.:		
1905.		
Jan. 31—Credit	125.00	300.00
		$35,765.26

This does not include the land taken over at the time of the organization of the Des Moines Gas Company.

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1001 DEFENDANTS' EXHIBIT #23.

8/15/11. F. C. W.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Report on the Work of the Des Moines Gas Company by William D. Marks, Consulting Engineer, Park Row Building, New York City.

(Here follows diagram marked page 1002.)

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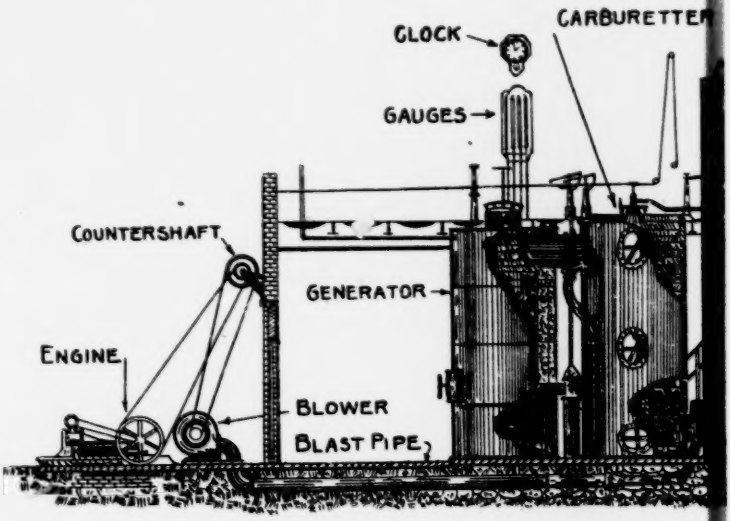

STANDARD DOUBLE SUPERHEATER LOWE
WITHOUT CONNECTIONS FOR REVERSAL OF ST
SIMILAR TO THE ONE USED BY THE DES

PARK ROW BLDG, N.Y.C.

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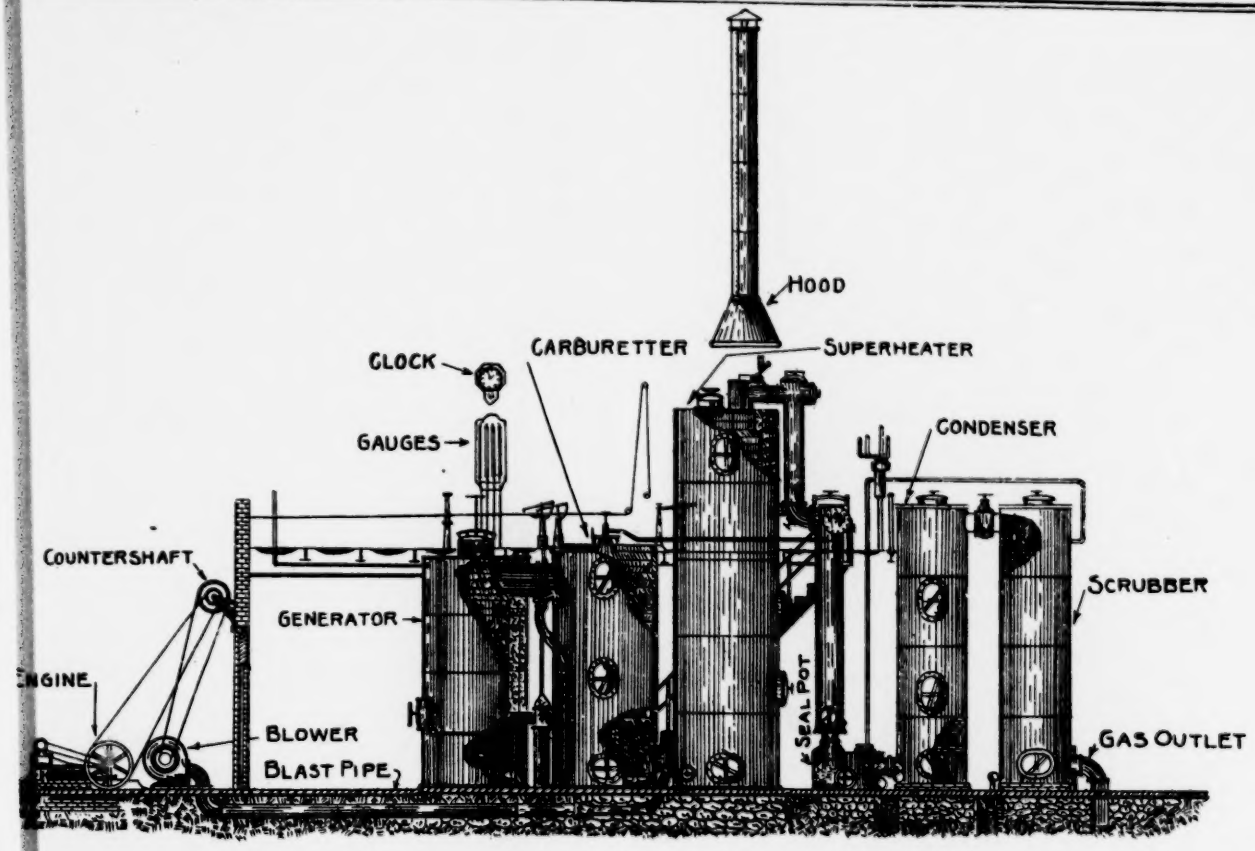

STANDARD DOUBLE SUPERHEATER LOWE WATER GAS APPARATUS

WITHOUT CONNECTIONS FOR REVERSAL OF STEAM THROUGH GENERATOR.

SIMILAR TO THE ONE USED BY THE DES MOINES GAS COMPANY.

W BLDG, N.Y.C.

WM. D. MARKS, C.E.

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1003

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1008 SECTION 1. Object of This Report. The object of this report is principally to obtain, by means of appraisement, the structural cost and the present value of the works of the Des Moines Gas Company as of November 1st, 1910, and also the cost of supplying gas to the consumer's meter from an investigation and analysis of the books and records of this company.

Incidentally the growth of the sales of gas as related to its price, and also the proper basis of fixing a going value will be touched upon.

SECTION 2. Appraisement List. The Des Moines Gas Company has furnished to the city an elaborate list of all of its real estate holdings, buildings, gas making and gas distributing machinery, but has not appended to it any of the money values of these items, giving merely the physical measurements and quantities in the buildings

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and referring to and indicating the principal measurements of its machinery

From this list, however, with the exception of meters in stock and a pile of lumber, which has been omitted, all reference to the raw material such as coke, coal, gas oil, oxide, lime, etc., etc., required for its operating stock on hand are omitted by the company.

Although not so advised, it appears to me probable that this omission was made with the intention of including it in the working capital. I should say that I have, in my appraisement, included the meters in stock but omitted the small pile of lumber valued at about $75.00. I have made a personal inspection of these works, identifying and examining each detail of this elaborate list so far as I was not prevented from so doing by the material being buried in the ground or otherwise hidden from sight, and I have found it to be exceedingly careful as to the items and correct as to lineal measurements. I have also found a large error in favor of the com-

1009 pany, arising from the representatives of this company adopting what is known as "kiln count" as to the number of bricks in a cubic foot instead of the actual count which, roughly, may be said to be some 25% less.

Kiln count is correct enough as affording a very liberal margin for buildings not yet built, but in this case where the buildings are of the type known as factory or warehouse construction, all of the brick delivered are used and all of the brick bats and spawls can be worked into this structure and so the actual number of bricks per cubic foot give the correct measure.

The details of this correction of quantities are given with the various items and computations.

It will be found that in order to obtain a correct appraisement of the Lowe Carburetted Water Gas apparatus I have been obliged to depart somewhat from the arrangement of the list furnished by the Des Moines Gas Company. This is due to the fact that the United Gas Improvement Company possessing patents and an organized business in the Lowe Water Gas apparatus fixes a lump sum for all the machinery required for a water gas set of each given capacity. I should perhaps add that this list for appraisement furnished by the Des Moines Gas Company is the most exhaustive and complete of any that I have ever seen, and that there is no reason to believe that every item of apparatus worthy of consideration and a great many that were unworthy were included in it, and so I have departed from my usual custom of making allowances for omissions in making my appraisement. At this point it is proper to call attention to the fact that no overhead charges for omissions can be made in this inventory, nor should they be allowed in any proper inventory, although in a preliminary estimate where the engineer has to rely only on his own foresight it is proper to make a percentage allowance for omissions since all of the material is not in place and accessible as in the case of an inventory.

1010 The statement is made that from this appraisement list has been excluded all street mains, services, meters and apparatus required for the village of Valley Junction, and I have no means

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nor the time to verify this statement; for this reason and also for the avoidance of the expense of detailed verification I have made use of, but have not accepted as final, the appraisement list furnished by the Des Moines Gas Company.

I have no reason, from any inspection which I have made, to doubt the substantial accuracy of so much of this list as I have been able to verify by personal visit.

SECTION 3. Accounts and Records of the Des Moines Gas Company. The City of Des Moines, having been granted access to the accounts and records of the Gas Company, is having a careful verification made of the operating expenses for the year 1910, and also a somewhat less extended verification of the four years preceding for the purpose of learning the sales of gas, the gross earnings or revenue derived therefrom and the operating cost of gas at the holder and at the consumer's meter. The figures for revenue and cost used in this report will be based upon the results obtained by the accountants for the city with such modifications as may appear to me from a rational and practical knowledge of the business to be necessary to give fair average results for a period of five years of operation under good management both commercial and physical.

SECTION 4. General Consideration. From such casual judgments as I was able to form the engineering, management and arrangement of these works appears to be very good. Some of the buildings in the northwest corner of the northern square of land are built of poor brick and have had to be braced up in order to prevent them from falling down. The roofs at places too are in very bad shape; particularly in the case of the older buildings, which I should
1011 judge were erected about the year 1876. They are of little value save as they happen to be located and of use where they are so long as they can be prevented from falling down.

The newer buildings and the newer apparatus are of very good quality of material and workmanship and the general condition of the yards and works is one of extreme neatness and order.

These works appear to have a safe daily capacity of generators for about three million cubic feet, and an annual capacity of upwards of six hundred million cubic feet. As the largest daily output to date is reported as being two and one quarter million cubic feet and the largest annual output five hundred and fifty million cubic feet, there still remains a considerable margin for expansion of this business.

The purifying apparatus appears to have about reached its capacity or will have done so at three million cubic feet daily, and the holder capacity of about one million four hundred thousand cubic feet is also as little as should be used with three million cubic feet per day output.

From a rapid inspection of the size of the street mains it would appear as if the distribution system was adequate to the needs of the city, providing care is taken to readjust the system as irregularities of pressure may arise. There are two pushers or pumps for gas now in use which, I was told by an outsider, were used to pump the gas required to Valley Junction and the western edge of the City of Des Moines.

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For this reason I have included these pushers and this high pressure main in the appraisement of the property of this company.

The manufacturing works of this company are located on low land on the east bank of the Des Moines River and possess the usual advantages sought by gas companies of low level for the works
1012 access to an independent supply of water for the circulation system.

Three railway lines pass close to these works and they are connected with the belt line so that it is possible, without unusual expense, to deliver into their yard and tanks all of the coke, coal and gas oil required for the manufacture of carburetted water gas at low rates.

It is usual in most of the gas works of this United States to arrange for the manufacture of coal gas either separately or to be used in the form of mixed gas with the carburetted water gas, and from the abandoned wreck of a bench of retorts the inference is that such arrangements were once made in these works and have since been definitely relinquished.

In the City of Cleveland, Ohio, where coal from the Youghiogheny coal fields can be transported cheaply, they have found it possible to supply gas at the consumer's meter for long years at an average cost of forty-four cents per thousand cubic feet, and have sold it at seventy-five cents per thousand cubic feet. The economy of coal gas with cheap coal results from the sale of residuals which from each ton of coal are about one thousand pounds of salable coke, twelve gallons of tar and about forty cents' worth of ammonia. There is no means of determining how cheaply this coal gas can b manufactured in Des Moines.

The art of making an appraisement cannot be reduced to rigid scientific series of laws, nor is it ever likely to be so reduced. Experienced judgment, the result of thorough technical knowledge of the methods for making gas combined with long commercial and constructing engineering experience, is required to determine either the structural cost or the present value of gas works.

In appraising it is only safe to laboriously look up every
1013 item of a gas works and to apply to the depreciation of these the experienced judgment above referred to for the purpose of depreciating, since depreciation may result from any one of three causes.

Physical decay, which is exceedingly irregular, depending — the care of the machinery and on the severity of its usage as well as the quality of the machine's workmanship. This physical decay is a vanishing quantity and arrangements for meeting it are most safely made on a purely commercial basis by fixing the number of years of the machine's probable life and then regardless of the vagaries of physical decay setting aside a certain amount which will equal the value of the machine at the end of its probable life.

Obsolescence as a factor of depreciation is more difficult to deal with because it depends on the progress of science in the methods of manufacture of gas and also upon invention of the apparatus with which gas is manufactured, stored or distributed.

Inadequacy as a factor of depreciation is one which can be forecasted to some extent and preparation made to meet it.

In discussing depreciation it is necessary to determine which one of the three factors, physical decay, obsolescence or inadequacy, will first terminate the life of the machine or apparatus, and to use this first factor as the basis of depreciation.

In many cases of street mains, services and underground piping in general, it is not possible to closely watch the progress of physical decay, and it is therefor- necessary so far as we are able, to gather together what information comes to the surface and fix the life of the various buried materials.

In the case of cast iron gas mains nobody has lived long enough to determine their life. Cast iron rusts and after the rust has attained a certain thickness it becomes a protecting coat, and,
1014 so far as we know, remains in this condition for a longer period than our experience has yet enabled us to measure.

Wrought iron rusts, scales and rusts again, and in the case of service pipes and underground wrought iron piping of small dimensions it has been the experience in the City of Minneapolis, which in many respects, as to soil, resembles Des Moines, that fifteen years can be regarded as the average life of a wrought iron underground service pipe.

On the continent of Europe houses and factories and other buildings hundreds of years old are very common, but on this side of the Atlantic fifty years appears to be considered the maximum life of factory buildings in most cases.

In the depreciation, which will follow hereafter, of buildings the Somers system in the depreciation of buildings is used because it carries the authority of its adoption by the City of Cleveland and in part by the City of New York, and also in many other cities of the United States.

I have stated the case of an appraisement thus frankly and in advance to show that in appraisements it is as impossible as it would be insincere to claim any excessive degree of accuracy. Although long experience as a specialist will enable an appraiser to obtain the substantial truth in the aggregate of gas works, or other works in which the appraiser has used experienced judgment and laboriously goes into details.

Section 5. Overhead Charges. When the preliminary estimate is made the engineer has usually found it necessary, after collecting and adding up all the raw material and productive labor required, to make an overhead charge to provide for engineering designs, superintendence, general management, taxes and interest on the money invested. In doing this he is obliged to use his judgment as to the length of time required to complete the work. In
1015 this matter of time all engineers would agree with me that a year and a half, including two working summer seasons, is sufficient time in which to erect the manufacturing works complete in every detail.

Regarding the existing system of street mains, one hundred and eighty miles in length, on which a great deal of stress is laid, I would

venture, as my opinion, the statement that all the pipe now underground could be laid without serious disturbance to the traffic of the city in two summer seasons of work, requiring a gang of about four hundred and fifty men to do it. I speak thus confidently because in 1888 and '89 I underlaid the principal streets of Philadelphia with electric conductors, covering all streets of business importance between the Delaware and the Schuylkill Rivers, and Vine Street and South Street, which is the heart of the city and its busiest point.

Referring more particularly to the interest on the investment, taken usually at 6%, and calculated for one half of the time of construction, or nine months, I would say that it is very rarely the fact that a company in good standing has to pay one half the interest on its investment or anything like that amount, as most of the heavy payments come at the completion of the work without interest if contract work, or if for material when it does its own work. For this reason in the present instance it appears perfectly safe to assume 4½% interest on moneys expended and leave a liberal margin.

Referring now to the matter of the cost of drawing and engineering designs, I would say that Wm. Farmer, the foremost engineer of many years ago in New York City, was paid 1% of the cost of the manufacturing plant of the complete gas works of St. Louis for furnishing all of the drawings and specifications required in its construction. This gas works has a daily capacity of one mil-
1016 lion cubic feet of coal gas, and the drawings required for a water gas plant would appear to me to cost considerably less.

Regarding supervision during erection, I would say that the cost of a resident engineer and of a foreman of construction for a year and a half was less than the $7,500.00 paid to Wm. Farmer for drawings for a station costing $750,000.00.

Therefore it appears safe, granting close management, to fix the price of drawings, specifications and supervision during erection at two per cent.

The taxes in the City of Des Moines, I am told, are about two and a quarter per cent on the par value of the property taxed, but it does not appear to be the custom in any community to tax unfinished buildings or unfinished machinery, and the probabilities are that beyond a land tax, which is a relatively inconsiderable amount of the value of the plant, no taxes will be paid. I have therefore fixed it at what I believe a liberal margin: the taxes for a year and a half at two per cent.

In the matter of preliminary organization of the company the question of the cost of the officials, directors, legal advice and general management in the case of a small company organized to meet the first demands of a town just large enough to consider the use of gas, the preliminary cost of organization will be very slight, and after the works are going the operating expense in the case of manufacture of gas would all be charged to the cost of gas making.

In order to be liberal I will reckon the cost of a board of directors and legal advice at twice the actual cost for drawings and supervision, or four per cent.

Recapitulating, we have:

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1017	Interest	4½%
	Drawings and supervision	2 %
Taxes		2 %
General management		4 %
	Total	12½%

Against this percentage objection will at once arise, in the minds of many, to the low rate of overhead charges, I would say that its basis is not a preliminary estimate, which so frequently falls far below the actual cost of a works, but is an inventory in which every detail, every pound of material or machinery is taken account of. If there are any charges for omissions, contingencies, fire and liability insurance, they are very small, indeed, in the case of brick and iron structures such as gas works.

This 12½% overhead charges I shall apply only to the buildings, machinery, gas holders and apparatus in the manufacturing part of the gas works.

Outside the walls of the gas works, for the sake of having a sound distribution system and avoiding heavy losses through the leakage of gas, it is very rarely that the street main system, the services or the meters are put in by anybody save the employés of the establishment under the charge of the operating officials of the gas company.

For this reason I have been accustomed, after carefully obtaining the true cost of the raw material required for street mains and services, to add to the street mains 10% undistributed charges and 15% margin for profit or bad management. To the house services to add 4 cents per foot for miscellaneous expenses and to the meters, which form almost a separate department, requiring special shop and special experts for testing and repairing, 12½% for overhead charges.

1018 SECTION 6. Depreciation. As stated above depreciation of gas works arises from three causes: physical decay, obsolescence, and inadequacy. It will be perceived upon reflection that depreciation and repairs cannot be separated. The more thorough and prompt repairs of any manufacturing establishment may be the less is the residual allowance which will have to be made for residual depreciation on the books of the company. In some of our public service corporations, as, for instance, the Pennsylvania Railroad, the policy is to make repairs and replacements so thorough and so effective as to require no allowance whatever for depreciation in figuring the operating cost at the end of the year. In other cases of thorough repairs some agreed upon depreciation covering obsolescence and inadequacy is always made at the end of the year.

Referring now more particularly to the gas works. The cast iron street main system has been much discussed amongst engineers, and finally nearly all appear to be agreed upon the fact that a cast iron pipe in the streets has never been found, except under extraordinary conditions, to perish from physical decay.

The repairs to cast iron mains arise almost wholly from accidents and from replacements demanded by the conditions of the street works or the increase of business, and in case the size of the mains is enlarged the cost of the smaller mains is charged to repairs and the cost of the larger mains, less the cost of the smaller mains, is charged to capital account.

We have no reason to believe that a cast iron system of mains will become obsolete, and I have above explained how inadequate mains replaced by larger mains are dealt with.

In the matter of meters there is a rapid depreciation which, for the sake of avoiding slow meters and a great loss to the company in gas bills, require close attention. It has become generally
1019 the belief that seven years reaches the average life of a meter in good condition for measuring, with ordinary attention to its repairs, and after such service it should be removed and before being used again subjected to such thorough repairs and renewal of parts as will approximate the cost of a new gas meter.

The average useful life of a gas holder is taken at about forty years. The average useful life of a wrought iron street main service is about fifteen years under ordinary conditions. By means of dipping services in a tarry or asphalt compound it has been found possible to add very much to the life of services, and this is practiced of recent years in all well managed gas works.

Referring now more particularly to the commercial methods of dealing with depreciation. After the life is fixed for any item of a gas works provision can most simply be made for its ultimate replacement by annually setting aside the average amount of its depreciation based on the best judgment of gas engineers.

Instead of creating a fund commonly known as a sinking fund, the Massachusetts Gas Commission has heretofore permitted a direct charge for depreciation to the profit and loss account, and a reduction of the fixed assets by a corresponding credit or credits to the various fixed investments of the company.

It will be perceived from this that the cash value of these depreciations is left in the bank to be drawn upon for whatever purposes the company may deem it necessary to use money.

Because of the fact that the profit is usually greater on extensions of plant than the profit which could be derived from investments in bonds or other securities, most of the Massachusetts companies do not create a depreciation fund, but use the money to extend
1020 the plant, as their repairs are generally very thorough and few actual replacements are required. This depreciation money used for the extension of plant appears in future balance sheets as surplus over and above capitalization of these public service corporations which are not allowed to issue any stock or security for which par is not paid, and they sometimes are obliged to pay a premium on new issues ranging from fifty to one hundred per cent. as decided by the Commission after a careful investigation of the finances of the company applying for new stock.

SECTION 7. Inventory page 16; Des Moines Gas Company; Purifying House #1 A & B.

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Erected 1892, brick, slate roof, monitor ventilator, concrete foundations and floors.

Oxide conveyor 1906—Elevator disused, roof trusses wood.

	Structural cost.	Present value.
Contract Price	$6,904.92	
Overhead charges 12½%	863.12	
Structural Cost	7,768.04	
Depreciation 18 yrs. 25% (Somers	1,942.01	
		5,826.03
Area — "A" = (101'-4" x 30'-9") =	3,116,00 sq. ft.	
" — "B" = (12'-4" x 11' 3") =	139.00 sq. ft.	
Total area A & B	3,255.00 sq. ft.	

The new structural cost per sq. ft. is $2.39.

From the data furnished in Gas Company's Investory, page 18, the number of bricks in foundation calculated on a basis of 21 bricks per cu. ft. is 3,990. Figured on the basis of 17.7 bricks per cu. ft. as obtained from actual measurements, the number of bricks is 3,370, or an excess of 18% in company's figures.

In case of walls the number of bricks given by company is 233,-932. Corrected figures give the number as 183,160. This
1021 makes an excess of 28% in company's figures. The explanation of this excess is that the company has taken 7½ bricks per sq. ft. wall area in case of a wall of 4" thickness, 22½ bricks per sq. ft. wall area for a 13" wall and 30 brick to a 17" wall; whereas figures based on actual measurements taken from the building itself give 5 2/3 bricks per sq. ft. wall area for 4" wall, 18.4025 per sq. ft. wall area for 13" wall thickness and 24.0925 bricks for 17" wall.

NOTE—Contractor Jas. Maine's figures for the masonry work on Purifying House was $5,223.27.

SECTION 8. Inventory page 25, Des Moines Gas Company. Contents of Purifying House #1 A & B.

		Structural cost.	Present value.
Steam Hyd. Elevator (Obsolete		$500.00	$50.00
Bricket Oxide Conveyor ht. 40 ft. 5 x 6 vert. engine (1905)	1,500.00		
Overhead charges 12½%	187.50		
		1,687.00	
Structural Cost	1,687.50		
Depreciation 5 yrs. 5% 25%	421.87		
			1,266.00

		Structural cost.	Present value.
4 C. I. Purifying Boxes 20 x 20 x 7′ including covers hoist centre seal valves and conn. 1893.....	16,000.00		
16 inch C. I. pipe erected 327 ft. @ $2.10.....	687.00		
16 inch valves 2 @ $74....	148.00		
Contract price.....	16,835.00		
Overhead charges 12½%....	2,108.37		
	18,943.37	18,943.00	
Depreciation 17 yrs. 2% 34%	6,440.00		12,503.00
Totals		$21,130.00	$13,819.00

1022 SECTION 9. Inventory page 26, Des Moines Gas Company; Fire Brick Shed #1 C.

Erected 1909. Brick foundation, corrugated iron walls and roof; steel members. Dirt floor.

	Structural cost.	Present value.
Contract price.....	74.46	
Overhead Charges 12½%.....	9.31	
Structural Cost.....	83.77	
Depreciation 1 yr. 2%.....	1.68	
		82.09

Area = (19′-0″ x 12′ 0″) = 228 sq. ft.

Structural cost per sq. ft. new is 37¢.

This shed consists merely of two walls and roof made of corrugated iron fastened to light steel members. The walls of brick buildings No. 1 A & B (Purifying House) are used to close in the other two sides of the brick shed.

There is an excess of 23½% in the number of bricks given by the company on account of figuring 21 instead of 17 brick to the cu. ft. obtained from actual measurements.

SECTION 10. Inventory page 28, Des Moines Gas Company; Meter, Governor, Exhauster and Wash Room #3.

Erected 1876*a*. Brick and wood, 1st story and basement partitioned into 4 parts A, B, C, D. Foundations of rubble stone in cement mortar. Walls of brick in lime mortar. Roof of slate on rough boards supported on wood trusses. "Star" type ventilators. Floor of division A basement is concrete on earth; 1st floor concrete on matched boards. Floor of division B basement is dirt; 1st floor concrete on matched boards and C. I. plates. Floor of divisions C & B basement of brick flat. 1st floor of double matched boards.

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1023

	Structural cost.	Present value.
Contract Price	5,129.60	
Overhead charges 12½%	641.20	
Structural Cost	5,770.80	
Depreciation 34 years 63% (Somers)	3,635.60	
		2,135.20

Area = (98'-6' x 29'-4") = 2,886 sq. ft.
Structural cost per sq. ft. new is $2.00.

The company has figured 25¾ ½ more bricks in the walls, than actual figures, based on measurements taken at site of buildings, give. The cause of this excess is the company has assumed 7½ bricks per sq. ft. area of walls 4" thick and 22½ bricks per sq. ft. area of walls of 13" thickness, whereas actual measurements give 5 2/3 bricks per sq. ft. area for 4" wall and 18.40 bricks per sq. ft. area for a 13" wall. In the case of the brick emplacements the excess is 26%, caused by assuming 15 bricks per sq. ft. area for wall 8" thick instead of taking 12 bricks, as actually figured from measurements taken from building.

The buildings generally are in poor condition and walls ready to fall down. Brace, truss and tie rods prevent walls from falling down.

SECTION 11. Inventory page 41; Des Moines Gas Company; Contents, Meter, Governor, Exhauster and Wash Room, Building 3.

Items.	Structural cost.	Present value.
Foundation excavation	$10.00	
Brick and concrete 162 cu. yds. @ $7.00	1,134.00	
Laboratory Apparatus	2,000.00	
2 eight ft. station meters	4,000.00	
1 Connelly 16" Governor 1896	1,100.00	
1 Connelly 24" Governor 1903	1,600.00	
Toiley Fixtures	100.00	
1024 1 Safety blow back and drip pump	400.00	
16 inch #8 Wilbraham Green Exhauster and N. Y. Safety engine 1909	1,500.00	
16 inch 2 #7 Root Exhauster and 2 N. Y. safety engines 1909	2,300.00	
8 inch 2 #5 Wilbraham Green pushers and 2 N. Y. Safety engines 1906	2,000.00	
One P. & A. tar extractor 1905	750.00	
Work bench and vise	15.00	
Bath tub and lavatory furnishings	550.00	
Buffalo Duplex Fire pump 7½ x 5 x 8	200.00	
Warren Duplex Pump 10 x 6 x 10	300.00	
Vertical Pump	150.00	

	Structural cost.	Present value.
Piping and Valves:		
8″ 188 ft. @ $1.86	350.00	
10″ 166 " @ 2.50	415.00	
16″ 364 " @ 4.20	1,529.00	
20″ 19 " @ 5.80	110.00	
24″ 48 " @ 7.20	346.00	
(Double rates covering valves etc. $1,375)		
Total contract cost new.....	$20,859.00	
Drawings, supervision, general management, interest and taxes 12½%.....	2,607.00	
Total structural cost.....	23,466.00	
Depreciation inspection 25%.....	5,866.00	
		$17,600.00

Average age 6 years.

SECTION 12. Inventory page 43. Des Moines Gas Company; Retort, Generator, Engine and Blower House #4.

Erected 1876. Three divisions A, B, C. Division A and C one story construction. Division B of two story construction. Foundations of rubble stone in cement mortar, Brick walls, lime mortar. Roof of A & B is of corrugated iron on steel pipe with wood members. Monitor of steel. Floor of A is dirt. Floor of B brick laid flat, operating floor is made of C. I. plates. Floor of C is brick laid flat.

1025

	Structural cost.	Present value.
Contract Price.....	$3,255.78	
Overhead charges 12½%.....	406.97	
Structural Cost.....	$3,662.75	
Depreciation 34 yrs. Insp. 67% (Somers 63)	2,454.04	
		$1,208.71

Area A & B (84′-1″ x 31′-8″) = 2,663.5
" C (28′-8″ x 13′-4″) = 382.3

Total area A B and C.... 3,045.8 Sq. ft. say 3,046.

Structural cost per sq. ft, new is $1.20.

The Company's figures show an excess of 25½% in the number of bricks over the quantity obtained from actual measurements taken at the building. This difference comes from assuming 7½ bricks per sq. ft. wall area in a 4″ wall, 15 bricks for 9″ wall and 22½ bricks in 13″ wall; whereas corrected figures give 5 2/3 bricks per sq. ft. area for a 4″ wall, 12 bricks for 9″ wall and 18.4 bricks to a 13″ wall.

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The steel roof supports, roof and monitor are practically scrap iron; the building in general is about ready to tumble down, so that a depreciation of 67% is a reasonable figure on its present condition.

SECTION 13. Inventory page 52. Des Moines Gas Company Contents Retort House, Generator, Engine and Blower House #4.

Items.	Structural cost.	Present value.
Excavation 32 cu. yds. @ 35¢	$11.00	
Foundations 34 " " @ $7.00	238.00	
2 sets Lowe Water Gas Apparatus		
1026 installed 1887	.....	
2 Generators 6 ft. diameter	.....	
2 Carburetters 6 " "	.....	
2 Superheaters 6 " "	.....	
2 Washers 4 " "	.....	
1 Scrubber 4 " "	.....	
1 Condenser 5 " "	.....	
2 engines for blowers	.....	
2 #6 Sturtevant Blowers	.....	
Oil Tank, sealpots, oil heater, superheater stacks, fire brick linings, oil measuring system, gauges, coal buggies, fire tools, tar separators, belting, blast piping, counter shaft, boilers, chimney stack, complete cast iron connections, cast iron floor, steeal beams, floor plates, columns, railings and stairway 2 sets complete @ $8,000.00	$16,000.00	
Total contract cost water gas apparatus	16,249.00	
Over-head charges 12½%	2,031.12	
	$18,280.12	
Depreciation 23 yrs. at 2½%, 58%	10,602.00	
		$7,678.00
Coal gas apparatus, 1900, 5 benches 6 retorts at $2,000.00	10,000.00	
Depreciation 90%	9,000.00	1,000.00
Total structural cost	$28,280.00	
Present Value		$8,678.00

1027 SECTION 14. Inventory Page 53. Des Moines Gas Company Coal Shed, Scrubber and Condenser Room #5 A. & B. Erected in 1876. Two divisions A and B. One Story construction. Foundations of rubble stone in cement mortar. Walls of brick, lime mortar; corrugated iron roof. Division A has monitor of wood, roof of tin. Floor of A is of brick laid flat. Floor in B is of boards. Building contains openings but no doors.

SE IN CENTER

	Structural cost.	Present value.
Contract Price	$1,445.08	
Overhead charges 12½%	180.64	
Structural Cost	$1,625.72	
Depreciation 34 yrs. 38% (Somers)	617.79	
		$1,007.93

Area A (19′ 3″ x 29′-11″) = 575.75
Area B (54′-0″ x 19′- 3″) = 1039.50

Total area A and B 1615.25 sq. ft.

The new structural cost per sq. ft. is $1.07.

The Company has used 25% more brick than the number actually contained from measurements taken from building.

The bricks in the condenser room are in a poor condition, actually crumbling away in certain portions. The other buildings, however, appear to be in a fair condition.

SECTION 15. Inventory Page 58. Des Moines Gas Company Contents Coal Shed, Scrubber and Condenser Rooms #5.

Items.	Structural cost.	Present value.
Excavation 9 cu. yds. at 35¢	$3.00	
Foundations brick 14500 or 31.6 cu. yds. @ $7.00	221.00	
Concrete, 2 cu. yds. @ $7.00	14.00	
150 ft. industrial railway @ 50¢	75.00	
Turntable—1000 lbs. @ 10¢	100.00	
Charging cars—2 at $100	200.00	
1028		
Total contract price	$613.00	
Drawing and supervision, general management, interest and taxes 12½%	77.00	
Total structural cost	$690.00	
Depreciation by inspection 50%	345.00	
		$345.00

Building 5 A contains part of the old (1887) 6 ft. Water Gas Set, and is now partially used as a coke bin, with rough wooden partitions.

Building 5 B is used as a coal dump for steam coal. The industrial railway above being used to carry coal to boilers.

SECTION 16. Inventory Page 59. Des Moines Gas Company Boiler and Engine Rooms—Building #6 A and B.

Erected 1902, of brick and steel construction, one story high, foundations of concrete and brick, walls of brick in lime mortar, floors of concrete on earth, roof of slate on steel purlins and trusses.

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	Structural cost.	Present value.
Contract Price	$4,927.05	
Overhead charges 12½%	615.88	
Structural Cost	$5,542.93	
Depreciation 17% 8 yrs. (Somers)	942.30	
		$4,600.63

Area 2,831 sq. ft.
Structural cost per sq. ft. $1.958.
Gas Company's estimate of brick 27.45% above actual number.

Inventory Page 68. Boiler House Extension—Building #6 C. Erected 1909, of brick and steel construction, one story high, foundations of concrete and brick in cement mortar, North and West walls of brick in cement mortar, East wall of structural steel covered with corrugated iron, floor of brick cement grouted, 1029 roof of corrugated iron on steel purlins, and trusses.

	Structural cost.	Present value.
Contract Price	$893.00	
Overhead charges 12½%	111.62	
Structural Cost	1,004.62	
Depreciation 3% 1 yr. (Somers)	30.14	
		$974.48

Area 572 sq. ft.
Structural cost $1.756. per sq. ft.

SECTION 17. Inventory Page 74. Des Moines Gas Company Generator House #7.

West portion was erected in 1902, extended in an easterly direction in 1909. Brick and steel construction, two stories high. Concrete foundations. North, south, and west walls of brick. East wall of temporary construction, corrugated iron and wood framing. Roof of west portion of slate, steel trusses. Steel monitor. First floor concrete and brick laid flat. Second floor of cast iron plates, steel supports. Stairs of structural steel and wood.

	Structural cost.	Present value.
Contract price as per Co.'s inventory	$8,449.78	
Less structural cost of C. I. floors, stairs, etc., for generators	1,718.22	
Corrected contract price	$6,731.56	
Overhead charges 12½%	841.44	
Structural cost new	$7,573.00	
Depreciation 4 yrs. 8% (Somers)	605.84	
		$6,967.16

Area—(63′ 0″ x 63′ 0″) = 3969 sq. ft.
The structural cost per sq. ft. area new is $1.91.
The Company has an excess of 30% in their number of bricks over that obtained from figures based on building measure-
1030 ments. The building appears to be in good condition.

SECTION 18. Inventory Page 66. Des Moines Gas Company. Contents, Boiler and Engine Room #6 A and B.

Items.	Structural cost.	Present value.
Excavation—68 cu. yds. @ 35¢	$24.00	
Concrete cu. yds. @ $7.00	364.00	
Brick—2.93 cu. yds. @ $7.00	21.00	
Rest of machinery complete contract.		
Boiler House Extension #6 C. Inventory Page 73.		
Excavation 15 cu. yds. @ 35¢	5.00	
Foundations 16 cu. yds. @ $7.00	112.00	
125 H. P. Phoenix Boiler and stack erected	2,500.00	
Inventory Page 83. Generator House #7.		
Foundations brick 6176 cu. ft.		
" concrete 2935 cu. ft.		
" total 9111 cu. ft.		
337.5 cu. yds. @ $7.00	2,302.00	
One 10′ 6″ Lowe Water Gas Set complete		
Two 8′ 6″ Lowe Water Gas Sets complete.	50,000.00	
	$55,388.00	
Drawing and supervision, general management, interest and taxes 12½%	6,923.00	
		$62,311.00

No depreciation.

SECTION 19. Inventory Page 84. Des Moines Gas Company Coal or Coke Shed Building #8 A.

Erected 1896. Frame construction on brick foundations. One story high, and excavated to a depth of 8 ft. below ground level. Plank walls; tar felt and gravel roof. Floor of tar and breeze.

	Structural cost.	Present value.
1031 Contract Price	$4,223.45	
Overhead charges 12½%	527.93	
Structural Cost	$4,751.38	
Depreciation 14 yrs. 31% (Somers)	1,472.93	
		$3,278.45

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Area (75′ 0″ x 75′ 0″) 5625 sq. ft.
The new structural cost per sq. ft. is 84½%.
The company uses 23½% bricks more than the actual number.
The height of the brick wall is so low that a regularly constructed scaffold is unnecessary, merely a few planks supported on horses, being sufficient for the masons to stand on.
A portion of the west wall of building has not been painted.

Inventory page 88. Runway and coal or coke shed—Building #8 B.
Erected in year 1901. Frame construction, on steel and wood members. Walls of corrugated iron on wood framing, corrugated iron roof. Plank floor.

	Structural cost.	Present value.
Contract Price	$318.59	
Overhead charges 12½%	39.82	
Structural cost	358.41	
Depreciation 9 yrs. 23% (Somers)	82.43	
		$275.98

Area 404 sq. ft.
The structural cost per sq. ft. area is 89¢.
The box cornice given on page 89 of inventory is of the crudest construction, consisting merely of a plain bottom and side piece of ordinary planking.

SECTION 20. Inventory Page 87. Des Moines Gas Company. Contents, Coal or Coke Shed #8 A.

Items.	Structural cost.	Present value.
Fairbanks Standard Scales 5 x 6 ft. platform—price	$300.00	
Overhead charges 12½%	38.00	
1032 Structural cost	$338.00	
Depreciation, inspection 50%	169.00	
		$169.00

Building 8 A used for the storage of coke is a cellar subject to overflow during periods of high water.

SECTION 20 A. Inventory Page 91. Des Moines Gas Company. Contents, Runway and Coal Shed #8 B.

Items.	Structural cost.	Present value.
Steam Hyd. elevator lifting coke from cellar to operating platform 16′ 9″—Price	$1,500.00	
Drawing, supervision, general management, interest and taxes 12½%	197.00	
Total structural cost	$1,697.00	
Depreciation inspection 67%	1,131.00	
		$566.00

This elevator operates badly and is much worn.

SE IN CENTER

SECTION 21. Inventory Page 92. Des Moines Gas Company Smith, Carpenter Shop and Storeroom—Building #10.

Building erected 1876, of brick and wood construction, one story high, foundations of concrete and brick in cement mortar, walls of brick in cement mortar, floors of concrete on earth, and brick grouted with cement.

	Structural cost.	Present value.
Contract Price	$5,850.50	
Overhead charges 12½%	731.31	
Structural cost	$6,581.81	
Depreciation 38% (Somers 34 yrs.)	2,501.09	
		$4,080.72

Area 6,446.6 sq. ft.

Structural cost per sq. ft. $1.021.

The Gas Company's estimate of quantities gives 21 bricks per cu. ft. while an actual measurement gives 16.53 an overestimate on their part of 27%.

1033 This building has been repaired and painted, its brick work is rough, its roof covered with tin and repaired with tar felt, is out of line and generally in bad condition; its present value appears very small save for the fact that it can be used.

SECTION 22. Inventory Page 103. Des Moines Gas Company. Contents, Smith, Carpenter Shop and Store Room. #10.

Foundation:

	Structural cost.	Present value.
Concrete 1 cu. yd. @ $7.00	.....	7.00
Brick 68 " " @ 1.6¢	.....	1.00
Buffalo Forge and 5 H. P. engine	$200.00	
Drill press,	100.00	
Screw cutting lathe,	300.00	
Grind stone and emery wheel,	15.00	
Smith's Forge	25.00	
2 Anvils,	20.00	
2 bench vises,	10.00	
Pipe vise,	7.00	
Heater for soldering,	3.00	
Screw cutting machine,	150.00	
Counter shafting, etc.	100.00	
		930.00
Purchase price,		938.00
Overhead charges 12½%		117.00
Structural cost,		1,055.00
Depreciation (inspection) 50%		527.00
Present value,		528.00

None of this apparatus appeared new or very carefully kept.

COPY BOUND CLOS

SECTION 23. Inventory Page 104. Des Moines Gas Company. Barrel Oil Store House #11.

Erected in 1909. One story concrete structure. Foundations and floor of concrete. Reinforced concrete walls and roof. Batten doors, metal sheathed.

		Structural cost.	Present value.
1034	Contract Price	$183.00	
	Overhead charges 12½%	22.88	
Structural cost		$205.88	
Depreciation for 1 yr. 2% (Somers)		4.12	
			$201.76

Area—(10′ 11″ x 15′ 11″)—176
2 (8′ 2″ x 3′ 7″) =58.8
Total area is 234.8 sq. ft.
The new structural cost per sq. ft. is 86¢.
The company uses 31½% more bricks in the 4″ wall than actual figures give.

NOTE—The Company does not specify the quantity or form of reinforcement in this building, nor does it appear in the sketches of said building,. Building in general is in a substantial condition.

SECTION 24. Inventory Page 108. Des Moines Gas Company. Pump House, Building #12. Erected 1910 of brick, steel and concrete construction, one story high, foundations of concrete and brick in cement and mortar, walls of brick in lime mortar, roof of reinforced concrete on steel purlines, floors of concrete on cinders.

	Structural cost.	Present value
Contract price	$597.67	
Overhead charges 12½%	74.71	
Structural cost	$672.38	
Depreciation, none		$672.38

Area 308 sq. ft.
Structural cost per sq. ft. $2.18.
Gas Company's estimate of brick nearly 22% above actual number.

SECTION 25. Inventory Page 111. Des Moines Gas Company. Contents, Pump House #12.

8 small steam pumps
2 water pumps.
1035 2 oil pumps
2 tar pumps
2 drip pumps

OSE IN CENTER

	Structural cost.	Present value.
Average price 8 @ $200.00	$1,600.00	
Overhead charges 12½%	200.00	
Structural cost	$1,800.00	
Depreciation 5 yrs. at 5% (25%)	450.00	
		$1,350.00

SECTION 26. Inventory Page 114. Des Moines Gas Company. Oil Pump House, Building #13. Erected 1907, remodeled 1909. of brick construction one story high, foundation of concrete and brick in cement mortar, walls of brick and lime mortar, roof of slate on steel pipe, floor of concrete on earth.

	Structural cost.	Present value.
Contract price	$128.55	
Overhead charges 12½%	16.07	
Structural cost	$144.62	
Depreciation 3% (Somers)	4.34	
		$140.28

Area 121 1/8 sq. ft.
Structural cost per sq. ft. $1.194.
Gas Company's estimate of brick 27% above actual number.

SECTION 27. Inventory Page 115. Des Moines Gas Company. Contents, Pump House #13.

Excavation ½ cu. yd.

	Structural cost.	Present value.
Foundation 465 brick @ 1.6¢	$8.00	
One Davidson 6" x 8" x 12" Pump	500.00	
Contract price,	508.00	
Overhead 12½%	63.00	
Structural cost	$571.00	
Depreciation inspection 20%	114.00	
Present value		$457.00

1036 SECTION 28. Inventory Page 116. Des Moines Gas Company. Meter House #14. Erected in 1909. One story construction of bricks, steel and concrete. Brick and concrete foundations. Brick walls, reinforced concrete roof on steel purlines. Star Type ventilator. Concrete floor on brick edge.

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	Structural cost.	Present value.
Contract price	$1,104.32	
Overhead charges, 12½%	138.04	
Structural cost	$1,242.36	
Depreciation for 1 yr. 2% (Somers)	24.85	
		$1,217.51

Area (28′ 8″ x 20′ 8″)=594 sq. ft.
Structural cost per sq. ft. new is $2.09.
The Company's estimate for brick is 15% over the actual number.

SECTION 28. Inventory Page 120. Des Moines Gas Company. Contents, Meter House #14.

	Structural cost.	Present value.
Excavation 25 cu. yds. @ 35¢	$8.75	
Foundations 6 " @ 7.00	42.00	
Brick 3,713 @ 1.6¢	59.41	
Station meter—14 ft. diameter, 14 ft. long (1909) installed	8,500.00	
Cast iron piping (Double price)	.....	
25″ pipe 28 ft.	.....	
24″ tees—3 at 6 ft. 18 ft.	.....	
24″ bends—3 at 4 ft. 12 ft.	.....	
58 ft. @ $7.20	417.60	
24″ valves—3 @ $150.	450.00	
Contract price	$9,477.76	
Overhead charge 12½%	1,184.72	
Structural cost	$10,662.48	
Depreciation, none.		
Present value		$10,662.00

This meter appears to be quite new.

1037 SECTION 30. Inventory Page 121. Des Moines Gas Company. Stable, Building #15. Division- A and B erected 1897, Division C erected 1883, all of frame construction on brick foundations. A and C of one story construction, B of two story construction; roof of A and B of rubberoid on rough boards and wood rafters, roof of C of shingle on rough boards and wood rafters; floor of A concrete on earth; of B plank on wood joist; of C concrete and brick.

	Structural cost.	Present value.
Contract price	$1,327.41	
Overhead charges 12½%	165.93	
Structural cost	1,493.34	
Depreciation	576.93	
		$916.41

E IN CENTER

Depreciation is figured 45% of $859.54 for division C or $386.79 and 30% of $633.80 for division- A and B or $190.14, making a total of $576.93.

Gas Company's estimate of brick is 23.5% above actual number.

SECTION 31. Inventory Page 127. Des Moines Gas Company. Boiler House #16. Erected in 1906. Building of structural steel and galvanized iron. One story high. Concrete foundations. Corrugated iron walls and steel framing. Corrugated iron roof on steel purlins. Skylights of wire glass on wooden frame. Floor partly cement and partly cinder. Metal sheathed batten doors.

	Structural cost.	Present value.
Contract price	$558.94	
Overhead charges 12½%	69.87	
Structural cost	$628.81	
Depreciation 4 yrs. 10% (Somers)	62.88	
		565.93

Area—(40′ 4″ x 14′ 3″) 576.7 sq. ft.

Structural cost per sq. ft. area new is $1.09.

1038 The 64.68 sq. ft. of windows given on page 128 of inventory, judging from the sketches, are merely wooden shutters.

SECTION 32. Inventory Page 129. Des Moines Gas Company. Contents Boiler House #16.

Items.	Structural cost.	Present value.
Excavation 12 cu. yds. at 35¢	$4.20	
Foundations 8,29 cu. yds. at $7.00	58.03	
Slab concrete, 278 sq. ft. at 13¢	36.14	
Floor brick 278 sq. ft. at 13¢	36.14	
One 60 H. P. Hor. Tub. Boiler, 54″ in diameter, 16′ long, brick setting smoke stack and injector 60 H. P. at $20	1,200.00	
Contract price	$1,334.51	
Drawing, supervision, general management, taxes and interest, 12½%	166.81	
Structural value	$1,501.32	
Depreciation 4 yrs. 7%—28%	420.37	
		$1,080.95

This boiler stands in temporary structure in the holder yard and is used for heating seals of gas holders.

SECTION 33. Inventory Page 130. Des Moines Gas Company. Fire Brick Storage, Building #17. Erected 1905, of one story frame construction on wood sills, roof of tar felt on rough boards and wood rafters.

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	Structural cost.	Present value.
Contract price	$98.40	
Overhead charges	12.30	
Structural cost	$110.70	
Depreciation 55%	60.88	
		$49.82

Area 395.4 sq. ft.
Structural cost per sq. ft. $0.28.

1039 SECTION 34. Inventory Page 132. Des Moines Gas Company. Fire Hose House #35. Erected in 1905. One story frame structure. Walls of matched boards on wood studding. Roof of tar on matched boards on wood rafters. Dirt floor. Batter

	Structural cost.	Present value
Contract price	$23.93	
Overhead charges 12½%	2.99	
Structural cost	26.92	
Depreciation 5 yrs. 15% (Somers)	4.04	
		$22.88

Area (7′ 3″ x 6′ 4″)—46 sq. ft.
Structural cost per sq. ft. new is 58½.

SECTION 35. Inventory Page 134. Des Moines Gas Company. Coke Shed. Building #53. Erected 1887, of frame construction, on brick piers, walls of vertical boards stripped. Roof of shingles on wood sheathing and wood rafters.

	Structural cost.	Present value.
Contract price	$464.74	
Overhead charges 12½%	58.09	
Structural cost	$522.83	
Depreciation 90%	470.52	
		$52.31

Area—1,538 sq. ft.
Structural cost per sq. ft. $0.34.
Building rotted away and ready to fall down. Nobody would give $50.00 and take this building down for material.

SECTION 36. Inventory Page 154. Des Moines Gas Company. Coke Rack #54. Erected in 1907. Wood construction. Plank siding supported on posts imbedded in ground.

	Structural cost.	Present value.
Contract price	$58.49	
Overhead charges 12½¢	7.31	
Structural cost	$65.80	
Depreciation 3 yrs. 15%	9.87	
		$55.93

OSE IN CENTER

1040 Area (72′ 0″ x 54′ 4″) ..... 3,912 sq. ft.
Less (7′ 3″ x 25′ 0″) ..... 181 " "

Corrected area ..... 3,731 " "
Structural cost per sq. ft. area new is 1.8¢.

SECTION 37. Inventory Page 195. Des Moines Gas Company. Oil Barrel Store House #55. Erected in 1906. One story frame structure. Rubble stone piers. Walls of slat construction on wood studding. Tar felt roof on rough boards, wood rafters. Rough board floor on wood joists. Batten door.

	Structural cost.	Present value.
Contract price	$47.26	
Overhead charges 12½%	5.91	
Structural cost	$53.17	
Depreciation by inspection 50%	26.59	
		$26.58

Area (20′ 0″ x 10′ 0″)—200 sq. ft.
Structural cost per sq. ft. new is 26½¢.

This building is of the crudest form of construction, made up chiefly of wreckage material, so that 50% is a reasonable depreciation on its present condition.

SECTION 38. Inventory Page 200. Des Moines Gas Company. Rubbish Kiln #59. Erected in 1909. Brick construction, conical shape.

	Structural cost.	Present value.
Contract price	$20.60	
Overhead charges 12½%	2.58	
Structural cost new	$23.18	
Depreciation by inspection 50%	11.59	
		$11.59

This structure is in a bad condition so that 50% is a fair depreciation, judging from its present condition.

SECTION 39. Inventory Page 164. Des Moines Gas Company. Works Paving. Laid at various dates covering a period of eighteen years, consists of concrete on cinder, brick on sand and creo-
1041 sote blocks on concrete base.

	Structural cost.	Present value
Contract price	$1,292.26	
Overhead charge 12½%	161.53	
Structural cost	1,453.79	
Depreciation (by observation) 40%	581.52	
		$872.27

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The Gas Company's inventory includes 311 sq. yds. of brick sidewalk, 134 sq. yds. of cement sidewalk and 512 linear feet of curbing which does not lay within the limits of their property, but lays in the streets adjacent to their property. The same have therefore been omitted from this estimate.

Almost all of this paving is second or third class material and not worth the estimate except for use.

SECTION 40. Inventory Page 166. Des Moines Gas Company. Fencing and Gates. Erected at various dates covering a period of ten years, of picket construction on rails supported by posts embedded in the ground, gates are of the slide type, frame construction; 1,224 feet of 8 ft. fencing, 334 ft. of 6 ft. fencing, seven gates.

	Structural cost.	Present value.
Contract price	$1,190.13	
Overhead charges 12½%	148.77	
Structural cost	$1,338.90	
Depreciation (by observation) 15%	200.83	
		$1,138.07

SECTION 41. Inventory page 203. Des Moines Gas Company. Fencing and Gates on Leased Property. Date of erection not given. Fence of picket construction, gates of slide and swing type; 439 ft. of 8 ft. fencing, one swing gate and two slide gates.

1042

	Structural cost.	Present value.
Contract price	$335.35	
Overhead charges 12½%	41.92	
Structural Cost	$377.27	
Depreciation (by observation) 15%	56.59	
		$320.68

SECTION 42. Exhibit 1. No page. Des Moines Gas Company.

	Structural cost.	Present value.
Main office furniture:		
The purchase price is	$8,324.20	
Overhead charges 12½%	1,050.53	
Structural cost new is	$9,364.73	
Depreciation 10%	936.47	
		$8,427.26
Works office furniture:		
Purchase price is	$153.00	
Overhead charges 12½%	19.13	
Structural cost new is	$172.13	
Depreciation 50%	86.07	
		$86.06

OSE IN CENTER

Third and Vine Streets office furniture:		
Purchase price is	$371.05	
Overhead charges 12½%	46.38	
Structural cost new is	$417.43	
Depreciation 50%	208.72	
		$208.71
		$8,722.08

I consider these totals to be fair valuations of the contents of the several offices, based on the data and description given in the company's inventory and personal inspection upon two or more occasions of above premises.

My basis of prices is from catalogues and data gathered from other plants of similar character.

1043 SECTION 43. Inventory page 188. Des Moines Gas Company. Electric wiring. This wiring placed in Meter House, Boiler House, Stable, Purifying House, Exhaust Pump House, Condenser and Generator House is of the simplest character.

Items.	Structural cost.	Present value.
49 lamp outlets at 2.50	$120.50	
907 ft. conduit at 5¢	45.35	
Contract cost	$165.85	
Overhead 12½%	20.73	
Structural cost	$186.58	
Depreciation—inspection—25%	46.65	
		$139.93

This wiring is done where danger from an open flame exists.

SECTION 44. Inventory page 138. Des Moines Gas Company. Relief Holder #18. Capacity 175,000 cu. ft. One gas holder brick tank and appurtenances.

	Structural cost.	Present value.
Iron columns old style. 2 lifts. 175,000 cu. ft. at $175 per M	$30,625.00	
Overhead charge 12½%	3,828.00	
Structural cost	$34,453.00	
Depreciation 28 yrs. at 2½%—70%	24,117.00	
Present Value		$10,336.00

This holder, erected 1882, appears to have 10 or 12 more years of life when it will have to be abandoned. Being used for relief purposes it has had and will have severe usage.

Being small and old fashioned its structural cost exceeds that of a new steel tank holder of equal capacity today.

The books of the Des Moines Gas Company appear to have a charge of $33,356.00 to this holder.

1044 SECTION 45. Inventory page 140. Des Moines Gas Company. Storage Holder #19.

One 2 lift telescopic gas holder brick tank iron columns old style 1892 300,000 cu. ft. at $150 per M.....	$45,000.00	
Drawing, supervision, general management, interest and taxes 12½%.....	5,625.00	
Structural cost	$50,625.00	
Depreciation 19 yrs. 2½%—47½%...	23,447.00	
Present Value		$27,178.00

The approximate contract cost $45,000 in 1892 of this holder would be much reduced if replaced by a steel tank holder of modern make. The $45,000 price covers with ample margin every appurtenance such as inlets and outlets and valves required by this holder. In my opinion the actual contracts in possession of the Des Moines Gas Company would prove less than $45,000.

The books of the Des Moines Gas Company appear to have charged $40,057.00 to this holder.

SECTION 46. Inventory page 142. Des Moines Gas Company. Storage Holder # 20 (1902).

	Structural cost.	Present value.
One telescopic 3 lift gas holder, steel tank hollow brick cover well foundations inlet and outlet guide columns 1,132,000 cu. ft. at $100 per M....	$113,200.00	
Overhead charges 12½%.....	14,150.00	
Structural Cost	$127,350.00	
Depreciation 8 yrs. 2½%—20%.....	25,470.00	
Present Value		$101,880.00

1045 SECTION 47. Inventory Page 143. Des Moines Gas Company. Oil Tank #21. Erected in 1902. Capacity 100,000 gallons. Steel tank in brick emplacements. Concrete foundations. Brick emplacement walls. Cement coping. Tank is of the submerged head type.

	Structural cost.	Present value.
Contract price	$4,180.74	
Overhead charges 12½%	522.59	
Structural cost new	$4,703.33	
Depreciation 20% (8 yrs.)	940.67	
		$3,762.66

Cubical contents 14,137 cu. ft.
The structural cost per cu. ft. new is 33¢.
The company's estimate of the number of brick is 21% in excess of the actual number.

SECTION 48. Inventory Page 145. Des Moines Gas Company. Oil Tank, Structure #22. Erected 1897, of steel in brick emplacements; foundations of concrete, emplacements walls of brick cement mortar. Capacity 64,000 gallons.

	Structural cost.	Present value.
Contract price	$2,475.19	
Overhead charges 12½%	309.40	
Structural cost	$2,784.59	
Depreciation 13 yrs. 32½%	904.99	
		$1,879.60

Cubic content of tank—8,620 cu. ft.
Structural cost per cu. ft. $.323.
Gas Company's estimate of brick 17.1% above actual number.

1046 SECTION 49. Inventory Page 147. Des Moines Gas Company. Tar Tank and Evaporator #23. The tank was erected in 1891. Steel tank in brick emplacements. Concrete foundations. Submerged head type. Capacity 10,000 gallons. The tar evaporator was erected in 1908. Steel construction.

Tar Tank:

	Structural cost.	Present value
Contract price	$919.45	
Overhead charges 12½%	114.93	
Structural cost new	$1,034.38	

Depreciation 19 yrs. 47½%.
Cubical contents is 2138 cu. ft.
Structural cost per cu. ft. new is 48¢.

Tar Separator:

Contract price	$50.40	
Overhead Charges 12½%	6.30	
Structural cost new	$56.70	
Depreciation 2 yrs. 5%	2.83	
		$53.87

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Cubical contents is 80 cu. ft.
Structural cost per cu. ft. new is 67¢.
The tar tank was formerly used for oil storage purposes, but subsequently employed for storage of tar.
The Company has 22% more brick than the actual number.

SECTION 50. Inventory Page 150. Des Moines Gas Company. Oil Tanks, Structures #24 and #25. Erected 1907 and 1910. Of steel in brick emplacements, foundations of concrete emplacement walls of brick in cement mortar, tanks of the submerged head type, capacity 321,200 gallons each.

1047 #24.

	Structural cost.	Present value.
Contract Price	$7,326.22	
Overhead charges 12½%	915.78	
Structural cost	$8,242.00	
Depreciation 3 yrs. 7½%	618.15	
		$7,623.00

#25.

Contract price	$7,326.22	
Overhead charges 12½%	915.78	
Structural cost	$8,242.00	
Depreciation none		$8,242.00

Cubic content of tank 42940.5 cu. ft.
Structural cost per cu. ft. $0.192.
Gas Company's estimate of number of brick is 24.4% above actual number.

Structural cost 2 tanks	$16,484.00	
Present value 2 tanks		$15,865.00

SECTION 51. Inventory Page 190. Des Moines Gas Company. Fire Protection.

	Structural cost.	Present value.
Contract price	251.00	
Overhead charges 12½%	31.38	
Structural cost new	$282.38	
Depreciation 33⅓%	94.13	
		$188.25

SECTION 52. Inventory Page 194. Des Moines Gas Company. Fixures in Meter and Fitting Shop. Building #50. These consist of bins, shelves, partitions, meter trucks, elevator and engine, outfit for dipping meters and two meter provers.

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	Structural cost.	Present value.
Contract price	$686.00	
Overhead charges 12½%	85.75	
Structural cost new	$771.75	
Depreciation by inspection 33⅓ %	257.25	
		$514.50

SECTION 53. Inventory Page 153. Des Moines Gas Company. Oil Holder Oil Tank #36.

Tank erected in 1893. Steel tank resting on wood bents. Capacity 700 gallons.

	Structural cost.	Present value.
Contract price	$93.68	
Overhead charges 12½%	11.71	
Structural cost new	$105.*00*	
Depreciation 17 yrs. 42½%	44.79	
		$60.*00*

Cubical contents 102½ cu. ft.
Structural cost per ft. new is $1.02½.

SECTION 54. Inventory Page 197. Des Moines Gas Company. Holder Oil Tank #58. Erected in 1904. Steel Tank. Cinder foundation enclosed in wood framing. Capacity 9,500 gallons.

	Structural cost.	Present. value.
Contract price	$405.22	
Overhead charges 12½%	50.65	
Structural cost new	$455.87	
Depreciation 6 yrs. 15%	68.38	
		$387.49

Cubical contents 1272.4 cu. ft.
Structural cost per cu. ft. new is 36¢.

1049 SECTION 55. Inventory Page 158. Des Moines Gas Company. Wells, Valves Boxes, Tar Separators. Constructed at various dates covering a period of thirty-four years; consist of valve and junction boxes, sewer manholes, tar separators, water, tar, and blow-off wells, pipe conduit, and foundation and bulkhead for coke storage; constructed of wood, brick and concrete, with covers of wood, steel and cast iron.

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Works, Yard:

	Structural cost.	Present value.
Contract price	$2,017.66	
Overhead charges 12½%	252.21	
Structural cost	$2,269.87	
Depreciation by observation 50%	1,134.93	
		$1,134.94

Three tar separators are mentioned in typewritten inventory, but only two are shown on plans.

Holder, Yard:

	Structural cost.	Present value.
Contract price	$565.33	
Overhead charge 12½%	70.67	
Structural cost	$636.00	
Depreciation, by observation 25%	159.00	
		$477.00

SECTION 56. Inventory Page 163. Des Moines Gas Company. Outside Apparatus Davidson Simplex Steam Pump. This pump was used in connection with the tar separator. Size 2" x 2½" x 4".

	Structural cost.	Present value.
Contract Price	$100.00	
Overhead charges 12½%	12.50	
Structural cost new	$112.50	
Depreciation by inspection 50%	56.25	
		$56.25

1050 Fairbanks Track Scales. Installed in 1890. Size of platform 7' 6" x 36' 0". Capacity 100 tons.

	Structural cost.	Present value.
Contract price	$1,500.00	
Overhead charges 12½%	187.50	
Structural cost new is	$1,687.50	
Depreciation 20 yrs. 90%	1,518.75	
		$168.75

The track scale is no longer in use, and the platform is in very poor condition.

Stiff Leg Derrick #62. Erected 1890. It is of the stiff leg type. Consists of mast, boom, bracing, band winch, necessary cable, sheaves and guy wires.

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	Structural cost.	Present value.
Contract price	$150.00	
Overhead charges 12½%	18.75	
Structural Cost new	$168.75	
Depreciation 20 yrs. 50%	84.38	
		$84.37

Standard Wagon Scales. Installed 1876. Platform is 8′ 0″ x 14′ 0″. Capacity is 2 tons. This scale was rebuilt in 1890.

	Structural cost.	Present value.
Contract price	$500.00	
Overhead charges 12½%	62.50	
Structural cost new	$562.50	
Depreciation 2 yrs. 10%	56.25	
		$506.25

The total net structural cost new of the outside apparatus is $2,531.25.

Summation.

Pump	$112.50	$56.25
Railway Scales	1,687.50	168.75
Derrick	168.75	84.37
Wagon Scales	562.50	506.25
	$2,531.25	$815.62

1051 SECTION 57. Inventory pages 168 to 183 and pages 204 to 207. Des Moines Gas Company. Small piping in yard and buildings. In order to facilitate an estimate of the structural cost of the small piping in yard and buildings and be on the safe side allowing to the company more than could by the use of any ordinary methods be expended, the following figures have been applied to wrought iron pipe throughout.

Ditch or erecting per lineal foot 10¢.

Pipe per lineal foot at the net price.

Fittings and labor up to 1¼″ per lineal foot 4¢; total 20¢ for 1¼″ pipe and the following figures for other sizes:

For	⅜″	pipe	16¢.
"	½″	"	17¢.
"	¾″	"	17¢.
"	1″	"	18¢.
"	1¼″	"	20¢.
"	1½″	"	21¢.
"	2″	"	23¢.
"	2½″	"	28¢.
"	3″	"	33¢.
"	3½″	"	38¢.

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At this point the constant is changed and the figures are as follows:

For 4" pipe 44¢.
" 5" " 58¢.
" 6" " 72¢.
" 8" " $1.15.
" 10" " 1.61.

The valves are computed separately although all other fittings and the cost of laying in the yard and of erecting inside the shops are provided for in the cost per foot.

1052 For ½" Valve 30¢.
" ¾" " 38¢.
" 1" " 54¢
" 1¼" " 76¢.
" 1½" " $1.05.
" 2" " 1.59.
" 3" " 4.32.
" 4" " 6.00.
" 5" " 7.50.
" 6" " 9.00.
" 8" " 16.50.

All valves below 3" in size were estimated as standard brass Glove valves and above 4" and larger were estimated as iron body gate valves.

In case of terra cotta piping the figures are as follows:

For 3" 35¢ per lineal foot laid.
" 4" 40¢ " " " "
" 6" 50¢ " " " "
" 8" 60¢ " " " "
" 12" 75¢ " " " "

The L's are included in the total price for pipe.
In the case of terra cotta pipe the L's are allowed as two feet long.
In the case of cast iron pipe the figures are:

4" @ 49¢ per lineal foot laid.
6" @ 69¢ " " " "
8" @ 93¢ " " " "

For pipe coverings the following prices were used:

1053 For coverings ⅜" 10¢ per lineal foot erected.
" " ½" 10¢ " " " "
" " ¾" 11¢ " " " "
" " 1" 12¢ " " " "
" " 1¼" 13½¢ " " " "
" " 1½" 15¢ " " " "
" " 2" 16¢ " " " "
" " 2½" 18¢ " " " "
" " 3" 20¢ " " " "
" " 3½" 22½¢ " " " "
" " 4" 27¢ " " " "
" " 6" 36¢ " " " "
" " 8" 50¢ " " " "

The price used for pipe covering on all pipe except magnesia on leased property leading to Building #50, is an average of two kinds, the character of the covering is not specified in the inventory, therefore to give the Gas Company the benefit of any doubt the price used in the average between the price of air cell covering and magnesia pipe covering. The price used for magnesia pipe covering where specified in the works yard leading to Building #50 is 13¢ per lineal foot for ¾" pipe erected and 16½¢ for 1¼" pipe erected.

As Company's attendants appear to be directed to answer no questions, merely pointing out the objects it was impossible to learn anything regarding buried pipes from inspection and in the case of overhead pipes it was also impossible to take coverings or material down as they were in use. In every case the computers of this small piping, Mr. C. A. Hasek and Geo. D. Dobson, were careful to allow more than sufficient margin in favor of the Des Moines Gas Company.

1054 SECTION 58. Inventory Page 168. Des Moines Gas Company. Water Piping.

		Structural cost.	Present value.
Wrought iron pipe	4603′ @ $.282	$1,297.24	
Valves	134 @ 1.682	225.41	
Cast iron pipe	44′ @ .581	25.56	
Cast iron specials		22.34	
		$1,570.55	
Depreciation 50%		785.27	
			$785.28

SECTION 59. Inventory Page 170. Des Moines Gas Company. Circulation Piping.

		Structural cost.	Present value.
Wrought iron pipe	608′ 11″ @	$286.25	
Terra cotta tile pipe	88′ @ 50¢	44.00	
Valves	13 @ $5.105	66.36	
		$396.61	
Depreciation 50%		198.30	
			$198.31

SECTION 60. Inventory Page 171. Des Moines Gas Company. Steam Piping.

		Structural cost.	Present value.
Wrought iron pipe	3779′ 6″ @ $.2497	$943.67	
Covering	3522′ 6″ @ .1563	550.65	
Valves	148 @ 1.86	275.22	
Steam hose	115′ 6″ @ .38	43.89	
		$1,813.43	
Depreciation 50%		906.71	
			$906.72

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1055 SECTION 61. Inventory Page 174 Des Moines Gas Company. Exhaust Steam Piping. From engines and pumps in meter, exhauster and engine room, condenser and engine room pump house, etc.

				Structural cost.	Present value.
Wrought iron pipe	3932' 1"	@	$.2254..	$886.39	
Valves	48	@	1.685 ..	80.87	
Radiators 16 sq. ft.			1.00....	16.00	
Covering	1673' 11"	@	.18 ..	299.88	
Exhaust heads	3	@	22.00 ..	66.00	
Steam traps	5	@	38.00 ..	190.00	
Separators	3	@	14.25 ..	42.75	
				$1,581.89	
Depreciation 50%				790.94	
					$790.95

SECTION 62. Inventory Page 177. Des Moines Gas Company. Oil Piping. From cars to storage tanks and from storage tanks to sets.

				Structural cost.	Present value.
Wrought iron pipe	1969' 0"	@	$.35....	$691.32	
Cast iron "	765' 0"	@	.93....	711.45	
Valves	41	@	3.70....	151.26	
				$1,554.03	
Depreciation 50%				777.02	
					$777.01

SECTION 63. Inventory Page 179. Des Moines Gas Company. Gas Piping. For lighting meter, governor exhauster and wash room, retort, generator engine and blower house, coal shed, scrubber and condenser room, boiler house, smith, carpenter shops and store room.

Gas piping 2500.19' @ $.17.....				$428.69	
Depreciation 50%				214.35	
					$214.34

1056 SECTION 64. Inventory page 180. Des Moines Gas Company. Tar Piping. From Tar Extractors and Separators to Pumps, Relief Holder and Tar Evaporator.

				Structural cost.	Present value.
Tar Piping	747' 0"	@	$ .30	$223.93	
Valves	3	@	3.97	11.91	
Plug cocks	3	@	1.83	5.50	
				$241.34	
Depreciation 50%				120.67	
					$120.67

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SECTION 65. Inventory page 181. Des Moines Gas Company. Drain Piping.

	Structural cost.	Present value.
Wrought iron pipe 1109′ 4″ @ $0.2129.	$236.12	
Terra Cotta tile 62′ @ 0.412 .	25.55	
Valves 28 @ 0.522 .	14.63	
	$276.30	
Depreciation 50%	138.15	
		$138.15

SECTION 66. Inventory page 183. Des Moines Gas Company. Sewer Piping. From yards, drains, stable and pumps to sewer.

	Structural cost.	Present value.
Terra Cotta tile 1534′ 0″ @ $ .564.....	$865.00	
Wrought iron pipe 126′ 0″ @ 1.216...	153.18	
Cast iron soil pipe 109′ @ .49.....	53.41	
	$1,071.59	
Depreciation 50%	535.75	
		$535.74

SECTION 67. Inventory page 204. Des Moines Gas Company. Gas piping, building # 50. Leased property. For lighting and supplying power to the elevator engine in Meter Repair Shop and Store room, Building #50.

	Structural cost.	Present value.
1057 Gas Piping 912.72′ @ $.176.....	$160.81	
Depreciation 50%	80.41	
		$80.40

SECTION 68. Inventory 205. Des Moines Gas Company. Steam Piping on Leased Property.

	Structural cost.	Present value.
Steam pipe 1730′ @ $0.1879.....	$325.09	
Valves 20 @ 0.671.....	13.42	
	$338.51	
Depreciation 50%	169.25	
		$169.26

Inside Building.

SECTION 69. Inventory page 206. Des Moines Gas Company. Steam Piping on Leased Property.

	Structural cost.	Present value.
Steam Pipe 572′ @ $0.1957.....	$111.94	
Magnesia covering 331 @ $0.163.....	53.94	
Boxing	10.21	
	$176.09	
Depreciation 50%	88.04	
		$88.05

In yard.

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SECTION 70. Inventory page 207. Des Moines Gas Company. Water Piping, Building #50. Leased property, from works property to supply Meter Repair Shop and Store Room, Building #50.

	Structural cost.	Present value.
Water Piping 188′ 0″ @ $ .17	$31.96	
Valves 11 @ .315	3.46	
	$35.42	
Depreciation 50%	17.71	
		$17.71

1058 SECTION 71. Inventory pages 168 to 183. Leased Property Piping. Pages 204 to 207. Des Moines Gas Company. Summation of Small Piping in the various yards.

Inventory page.	Lin. ft.	Price per struc. Ft.	Cost.	Present value.
168. Water piping	4647′ 0″	$.338	$1,570.55	
170. Circulation piping	692′ 11″	.572	396.61	
171. Steam piping	3779′ 6″	.479	1,813.43	
174. Exhaust Steam piping	3932′ 1″	.402	1,581.89	
177. Oil piping	2734′ 0″	.568	1,554.03	
179. Gas "	2500′ 2″	.1715	428.69	
180. Tar "	747′ 0″	.323	241.34	
181. Drain piping	1167′ 4″	.237	276.30	
183. Sewer "	17969′ 0″	.606	1,071.59	
Leased property:				
204. Gas (Bldg. #50) piping	912′ 9″	.176	160.81	
205. Steam (in Bldg. #50) piping	1730′ 0″	.196	338.51	
206. Steam (Works property to Bldg. #50) piping	572′ 0″	.308	176.09	
207. Water (Bldg. #50) piping	188′ 0″	.188	35.42	
Total	25,371′ 9″	.38	$9,645.26	
Depreciation 50%			4,822.63	
				$4,822.63

Most of this piping has been put in after the works were in operation: Sufficient allowance for overhead charges is made in the unit prices used for computation. Depreciation by inspection.

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1059 SECTION 72. Inventory page 184. Des Moines Gas Company. Oil unloading device. For unloading oil from cars to storage tanks. Four in number.

	Structural cost.	Present value.
Contract price	$200.00	
Overhead charges 12½%	25.00	
Structural Cost	$225.00	
Depreciation 25%	56.25	
		$168.75

SECTION 73. Inventory page 185. Des Moines Gas Company. Gas mains in works yards.

Cast iron	8″ —	20′	@ 0.93		$18.60
" "	10″ —	101′	@ 1.25		126.25
" "	14″ —	37′	@ 1.75		64.75
" "	16″ —	1183′	@ 2.10		2,484.30
" "	20″ —	368′	@ 2.90		1,067.20
" "	24″ —	754′	@ 3.60		2,714.40
					$6,475.50

Total straight pipe:

12 drips	24,418 lbs.			
10 reducers	4,449 "			
4 crosses	5,531 "			
31 tees	36,408 "			
23 Bends	15,009 "			
3 Sleeves	977 "			
Plugs, flanges and cap	2,081 "			
Total specials	88,873=44.4 tons	@	$60	$2,664.00

8″ Valves	1	@ $21.00	$21.00	
14″ "	1	@ 74.00	74.00	
16″ "	12	@ 74.00	888.00	
20″ "	4	@ 130.00	520.00	
24″ "	2	@ 150.00	300.00	
				$1,803.00
				$10,942.00

1060 Brought forward $10,942.00

Extra 1,000 ft. ditching and miscellaneous for specials.. 500.00

Structural cost plus..... $11,442.00

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SECTION 74. Inventory page 202. Des Moines Gas Company. Pipe Coating Tank #60 (a tar trough). Erected 1900. Wood construction.

	Structural cost.	Present value.
Contract price	$51.53	
Overhead charges 12½%	6.44	
Structural cost new	$57.97	
Depreciation 10 yrs. 45%	26.09	
		$31.88

Appears to have been made of a lot of old pipe and lumber.

SECTION 75. Cost Data from Buffalo and Cleveland Distribution System.

When we come to the distribution system covering street mains and services, but not the attached meters, the system of overhead charges heretofore used at 12½% is changed to an addition of 10% for undistributed expense and 15% for contractor's profit, making a total of 26½% added to the cost of raw material and productive labor.

It is the custom of gas companies to lay their own mains under their own foremen in order to insure tight joints and even grades to drips, by the use of skilled men allowed all the time that is necessary to do a good job.

Another point in which the laying of mains and of services differs essentially from the construction of the manufacturing works appears in the fact that both mains and services are put in on the installment plan as required to reach consumers, and except in the case of a very small proportion laid at the outset, the expense
1061 is larger than would be the case if all the mains were put in continuously until the whole district, present and future, was occupied.

In the case of services to the actual cost of labor and material is added 4¢ per lineal foot nearly doubling the usual net price of 1¼" service pipe.

The writer has prepared tables of the cost of laying gas mains with a great deal of detailed labor and has selected a scale of prices and a graphical representation of all details of street main laying first prepared and used in the City of Buffalo, New York, where he had access to the official records, of the city, giving the cost of laying the slightly heavier water mains in the streets of Buffalo under the conditions of meeting such obstacles in the way of street and steam railways to be crossed, sewer inlets to be replaced and all of the obstructions usually found in the streets of a large city.

In computing the excavation and filling of the ditches, he found the cost to be about 40¢ per cubic yard, and this cost is confirmed in the City of Des Moines by Mr. King, who has laid many of the underground conduits at present in the streets in the City of Des Moines.

The basic prices of cast iron mains taken ranges from $30.80 per

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ton of 2,000 pounds for 3" pipe, to $26.80 for 24" pipe delivered in the city.

Recent quotations in the Iron Age of $30.00 a ton for cast iron pipe confirm these basic prices which were obtained for a period of five years anterior to the year 1907, and give the following prices per foot for pipe laid without pavement.

	3"	cast	iron	pipe	36¢	per	ft.
	4"	"	"	"	49¢	"	"
	6"	"	"	"	69¢	"	"
1062	8"	cast	iron	pipe	93¢	per	ft.
	10"	"	"	"	$1.25	"	"
	12"	"	"	"	1.50	"	"
	14"	"	"	"	1.75	"	"
	16"	"	"	"	2.10	"	"
	20"	"	"	"	2.90	"	"
	24"	"	"	"	3.60	"	"

In Cleveland, Ohio, where the writer made an appraisement of the three artificial gas works there built, the Secretary of the Cleveland Gas Light & Coke Company appeared before the Board of Review for Taxes and presented, in 1903, the following scale of costs required for laying the four or five hundred miles of mains in the streets of Cleveland.

For	3"	cast	iron	pipe	36¢	per	lineal	foot.
"	4"	"	"	"	47¢	"	"	"
"	6"	"	"	"	65¢	"	"	"
"	8"	"	"	"	93¢	"	"	"
"	10"	"	"	"	$1.19	"	"	"
"	12"	"	"	"	1.44	"	"	"
"	16"	"	"	"	2.17	"	"	"
"	20"	"	"	"	2.85	"	"	"
"	24"	"	"	"	3.75	"	"	"

In comparing these scales it is worthy of note that the 4" and 6" sizes used by me at 49¢ and 69¢ are given by the Cleveland Company at 47 and 65 cents per lineal foot, and will produce a lower valuation of a system of mains.

Amongst the exhibits filed in 1894 in the suit of the Capital City Gas Light Company against the City of Des Moines, is the following estimate of a well known gas engineer, Mr. William Henry White, for the Capital City Gas Light Company,

1063	For	3"	cast	iron	mains	laid	35¢	per	lineal	foot.
	"	4"	"	"	"	"	45¢	"	"	"
	"	6"	"	"	"	"	70¢	"	"	"
	"	8"	"	"	"	"	85¢	"	"	"
	"	10"	"	"	"	"	$1.00	"	"	"
	"	12"	"	"	"	"	1.30	"	"	"
	"	14"	"	"	"	"	2.00	"	"	"
	"	16"	"	"	"	"	2.30	"	"	"

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It will be noted in this scale of prices that Mr. White gives for 4" and 6" respectively 45 and 70 cents as against my own 49 and 69 cents per lineal foot. Again showing that the prices giving the cost of laying mains in my subjoined computations are higher than either of these used by the gas companies in Cleveland, Ohio, or in Des Moines, Iowa.

I beg leave to again call attention to the fact that the overhead charges properly chargeable to the building of the manufacturing plant do not exist in the case of a distribution system because the works being in operation the salaries of higher officials are charged to operating cost and enter into the cost of making gas in most cases which have come to my knowledge, and therefore the 26½% added to the cost of raw material and productive labor is a most liberal provision for the lack of economy resulting from interrupted laying of mains and services and the expense of keeping men on for whom there frequently is no work.

It will be noted in the subjoined estimate that, with the exception of the wrought iron 2½" temporary street mains, there has been no depreciation of the street system for physical decay, obsolescence or inadequacy.

SECTION 76. Inventory page 209. Des Moines Gas Company. Structural Cost of Mains Laid Without Pavements. Mains
1064 laid in ditches, lineal feet.

Wrought iron 2½", 33,947 ft., @ 25¢			$8,487.00	
Depreciation 33%			2,829.00	
				$5,658.00
Cast Iron 3"	35,301 ft.	@	36¢	12,708.00
" " 4"	573,724 "	@	49¢	281,125.00
" " 6"	162,004 "	@	69¢	111,783.00
" " 8"	64,934 "	@	93¢	60,389.00
" " 10"	32,008 "	@	$1.25	40,010.00
" " 12"	31,349 "	@	1.50	47,024.00
" " 14"	622 "	@	1.75	1,088.00
" " 16"	27,206 "	@	2.10	57,133.00
" " 20"	6,036 "	@	2.90	17,504.00
" " 24"	1,180 "	@	3.60	4,248.00
	968,311 "	@	0.659	$638,670.00

No depreciation for cast iron piping.
Cast Iron Mains laid in River.

Wrought iron 8"	673 ft.	@	($1.25 & 1.30)	$2.55	$1,716.00
Cast " 16"	1,300 "	@	(2.10 & 3.07)	5.17	6,721.00
" " 24"	639 "	@	(3.60 & 5.54)	9.14	5,840.00
	2,612 "			$5.50	$14,277.00

NOTE.—Cross timber and 16 ft. piling with yoke, estimated at $10.00 per pile.

8″ main 37 piles @ $10.00	$370.00	
Coffer dam and pumping (if any)	500.00	
		$870.00

Averaging $1.30 per ft. pipe.

16″ Main 199 piles at $10.00	$1,990.00	
2 Coffer dams and pumping	2,000.00	
		3,990.00

Averaging $3.07 per ft. pipe.

24″ main 154 piles at $10.00	1,540.00	
Coffer dam and pumping (loose rock)	2,000.00	
		3,540.00

Averaging $5.54 per ft. pipe.

1065 *Recapitulation.*

968,311 ft. street mains in ditches and on bridges	$638,670.00
2,612 " " " " River	14,277.00
970,923 " Total present value of mains	$652,947.00

183,89 miles in length.

The total cost of street mains from the beginning of the first gas company to date appears to be recorded in this company's books as $647,290.35.

SECTION 77. Inventory page 217. Des Moines Gas Company. House Services Only.

Price 1¼″ wrought iron pipe $0.225, Disct. 74.75% Net	$0.057
Carting, fittings and miscellaneous	.04
Labor and ditch 2 x 4 ft.	.10
Total per foot of service	$0.197
Average cost per ft. length new about	$0.20
Cost of one 80 ft. service new	16.00
17,170 services at $16.00 Structural cost	$274,720.00
Depreciation 50% for 7½ years	137,360.00
Present value	$137,360.00

These works appear to have been started in 1876 or about 35 years ago, and presumably its service connections have been steadily added each year.

It is customary to reckon the life of wrought iron services at about 15 years, and 7½ years is probably less than the average age of Des Moines services. No data as to the age of this Company's services is accessible. However, $8.00 per service is larger than the

allowance usually made for old services in closely built eastern cities and appears to me very liberal in this case. No overhead charges are made because in going works these expenses are charges to gas making and appear in operating cost.

1066 The total structural cost of services from the company's books appears to be $257,672.56 from the beginning.

SECTION 78. Inventory page 218. Des Moines Gas Company. Lamp Services and Lamp Posts.

Items.	Structural cost.	Present value.
Services, 1¼" pipe laid in ditch 2 x 4 ft. 18 ft. @ 20¢	$3.60	
Riser ¾" pipe in post, 13 ft. @ 7¢	.84	
C. I. Lamp post 280 lbs. @ 3½¢	9.80	
Labor setting post, hauling, excavation, etc.	3.00	
	$17.24	
Total delivery and erecting price 1,140 lamp posts @ $17.24	$18,653.60	
Depreciation obsolescence 50%	9,326.80	
Present Value		$9,326.80

It is customary to place lamp posts in advance of paved streets in the outskirts of cities.

The growing preference for electric street lighting by means of Tungsten incandescent lights is rapidly driving ordinary forms of gas street lights out of use, therefore 50% depreciation is a rather small allowance.

The total of "Street Lamp extension" recorded in the books of this gas company from the beginning to 1911 is $25,335.43.

SECTION 79. Meters in Use. In the appraisement of the meters in use, subjoined, the first discount is given as 42%, which 42% is the amount claimed by Mr. Daniel Warmington and Mr. Walter K. Slaven, officials of the gas light companies of Cleveland, Ohio.

1067 It is more than probable that if this discount was given to the Cleveland Companies that a larger discount has been given to the United Gas Improvement Company of Philadelphia, although it is quite possible that the usual discount of 33% has been that allowed to the Des Moines Gas Company, and for this reason I have subsequently added 15½% before adding the overhead charges 12½%, and subtracting the depreciation of 33⅓%.

This depreciation of 1/3 corresponds to the basis of depreciation assumed by the United Gas Improvement Company, which gives about 25 years as the life of a meter and a little over 8 years as the age of a Des Moines gas meter.

SECTION 80. Inventory Page 227. Des Moines Gas Company Meters in use.

			Cleveland net price.	Old 42
Ordinary dry meters:				
3	light	915 @ $4.35	$3,980.25	
5	"	7122 @ 5.51	39,242.22	
10	"	1008 @ 6.96	7,015.68	
20	"	106 @ 9.57	1,014.42	
30	"	72 @ 13.05	939.60	
45	"	18 @ 19.14	344.52	
60	"	9 @ 26.10	234.90	
80	"	1 @ 35.96	35.96	
100	"	3 @ 43.50	130.50	
150	"	1 @ 52.20	52.20	
200	"	1 @ 92.80	92.80	
		9256 @ 5.73		$53,083.0
Prepayment meters:		Recent prices 42%.		
5	light	10207 @ $8.50	$86,759.50	
10	"	227 @ 11.00	2,497.00	
		10434 @ 8.55		$89,256.5
1068		Type A meters:	Recent prices 42% Disc	
10	light	46 @ $8.41	$386.86	
30	"	4 @ 19.72	78.88	
60	"	1 @ 46.40	46.40	
		51		$512.1

Cast iron meter:

2000 light 1 @ $1,000, equivalent	$1,000.0
Total 19,742 meters freight etc., @ $1.00	19,742.0
Total delivery and erecting price	$163,594.0
Add 15½% to cover 33% disct. instead of 42%	25,357.0
	$188,951.0
Overhead charges 12½%	23,619.0
Total Structural Cost	$212,570.0
Depreciation average 33 1/3% (2 to 3 yrs. use)	70,857.0
Present value	$141,713.0

The total charge to meters on books of Des Moines Gas Company is $187,755.93 from the beginning.

SECTION 81. Meters in Stock. These meters in stock should properly be included in the working capital of about $68,000.00, allowed for that purpose, but being relatively small have been included in the appraisement in order to favor the Company.

SECTION 82. Inventory Page 228. Des Moines Gas Company. Meters in Stock.

Ordinary dry meters.		Old prices 42% discount.	
3 light	178 @ $4.35	$774.30	
5 "	237 @ 5.51	1,305.87	
10 "	166 @ 6.96	1,155.06	
20 "	14 @ 9.57	133.98	
30 "	4 @ 13.05	52.20	
45 light	8 @ 19.14	153.12	
50 "	3 @ 26.10	78.30	
	610 6.00		$3,652.83
1069	Prepayment meters.	New prices 42%.	
5 light	196 @ $8.50	$1,666.60	
10 "	39 @ 11.00	429.00	
	235		$2,095.60
Type "A" Meters.			
10 light	6 @ $8.41	$50.46	
30 "	2 @ 19.72	39.44	
	8		$89.90

Total 853 in stock @ $1.00.

Freight, etc.	$853.00
Total delivery price	$6,691.33
Add 15½% to cover difference between 33 and 42%	1,037.00
Structural cost and present value	$7,728.00

SECTION 83. Inventory Exhibit #2, No page Des Moines Gas Company. Works tools.

	Structural cost.	Present value.
Purchase price	$1,189.78	
Overhead charges 12½%	148.72	
Structural value	$1,338.50	
Depreciation 50%	669.25	
		$669.25

Idle Apparatus:

Purchase price	$616.65	
Overhead charges 12½%	77.08	
Structural value	$693.73	
Depreciation 95%	659.04	
		$34.69

1070 Miscellaneous:

Purchase price	$163.06	
Overhead charges 12½%	20.38	
Structural value	$183.44	
Depreciation 75%	137.58	
		$45.86

Summaries:

Works tools	$1,338.50	$669.25
Idle apparatus	693.73	34.69
Miscellaneous	183.44	45.86
	$2,215.67	$749.80

I consider these figures to be reasonable values of the tools, based on the description given in the company's inventory and a casual inspection of the several tools on the company's premises. The prices of the several items are derived chiefly from catalogues.

Under the heading of "Miscellaneous Tools" appear several office furniture items, which occur again under another portion of the inventory, i. e. "Works Office Furniture," and have consequently been omitted under the former heading.

SECTION 84. Inventory Exhibit #3 No. Page Des Moines Gas Company. Distribution Tools.

Rolling stock tools.	Structural cost.	Present value.
Purchase price	$691.10	
Overhead charges 12½%	86.39	
Structural value	$777.49	
Depreciation 50%	388.75	
		$388.74

1071

Main and service tools.	Structural cost.	Present value.
Purchase price	$1,184.05	
Overhead charges 12½%	148.01	
Structural value	$1,332.06	
Depreciation 50%	666.03	
		$666.03

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Fitting and Meter Repairs:		
Purchase price	$771.65	
Overhead charges 12½%	96.43	
Structural value	$868.08	
Depreciation 50%	434.04	
		$434.04
Summaries:		
Rolling stock tools	$777.49	$388.74
Main and service tools	1,332.06	666.03
Fitting and meter repairs	868.08	434.04
	$2,977.63	$1,488.81

The above figures represent a fair valuation of the distribution tools, based on descriptions given in company's inventory and data obtained by inspection on several occasions of certain of the apparatus at the company's yards.

SECTION 85. Cost Data From Des Moines City Rejected Items. The pavements claimed as the property of the Des Moines Gas Company because after the mains have been laid the city has, at its own expense, placed costly pavements over them appears to be an unwarranted appropriation of other people's property, the pavements costing $204,994.00.

Cast iron mains under these pavements are practically indestructible and, I am told that many successive pavements have been worn out and replaced over certain portions of the street main system of Des Moines, therefore it is quite possible, with good
1072 management, that the company should avail itself of the time of repaving by the city for the purpose of enlarging its mains or adding to them if such enlargement is found to be necessary.

It is true that a costly pavement over a street main adds to the cost of emergency repairs if they are at any time required, but this cost goes into the operating expenses of the Gas Company, and is charged into the cost of gas.

Whenever a city puts down costly pavements over an existing system of mains it creates a barrier against possible competition by another company by increasing the cost of reduplication of mains in the streets by the new company.

In the case of the sale of a gas company to another public service corporation it appears to me quite probable that the cost of pavements should be taken into consideration but in a rate case or in the case of the purchase of the gas works by the municipality I cannot conceive of any reason in justice, or arising from good fortune which should permit the claiming of pavements over a street gas mains unless actually put down by the company.

The cost of lifting pavements on street gas mains should also be eliminated for the same reason.

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Included in the price per lineal foot of the various sizes of gas mains are such items as line pot drips, valves and steam and street railway crossings, and therefore these items as follows:

Lifting pavement	$28,242.00
Line pot drips	3,000.00
Valves	2,744.00
Steam and street railway crossings	636.00

1073 have been omitted from the appraisement.

In the item of services on the average of structural cost is intended to be covered the pavements claimed by the gas company, $35,441.45, and taking up pavement, $50,238.88. It is probable that in the majority of cases of renewals of old services that these expenses have been charged into repairs and gone into operating expenses in making gas. It is worthy of note also that all of these expenses have no overhead charges above raw material and productive labor, since such expenses have been incurred during the month of the gas works. The salaries and other expenses of the management do not answer as overhead charges but as charges against the operating expense of making gas.

SECTION 86. Inventory Page 210. Des Moines Gas Company. Pavements Claimed by Gas Company.

Asphalt on Concrete	31,378.8	sq. yds.	@	$1.85	(1911D)	$58,051
Wood Block on "	3,937.3	" "	@	3.00	"	11,812
Brick on "	40,608.	" "	@	2.00	"	81,216
Brick on Sand	35,050.9	" "	@	1.50	"	52,576
Macadam	530.	" "	@	1.10	(1907)	583
Cement Concrete	540.	" "	@	1.40	(1911D)	756
	112,045	" "	@	1.83	average	$204,994

or about 31.4% of $652,947, the correct valuation. The Gas Company seeks to add $204,994 to the value of its street mains for pavements laid by this city at its own expense. It is customary and proper to add to the cost of the bare gas mains, the cost of ditching and laying borne by any Gas Company, but it appears as if practically all of this company's mains had been laid without lifting pavements of our present costly character, and in the majority of cases before our pavements were laid at all; so that $652,947

1074 will probably be a fair present value of the street gas mains as the prices per foot cover all special castings, valves, hauling, lead cement and tools, besides an allowance of 10% undistributed expense and 15% contractor's profit. In addition to these items, the quotations for cast iron piping in the Iron Age in 1910 *is* the basis of the above given costs per lineal foot modified for each size as given in the diagram. Obviously the Des Moines Gas Company does not own its ditch in the streets; this ditch is merely an easement where locality is changeable at the will of the City, or of

the Gas Company. Nor can it claim to own the pavements above its easement, for unless its mains are laid after the pavement is down, it has been at no expense for pavements; and in case the Gas Company does lift and replace a pavement for construction, it can only justly add the actual cost of so doing to its investment in its street mains.

Gas distribution, by reason of the inconvenience arising from obstructing the streets unnecessarily, is a natural monopoly. When, as is today the case, a city lays costly pavements over gas mains already down, it places a barrier in the way of competition, since the cost of lifting and repairing the pavement would be added to any competing system.

In the negotiations attendant upon a sale of the gas works, this extra cost might be recognized as an element of its selling value, but should not be used to tax citizens already taxed for the pavements. If at any time, for the purpose of repairs to street mains or services, it is necessary to lift costly pavements, this cost goes into operating expense under the head of repairs, and may slightly increase the cost of supplying gas, but does not add anything to the value of this company's fixed investment.

1075 SECTION 87. Inventory page 214. Des Moines Gas Company. Cost of Lifting Pavements on Street Gas Mains.

Asphalt on Concrete	8¢	per	lineal	ft.	of	ditch.
Wood Block on Concrete	7¢	"	"	"	"	"
Brick on Concrete (Tar)	7¢	"	"	"	"	"
Brick on Sand (2 course)	3¢	"	"	"	"	"
" " " (2 course)	5¢	"	"	"	"	"
Macadam	2¢	"	"	"	"	"
Concrete	3¢	"	"	"	"	"

Asphalt on Concrete	138,580 ft.	@ 8¢	.....	$11,086
Wood Block on "	14,655 "	@ 7¢	.....	1,026
Brick " "	153,257 "	@ 7¢	.....	10,728
Brick on Sand	132,015 "	@ 4¢	.....	5,281
Macadam	3,180 "	@ 2¢	.....	64
Concrete	1,890 "	@ 3¢	.....	57
	443,577 "	@ 6.4¢	.....	$28,242

When the taking up of the street paving over gas mains has occurred, an average of 6.4 cents per lineal foot of ditch appears to be correct.

As the total cost $28,242 of lifting paving over all mains is less than ½ of one per cent of $652,947, and is included in that sum to the extent to which it has occurred in the streets of Buffalo and Cleveland, it should not be added even if proof could be given that every foot of 443,557 feet had been lifted.

SECTION 88. Inventory page 215. Des Moines Gas Company. Line Pot Drips.

1076

400 Each	17—3″ drips	6,800 lbs.	
	107—4″ "	42,800 "	
800 Each	30—6″ "	24,000 "	
	7—8″ "	5,600 "	
1,200 Each	5—10″ "	6,000 "	
	9—12″ "	10,800 "	
2,000 Each	11—16″ "	22,000 "	
	1—20″ "	2,000 "	
	187	120,000 "	

60 Tons (2,000) lbs. @ $50.00 ..... $3,000.00

As no drawings have been furnished of the various sizes of line drips, the total weight of 187 drips had been estimated as shown above at 60 Tons, which will be found to be liberal. The cost of special castings is included in the estimate given for street mains, $652,947.00.

The above estimate of $3,000.00 is less than ½ of 1%, and should not be added to it. This amount claimed has been checked merely to show its unimportance.

SECTION 89. Inventory page 215. Des Moines Gas Company. Valves claimed by Gas Company. Double Gate. Hub End.

5— 3″	Valves	@	$6.00	$30.00
63— 4″	"	@	9.00	567.00
30— 6″	"	@	14.50	435.00
8— 8″	"	@	21.00	168.00
8—10″	"	@	30.00	240.00
3—12″	"	@	38.00	114.00
10—16″	"	@	74.00	740.00
3—24″	"	@	150.00	450.00
130			21.11	$2,744.00

1077 The above $2,744.00, value of 130 valves claimed, has been computed to show its unimportance. It is less than ½ of 1% of the total value of the Street mains, 652,947 and is included in it.

SECTION 90. Inventory page 216. Des Moines Gas Company. Amounts claimed by Gas Company for Steam and Street Railway Crossings.

In case of railway crossings by gas mains, the important question is which located first, and this point is not stated by the Gas Company.

It would appear to me to add to the cost of ditching, about $1.00 per crossing to support the track by means of a couple of ties or beams placed parallel to the rails if the track is already there. Under the doubtful assumption that the gas mains were all laid after the tracks, the following extra cost might be required:

Steam Railway crossings,	191	@	$1.00	$191.00
Street " "	227	@	1.00	227.00
" " "	109	@	2.00	218.00
				$636.00

As figures given for laying mains in Buffalo and Cleveland necessarily included crossing Steam and Street Railways, the above amount of $636.00 is included in the total of $652,947, estimated value of street gas mains, and should not be added to it. The very large amounts claimed by the Gas Company for railway crossings appear to be impossible from any practical point of view.

SECTION 91. Inventory page 219. Des Moines Gas Company. Services Laid Under Street Paving.

1078 Pavements claimed by Gas Company:

Asphalt on Concrete	5,507	sq. yds.	@ $1.85...	$10,187.95
Wood Block on Concrete	601	" "	@ 3.00...	1,803.00
Macadam	103	" "	@ 1.10...	113.30
Cement Concrete	13	" "	@ 1.40...	18.20
Brick on Sand	5,806	" "	@ 1.50...	8,709.00
Brick on Concrete	7,305	" "	@ 2.00...	14,610.00
	19,335	" "	@ 1.83...	$35,441.45

In past years it has frequently happened that gas lamp posts were ordered placed where pavements have to be lifted and repaired in order to erect them, but in the last decade electricity as a street light has driven street gas lamps into the suburbs where expensive pavements are not found, and it is also probable that the gas posts still remaining in our streets were all erected before our present costly forms of street pavements were put down. The placing of a pavement over a service may increase the cost of repairs which account entering operating expense may increase the cost of supplying gas to street lights.

The above $35,441.45 should not be added to the value of services. Presumably all pavements lifted to repair services has been charged to operating expense.

SECTION 92. Inventory page 226. Des Moines Gas Company. Taking up Paving over Services.

Asphalt on Concrete	24,780 ft.	@	8¢.....	$1,982.40
Wood Block on Concrete	2,317 "	@	7¢.....	162.19
Brick on Concrete	28,177 "	@	7¢.....	1,972.39
Brick on Sand	22,395 "	@	4¢.....	895.80
Macadam	465 "	@	2¢.....	9.30
Concrete	60 "	@	3¢.....	1.80
	78,194 "	@	6.4¢.....	$5,023.88

It appears as if the principal cause of lifting pavements over services must be repairs which enters into operating expense.
1079 The sum of $5,023.88 is not properly chargeable to capital expenditure.

SECTION 93.

Summary of the Tangible Property of the Des Moines Gas Company, November 1st, 1910.

Estimated of 3,000,000 cubic feet safe daily capacity.

Inventory page.	Items.	Structural cost.	Present value.
15.	Land used (See Real Estate)		
16.	Purifying House #1 A & B...	$7,768.00	$5,826.00
25.	Contents Purifying House.....	21,130.00	13,819.00
26.	Fire Brick Shed #1 C.....	84.00	82.00
28.	Meter Governor, Exhauster and wash room Bldg. #3.....	5,771.00	2,135.00
41.	Contents of above building.....	23,466.00	17,600.00
43.	Retort, Engine, Generator and Blower House #4.....	3,663.00	1,209.00
52.	Contents of above building #4.	28,280.00	8,678.00
53.	Coal Shed, Scrubber and Condenser Room #5.....	1,626.00	1,008.00
58.	Contents Room #5.....	690.00	345.00
59.	Boiler and Engine Rooms #6 A & B.....	5,543.00	4,601.00
68.	Boiler House Extension #6 C..	1,005.00	974.00
74.	Generator House #7	7,573.00	6,967.00
83.	Contents Houses 6 A-B & C and #7 (Water Gas Manufacturing)	62,311.00	62,311.00
84.	Coal or Coke Shed #8 A.....	4,751.00	3,278.00
88.	Coal or Coke Runway #8 B...	358.00	276.00
87.	Contents Building #8 A.....	338.00	169.00
91.	Contents Building #8 B.....	1,697.00	566.00
92.	Smith, Carpenter Shop and Store Room, #10.....	6,582.00	4,081.00
	Carried Forward.....	$182,636.00	$133,925.00

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	Brought Forward.....	$182,636.00	$133,925.00
103.	Contents Bldg. #10.....	1,055.00	528.00
104.	Barrel Oil Store House #11...	206.00	202.00
107.	Pump House #12.....	672.00	672.00
111.	Contents Bldg. #12.....	1,800.00	1,350.00
112.	Oil Pump House Bldg. #13...	145.00	140.00
115.	Contents Bldg. #13.....	571.00	457.00
116.	Meter House #14.....	1,242.00	1,218.00
120.	Contents House #14.....	10,662.00	10,662.00
121.	Stable #15.....	1,493.00	916.00
126.	Boiler House #16.....	629.00	566.00
129.	Contents Bldg. #16.....	1,501.00	1,181.00
130.	Fire Brick Storage #17.....	111.00	50.00
132.	Fire Hose House #35.....	27.00	23.00
134.	Coke Shed Bldg. #53.....	523.00	52.00
154.	Coke Rack #54.....	66.00	56.00
195.	Oil Barrel Store House #55...	53.00	27.00
200.	Rubbish Kiln.....	23.00	12.00
164.	Works Paving.....	1,454.00	872.00
166.	Works Fencing.....	1,339.00	1,138.00
203.	Fencing, Leased Property.....	377.00	321.00
156.	Lumber in yard, $69.20 omitted as operating stock		
	Exhibit 1—Main Office furniture and fittings.....	9,365.00	8,427.00
	Works Office—Meter Room Furniture	172.00	86.00
	" " 3rd & Vine "	417.00	209.00
188.	Electric Wiring.....	187.00	140.00
	Carried Forward.....	$216,726.00	$163,230.00

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	Brought Forward.....	$216,726.00	$163,230.00
190.	Fire Protection Apparatus.....	282.00	188.00
194.	Fixtures in Meter and Fitting Shop #50.....	772.00	514.00
	Total Buildings and Contents, Fencing and Paving.....	$217,780.00	$163,932.00

Yard Structures and Fixtures.

137.	Relief Holder #18.....	34,453.00	10,336.00
140.	Storage Holder #19.....	50,625.00	27,178.00
142.	" " #20.....	127,350.00	101,880.00
143.	Oil Tank #21.....	4,703.00	3,763.00
145.	Oil Tank #22.....	2,785.00	1,880.00
147.	Tar Tank & Evaporator #23 Tank	1,034.00	543.00
	Separator	57.00	54.00
150.	Oil Tanks #24 and #25.....	16,484.00	15,865.00

LOSE IN CENTER

152.	Old Holder Oil Tank #36.....	105.00	61.00
197.	Holder Oil Tank #58.....	456.00	387.00
158.	Wells, Valve Boxes, Tar Separators, etc., North Yard.....	2,270.00	1,135.00
	Wells, Valve Boxes, Tar Separators, etc., South Yard.....	636.00	477.00
163.	Outside Apparatus.....	2,531.00	816.00
168.	Small Piping in the Various Yards	9,645.00	4,823.00
184.	Oil Unloading device 4 Stations.	225.00	169.00
185.	Gas Mains in Works Yard.....	11,442.00	11,442.00
202.	Pipe Coating Tank.....	58.00	32.00
	Totals of Yard Structures and Fixtures	$264,859.00	$180,841.00

1082 *Summary of the Tangible Property.*

Distribution System.

Inventory page.	Items.	Structural cost.	Present. value.
209.	Street Mains—No Pavements.	$652,947.00	$652,947.00
217.	House Services Only.....	274,720.00	137,360.00
218.	Lamp Services and Lamp Posts	18,654.00	9,327.00
227.	Meters in Use	212,570.00	141,713.00
228.	Meters in Stock (Should be included in Working Capital)	7,728.00	7,728.00
	Total Distribution System...	$1,166,619.00	$949,075.00
	Works Tools:		
	Exhibit #2 Works Tools.....	$1,338.00	$669.00
	Idle Apparatus and Scrap.....	694.00	35.00
	Miscellaneous Tools	183.00	46.00
	Exhibit #3 Rolling Stock Tools...	777.00	389.00
	Main and Service Tools.....	1,332.00	666.00
	Filling & Meter Repairs Apparatus	868.00	434.00
	Exhibit #4 Stable Equipment #15	10,000.00	5,000.00
	Totals for Tools & Stable Equipm't	$15,192.00	$7,239.00

Recapitulation of Appraisement November 1, 1910.

Items.	Structural cost.	Present. value.
Total Bldgs. & Contents, Fencing and Paving	$217,780.00	$163,932.00
Total Yard Structures and Fixtures.	264,859.00	180,841.00
" Distribution System	1,166,619.00	946,075.00
" Tools and Stable Equipment.	15,192.00	7,239.00
" Land Owned	35,765.00	100,000.00
" **All Fixed Investment.....**	**$1,700,215.00**	**$1,401,087.00**

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1083 Total amount Company's investment December 31, 1910, found by City accountants $1,592,563.00.
Total gas sales for year 1910, 528,375,454 cubic feet.

Structural Cost of whole investment per 1000 cubic feet sold.. $3.22
Present Value " " " " " " " " .. $2.65

Des Moines Gas Company.

Summary of Rejected Tangible Property Claimed by Des Moines Gas Company and not Allowed by Appraiser in Rate Cases.

Inventory page.	Items.	Structural cost.	Present. value.
210.	Payments Claimed by Company	$204,994.00	$204,994.00
214.	Cost of Lifting Pavements on mains	28,242.00	28,242.00
215.	Line Pot Drips	3,000.00	3,000.00
215.	Valves in Streets	2,744.00	2,744.00
216.	Steam and Street Railway Crossings	636.00	636.00
219.	Pavement for services laid under Street Paving.....	35,441.00	35,441.00
226.	Pavement for services taking up same	5,024.00	5,024.00
	Totals rejected claims for rate appraisements and of duplications in value of apparatus	$280,081.00	$280,081.00

1084 SECTION 94. Residual Depreciation: The term "depreciation" appears to be rather vague in its meaning, and for the sake of a clear understanding I shall use it as meaning the residue of physical decay, obsolescence or inadequacy which cannot be cured by complete and careful repairs, even if these repairs be made as complete and thorough as it is possible for the art of man to make them. Thus a gas works may always be well cared for and in good condition, and yet at the end of a term of years become worthless, although this final collapse fortunately does not occur at the same time for all parts of the works.

In the case of the Des Moines Gas Company I have given you its structural cost, meaning by that the actual money spent by the company and invested in fixed plant as near as I could estimate it at $1,700,215.00.

I have also given you its present value for the purpose for which it is operated, i. e., making gas, as $1,401,087.00.

This present value merely means the amount which a fair-minded purchaser should pay for the works in their present condition, if he was purchasing them for the purpose of making and supplying gas.

You will note that the structural cost of the land is taken by me from the records found, at $35,765.00, and the present value of the land approximated at $100,000.00, showing an appreciation in value, due to the growth of the City of Des Moines.

Putting this in another way, the structure- of this gas plant purchased for the purpose of supplying gas have depreciated $363,363.00. And the land purchased for the purpose of supplying gas has increased in value $64,235.00, leaving as the residual depreciation of this investment, $299,128.00.

1085 From one of the Exhibits of the Des Moines Gas Company the total amount of gas sold since June 30, 1888, is given as 4,447,494,868 cubic feet, to January 1, 1911. Before 1888 it is necessary to estimate as I have no records accessible. I have, therefore, taken the total amount of gas sold at about 5,000,000,000 cubic feet.

Dividing the residual depreciation $299,128.00 by 5,000,000,000, I find the residual depreciation to be 5.98¢ per M cubic feet of gas sold.

In round figures, since it is but an estimate, we can take this at 6¢ per M cubic feet to be added to the cost of gas—assuming that the depreciation per M cubic feet of gas has been the same since the beginning of the works up to January 1, 1911. As a matter of fact, as the volume of gas sold increases the depreciation per M cubic feet decreases, and therefore the depreciation per M cubic feet in 1910 is very much less than it could have been in 1888.

This physical fact puts us on the safe side in estimating our residual depreciation at 6¢ per M.

Another manner of computing residual depreciation for one year, as subjoined, involves too many assumptions to be safely used, save as a check upon the depreciation derived from long periods of operation of gas works. These assumptions are—depreciation of manufacturing plant and yard structures, 2¼%—which may be less or more, according as the life of the works exceeds or falls below forty years.

1086 In the matter of house services, the life of a service is taken as fifteen years, and 7% as its rate of depreciation. If, owing to improved methods of protective services its life has become twenty-five years, the rate of depreciation is 4%.

In the matter of meters, a meter's life is assumed to be seven years, and the depreciation about 15%.

The appreciation of land per M cubic feet of sales is taken in this instance as 1.29 of a cent.

The Des Moines Gas Company presents the following record of repairs, covering a period of four years, and giving yearly averages, which probably are not as great as might be derived at a longer period:

DES MOINES GAS COMPANY EXHIBIT 24.

	Repairs works.	Repairs mains.	Repairs services.	Repairs meters.
1907	$9,699.99	$2,838.28	$469.22	$2,292.77
1908	6,835.23	4,420.78	504.92	3,443.85
1909	5,996.71	3,166.73	910.41	4,772.99
1910	14,193.78	9,347.30	5,224.76	5,211.63
Total	$36,725.71	$19,773.09	$7,109.31	$15,721.24
Yearly Average	$9,181.43	$4,943.27	$1,777.33	$3,930.31

If now we subtract the yearly average or repairs in each case from the straight depreciation, which would have occurred had no repairs been made, as subjoined, we obtain about 8¢ residual depreciation per M cubic feet of gas, which serves only as a rough check upon the more correct 6¢ per M already deduced from larger quantities and a longer period:—

1087 *Residual Depreciation for One Year. Computed for One Year. Life Works* 40 *Years.*

Buildings, etc., Structural Cost	$217,780		
Yard structures, etc. " "	264,859		
Tools & stables equipment	15,192		
	$497,831	@ 2½%	$12,445.77
Less average annual repairs on basis 5 years			9,181.43
Residual Depreciation			$3,264.34
House services, structural cost	$274,720		
Lamp posts and services	18,654		
	$293,374	@ 7%	$20,536.18
Less average annual repairs			1,777.33
Residual Depreciation			$18,758.85
Meters, structural cost	$212,570	@ 15%	$31,885.50
Less annual repairs			3,930.31
Residual Depreciation			$27,955.19
Appreciation of land per M sales	1.29¢		
528,375 M at 1.29¢			$6,816.04

Recapitulation.

Buildings, etc., Residual Depreciation	$3,264.34
Services, " "	18,758.85
Meters, " "	27,955.19
Total above " "	$49,978.38
Land appreciation subtracted	6,816.04
Resultant residual depreciation one year	$43,162.34

Dividing by 528,375 M—

Apparent residual depreciation per M ..... 8.17¢

The 6 cents per M residual depreciation derived from larger quantities and longer period is the more correct approximation.

1088 SECTION 95. Working Capital for Construction and Operation of Gas Works: Obviously the whole investment in works before they are started must be regarded as working capital upon which a proper rate of interest is allowed to be added to the structural cost at the time of the works' completion and capitalization.

In Section 5, "Over-head Charges," Page 7, I have made an allowance of 12½% on all contracts in and about the works, of which 4½% is, as I regard it, a very large allowance for interest.

In the case of the distribution system of mains I have made an allowance of 10% undistributed charges, and 15% contractor's profit, making a total of 26½% on the cost of productive labor and raw material.

In the matter of land, I have not been able—not being an expert in real estate—to do more than accept the statement of gentlemen in whose judgment I had confidence, and to increase the value of land from about $36,000 to about $100,000, in attempting to compute any overhead charges upon an item so vague and so dependent upon the growth of the city and the neighborhood.

Referring now to the working capital required for the operation of the works after they are finished, I would say that it is a matter in which the opinion of practical operators of works differ widely. I have heard it stated with the utmost confidence by men practically engaged in the operation of gas works, that 30¢ per M cubic feet of sales is what is conveniently required to cover the necessary reserve stocks of coke, of coal, gas oil, purifying material, of service pipe, of street mains and special fittings and castings, of meters and all general stores. But I found that this opinion was only a general one, not based on careful investigation, and intended to give to the Gas Company the widest margin in preparing for any famine of material that might arise, as well as covering the minor expenses of plants.

1089 From my own investigations of the working capital of the Massachusetts Gas Companies which I deem to be well man-

aged, I am led to believe that 13¢ per M cubic feet is all that is practically needed; and although Judge Hough of the United States Circuit Court made to the Consolidated Gas Company an allowance of $1,000,000 which is a less sum per M cubic feet of gas sold by that company, I prefer to adhere to 13¢ per M cubic feet.

Coming directly to figures, I find the necessary working capital for the operation of the Des Moines Gas Company to be $68,689.00, which results from the multiplication of 528,375 M by 13¢. From this should be subtracted the consumers' deposits of 1910, amounting to $897.46, and the meters in stock, amounting to $7,728.00—leaving $60,064 as a balance required to be raised by the stockholders.

However, since this is rather an indeterminate quantity, it will be just as well to retain 13¢ per M as the estimate for required working capital.

SECTION 96. The Cost of Supplying Gas: All of the gas supplied to the City of Des Moines and to its suburb, Valley Junction, is reported to be of 24 candle power average and something over 600 British Thermal Unit heat capacity per cubic foot.

This gas is manufactured by the Lowe Carburetted Water Gas process, from coke and mineral oil. It might — possible to produce equally as useful a gas, but not of as high candle power, by the direct process of distillation of gas coal in retorts after the older method usually practiced in large cities. Under the present conditions this subject is not open to discussion, as there are no coal gas retorts in the works ready for use.

From data derived from the Des Moines Gas Company's books by the city accountants, the following average tabulated cost of 24 candle power gas, at the consumer's meter, is derived:

Cost per M Cubic Feet of Manufacturing and Distributing Gas, January 1, 1906, *to December* 31, 1910.

	In holder mfg. Cents.	Dist.	Commercial exp.	New business.	General exp.	Taxes.	Leakage.	Total. Cents.
2 mos. to Feb. 28, 1906	36.82	5.82	7.92	4.38	1.36	6.14	4.70	67.14
Yr. ended Feb. 28, 1907	36.89	4.67	7.56	4.76	2.68	5.56	2.78	64.90
Feb. 29, 1908	35.13	5.44	7.31	4.36	2.19	6.87	2.20	63.50
Feb. 28, 1909	32.98	5.32	7.57	2.96	2.49	4.47	1.93	59.72
Ten mos. to Dec. 31, 1909	30.75	6.60	8.24	3.93	3.78	7.37	1.99	62.66
Yr. ended Dec. 31, 1910	29.75	8.49	9.01	4.54	4.90	7.25	1.36	65.30
Av. 5 yrs. Dec. 31, 1909	34.02	5.52	7.67	3.98	2.72	6.56	2.27	62.74
Av. 5 yrs. Dec. 31, 1910	33.04	6.21	7.98	4.11	3.22	6.73	2.04	63.33

1091 It will be observed that the average of four years ending December 31, 1909 for the cash operating expenses is 62.74¢ per M cubic feet; and that the average for five years, ending December 31, 1910, is 63.33¢ per cubic feet—showing a sudden increase in the cost of making gas in the year 1910.

In neither of these costs is included the residual depreciation of the gas works.

Perhaps it will be better to obtain a fair average to cover the whole period of five years back of the year 1910, December 31. The subjoined computation shows rejections of items amounting to $16,746.88, and the addition of an item of $1,508.54 previously deducted by the company. By this method the cost, inclusive of cash operating expenses and residual depreciation, appears to be 69.33¢ per M.

Cost of Gas—Des Moines Gas Company Deduced from 5 Years Operations Ending Dec. 31, 1910.

Total operating expenses for 5 yrs. as per Company's books		$1,466,821.22
Deduct the following items:		
Accidents & damages (1893)	$3,685.17	
Replacement values, salary, time and expenses of engineers, draftsmen and others, inventory	5,935.18	
Interest on floating debt	7,126.53	16,746.88
		$1,450,074.34
Add the items previously deducted by Company:		
Interest received on bank balance		1,508.54
Operating expenses for 5 yrs		$1,451,582.88
Residual Depreciation 5 yrs. 6¢ per M		137,522.05
		$1,589,104.93
Total gas sold in 5 yrs. from Dec. 31, 1905 to Dec. 31, 1910		2,292,034,290 cu. ft.
Giving as the average cost of making, distributing and measuring gas, collecting bills, making repairs, allowing for residual depreciation, taxes, legitimate accidents, donations, insurance, bad debts and sundry small expenses		69.33¢ per M.

1092 SECTION 97. Price of Gas: For the five years ending December 31, 1910, the city's accountants have found the total sales of gas to be 2,292,034,290 cubic feet, and the collections to be $2,316,369.08—giving as the average price per M. collected by this Company for its gas for all purposes, $1.0106.

Des Moines Gas Company.

December 31, 1905 *to December* 31, 1910.

	Sales cu. ft.	Collections.
2 mos. 2/28/06	59,059,182	$59,158.83
2/28/07	388,892,406	390,832.88
2/29/08	441,877,493	446,509.75
2/28/29	465,970,133	471,734.22
10 mos. 12/31/09	404,244,022	409,240.40
12/31/10	531,991,054	538,893.00
Total	2,292,034,290	$2,316,369.08

Average per M ..... $1.0106.

The fair and reasonable price, yielding a profit on the fixed investment and working capital required during this period appears to me to be as follows:—

Referring to Section 93: The present value of whole fixed investment for 1000 cubic feet of gas sold, is $2.65,

Referring to Working Capital, Section 95: Working Capital per M cubic feet, 13¢.

Total investment, $2.78.

1093 The question of the rate of profit allowable as a fair and reasonable return upon investment in gas works has been debated in the courts, and in each locality depends upon the value of money for loans without unusual risk.

It is an aphorism of business men familiar with finance that all interest or profit above 6% is proportional to the unusual risk taken; and below 6% all interest less than 6% is given on security having little or no risk at all.

I am content myself with the 6% fixed as the reasonable rate of profit allowed to the Consolidated Gas Company of New York by the Supreme Court of the United States.

6% of $2.78 gives 16.68¢ as the fair profit allowable on each 1000 cubic feet of gas sold by the Des Moines Gas Company.

Recapitulating, we have for the price of 1000 feet of gas, the following items:—

Cash Operating Expenses	63.33¢
Residual Depreciation	6.00¢
Profit, $2.78 @ 6%	16.68¢
Total	86.01¢

It is worthy of note that this 86¢ includes most liberal allowances for advertising, experimenting, seeking new business, making donations, extravagantly furnished offices, and even a special salary charge for salaries paid to non-resident officials, of $10,000 in the

year 1910. Besides all and every legitimate expense for coal, coke, gas oil, labor and repairs which have occurred.

SECTION 98. Increase of Gas Sales with Lowered Prices:

There is a very definite law of a practical or empirical nature, which connects the price of gas with the sales per capita of the community served. But in the present special instance this law will not be used save in so far as it bears upon the case of
1094 the City of Des Moines.

The annual sales per capita is a gauge of the natural law of supply and demand.

It is necessary to adjust comparison of the gas managers' ability in different cities and towns. It is necessary to a conservative consideration of expansion of the existing gas works. It is necessary to fix the capacity of new gas works in advance of their construction.

No variations in the price of gas can be wisely and safely made without using the sales per capita for the basis of computation.

Fixing exact future prices is a common error of inexpert legislators, since the prices of raw materials and productive labor cannot be fixed.

For this reason it is unwise to unalterably fix the price of gas in the future, at least for any considerable period of time, for a change of price in raw material or productive labor may result in injustice either to the company supplying gas or to its customers consuming gas.

In England for many years, and in the case of about two-thirds of the gas companies, and recently in Boston, Massachusetts, a just method of fixing the relative price of gas and the percent of dividends has been reached by the use of the London sliding scale.

This scale's fairness to both producer and consumers of gas should recommend its use in the cases of legislative enactments fixing the price of gas and tending to relieve the unreasoning antagonism often developed between the municipality and a public utility corporation.

But no suggestion of a sliding scale has been made in the ordinance of the Des Moines City Council, passed Dec. 27, 1910. And we must endeavor to find a fixed price for gas for the present time, allowing a margin in favor of the company.

1095 The subjoined statement of the sales of gas for the past twenty-two years will indicate the manner of the growth of the sales of gas in Des Moines:

Des Moines Gas Company.

Statement Gas Sold.

June 30, 1888—Price per M.....	43,646,474	....
June 30, 1889—As below to.....	43,660,021	2.3
Dec. 31, 1890	51,990,789	....
Dec. 31, 1891	52,508,537	1.0
Dec. 31, 1892	50,974,020	*2.9
Dec. 31, 1893	51,354,777	0.7
Dec. 31, 1894	56,662,290	10.3

Dec. 31, 1895—$1.70 and $1.50.....	61,099,842	7.8
Dec. 31, 1896—$1.30	76,436,500	25.1
Dec. 31, 1897—$1.30	83,951,343	9.8
Dec. 31, 1898—$1.25	93,616,429	11.5
Dec. 31, 1899—$1.25	109,820,600	17.3
Dec. 31, 1900—$1.20	141,928,750	9.2
Dec. 31, 1901—$1.20	160,990,352	13.4
Dec. 31, 1902—$1.15	206,763,656	28.4
Dec. 31, 1903—$1.15	244,245,516	18.2
Dec. 31, 1904—$1.15	292,407,382	19.7
Dec. 31, 1905—$1.10	334,404,640	14.4
Dec. 31, 1906—$1.00	372,101,839	11.3
Dec. 31, 1907—$1.00	429,519,162	15.4
Dec. 31, 1908—$1.00	461,177,956	7.3
Dec. 31, 1909—$1.00	497,244,529	7.8
Dec. 31, 1910—$1.00	531,991,054	7.0
Total	4,447,494,868 cu. ft.	

* No record reported before 1888.

In the per cent column at the right hand side great irregularities will be observed in the percentage of gain, until the price of $1.15 in 1902 is reached.

It would appear as if at this price gas was no longer a luxury but had become a commodity generally used for useful purposes.

When, on Jan. 1, 1906, the price of gas finally reached $1.00 the response of the community was a liberal increase in the per cent of use. But as this price continued along down to January 1, 1911, the percentages of increase in the use of gas became less, showing that the community which, in the period of 1890 to 1900 had increased 2.4% annually, and in the period 1900 to 1910 had increased 3.9% annually, were approaching satisfaction.

1096

In connection with this matter of satisfaction, it is necessary to call attention to a mixed metaphor frequently used when gas engineers speak of the point of satisfaction for a community. The originator of this phrase, Dr. Alexander Humphreys, explained that he meant by the "point of satisfaction" to compare a gas company which could no longer increase its sales per capita to a body of saturated steam, which could no longer absorb any more water. It will be understood when I use the phrase "point of satiation" that it has the same meaning as "point of saturation" was intended to give.

In the year 1890 the population of Des Moines was 50,063 and the sales of gas 51,990,789 cubic feet, resulting in a sales per capita of 1,038 cubic feet, with the net price of gas for illuminating purposes at $1.70, and for fuel purposes at $1.50, unless over 10,000 cubic feet were used by a consumer, in which case it was put at $1.25.

In the year 1900 the population of Des Moines was 62,139, and

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the sales of gas 141,928,750 cubic feet, giving a sales per capita of 2,445 cubic feet, with a price of $1.20 for all purposes.

In the year 1910 the population of Des Moines and Valley Junction was 88,954, and the sales of gas to both places 531,991,054 cubic feet, giving a sales per capita of 5,980 cubic feet, with the nominal price of gas at $1.00 and the actual average price of gas $1.01.

We observe in the ten years between 1900 and 1910 the sales of gas per capita have increased nearly 150%, while the population has increased 39%.

The method of reduction of the price of gas is shown in
1097 defendant's Exhibit 14:

DEFENDANT'S EXHIBIT 14.

History of Price of Gas.

Prior to January 1, 1896, the price of gas in Des Moines was:

	Gross.	Discount.	Net.
Illuminating Purposes	$1.80	10¢	$1.70
Fuel Purposes:			
Less than 10,000 cu. ft.	1.80	30¢	1.50
Over 10,000 cu. ft.	1.80	55¢	1.25

City Ordinance No. 724, passed April 29, 1895, and again May 16, 1895, as amended by City Ordinance No. 751, passed February 7, 1896, fixed the rate as follows:

For All Purposes:			
1896 to 1897	1.40	10¢	1.30
1898 to 1899	1.35	10¢	1.25
1900 to 1901	1.30	10¢	1.20
1902, 1903 and 1904	1.25	10¢	1.15
1905	1.20	10¢	1.10
1906 to 1910 incl.	1.10	10¢	1.00

This last rate of $1.00 net is the one in force at the present time.

In the records of the Massachusetts Gas & Electric Light Commission from 1888 to 1910 we possess the data enabling us to investigate the effect of price upon the sales per capita of gas in Massachusetts.

In the subjoined tabulation of the facts derived from the above mentioned records, there is the unmistakable proof that, regardless of the size of the city, a notable increase in the sales of gas per capita always occurs in the year following a reduction of gas prices.

Further, so long as the price of gas is above $1.25 per M the

growth of the gas business is uncertain and irregular; but when it reaches $1.10 the growth of the sales of gas per capita is
1098 certain and astonishingly large.

It will further be noticed from a study of the subjoined statistics that between the years 1901 and 1910 there has also been a growth of the sales of gas per capita at a constant price, due in all probability to the increasing number and variety of apparatus intended to heat or to cook by gas when it reaches moderate prices.

Nevertheless, there appears to be a practical point of satiation, or of very slow increase in the sales of gas per capita ultimately reached for each price of gas; when a further notable increase in the sales of gas demand a reduction in its price.

Massachusetts Gas Companies Charging 80¢ *Per M* (1910), *Including From* 75 *to* 85 *Cents.*

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Boston	80.1	706,301	4,373,611
Lynn	77.8	104,771	601,591
Worcester	80.5	145,986	637,570
		957,058	5,612,772

Sales Per Capita ..... 5760 cu. ft.

Massachusetts Gas Companies Charging 90¢ *per M* (1910), *Including from* 85 *to* 95 *Cents.*

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Charlestown	90.5	64,595	238,230
Cambridge	87.8	158,924	669,228
Fall River	86.4	119,295	495,612
East Boston	92.7	40,940	222,960
Lawrence	90.2	110,170	417,865
Lowell	91.1	118,515	373,672
New Bedford	85.4	96,652	360,312
Springfield	89.6	88,926	509,222
		798,017	3,277,101
Average 8 Cities		99,752	
Sales Per Capita		4,106 cu. ft.	

1099 *Massachusetts Gas Companies Charging* $1.00 *per M* (1910), *Including from* 95¢ *to* $1.05.

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Dedham	1.04	24,791	47,897
Haverhill	1.01	44,115	203,363
Malden	1.00	60,119	345,004
Newton	.977	88,034	323,053
N. Adams	1.03	23,226	55,251
Revere	1.03	18,219	91,192
Taunton	1.04	34,259	107,365
		292,763	1,173,125
Average 7 cities		41,823	
Sales per Capita		4,007 cu. ft.	

Massachusetts Gas Companies Charging $1.10 *per M* (1910), *Including from* $1.05 *to* $1.15.

Cities.	Prices.	Population.	Sales M cu.ft.
Adams	1.14	13,026	15,314
Brockton	1.11	56,878	192,826
Fitchburg	1.14	37,826	85,164
Gloucester	1.10	24,398	61,409
Salem	1.11	59,418	144,968
		191,546	499,681
Average 5 cities		38,309	
Sales per Capita		2,608 cu. ft.	

Massachusetts Gas Companies Charging $1.25 *per M* (1910), *Including from* $1.15 *to* $1.37½.

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Arlington	1.29	26,038	29,717
Attleboro	1.20	16,215	48,958
Beverly	1.17	18,650	45,460
Blackstone	1.29	5,648	1,426
Chicopee	1.26	30,295	47,241
N'hampton	1.33	19,431	54,143
N'Attleboro	1.31	11,305	33,258
Ware	1.33	8,774	8,885
Williamstown	1.25	3,708	6,839
Pittsfield	1.16	35,689	111,985
		174,753	387,912
Average 10 cities		17,475	
Sales per Capita		2,220 cu. ft.	

1100 *Massachusetts Gas Companies Charging* $1.50 *per M* (1910), *Including from* $1.37½ *to* $1.62½.

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Athol	1.59	8,536	8,492
Quincy	1.49	32,642	47,811
Clinton	1.48	13,075	19,072
Danvers	1.62	9,407	7,068
E. Hampton	1.60	8,524	11,040
Framington	1.55	12,948	20,856
Leominster	1.56	17,580	25,270
Marlboro	1.53	21,322	26,347
Milford	1.53	15,243	20,152
Natick	1.56	9,866	14,123
Newburyport	1.41	14,949	30,787
Norwood	1.57	8,014	13,754
Spencer	1.54	6,740	9,351
Webster	1.41	28.359	29,016
Woburn	1.41	15,308	14,996
		222,513	298,335
Average 15 cities		14,834	
Sales per Capita		1,341 cu. ft.	

Massachusetts Gas Companies Charging $1.75 *per M* (1910), *Including from* $1.62½ *to* $1.87½.

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Amesbury	1.63	11,552	12,278
Greenfield	1.64	15,125	14,970
Marblehead	1.84	7,338	6,661
Plymouth	1.83	12,141	11,720
		45,156	45,629
Average 4 cities		11,539	
Sales per Capita		988 cu. ft.	

Massachusetts Gas Companies Charging $2.00 *per M* (1910), *Including from* $1.87½ *to* $2.12½.

Cities.	Prices.	Population 1910.	Sales M cu. ft.
Nantucket	2.06	2,962	3,378
Gardner	2.00	14,699	7,298
Ipswich	1.88	5,777	3,678
Stoneham	1.91	7,090	4,389
		30,528	18.743
Average 4 cities		7,632	
Sales per Capita		614 cu. ft.	

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1101 *Relation of the Price of Gas to per Capita Sales of Gas from Massachusetts Gas & Electric Light Com. Reports.*

Prices per M.	1901. Sales per capita.	1907. Sales per capita.	1910. Sales per capita.	Average sales per capita.
$2.25	283 cu. ft.	....	....	283 cu. ft.
2.00	584 "	722 cu. ft.	614 cu. ft.	640 "
1.75	843 "	898 "	988 "	910 "
1.50	1187 "	1395 "	1341 "	1308 "
1.25	1669 "	2535 "	2220 " (2)	2141 "
1.10	....	....	2608 "	2608 "
1.00	2393 "	3824 "	4007 "	3408 "
0.90	.... "	....	4106 "	4106 "
0.80	....	....	5760 "	5760 "

(2) In 1910 the $1.25 group ranges from $1.15 to $1.37½. In other years from $1.12½ to $1.37½.

Steady Increase Sales per Capita Due to the Passage of Time for $1.00 Gas.

In 1910 Sales Per Capita $1.00 gas.....	4,007 cu. ft.
In 1901 " " " " "	2,393 "
Nine years' increase per capita.....	1,614 "
One year's increase " "	179 "

Average Increase of per Capita Sales Due to Lowered Prices.

From $2.25 to $2.00.....	14	cu. ft. increase for	1 cent
" 2.00 to 1.75.....	11	" " "	" " "
" 1.75 to 1.50.....	16	" " "	" " "
" 1.50 to 1.25.....	33	" " "	" " "
" 1.25 to 1.00.....	51	" " "	" " "
" 1.00 to 0.80.....117		" " "	" " "

1102 Before applying the precedence derived from Massachusetts gas companies to the case of the city of Des Moines, it is necessary to note the different conditions controlling the cities of Massachusetts and Iowa.

Massachusetts cities are not growing rapidly in population, and therefore are not building extensions and new houses and factories as rapidly as they are being built in the State of Iowa.

The habits of the people, and their mental attitude in Massachusetts delay progress and development as compare with the development of the state of Iowa.

All of these conditions are in favor of a more rapid natural increase in gas sales in Iowa, and also productive of a readier response to any lowering of gas prices in increased sales per capita.

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For the year 1910, and with a price of 90 cents, we find the sales per capita, in Massachusetts to be 4,106 cubic feet.

For the year 1910, and with the price at $1.10, we find the sales of gas to be 2,608 cubic feet per capita. The difference between these is 1,498 feet; and dividing by 20¢ we find the increase of gas sales per capita in the State of Massachusetts to have been about 75 cubic feet for each cent reduction in price.

Further, in order to learn the annual increase in the sales of gas per capita at the constant price of $1.00, in Massachusetts, between the years of 1901 and 1910, we find the difference, as above shown, to be 1,614 cubic feet per capita—or an average in round figures of 180 cubic feet per year per capita.

The statement has heretofore been made that the safe capacity of the existing works of the Des Moines Gas Company is about 3,000,000 cubic feet per day, or, say 600,000,000 or more cubic feet per year. Its sales for 1910 amounted to 528,375,000 cubic feet.

And it is reasonable to assume that with the price of gas
1103 reduced to 90¢, as per ordinance of December 27, 1910, 600,000,000 cubic feet annual sales, or the works capacity, will be reached.

It is obvious that the only increase required to reach this capacity will be in oil, coal and coke for fuel and the purifying material. In general, all the other conditions of operation will remain as they are today.

From the operating expenses for the year ending December 31, 1910, we have the following figures:

Boiler Fuel Per M Cubic Feet	.0288¢
Generator Fuel	.1038¢
Oil	.1150¢
Purifying Labor & Supplies	.0022¢
Increased Cost of Gas Per M	.2490¢

Thus we see, speaking in round figures, that the cost of gas while the sales are increasing to 600,000,000 cu. ft. annually will be increased by 71,625,000 cubic feet at 25¢ per M, as shown in the subjoined computation:

Revenue for 600,000 M cu. ft. sales @ 90¢		$540,000.00
1910 Sales 528,375 cu. ft.		
Increase 71,625 cu. ft.		
Operating expense:		
528,375 cu. ft. @ 69.33¢	$366,322	
71,625 " " @ 25¢	17,906	384,228.00
Net Earnings		$ 155,772.00
Net Earnings Per M		25.96¢
Average Coct of Gas per M		64.04¢
Price per M at consumer's meter		90¢

Present Value of Fixed Investment.....	$1,401,087.00
Fixed Investment Per M Cu. Ft.....	2.37
Working Capital per M.....	.13
Total Investment Per M.....	2.50
26¢ Profit Per M gives.....	10¢
With the Price of Gas Fixed at.....	90¢

From the above it appears rational and practical to assume that within a brief period after the acceptance of the price of 90 cents per M cubic feet, that the Des Moines Gas Co. will be selling
1104 600,000,000 cubic feet of gas annually, and earning a 10% profit on its plant and working capital.

SECTION 99. Computation of Going and Market Value with Gas at 90 Cents Per M.

The going value is a matter of common consent and cannot be arbitrarily fixed independently of the attitude of investors.

For the sake of clear definition, I will say that my meaning of the going value of a works or factory is that amount by which it exceeds its present value of fixed plant and working capital, because of the excellence of its management, the fixity of its tenure of any business, and the room for development in the community which it serves, with, as a controlling consideration the profit at which this service is rendered.

Mr. Ewing Matheson, England's greatest authority on depreciation and valuation of factories, never mentions going values in connection with anything else but sales of the works themselves.

Apparently the idea of using going value in the fixing of rates has not yet been conceived by English business men.

If any man, engaged in competitive business, should attempt to use the possibly large going value of a successful concern as the basis of his profits, he would be committing commercial suicide, because his competitors would at once under-bid him.

For the public convenience our municipalities have made of late our public utilities into privileged parasites, having a monopoly of the gas, water, electricity or other commodities which they sell, and therefore have removed the healthy corrective of competition, frequently without doing their plain duty to the public in fixing a fair and reasonable rate for the commodity at the same time that they grant a monopoly in it.

1105 The idea of basing the going value of any gas company on its number of services, or on its los-es while building up business, or for that matter on the theoretical greater profit of a going concern for a given term of years over a new concern which is started at the beginning of that term of years, appears to me wholly irrational and impractical—because whatever might be the result of such far-fetched and fanciful computation it would have no effect whatever on an experienced investor.

The sub-joined computation gives the going value $352,000.00 and the total market value of $1,821,000.00 of the Des Moines Gas Company.

Computation of Going Value, With Gas at 90¢ Per M.

Franchise Price—Per M	.90¢
Price with 6% profit included	.86
Extra Profit—per M	.04
Total extra profit 528,375 M @ 4¢	$21,135.00
Capitalizing $21,135.00 @ 6%	352,250.00

We can then obtain the market value of these works as follows:

Present depreciated value	$1,401,000.00
Working Capital	68,000.00
Going Value	352,000.00
Total Market Value	$1,821,000.00

If the Des Moines Gas Company has been legitimately capitalized at $1,768,000.00 common stock, this stock should sell at about $103.00 or a little over it if purchasers had sufficient confidence in this company's management and the future growth of Des Moines, to accept less than 6% profit.

1106–1760 SECTION 100. Recapitulation:

The corroborative figures of cost quoted from the City's accountants now investigating the Des Moines Gas Company's accounts were all received subsequently to the completion of my appraisement.

The present land value $100,000, is estimated by parties in whose sound judgment and liberality I confide. The structural cost means the real money estimated to be required to build such a plant as the Des Moines Gas Works, at the times when it was built—and is $1,700,215.00.

The present value means the Structural Cost, less the residual depreciation, except in the case of abandoned property, and is $1,401,087.00, as existing in good repair.

The market value of the property of the Des Moines Gas Company is the value on a 6% profit basis, with the price of gas at 90¢ per M, and is $1,821,000.00.

For so long as the cost of raw material and productive labor does not rise, the straight price of 90 cents per M cubic feet of 24 candle power carburetted water gas, containing over 600 British Thermal Units per cubic feet, will give a fair and reasonable profit of six per cent, upon the market value of the Des Moines Gas Company's property, $1,821,000.00—which value exceeds both its structural cost and the present value.

Any future increases of sales of gas at 90 cents will have a tendency to raise the rate of profit above 6% and increase the market value of the Company's property above the present value.

Very respectfully,

WM. D. MARKS,
Consulting Engineer.

DES MOINES, IOWA, *August* 14, 1911.

1761 DEFENDANTS' EXHIBIT # 30.

J. P. B.

Duplicate.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

DES MOINES GAS COMPANY
vs.
THE CITY OF DES MOINES.

December 31, 1910.

Marwick, Mitchell & Co., Chartered Accountants, 79 Wall Street, New York.

1762 & 1763 INDEX.

1764 *Index to Report.*

Page.
1. Scope of Investigation.
2. History of the Company.
3. Acquisition of Properties and Issue of Securities.
4. Rates Charged for Gas since March 1, 1906.
4. Factors Affecting Cost of Manufacture and Distribution of Gas.
5. Conclusions:
5. 1. Cost per M C. F. of Manufacture and Distribution of Gas.
6. 2. Allowance for Depreciation.
6. 3. Operations for the year 1910 adjusted.
8. 4. Returns of Net Revenue.
9. 5. Capital Invested in the Business and Return Yielded by Net Revenue.
10. Explanatory of Conclusions:
11. 1. Particulars of Expenses previously referred to.
11. Expense of Manufacturing.
12. Expense of Distribution.
13. Commercial Expense.
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15. General Expense.
16. 2. Allowance for Depreciation.
17. Per Cent on Investment.
18. 3. Estimate of Net Revenue under Normal Conditions, by means of certain averages.
20. 5. Investment in Plant and Property and in Working Capital.
21. Summary showing Appraisal of Plant and Property at 1895 and Subsequent Additions.
25. Investment in Working Capital.

26. General:
27. Balance Sheet.
28. Operations from January 1, 1895, to December 31, 1910.
30. Surplus Income—July 1, 1886, to February 28, 1906.
31. Accident Claims.

1765 *Index to Exhibits and Schedules.*

From January 1, 1906, to December 31, 1910.

Exhibits.

"A." Income and Profit and Loss Account.
"B." Income and Profit and Loss Account, stated in cents per Thousand Cubic Feet Sold.
"C." Statement of Total Gross Revenue from Gas.
"D." Comparative Statement of Cost of Manufacturing and Distributing Gas.
"E." Comparative Statement of Cost per Thousand Cubic Feet of Manufacturing and Distributing Gas.
"F." Comparative Balance Sheets, as at March 1, 1906, February 28, 1907, 1908 and 1909, and December 31, 1909 and 1910.

Schedules.

"1." Quantity of Gas Manufactured, Sold, Used by Company and Unaccounted for, from January 1, 1906, to December 31, 1910.
"2." Comparative Monthly Statement of Quantity of Gas accounted for and unaccounted for, from January 1 1906, to December 31, 1910.
"3." Summary of Extensions and Improvements at Works from January 1, 1895, to December 31, 1910.
"4." General Statistics, for the years 1895 to 1910.
"5." Summary of Additions to Mains, Services, Meters and Street Lamps, from January 1, 1895, to December 31, 1910.
"6." Data relative to Standard Prices paid by Company.
"7." Office Salaries and Pay-roll Labor—December, 1910.

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1766 & 1767 REPORT.

1768 In the Circuit Court of the United States within and for the Southern District of Iowa, Central Division. In Chancery.

DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, Defendant.

CHICAGO, *August* 19, 1911.

To Robert O. Brennan, Esq., H. W. Byers, Esq., Solicitors for the Defendant, the City of Des Moines.

DEAR SIRS: In accordance with your instructions, we have made an examination of the accounts of the Des Moines Gas Company, Des Moines, Iowa, during the period from March 1, 1906, to December 31, 1910, for the purpose of determining the cost of manufacturing and distributing gas, and of its predecessor, the Capital City Gas Light Company, for two months to March 1, 1906, thereby completing a period of five years. We also made an examination to ascertain the actual amount expended in the construction of the plant and properties, used in the ordinary course of business, adopting as a basis the valuation prepared on January 1, 1895. Our report upon this examination is now submitted, together with the statements detailed in the index prefixed hereto.

1769 *History of the Company.*

The Des Moines Gas Company is one of a number of gas companies controlled by the United Gas Improvement Company of Philadelphia, and was organized under the laws of the State of Iowa on February 28, 1906, for the purpose of acquiring the properties and investment of the Capital City Gas Light Company, Des Moines, and also the plant, property, etc., of Mr. Jansen Haines and Mr. William B. Keffer, in the town of Valley Junction, Iowa.

The Des Moines Gas Company's predecessor, the Capital City Gas Light Company, was acquired by the controlling company on July 1, 1886, the total capital stock of $300,000.00 being acquired from Mr. William Sumner, as representing the old stockholders. This company continued the manufacture and sale of gas in the city of Des Moines until March 1, 1906, as at which date a proposition was made by Mr. W. H. Marshall to procure the conveyance and sale of the entire plant and other assets of the company to the Des Moines Gas Company, free from all debts and liability except $400,000.00 of First Mortgage Bonds with accrued interest thereon and the current liabilities of that company. The proposition also provided for the conveyance and sale of the Valley Junction plant.

The consideration to be granted by the Des Moines Gas Company in payment therefor was met by the issue at par of the following securities:

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$285,000.00 of First Mortgage 5% 20 year Gold Bonds dated March 1, 1906, being part of a total authorized issue of $1,500,000.00	$285,000.00
$800,000.00 of 6% Preferred Stock Contracts	800,000.00
22,490 Shares of $100.00 each of the Capital Stock of the Company, out of a total authorized issue of 22,500 shares	2,249,000.00
Total	$3,334,000.00

1770 Of the above securities the stockholders of the Capital City Gas Light Company acquired $240,000.00 5% bonds and the whole of the preferred stock contracts and shares. The debt due by that Company to the United Gas Improvement Company, not included in the above transaction, amounting to $105,526.49, was satisfied by the delivery of half of the bonds received, viz; $120,000.00. The net result to the shareholders of the old company was represented by the distribution pro rata of the remaining securities, viz:

	Par value.
$120,000.00 5% Bonds	$120,000.00
$800,000.00 6% Preferred Stock Contracts	800,000.00
22,490 Shares of Capital Stock	2,249,000.00
Total	$3,169,000.00

The remaining $45,000.00 of the Des Moines Gas Company bonds were issued in payment of the Valley Junction properties.

The whole of the capital stock of the new Company has been taken up, while the $400,000.00 6% bonds of the old Company already referred to, due January 1, 1907, were redeemed as at that date by the issue of a like amount of 5% bonds. Further issues of bonds against extensions and improvements carried out by the Company down to December 31, 1910 amount to $412,000.00. On the other hand, $389,000.00 of the preferred stock contracts have been repaid. The total capital indebtedness of the Company as at December 31, 1910 is therefore as follows:

5% First Mortgage Bonds	$1,097,000.00
6% Preferred Stock Contracts	411,000.00
22,500 Shares of $100.00	2,250,000.00
Total	$3,758,000.00

1771 At the date on which the Company acquired the assets of the old company, viz: March 1, 1906, the rate for gas supplied to consumers in Des Moines was $1.00 per thousand cubic feet as fixed by the city authorities in an ordinance dated April 29, 1895, and confirmed May 16, 1895, which regulated the rates to be charged as from January 1, 1896. These rates were as follows:

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1896 and 1897	$1.40	less 10¢ Discount	$1.30
1898 and 1899	1.35	"	1.25
1900 and 1901	1.30	"	1.20
1902, 1903 and 1904	1.25	"	1.15
1905	1.20	"	1.10
1906 to 1910	1.10	"	1.00

In December 1910 the council passed an ordinance fixing the rate to be charged and collected for gas by any person, firm or corporation supplying or distributing gas to the City of Des Moines or its inhabitants at 90 cents for each one thousand cubic feet.

In according consideration to the question of the reasonableness of 90 cents per thousand cubic feet as a price for gas, several important factors must be taken into account. These, all having a direct bearing on the subject, may be briefly presented as follows:

1. At what cost, exclusive of depreciations, subsequently referred to, and interest on bonded and floating indebtedness, was gas manufactured and distributed in the City of Des Moines during the period of five years ended December 31, 1910?

2. What allowance must be added to this cost of manufacture and distribution to provide for the wear and tear, and probable inadequacy and obsolescence, of the plant necessary for the conduct of the business?

3. Applying the adjusted rate of 90 cents to sales in Des
1772 Moines, allowing the higher prices to remain for Valley Junction, and also applying the adjusted costs, what would have been the result of the operations for the year 1910?

4. Upon what capital investment would the excess of the ordinance price of 90 cents per thousand cubic feet over the adjusted cost of manufacture and distribution, including depreciation, give a return, using varying rates of interest?

5. What capital is invested in the business of the Des Moines Gas Company, dealing with the question under two classifications, viz:

(*a*) Investment in actual plant and property or fixed investment.

(*b*) Amount required for working capital.

Conclusions.

Having outlined the points to be duly accorded consideration, we have now to submit our conclusions upon the same:

1. For the period of five years from January 1, 1906 to December 31, 1910 the cost, stated upon the basis of sales per thousand cubic feet of manufacturing and distributing gas in the City of Des Moines, including Valley Junction, a suburb located a few miles from the Capital, exclusive of interest on bonded and floating indebtedness and depreciation on the plant, is as set forth in the following statement. With the exception of several items of an extraordinary nature, not applicable to the operations of the Company during the period under review, and now excluded and also to the inclusion of certain expenses not charged, this statement is as shown by the books.

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Expense of	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29			Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
		1907	1908	1909				
Manufacturing	¢36.82	36.89	35.13	32.98	30.75	34.02	29.76	33.04
Distribution	5.82	4.67	5.44	5.32	6.60	5.52	8.49	6.21
Commercial Expense	7.92	7.56	7.31	7.57	8.24	7.67	9.01	7.98
New Business	4.38	4.76	4.36	2.96	3.93	3.98	4.54	4.11
General Expense	1.36	2.68	2.19	2.49	3.78	2.72	4.90	3.22
Taxes	6.14	5.56	6.87	6.52	7.66	6.65	7.22	6.78
Leakage	4.70	2.78	2.20	1.93	1.99	2.26	1.35	2.04
Miscellaneous Sales	*.01	*.04	*.01	*.04	*.03	*.03	*.08	*.04
Totals and Averages ...	¢67.13	64.86	63.49	59.73	62.92	62.79	65.19	63.34

[* In red in copy.]

1773 Should the ordinance of December 1910, fixing the price of gas at 90 cents per thousand cubic feet, be held effective, the compensation payable to the City of Des Moines will be upon the basis of one and eight tenths cents per thousand cubic feet of sales and not two cents, as at present and as included in the foregoing statement. This adjustment of two tenths of a cent per thousand cubic feet sold in Des Moines will slightly reduce the above costs, as follows:

	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29. 1907.	1908.	1909.	Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
As Above	¢67.13	64.86	63.49	59.73	62.92	62.79	65.19	63.34
Reduction due to Modified Price	.20	.20	.20	.20	.20	.20	.20	.20
Adjusted Cost ..	¢66.93	64.66	63.29	59.53	62.72	62.59	64.99	63.14

2. To these costs must be added an allowance in respect of not only the wear and tear connected with the operation of the plant, but also providing for its probable inadequacy and obsolescence. In our opinion, an allowance of six cents per thousand cubic feet sold may be regarded as reasonable for three purposes and this we now add to the costs previously determined, as follows:

	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29. 1907	1908.	1909.	Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
Adjusted Cost, as above.	¢66.93	64.66	63.29	59.53	62.72	62.59	64.99	63.14
Depreciation	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Total Cost, including Depreciation.....	¢72.93	70.66	69.29	65.53	68.72	68.59	70.99	69.14

3. The operations of the Company for the year ended December 31, 1910, adjusted to give effect to "ninety cent" gas in the City of Des Moines, allowing a higher rate to prevail in Valley Junction, and also adjusting the cost of manufacture and distribution to include a depreciation charge, but to exclude certain extraordinary charges, are as follows:

Adjusted Statement of Operations.

1774 *Adjusted Statement of Operations*—Continued.

	Before adjustment. Cubic feet.	Amount.		After adjustment. Amount.
Sales in:				
Des Moines....	521,486,354	$552,345.85	at 90 cents	$469,337.72
Valley Junction	6,889,100	10,579.02		10,579.02
Used at Works.	3,615,600	3,615.60		3,615.60
Total Sales..	531,991,054	566,540.47		483,532.34
Deduct: Discount.....		27,647.47		1,000.00
Total Revenue.....		538,893.00		482,532.34
Operating Expenses—Net...		346,785.35		377,647.36
Net Revenue, available for Interest and other Charges		$192,107.65		104,884.98

In determining this result we have accepted the "gas used at works" at the figure stated by the Company on the basis of "dollar gas". Any change made would affect both the income and expenses but not the net result. We understand the new ordinance provides for gas being sold at 90 cents without any additional allowance in respect of non payment. We have therefore so entered it and excluded all discount except an arbitrary sum estimated as being that applicable to Valley Junction. This return of $104,884.98 is equivalent to a return of 19.71 cents per thousand cubic feet sold.

The operating expenses were adjusted upon the following basis:

As Actually Recorded.....	$346,785.35
Add: Depreciation—6 cents per thousand on sales of 531,991,054 Cubic Feet.....	31,919.46
Carried Forward.....	$378,704.81

1775 *Adjustment of Operating Expenses*—Continued.

Brought Forward.....	$378,704.81
Deduct: Adjustment of City Tax.....	1,057.45
Operating Expenses—As Adjusted.....	$377,647.36

A careful examination of Conclusion No. 1, recording the average expenses of operating this property for five years would indicate that those of the year ended December 31, 1910 are abnormally high and therefore cannot be regarded as indicative of true conditions. We observe that Complainant's witness, Mr. William J. Hagenah, agrees, at least in part, with this Conclusion, and in his computation excludes certain improper charges to operating expenses. The average distributing and other expenses for the four years immediately preceding 1910 and also for the five years including 1910, can more reasonably be regarded as indicative of normal conditions. We have therefore prepared computations, to be afterwards explained, taking the manufacturing cost of 1910 and adding the average distribution and other expenses just referred to. Adopting those results, which we have adjusted to include depreciation and gas at a selling price of 90 cents in Des Moines, we have a net revenue, available for interest and other charges of $145,173.06 under the first method and $135,863.22 under the second, the latter including the 1910 expenses in the average. These returns are equivalent to 27.28 and 25.53 cents per thousand cubic feet sold, respectively.

4. The net revenue ascertained in the preceding paragraph would yield the return set forth in the following table:

1776 *Returns of Net Revenue*—Continued.

Percentage of return.	Capital on basis of income of—		
	$104,884.98	145,173.06	135,863.22
Per M C. F. sold	¢19.71	¢27.28	¢25.53
%5	2,097,701.60	2,903,461.20	2,717,264.40
5½	1,907,001.45	2,639,510.18	2,470,240.36
6	1,748,084.66	2,419,551.00	2,264,387.00
6½	1,613,616.61	2,233,431.70	2,090,203.39
7	1,498,358.30	2,073,900.86	1,940,903.14
7½	1,398,467.73	1,935,640.80	1,811,509.60
8	1,311,063.50	1,814,663.25	1,698,290.25

It might be opportune at this time to point out that the sales for the seven months to July 31, 1911 are considerably in excess of those for the corresponding months in 1910. The increase amounts to 6.16%, ascertained as follows:

	1911.	1910.	Increase. Decrease.	Percentage.
January	55,897,877	48,485,753	7,412,124	15.29
February	48,729,565	44,189,507	4,540,058	10.27
March	45,299,650	45,005,147	294,503	.65
April	44,273,224	40,333,915	3,939,309	9.77
May	43,022,181	41,014,962	2,007,219	4.89
June	39,588,566	41,909,816	2,321,250	5.54
July	36,527,004	34,257,787	2,269,217	6.62
Total and Average.	313,338,067	295,196,887	18,141,180	6.16

[Boldface words and figures in red ink in copy.]

5. The capital invested in the business of the Des Moines Gas Company amounts to $1,550,766.58, analyzed as follows:

In Actual Plant and Property	$1,481,813.67
In Working Capital	68,952.91
Total	$1,550,766.58

1777 It has been contended and with a certain amount of reason that the actual investment in the plant should be increased, because of the omission of certain charges. This is so, but the fact must not be overlooked that any increase in this amount would correspondingly decrease the operating expenses, increasing the margin of profit available to pay interest and other fixed charges.

Should this plant and property be appraised upon a reproductive value a certain increase would *fall* to be made owing to the higher prices prevailing at this time than when the property was erected.

In determining the foregoing amount nothing has been added in respect of what has in this case been described as "going values."

Applying the net revenues referred to in Conclusion 4, we find that upon this investment of $1,550,766.58 the following returns have been earned for the year ended December 31, 1910:

Bases—"Ninety Cent" Gas and 6 Cents Depreciation:

	Net revenue.	Per cent of investment.
Actual Manufacturing and Operating Expenses for 1910	$104,884.98	6.76
Actual Manufacturing for 1910 and Average Operating Expenses for four years 1906-1909	145,173.06	9.36
Actual Manufacturing for 1910 and Average Operating Expenses for five years 1906-1910	135,863.22	8.76

Explanatory of Conclusions.

Conclusion No. 1.—We have prepared and submit in Exhibits "D" and "E" particulars of the operations from January 1, 1906 to December 31, 1910, a period of five years. The results, stated on the basis of per thousand cubic feet manufactured and sold are presented in summarized form on page 5 of this report. Be-
1778 fore submitting details of each classification of expense we might explain that from the two months' period to February 28, 1906, as shown by the books, we eliminated the expenditure on accidents, that expense being applicable to a prior period. To the expenses of the year 1909 we added the corporation tax paid in 1910, while in 1910 we excluded the amount applicable to 1909, but added that paid in 1911 applicable to 1910. From the expenses of 1910 we excluded the amount expended, connected with the

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regulation of the price of gas. This expenditure, as also interest charges, cannot be regarded as directly applicable to the ordinary course of business, and therefore should not be included in our present computations.

The following summaries present particulars of the expenses included under the various headings of the classification on page 5:

Manufacturing.—The expense of manufacturing gas—all water gas—stated on the basis of quantity produced is as follows:

	Two months, to Feb. 28, '06.	Year ended Feb. 28 or 29.			Ten months, to Dec. 31, '09.	Average four years, to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five y'rs, to Dec. 31, '10.
		1907.	1908.	1909.				
Manufacturing	¢.98	.49	.52	.57	.66	.58	.68	.60
Boiler Fuel	2.25	2.22	2.12	2.04	2.47	2.21	2.88	2.36
Expense Works	1.21	.91	.94	1.13	1.25	1.06	1.37	1.13
Generator Fuel	10.45	11.41	10.45	11.60	10.78	11.04	10.31	10.87
Manufacturing Labor..	1.92	1.87	1.80	1.83	1.99	1.87	1.92	1.88
Oil	18.11	17.47	17.98	14.91	12.25	15.75	11.49	14.78
Purification Supplies...	....	.23	.26	.13	.33	.23	.13	.21
Purification Labor	.10	.03	.08	.11	.10	.08	.09	.08
Repair Works	2.06	2.32	1.46	1.21	1.91	1.71	2.55	1.90
Water Tax	.03	.27	.23	.21	.19	.22	.18	.21
	37.11	37.22	35.84	33.74	31.93	34.75	31.60	34.02
Less: Residuals.....	.29	.33	.71	.76	1.18	.73	1.84	.98
Total.....	¢36.82	36.89	35.13	32.98	30.75	34.02	29.76	33.04

It will be observed that in each year of the period under review the cost of manufacture shows a steady decline as compared with the preceding year.

It might be mentioned that during the year 1910 extensive repairs were made at the works. Stated in dollars and cents the repairs during the period under review were as follows:

1779 *Repairs During Period Under Review—Continued.*

Two months to February 28, 1906	$1,370.91
Year to February 28, 1907	9,699.99
Year to February 29, 1908	6,835.23
Year to February 28, 1909	5,966.71
Ten months to December 31, 1909	8,213.18
Year to December 31, 1910	14,193.78
Total	$46,279.80

Apart from sundry repairs the following are the more important charges entered in this account during the year 1910:

Remodelling Water Gas Apparatus		$3,497.89
Less: Charged to Extensions and Improvements		1,219.04
		2,278.85
Repairing Holder Tank and Holders		523.14
Repairing Boilers		487.72
Repairing Calorimeter and Sundries		196.10
Expended on Coke Shed and Apparatus	$4,811.60	
Less: Charged to Extensions and Improvements	3,311.60	
		1,500.00
Total		$4,985.81

Distribution.—Stated upon the basis of per thousand cubic feet sold the distribution expenses are as follows:

	Two months, to Feb. 28, '06.	Year ended Feb. 28 or 29, 1907.	1908.	1909.	Ten months, to Dec. 31, '09.	Average four years, to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five y'rs, to Dec. 31, '10.
Distribution	¢.64	.57	.56	.61	.72	.62	.72	.64
Complaint Expense	.61	.57	.45	.48	.50	.50	.63	.53
Distribution Office Expense	.85	.67	.82	.68	1.21	.84	1.14	.91
Gratuitous Work	1.11	.47	.55	.38	.47	.49	1.25	.66
Repairs:								
Mains	.91	.73	1.00	.68	.95	.84	1.76	1.06
Services	.26	.12	.11	.20	.25	.17	.98	.36
Meters	.33	.59	.78	1.02	1.11	.86	.98	.89
Setting and Removing Meters.	.97	.82	1.04	1.13	1.33	1.09	1.01	1.07
Street Mains Abandoned	.03	.13	.13	.14	.06	.11	.02	.09
Expense—Storeroom and Stable	.11	....	....	....	....	....	....	....
Total	¢5.82	4.67	5.44	5.32	6.60	5.52	8.49	6.21

1780 The very large additional cost of the year 1910 over the preceding year and also over the average of the four years immediately prior thereto calls for special comment.

The reason for the increased expense of "gratuitous work" is not apparent from the records. A special inspector appears to have been added to this pay-roll during 1910, and generally, a more liberal policy seems to have prevailed.

The repairing of mains seems to have been done on a more extensive scale during 1910 and this expense includes $3,171.57 in respect of the cost of lowering 16" main (authorization 241) below river, between works and west side. The total cost of this work was $4,302.08, of which $1,130.51 was charged to plant account. Apart from this particular item, the charges to this account appear to be heavy in comparison with previous years.

The repairs to services are also heavy in 1910 as compared with preceding years. In 1910 this work cost .98 cents per thousand cubic feet against an average of .17 cents for the preceding four years. The large increase is partly explained by an expenditure of approximately $3,000.00 in regrading and resetting at East 6th, Des Moines Street and other streets, required in consequence of the City altering the streets.

Commercial Expense.—The following is a summary of the commercial expense during the period under review, stated in cents per thousand feet sold:

	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29, 1907.	1908.	1909.	Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
Commercial Expense	¢.38	.33	.31	.31	.31	.32	.36	.33
Expense Collection	1.03	.92	.82	1.00	.90	.91	1.20	.98
Expense Office	2.05	2.50	2.08	2.09	2.57	2.29	2.85	2.42
Office Salaries	4.46	3.81	4.10	4.18	4.46	4.15	4.60	4.25
Total	¢7.92	7.56	7.31	7.57	8.24	7.67	9.01	7.98

The increased expenses during 1910 appear to be due to a larger collection force being employed and to the additional cost of maintaining the new office. During 1910 an adding machine and a calculating machine were purchased at a cost of 623.64 and $225.00 respectfully, and charged to this account.

1781 New Business.—A summarized statement of the expenses of this department is as follows:

New Business—Continued.

	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29.			Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
		1907.	1908.	1909.				
New Business	¢.38	.33	.39	.38	.46	.38	.59	.44
Advertising	1.20	.92	.95	.70	1.11	.92	1.29	1.01
Appliance Demonstrations	.65	.72	.47	.35	.27	.45	.32	.42
Expense Soliciting	1.56	2.19	1.56	1.14	1.64	1.61	1.81	1.66
Gas Appliances	1.08	....	*.11	*.16	*.53	*.15	*.41	*.22
Gas Engine Expense	*1.22	.24	.15	.04	.04	.07	.01	.06
House Fitting Expense	*.37	.06	.66	.04	*.02	.17	*.03	.12
Gas Arc Rental and Maintenance	.62	.28	.27	.45	.95	.49	.94	.59
Gas Stove Depreciation	.48	.02	.02	.02	.01	.04	.02	.03
Total	¢4.38	4.76	4.36	2.96	3.93	3.98	4.54	4.11

[* In red ink in copy.]

The increased advertising expense of 1910 appears to be due to the inclusion of larger charges by the United Gas Improvement Company of Philadelphia, in respect of advertising services rendered.

The increased soliciting expense is explained by largely increased salaries in 1909 and 1910.

The gas arc rental and maintenance expense has increased owing to greater depreciation having been charged off during 1910, than in earlier years, and also to a falling off in rental receipts.

General Expense.—The following is a summary of this expense for the five years under review:

General Expense:	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29. 1907.	1908.	1909.	Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
Accident and Damages	....	.11	.13	.65	.52	.35	.49	.38
Association Meetings	....	.12	.08	.22	.36	.19	.22	.20
Expense General	¢.15	.38	.35	.25	.37	.33	.28	.32
Expense Extra	.05	.49	.31	.44	.84	.50	.75	.56
Insurance	.67	.64	.55	.33	.37	.47	.35	.44
Litigation	.07	.06	.06	.09	.21	.10	.19	.12
Fire Damage	....	.13	....	....	....	.03	....	.02
Uncollectible Bills	.16	.88	.67	.51	.60	.64	.62	.64
Street Lamp Operating	.26	*.13	.04	....	.10	.01	.12	.04
Salaries—General	....	....	....	....	.41	.10	1.88	.50
Total	¢1.36	2.68	2.19	2.49	3.78	2.72	4.90	3.22

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1782 Only two accounts in this classification call for special comment. "Expense Extra" appears to contain all expenditures which cannot be definitely assigned to any other account. These expenses include subscriptions to charity, to a committee known as the Greater Des Moines Committee, for capital stock of the Coliseum Company (more properly chargeable to Investment Account, but which we have permitted to stand as an expense) bonuses to manager, and other expenses, all apparently of a special nature. For the five years these expenses aggregated $12,733.10, as follows:

Two Months ended February 28, 1906	$27.50
Year ended February 28, 1907	1,914.50
Year ended February 29, 1908	1,371.65
Year ended February 28, 1909	2,062.31
Ten Months ended December 31, 1909	3,392.36
Year ended December 31, 1910	3,964.78
Total	$12,733.10

The second account calling for comment is that known as "Salaries General." From November 1, 1909, the Des Moines Company has paid salaries to certain of its officers, all we understand, non-resident in Des Moines. The amount charged during November and December 1909 amounted to $1,666.66, while for the year 1910 these salaries aggregated $10,000.00, being paid to the following gentlemen:

	Per annum.
S. T. Bodine, President	$2,500.00
Walton Clark, Vice-President	1,800.00
Lewis Lillie, Treasurer	1,600.00
W. F. Douthert, Secretary	1,600.00
J. A. Pearson, Purchasing Agent	2,500.00
Total	$10,000.00

Prior to November 1, 1909 no salaries were paid to those officials.

1783 In the accounts submitted by the Company was included a charge of $5,935.18 in respect to what was called "Replacement values—Rate Regulation Expense." This account included charges by the United Gas Improvement Company for draftsmen and engineers for time spent on special work for the Des Moines Company. As this expense is not an annually recurring one and is not directly connected with the operations of the business, we have excluded it from operating expenses. In fixing a reasonable rate for gas in the City of Des Moines, such special expenses should not be overlooked.

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Taxes.—A summary of the taxes charged during the period under review, but calling for no special comment, is as follows:

	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29.			Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
		1907.	1908.	1909				
Taxes:								
General	¢3.73	3.59	4.88	4.50	5.66	4.64	5.24	4.77
Special city tax	2.41	1.97	1.99	2.02	2.00	2.01	1.98	2.01
Total	¢6.14	5.56	6.87	6.52	7.66	6.65	7.22	6.78

Leakage.—Stated upon the basis of cents per thousand cubic feet of sales the leakage may be stated as follows:

Two Months to February 28, 1906	¢4.70
Year to February 28, 1907	2.78
Year to February 29, 1908	2.20
Year to February 28, 1909	1.93
Ten Months to December 31, 1909	1.99
Average preceding four years	2.26
Year to December 31, 1910	1.35
Average for five years	¢2.04

We agree with the opinion expressed by the Complainant's witness, Mr. William J. Hagenah, that the operating expenses include charges properly applicable to plant account. The fact must not be overlooked, however, that any readjustment of these charges would have the effect of increasing the plant account.

Conclusion No. 2.—To the cost of manufacturing and distributing gas, as ascertained from the books of the Company, there must be added an allowance in respect of the depreciation of the property and plant, due not only to the wear and tear incident to their
1784 operation, but also to their probable loss through inadequacy and obsolescence. In considering the amount of the depreciation allowance, attention must be directed to the condition in which the plant has been maintained, through the expenditure on repairs and general maintenance. The factors of renewals, repairs and depreciation must be regarded together, and an aggregate annual allowance averaging from ten to twelve cents per thousand cubic feet of sales would, in our opinion, be reasonable. To the actual expenditures on renewals and repairs, as shown by the following statement, we have added six cents per thousand cubic feet of sales in respect of depreciation.

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Repairs on—	Two months to Feb. 28, '06.	Year ended Feb. 28 or 29, 1907.	1908.	1909.	Ten months to Dec. 31, '09.	Average four years to Dec. 31, '09.	Year ended Dec. 31, '10.	Average five years to Dec. 31, '10.
Works	¢2.32	2.49	1.55	1.28	2.03	1.82	2.67	2.02
Mains	.91	.73	1.00	.68	.95	.84	1.76	1.06
Services	.26	.12	.11	.20	.25	.17	.98	.36
Meters	.33	.59	.78	1.02	1.11	.86	.98	.89
Setting and Removing Meters	.97	.82	1.04	1.13	1.33	1.09	1.01	1.07
Street Mains Abandoned	.03	.13	.13	.14	.06	.11	.02	.09
Total Repairs	4.82	4.88	4.61	4.45	5.73	4.89	7.42	5.49
Depreciation	6.00	6.00	6.00	6.00	6.00	6.00	6.00	6.00
Total	¢10.82	10.88	10.61	10.45	11.73	10.89	13.42	11.49

This depreciation of six cents per thousand cubic feet is equivalent to the following allowances. Based upon the investment in the property as shown by the following table, covering the period from January 1, 1895 to December 31, 1910, the position is as follows:

	Investment.		Depreciation.	
	Additions.	At close of period.	6 cents per M C. F.	% on investment.
Valuations—January 1, 1895	$429,426.83	429,426.83	.....	....
For Year ended:				
December 31, 1895	8,903.15	438,329.98	3,666.00	.836
" 1896	42,197.41	480,527.39	4,586.22	.954
" 1897	61,550.37	542,077.76	5,037.06	.929
" 1898	30,559.29	572,637.05	5,616.78	.981
" 1899	45,967.51	618,604.56	6,589.26	1.065
Carried Forward		$618,604.56	25,495.32	

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	Investment.		Depreciation.	
	Additions.	At close of period.	6 cents per M C. F.	% on investment.
Brought Forward	.....	618,604.56	25,495.32	....
For Year ended:				
December 31, 1900	$34,323.27	652,927.83	8,515.86	1.304
" 1901	110,775.17	763,703.00	9,659.40	1.265
" 1902	55,638.14	819,341.14	12,405.90	1.514
" 1903	86,470.66	905,811.80	14,654.70	1.618
" 1904	45,932.04	951,743.84	17,544.42	1.843
" 1905	115,566.43	1,067,310.27	20,064.30	1.880
Two Months to February 28, 1906	10,877.46	1,078,187.73	3,543.55	1.972
Year ended February 28, 1907	298,914.28	1,377,102.01	23,333.55	1.694
Year ended February 29, 1908	93,715.81	1,470,817.82	26,512.68	1.803
Year ended February 28, 1909	41,818.00	1,512,635.82	27,958.22	1.848
Ten Months to December 31, 1909	94,118.98	1,606,754.80	24,254.64	1.811
Year ended December 31, 1910	120,920.87	1,727,675.67	31,919.46	1.841
Total			$245,862.00	

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The percentage of annual depreciation is calculated upon the book value of all fixed assets, both depreciable and non-depreciable. Were the latter excluded and an allowance made for the residual value of the plant the rate would be correspondingly higher. Further, the depreciation allowance has been calculated upon the closing balance of each year and not upon the opening balance, plus the average additions for the year.

The question of this depreciation and also the book value of the property will be referred to in a subsequent section of this report.

Conclusion No. 3.—As explained on page 8 of this report, the distributing and other expenses of the year 1910 cannot be regarded as indicative of normal operating conditions. To obtain a reasonable estimate of the net revenue operating under normal conditions, and including sales at 90 cents per thousand cubic feet and an allowance for depreciation, we have decided to accept the average expenses of operating for two periods, as follows:

a. Four Years ended December 31, 1909.
b. Five Years ended December 31, 1910.

1786 The following is a summary of the position, applying these results in comparison with the actual results:

	Actual 1910.	Estimate.	
		No. 1.	No. 2.
Manufacturing—Actual Cost ...	¢29.76	29.76	29.76
Other Expenses:			
Distribution	8.49	5.52	6.21
Commercial Expense	9.01	7.67	7.98
New Business	4.54	3.98	4.11
General Expense	4.90	2.72	3.22
Taxes	7.22	6.65	6.78
Leakage—Actual	1.35	1.35	1.35
Miscellaneous Sales	*.08	*.03	*.04
Total Other Expenses..	35.43	27.86	29.61
Total	¢65.19	57.62	59.37

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Applying these estimated costs the operations of the year 1910 would have resulted as follows:

	Table No. 1. Four years, average.	Table No. 2. Five years, average.
Revenue, as already stated basis of 90 cents for Des Moines....	$482,532.34	482,532.34
Operating Expenses:		
Manufacturing, year 1910, actual	165,466.44	165,466.44
Distribution and other expenses on sales of 531,991,054 feet..	141,030.83	150,340.67
Depreciation, 6 cents per 1,000 on sales of 531,991,054 feet..	31,919.46	31,919.46
Adjustment of City Tax to 90 cent gas	*1,057.45	*1,057.45
Total Operating Expenses	337,359.28	346,669.12
Estimated Net Revenue, available for interest and other charges.....	$145,173.06	135,863.22

Stated in cents per thousand cubic feet this statement is 1787 as follows:

	Table No. 1.	Table No 2.
Revenue	¢90.70	90.70
Operating Expenses—as above.....	57.62	59.37
Depreciation	6.00	6.00
Adjustment of City Tax.....	*.20	*.20
Total Expenses	63.42	65.17
Estimated Net Revenue.....	¢27.28	25.53

Conclusion No. 4.—This conclusion, as presented on pages 8 and 9, does not call for further comment.

Conclusion No. 5.—This conclusion deals with the investment in plant and property and in working capital. We submit that the investment at December 31, 1910 amounted to $1,550,766.58, analyzed as follows:

In Actual Plant and Property.....	$1,481,813.67
In Working Capital	68,952.91
Total	$1,550,766.58

[*In red ink in copy.]

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The methods by which these results were determined may be presented briefly as follows:

Investment in Plant and Property.—On January 1, 1895 an appraisal of all the properties of the Company, then known as the Capital City Gas Light Company, was prepared and we have accepted that appraisal as the basis of our computations:

Appraisal—January 1, 1895	$429,426.83
Additions—January 1, 1895 to December 31, 1910—as per books	1,133,248.84
Cost of Valley Junction Property—paid in Bonds	45,000.00
Allowance for Gas Holder—not included in books	120,000.00
Appraisal, plus Subsequent Additions—Forward	$1,727,675.67

1788 *Investment in Plant and Property*—Continued.

Appraisal, plus Subsequent Additions—Forward	$1,727,675.67
Deduct: Depreciation of six cents per thousand cubic feet sold 4,097,700 M	245,862.00
Depreciated Value of Property	$1,481,813.67

The following summary presents particulars of the appraisal of January 1, 1895 and also of the additions distinguishing between the period prior to February 28, 1906 and that subsequent thereto:

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	Total.	Appraisal Jan. 1, 1895.	Total.	Additions. Jan. 1, 1895, to Feb. 28, 1906.	Additions. Mar. 1, 1906 to Dec. 31, 1910.
Tank and Holder No. 1	$15,000.00	15,000.00	.....	.....	.....
Tank and Holder No. 2	33,356.64	33,356.64	.....	.....	.....
Tank and Holder No. 3	40,057.41	40,057.41	.....	.....	.....
Old Gas Works	25,000.00	25,000.00	.....	.....	.....
Real Estate	35,765.26	8,916.00	26,849.26	25,200.00	1,649.26
Office Furniture	11,852.38	358.07	11,494.31	.....	11,494.31
Gas Building and Machinery	252,104.73	91,123.50	160,981.23	75,220.84	85,760.39
Meters	187,755.93	16,849.17	170,906.76	102,541.83	68,364.93
Street Mains	649,750.66	120,512.29	529,238.37	286,552.25	242,686.12
Services	258,794.17	35,504.82	223,289.35	150,796.07	72,493.28
Street Lamp Extension and Improvement	25,335.43	14,845.87	10,489.56	8,449.91	2,039.65
Water Gas Plant	27,903.06	27,903.06	.....	.....	.....
Total as per Books	1,562,675.67	429,426.83	1,133,248.84	648,760.90	484,487.94
Add:					
Valley Junction Property acquired in exchange for Bonds	45,000.00	.....	45,000.00	.....	45,000.00
Estimated Cost of Holder of which no record appears on Books	120,000.00	.....	120,000.00	.....	120,000.00
Total	1,727,675.67	429,426.83	1,298,248.84	648,760.90	649,487.94

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1789 The property of the Company is at present recorded on the books at $3,853,975.22, an amount $2,126,299.55 in excess of the original appraisal and cost as determined by us. The following statement will explain the difference between these two amounts:

The present Book Value of the Properties is.....		$3,853,975.22
Add: Depreciation written off as at June 30, 1909.		264,108.78
Book Cost to the Des Moines Company.....		4,118,084.00
Deduct:		
Book Value at January 1, 1895 in excess of Original Appraisal at that date:		
Water Gas Plant and Patents:		
As per Books.....	$200,000.00	
As appraised.....	27,903.06	
	172,096.94	
"Construction Account" at January 1, 1895 representing Stock issued without consideration.....	39,371.22	
	211,468.16	
Items charged to Plant Account during period to February 28, 1906, now excluded:		
Capital City Electric Light Company, Stock—Cost thereof less dividends received.....	2,553.00	
Transferred from Profit and Loss Account on May 1, 1897.....	131,744.44	
	134,297.44	
Appreciation of Plant on transfer to Des Moines Gas Company:		
Book Value of Plant as appearing on Des Moines Gas Company Books, March 1, 1906.....	3,592,723.24	
Less: Valley Junction Properties purchased, included.....	45,000.00	
Net Value of Capital City Gas Light Company Plant.....	3,547,723.24	

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Value thereof as appearing on Capital City Gas Light Company Books, February 28, 1906.....	1,423,953.33	
	2,123,769.91	
Carried Forward.....	$2,469,535.51	4,118,084.00

1790 *Property of the Company*—Continued.

Book Cost to the Des Moines Company.

Brought Forward.....		$4,118,084.00
Deductions, Continued:		
Brought Forward.....	$2,469,535.51	
Bond Discount and Reorganization Expenses charged to Plant in Des Moines Gas Company Books....	40,872.82	
		2,510,408.33
Actual Cost of Property as shown by Des Moines Gas Company Books.....		$1,607,675.67

To this amount, $1,607,675.67, representing the actual appraisal and cost of the property as shown by the books, we have added $120,000.00 being an estimate of the cost of a holder acquired in or about the year 1906, but not on the books. This would give the adjusted appraisal and cost value at $1,727,675.67, the amount shown on page 20. Stated in a somewhat different form the appreciation of $2,126,299.55 is determined as follows:

Appreciation on transfer, etc.....		$2,510,408.33
Deduct:		
Depreciation charged by Company..	$264,108.78	
Value allowed for Holder not on Books.....	120,000.00	
		384,108.78
Appreciation excluded from Accounts.....		$2,126,299.55

We might explain that there is no record on either the books of the Capital City or Des Moines Companies of this holder erected about 1906, for which we have allowed a cost of $120,000.00. The books of the latter company are quite clear as to the price paid for the properties and other assets acquired, viz: $3,334,000.00, consisting of the following securities:

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1791 *Securities*—Continued.

	Par value.
22,490 Shares Capital Stock	$2,249,000.00
First Mortgage 5% Bonds	285,000.00
Preferred Stock Contracts	800,000.00
Total	$3,334,000.00

Of this amount, $45,000.00 in bonds was paid for the Valley Junction property, the remainder of the bonds and the whole of the capital stock and preferred stock contracts being paid to the Capital City Gas Light Company. The books of the Capital City Gas Light Company are equally clear as to the disposition of these securities received in consideration of the assets transferred. Of the bonds thus acquired, $120,000.00 was paid in settlement of a debt of $105,526.49 payable to the United Gas Improvement Company. The remainder of the consideration, having a par value of $3,169,000.00 was, according to a journal entry on the books of the Capital City Gas Light Company, disposed of thus: "Dividend in liquidation distributed pro rata to the shareholders of this Company in the securities of the Des Moines Gas Company, that is, 22,490 shares of capital stock, $120,000.00 First Mortgage Gold Bonds, $800,000.00 Preferred Stock Contracts, as authorized by the Board of Directors at meeting held February 28, 1906 at 3.00 o'clock p. m."

From this entry we feel we might very reasonably assume that before making this distribution all obligations were settled. It has, however, been stated that the holder referred to had been contracted for. As it appears in neither set of books we assume the obligation was, in some way, adjusted by the Capital City Company shareholders. We have repeatedly requested the Company's officials to furnish us with information on this point, but so far we have
1792 not received it. In order that no injustice may be done to the Company we have added $120,000.00 to the cost of the property; that, we understand, may be regarded as approximately its cost.

We might also refer to the appreciation of $131,744.44 included in plant account as of date May 1, 1897. On that date this amount was charged, being credited to profit and loss account to bring the investment accounts of the Company covering its property, real and personal, including its right, franchises, privileges, contracts and immunities to an amount equal to $600,000.00 in excess of its indebtedness, that amount being estimated as a fair valuation on December 31, 1896. This wording is substantially that used in the records.

The depreciation charged off by the Company on June 30, 1909, $264,108.78, does not appear to have been calculated upon any basis. It was the amount then at the credit of profit and loss account and represented the net income of the Company from March 1, 1906 to June 30, 1909, after discharging all obligations in respect of expenses, including interest on bonded and floating indebtedness.

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Investment in Working Capital.—We have accorded consideration to the working capital employed in the business and ascertained that at December 31, 1910 it amounted to $68,952.91, made up as follows:

Current and Working Assets:	
Materials and Supplies	$77,410.46
Accounts Receivable	51,858.54
Cash in Bank and on Hand	49,434.15
Insurance paid in Advance	905.20
Total Current and Working Assets—Forward.	$179,608.35

1793 *Investment in Working Capital*—Continued.

Total Current and Working Assets—Forward.		$179,608.35
Liabilities:		
Bills and Accounts Payable	$51,838.37	
Accrued Taxes and Interest	58,817.07	
		110,655.44
Excess of Current Assets over Current Liabilities		$68,952.91

We believe the suggestion has been made that accrued taxes and interest should not be deducted in determining the amount of working capital, but we might point out that because of their non-payment the cash on hand is correspondingly increased. There is a period during the year when this liability does not appear on the balance sheet, and at that time the cash is correspondingly reduced. As a matter of fact, the cash balances are accumulated to provide for the payment of these obligations. The bill payable included above is for $14,000.00 and is payable on demand. It would therefore seem to be a legitimate deduction in determining the working capital. The foregoing figures are taken from the Company's balance sheet of December 31, 1910.

The question of this working capital should be considered from the standpoint of the amount required to operate the business. Looked at from this viewpoint we believe the amount sufficient for the needs of the business.

General.

To the following matters more or less directly connected with the case now under consideration, we desire to direct your attention:

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1794 *Balance Sheet.*

The following is a condensed comparative balance sheet as set December 31, 1910, and March 1, 1906, greater detail being presented in Exhibit "F", as taken from the books:

	Dec. 31, 1910.	March 1, 1906.	Increase. *Decrease.
Assets:			
Fixed Assets, before charging Depreciation	$4,118,084.00	3,592,723.24	525,360.76
Current and Working Assets	178,703.15	179,527.03	*823.88
Charges deferred to Future Operations	905.20	993.38	*88.18
Total	$4,297,692.35	3,773,243.65	524,448.70
Liabilities:			
Capital Stock	$2,250,000.00	2,249,000.00	1,000.00
Preferred Stock Contracts	411,000.00	800,000.00	*389,000.00
First Mortgage Gold Bonds—5%	1,097,000.00	685,000.00	412,000.00
Total Fixed Liabilities	3,758,000.00	3,734,000.00	24,000.00
Current	51,838.37	18,227.80	33,610.57
Accrued	58,817.07	21,015.85	37,801.22
Surplus, before charging Depreciation	429,036.91	.....	429,036.91
Total	$4,297,692.35	3,773,243.65	524,448.70

[* In red ink in copy.]

The current and working assets at December 31, 1910 include inventories aggregating $77,410.46, as follows:

Purification Stock	$4,113.30
Tar	1,235.34
Store room	36,218.12
Stable	5,805.40
Gas	811.44
Boiler Fuel	737.95
Generator Fuel	10,449.98
Carried Forward	$59,371.53

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1795 *Current and Working Assets*—Continued.

Brought Forward	$59,371.53
Oil, Water Gas, Stock	9,301.80
Gas Coal	1,222.16
Store room Suspense—1908	3,214.77
Store room Suspense—1910	819.00
Gas Arc Lamps	3,481.20
Total	$77,410.46

The surplus account, having a credit balance of $429,036.91, represents substantially the accumulated income of the period of four years and ten months from March 1, 1906 to December 31, 1910, determined as follows:

Year to February 28, 1907	$49,454.76
Year to February 29, 1908	77,739.26
Year to February 28, 1909	107,017.04
Ten Months to December 31, 1909	87,305.06
Year to December 31, 1910	112,168.60
Total Income	433,684.72
Taxes omitted by Company, charged by us	1,287.37
Replacement values expenses, charged by Company, eliminated from above	*5,935.18
Surplus as shown by Company	$429,036.91

[* In red ink in copy.]

Operations from January 1, 1895, *to December* 31, 1910.

The following summary presents our estimated investment in plant and property at the close of each year during this period. To the actual investment in physical properties we have added an arbitrary $50,000.00 for working capital, except at December 31, 1910, when we have added the amount determined in this report.

1796 We also present the revenue and operating expenses as shown by the books, except as adjusted by us during the last five years, including as an expense our allowance to provide for depreciation. We further state the ratio the net revenue, thus ascertained, bears to the investment, as now determined:

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Year to:	Estimated investment less depreciation.	Net revenue.	% to investment.	Total revenue.	Operating expenses, incl. depreciation.
December 31, 1895	$484,664.	36,351.	7.50	95,414.	59,063.
" 1896	522,275.	25,573.	4.90	99,921.	74,348.
" 1897	578,788.	31,273.	5.40	109,901.	78,628.
" 1898	603,731.	35,772.	5.93	118,117.	82,345.
" 1899	643,109.	30,682.	4.77	138,521.	107,839
" 1900	668,917.	48,177.	7.20	173,158.	124,981.
" 1901	770,032.	54,176.	7.04	197,623.	143,447.
" 1902	813,265.	61,621.	7.57	242,610	180,989.
" 1903	885,081.	74,282.	8.39	289,486.	215,204.
" 1904	913,468.	114,260.	12.51	337,205.	222,945.
" 1905	1,008,972.	127,527.	12.64	369,375.	241,848.
Two Months to: February 28, 1906	1,016,304.	15,973.	9.43	59,159.	43,186.
Year to: February 28, 1907	1,291,885.	115,281.	8.92	390,833.	275,552.
" 29, 1908	1,359,088.	139,449.	10.26	446,510.	307,061.
" 28, 1909	1,372,948.	165,442.	12.05	471,734.	306,292.
Ten Months to: December 31, 1909	1,442,812.	130,661.	10.87	409,240.	278,579.
Year to: December 31, 1910	1,550,767.	160,189.	10.33	538,893.	378,704.
Total		1,366,689.	.....	4,487,700.	3,121,011.
Average	$893,603.	85,418.	9.56		

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In compiling this statement we have assumed that additions to plant were earning during the entire year, instead of on the basis of one half of a year.

As an indication of the reduction in the percentage earned through the adoption of the foregoing method of deducting depreciation from the investment and per contra, adding it to the operating expenses we might explain that, were we to adopt the Company's own net revenue, which ignores depreciation, the return upon the in-
1797 vestment, also stated before deducting depreciation, would be 11.12% for the calendar year 1910.

Surplus Income—July 1, 1886, *to February* 28, 1906.

The United Gas Improvement Company acquired control of the Capital City Gas Light Company on July 1, 1886 and operated it under that name until February 28, 1906, when it was reorganized as the Des Moines Gas Company. During this period the operations of the Company as recorded by its books resulted in a net income, available for stockholders, after payment of all interest charges of $640,709.16. This amount was divisible between the periods July 1, 1886 to December 31, 1896, and January 1, 1897 to February 28, 1906, in the proportions of $181,005.56 and $459,703.60 respectively. At December 31, 1896 the first named amount was disposed of as follows:

Net Income, available for Dividends	$181,005.56
Dividend of 4¼% declared on April 3, 1888	12,750.00
Undivided Income at December 31, 1896	168,255.56
Appreciation of Properties to an amount $300,000.00 in excess of Outstanding Capital of same amount	131,744.44
Amount issued as Stock Dividend	$300,000.00

The accumulated profits from January 1, 1897 to February 28, 1906 amounting to $459,703.60 were at the credit of surplus account when the transfer was made, having been utilized in the development of the business.

The total income, before charging depreciation, but after meeting all interest charges, from July 1, 1886 to December 31, 1910, may be summarized as follows:

1798 *Total Income*—Continued.

July 1, 1886 to Dec. 31, 1896	$181,005.56
Jan. 1, 1897 to Feb. 28, 1906	459,703.60
Mar. 1, 1906 to Dec. 31, 1910	433,684.72
Total	**$1,074,393.88**

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Accident Claims.

During our examination of these accounts we several times enquired if any accident claims were pending against the Company at December 31, 1910. Only after the completion of our report were we advised of the following claims pending. We quote from the Company's statement as follows:

"Frank Getchell:	
Killed when automobile struck service cart November 22, 1907, suing for	$100,000.00
"O. R. Nattinger:	
Killed in above accident, suing for	20,000.00
"Isle Denny:	
Injury in above accident, suing for	1,000.00
"Nattinger Automobile Co.:	
Suing for damages to automobile involved in the above mentioned case	500.00
"Thomas Travis:	
Skull fractured and otherwise badly injured March 2, 1910, suing for	30,000.00

"In addition to the above mentioned cases there are several small outstanding claims for from $25.00 to $100.00."

We understand the company repudiates liability in respect of these accidents, but we would suggest that consideration might be accorded to the probable loss, if any such can be established.

1799 Data relative to the unit costs of supplies, mains, services and meters installed, etc. is presented in schedules attached hereto.

In justice to the Company we desire to state that every facility was afforded us in the conduct of this examination, and that we found the books and records to have been well kept.

Yours truly,

MARWICK, MITCHELL & CO.,
Chartered Accountants.

(Here follows diagram marked p. 1800.)

(Here follow pasters, marked pages 1801-1818.)

SCHEDULE "3."

Summary of Extensions and Improvements at Works.

1. Period from Jan. 1, 1895, to Feb. 28, 1906:

1895, Mar. 31.	Purifiers—Balance Contract		$422.00
1895, Apr. 30.	New Coke Wagon		53.75
1895, Aug. 31.	Display Room Apparatus		164.47
1895, Dec. 31.	New Water Pump		186.23
1895, Dec. 31.	Sundries		11.88
			838.33
	Less: Tools		100.00
	Total 1895		738.33
1896, May 31.	Display Window	$31.00	
1896, May 31.	Fire Protection	52.80	
1896, July 31.	New Buggy	150.00	
1896, Sept. 30.	Hose	50.00	
1896, Sept. 30.	Office Furniture	25.00	
1896, Oct. 31.	Ventilating Fan	27.00	
1896, Oct. 31.	New Tank Scales	1,070.57	
1896, Dec. 31.	New Coal Shed	3,688.30	
1896, Dec. 31.	Averaging Tank	115.16	
1896, Dec. 31.	Setting up 16" Generator	429.88	
1896, Dec. 31.	Changing Water Gas Apparatus	652.22	
	Total 1896		6,291.93

1897, Feb. 28. Office Furniture	25.00	
1897, Mar. 31. Welsbach Store Room	30.44	
1897, May 31. New Gutters	82.00	
1897, May 31. Bristol Gauge	35.80	
1897, July 31. Coupon Cutter	60.00	
1897, July 31. Filing Case	25.00	
1897, July 31. Office Changes	20.75	
1897, July 31. Bristol Gauges	44.40	
1897, Aug. 31. Oil Storage Tank	2,023.80	
1897, Oct. 31. Elevator	443.21	
1897, Oct. 31. Addressograph	197.66	
1897, Dec. 31. Tar Separator	259.72	
1897, Dec. 31. Pump	119.06	
1897, Dec. 31. Tools	51.60	
Total 1897		3,418.44
1898, Apr. 30. Office Furniture	475.86	
1898, Apr. 30. Horse and Wagon	217.00	
1898, May 31. Exhaust and Connection	2,411.52	
1898, June 30. Office Safe	100.00	
1898, Dec. 31. Lathe and Tools	208.32	
Total 1898		3,412.70
Carried Forward		$13,861.40

1820		Brought Forward		$13,861.40
1899, May 31.		Cashier's Cage	$115.00	
1899, May 31.		New Desk	28.00	
1899, June 30.		Store Room	50.00	
1899, June 30.		Lockers	56.10	
1899, Dec. 31.		Store Room	175.00	
1899, Dec. 31.		New Boilers	5,731.41	
1899, Dec. 31.		Water Tank	200.00	
1899, Dec. 31.		New Exhauster	1,820.29	
1899, Dec. 31.		Gauges	87.90	
1899, Dec. 31.		Water Pump	276.05	
1899, Dec. 31.		Oxygen Pump	51.78	
1899, Dec. 31.		Gauges	68.25	
1899, Dec. 31.		Tools	71.12	
			8,730.90	
	Less:	New Boilers, Water Tank, Water Pump sold	$260.00	
		Governor	175.00	
		Sundries	90.00	
			525.00	
		Total 1899		8,205.90
1900, Feb. 28.		New Exhauster	221.06	
1900, Apr. 30.		Desk	64.00	
1900, Apr. 30.		Adding Machine	250.00	
1900, Apr. 30.		Store Room	54.26	
1900, Nov. 30.		Fire Protection	95.85	
1900, Nov. 30.		Wet Meter	18.00	

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1900, Nov. 30. Tools		91.03	
1900, Nov. 30. Sundries		92.20	
	Total 1900		886.40
1901, Sept. 30. Fan		58.50	
1901, Sept. 30. Cabinet		113.00	
1901, Sept. 30. Coupon Cutter		57.00	
1901, Sept. 30. Pentane Lamp		90.00	
1901, Sept. 30. Hydrogen Apparatus		22.25	
1901, Sept. 30. Addressograph		118.82	
1901, Nov. 30. Mason Regulator		73.86	
1901, Dec. 31. Barrows		599.58	
1901, Dec. 31. Awnings		55.85	
1901, Dec. 31. New Store Room		977.94	
1901, Dec. 31. Countershaft		69.88	
1901, Dec. 31. New Water Gas Apparatus		34,405.49	
	Carried Forward	$36,642.17	22,953.70
1821	Brought Forward		$22,953.70
1901, Continued:			
	Brought Forward	$36,642.17	
1901, Dec. 31. Blowers		119.52	
1901, Dec. 31. Weighing Scales		123.48	
1901, Dec. 31. Pipe Machine		83.77	
1901, Dec. 31. Tools		34.21	
	Total 1901		37,003.15

1902, June 30.	Horse	153.76	
1902, Aug. 31.	Stable	158.38	
1902, Aug. 31.	Horse and Wagon	614.50	
1902, Dec. 31.	Shop A	944.83	
1902, Dec. 31.	Gauges	41.89	
1902, Dec. 31.	Photometer	199.71	
1902, Dec. 31.	Coating Apparatus	31.01	
1902, Dec. 31.	Paving and Concreting	1,297.44	
1902, Dec. 31.	Engine Shop	25.00	
1902, Dec. 31.	Wagon	75.00	
1902, Dec. 31.	Fire Protection Apparatus	39.60	
1902, Dec. 31.	Stable	352.15	
1902, Dec. 31.	Tools	137.46	
1902, Dec. 31.	Office Furniture	344.20	
		4,414.93	
	Sundry Sales	386.49	
	Total 1902		4,028.44
1903, June 30.	Horse	150.00	
1903, Dec. 31.	Oil Filter	25.07	
1903, Dec. 31.	Oxide Pan	66.79	
1903, Dec. 31.	Coke Bins	310.56	
1903, Dec. 31.	Fire Hose	157.90	
1903, Dec. 31.	Changing Blast Connection	30.20	
1903, Dec. 31.	Oxide Floor	226.99	
1903, Dec. 31.	Furniture	40.85	
1903, Dec. 31.	Tools	375.12	
		1,383.48	

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Less: Transferred to Stable	$2,143.00		
Repairs, Stable, etc	462.15		
		2,605.15	
Total 1903			*1,221.67
Carried Forward			$62,763.62

[* In red ink in copy.]

1822	Brought Forward		$62,763.62
1904, Jan. 31.	Oil Pump House	$71.09	
1904, Mar. 31.	Typewriter	164.50	
1904, July 31.	Filing Cabinet	55.85	
1904, July 31.	Water Main	306.48	
1904, July 31.	Engine Stop	62.91	
1904, Dec. 31.	New Fence	117.45	
1904, Dec. 31.	Washbox Valves	421.18	
1904, Dec. 31.	Feed Water Heater	150.00	
1904, Dec. 31.	Pipe Covering	103.75	
1904, Dec. 31.	Changing Connections	400.00	
	Total 1904		1,853.21
1905, Sept. 30.	Station Meter Drums	600.00	
1905, Nov. 30.	Holder Heating Syphons	83.70	
1905, Nov. 30.	Fence	752.48	
1905, Nov. 30.	Station Meter Drums	87.96	
1905, Nov. 30.	Bristol Gauge	59.91	

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1905, Nov. 30. Holder Scale		14.49	
1905, Dec. 31. Generator Fire Doors		100.00	
1905, Dec. 31. Deepening Purifiers		6,876.97	
Total 1905			8,575.51
1906, Feb. 28. Deepening Purifiers		89.62	
1906, Feb. 28. Pump and Pump House		46.71	
1906, Feb. 28. Pusher Plant		45.85	
1906, Feb. 28. Oxide Floor		195.23	
1906, Feb. 28. P. & A. Condenser		1,651.09	
Total Two Months			2,028.50
Total to Feb. 28, 1906			$75,220.84

1823

2. Period from March 1, 1906, to December 31, 1910:	Year ended. Feb. 28, 1907.	Feb. 29 1908.	Feb. 28, 1909.	10 mos. ended Dec. 31, 1909.	Year ended Dec. 31, 1910.	
Oxide Floor	$11.20	.....	.....	.....	.....	
Storeroom—Valley Junction	217.49	.....	.....	.....	.....	
Cement Sidewalk—Valley Junction	58.50	.....	.....	.....	.....	
Fence	271.17	.....	.....	.....	.....	
Changes to Storeroom	29.16	.....	.....	.....	96.99	
Tar Separator and Pump House	562.38	97.39	.....	.....	.....	
Metallic Hose	167.10	.....	.....	.....	.....	
P. & A. Condenser	7.45	78.37	.....	.....	.....	
Pumps	200.00	.....	.....	.....	.....	129.80

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Pusher Plant	3,096.62	.....	.....	.....	.....	
Boiler Feed Pump	322.71	.....	.....	.....	.....	
Housing Holder Tank	.....	2,696.64	.....	.....	.....	
Oil Tank	.....	8,402.40	.....	28.80	7,822.39	
Water Gas Set	.....	69.36	.....	.....	.....	
Livesay Seal	.....	467.82	.....	433.89	.....	
Deep Well	.....	622.44	.....	.....	.....	
Alteration for Unloading Coal	.....	500.00	.....	.....	.....	
Water Service	.....	711.04	281.19	.....	.....	
Boilers	.....	2,119.64	245.38	.....	.....	
Hygrometer and Coils	.....	93.90	15.00	50.00	.....	
Photometer Standard	.....	.....	63.64	.....	.....	
Fire Line	.....	.....	112.56	.....	.....	
Air and Steam Meters	.....	.....	566.72	.....	.....	
Back Pressure Valves	.....	.....	198.32	.....	.....	
Butterfly Valves	.....	.....	298.48	.....	.....	
New Condenser, etc.	.....	.....	.....	2,618.00	4.15	
Governor, etc.	.....	.....	.....	130.31	.....	
New Set	.....	.....	.....	24,338.66	4,194.51	
Exhauster	.....	.....	.....	2,156.21	.....	
Station Meter	.....	.....	.....	2,210.13	8,139.01	
Toilet Facilities	.....	.....	.....	126.73	269.48	
Dipping Meter	.....	.....	.....	80.61	.....	
Calorimeter	.....	.....	.....	376.05	.....	
Railing	.....	.....	.....	22.16	.....	
Moving Shop	.....	.....	.....	3,300.00	.....	
Gas Engine	.....	.....	.....	225.00	.....	
New Stacks	.....	.....	.....	350.94	.....	
Photo Cocks	.....	.....	.....	13.70	.....	

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Remodeling W. G. Apparatus					1,219.04
Replacing Stock					124.61
Oil Handling Apparatus					57.25
Carried Forward	$4,943.78	15,859.00	1,781.29	36,461.19	22,057.23
1824 2. Period from March 1, 1906, to December 31, 1910, Continued:					
Brought Forward	$4,943.78	15,859.00	1,781.29	36,461.19	22,057.23
Bristol Gauges					83.25
Coke Shed and Apparatus					3,311.60
Improving River Front					545.71
Draft Regulator					36.95
Feed Water Heater					680.39
	$4,943.78	15,859.00	1,781.29	36,461.19	26,715.13

Total to December 31, 1910, $85,760.39.

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SCHEDULE "4."

General Statistics.

For the Years 1895 to 1910.

Year.	Population.	Meters.		Mains.		Gas sales.			
		Number in service.	Inhabitants per meter.	Feet.	Per meter.	M C. F.	Per cent increase.	Per meter, M C. F.	Per inhabitant, M C. F.
1895.....	56,500	2,488	22.71	202,529	81.40	61,100	.....	24.56	1.08
1896.....	57,000	2,868	19.88	257,796	89.89	76,437	25.10	26.65	1.34
1897.....	57,800	3,479	16.61	304,514	87.53	83,951	9.83	24.13	1.45
1898.....	59,000	4,127	14.30	340,616	82.53	93,613	11.51	22.68	1.59
1899.....	60,500	5,308	11.40	360,518	67.92	109,821	17.31	20.69	1.82
1900.....	62,100	6,425	9.67	381,983	59.45	141,931	29.24	22.09	2.29
1901.....	64,500	7,682	8.40	430,398	56.03	160,990	13.43	20.96	2.50
1902.....	67,200	8,898	7.55	468,606	52.66	206,765	28.43	23.24	3.08
1903.....	70,000	10,395	6.73	522,259	50.24	244,245	18.12	23.50	3.49
1904.....	72,900	11,436	6.37	551,202	48.20	292,407	19.72	25.57	4.01
1905.....	75,600	12,940	5.84	640,442	49.49	334,405	14.36	25.84	4.42
1906.....	78,000	14,640	5.33	778,893	53.20	372,102	11.27	25.42	4.77
1907.....	80,200	16,073	4.99	823,180	51.21	429,519	15.43	26.72	5.36
1908.....	82,300	17,100	4.81	858,665	50.21	461,178	7.37	26.97	5.60
1909.....	84,400	18,439	4.58	907,640	49.22	497,245	7.82	26.97	5.89
1910.....	88,900	19,736	4.50	1,005,734	50.96	531,991	6.99	26.96	5.98

CLOSE IN CENTER

SCHEDULE "5."

Summary of Additions to Mains, Services, Meters, and Street Lamps

From January 1, 1895, to December 31, 1910.

Period.	Mains.	Services.	Meters.	Street lamps.
For the year ended:				
December 31, 1895	$3,819.39	2,364.04	1,907.67	73.72
" 1896	23,139.46	6,878.75	3,633.28	2,253.99
" 1897	20,124.25	6,901.35	5,008.82	1,097.51
" 1898	12,967.43	7,715.55	5,705.91	757.70
" 1899	13,917.29	10,897.10	12,762.77	184.45
" 1900	7,934.00	16,944.01	8,244.95	313.91
" 1901	38,824.34	23,339.32	9,917.55	1,190.81
" 1902	24,973.12	17,842.59	8,266.88	702.11
" 1903	48,563.78	21,923.57	17,205.25	35.91
" 1904	23,998.35	14,913.00	5,221.91	*54.43
" 1905	65,473.12	19,306.48	20,530.80	1,805.52
Two Months to:				
February 28, 1906	2,817.72	1,770.31	4,136.04	88.71
†Total to February 28, 1906	†286,552.25	†150,796.07	†102,541.83	†8,449.91
For the year ended:				
February 28, 1907	87,672.28	14,738.11	24,972.51	1,587.60
" 29, 1908	52,716.86	12,537.90	12,457.74	144.31
" 28, 1909	21,273.23	12,636.45	5,858.42	268.61

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For the ten months ended:				
December 31, 1909	30,816.97	14,001.87	12,361.21	39.13
For the year ended:				
December 31, 1910	50,206.78	18,578.95	12,715.05	.....
*Total to December 31, 1910	†242,686.12	†72,493.28	†68,364.93	†2,039.65
Total	$529,238.37	223,289.35	170,906.76	10,489.56

The mains laid during the period from March 1, 1906, to December 31, 1910, as per the books, are as follows:

Size of main.	Total feet laid.	Total cost.	Average cost.
*3″ and under	30,996	$702.67	.0227
4″	208,121	94,291.33	.4531
6″	59,933	44,585.89	.7439
8″	20,613	21,512.62	1.0436
Carried Forward	319,663	$161,092.51	

* In red ink in copy.
† In green ink in copy.

SCHEDULE "5"—*Continued.*

Summary of Additions to Mains, Services, Meters and Street Lamps—Continued.

Mains Laid and Cost—Continued.

Size of main.	Total feet laid.	Total cost.	Average cost.
Brought Forward	319,663	$161,092.51	
10"	7,114	9,554.97	1.3431
12"	10,610	12,801.68	1.2065
16"	7,020	14,966.22	2.1319
20"	6,036	19,253.89	3.1898
24"	1,819	17,048.96	9.3727
Total	352,262	234,718.23	
Improvements		7,967.89	
Total as Above			$242,686.12

* This account obviously is in error and we are of opinion has been confused with services.

COPY BOUND

Meters in Service.

	Total.	In stock.	Nominally in service.	Turned off.	In actual service.
As at December 31:					
1894	2,362	137	2,225	...	.....
1895	2,644	156	2,488	...	.....
1896	3,192	324	2,868	...	.....
1897	3,870	391	3,479	...	.....
1898	4,517	390	4,120	...	.....
1899	5,760	452	5,308	...	.....
1900	6,732	307	6,425	...	.....
1901	8,082	400	7,682	...	.....
1902	9,165	267	8,898	...	.....
1903	11,190	795	10,395	...	.....
1904	11,919	483	11,436	...	.....
1905	14,220	585	13,635	695	12,940

Carried Forward.

1828

SCHEDULE "5"—*Continued.*

Meters in Service—Continued.

	Total	In stock.	Nominally in service.	Turned off.	In actual service.
February 28, 1906	14,640	1,076	13,564	520	13,044
February 28, 1907	16,285	1,194	15,091	520	14,571
February 29, 1908	17,847	1,157	16,690	617	16,073
February 28, 1909	19,032	1,687	17,345	583	16,762
December 31, 1909	20,110	1,210	18,900	461	18,439
December 31, 1910	21,415	987	20,428	692	19,736

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Sizes of Meters Purchased Less Condemned.

Light.		Number.	Last invoice price, excl. freight.	
3	Standard	28	$5.00	
5	"	7,782	5.85	
10	"	1,231	8.55	
20	"	42	10.25	
30	"	42	16.10	
45	"	27	20.40	
60	"	2	46.50	
5	Prepay	9,774	9.30	Without locks or attachments.
10	"	125	11.65	" " " "
		19,053		
Details of December 31, 1894, Meters unknown..		2,362		
Total		21,415		

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SCHEDULE "6."

Data Relative to Standard Prices Paid by Company.

Invoice. Date.	Number.		
		Fuel, etc.:	
Nov. 3, 1910	4054	Steam Coal per ton delivered	$1.55
		Mine Run Coal per ton delivered	2.50
		Oven Coke $4.00 per ton, Freight $1.85	5.85
Nov. 26, 1910	4056	Petroleum Gas Oil (Standard Oil Co.) F.O.B. Des Moines—per 100 gals	2.80
		Wrought Iron Pipe:	
Aug. 5, 1910	2879	1/4" F. O. B. Des Moines—per foot	.0163
" 5, 1910	2879	3/8" " " "	.0157
" 5, 1910	2879	1/2" " " "	.022
" 5, 1910	2879	3/4" " " "	.0254
		Galvanized Iron Pipe:	
Aug. 5, 1910	2879	1/2" F. O. B. Des Moines—per foot	.0314
" 5, 1910	2879	3/4" " " "	.035
" 5, 1910	2879	1" " " "	.049
		Cast Iron Pipe:	
Aug. 31, 1910		4" F. O. B. Des Moines—per foot	.27
Nov., 1907		6" " " "	.48
Sept. 1, 1910		8" " " "	.54
Apr. 23, 1910		10" " " "	.79
Nov. 16, 1910		12" " " "	.84
Nov. 23, 1910		16" " " "	1.10
Oct., 1907		24" " " "	3.68

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Oil Contract—Dated June 1, 1909:

Standard Oil Co. of New York contracts to sell to Des Moines Gas Company 7,590,000 gals. of Gas Oil (this quantity expected to cover three years' supply) at the rate of $.028 per gal. delivered in tank cars at Des Moines, Iowa.

Coke Contract—Duration of Contract June 1, 1911, to June 1, 1912:

The Milwaukee Coke & Gas Co. by Pickands, Brown & Co., Agents, agree to sell to Des Moines Gas Company 9,500 tons, 10% more or less, of Milwaukee Solvay Run-of-Oven Coke at the rate of $4.00 per ton—F. O. B. cars Milwaukee. (Freight $1.85 per ton.)

1830

SCHEDULE "7."

Office Salaries and Pay-Roll Labor.

December, 1910.

Invoice. Date.	Invoice. Number.	Office Salaries—Rate per Month:	
Dec. 24, 1910	4367	Manager	$625.00
		Engineer	266.66
		Assistant Secretary & Treasurer	191.66
		Chief Clerk	150.00
		1 Cashier	112.50
		1 Assistant Cashier	60.00
		1 General Bookkeeper	100.00
		1 New Business Agent	200.00
		7 Ledger Clerks	570.00
		2 Stenographers	160.00
		1 Demonstrator	100.00
		16 Clerks	783.33

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		7 Solicitors	530.00
		5 Collectors	265.00
		2 Cadet Engineers	185.00
			$4,299.15
		Pay-roll Labor:	
Dec. 15, 1910	4357	Foreman— Per Month	$100.00
		Night Foreman— "	85.00
		Works Clerk— "	65.00
		Engineers (Boiler)—Per Day	2.75
		Gas Makers— "	2.75
		Firemen— "	2.40
		Shop Foreman—Per Month	85.00
		Store Clerks— "	75.00
		Ordermen— Per Day	2.375
		Meter Reader— "	2.00
		Laborer— "	2.00
		Service Foreman— "	2.375
		Inspector— "	2.75

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1831 DEFENDANTS' EXHIBIT #31.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

9/12/11.

Des Moines Gas Company.

Rate Litigation Expenses 1909 *and* 1910.

Abstract.

1909. Replacement Value:

Service Investigation	Page	1	$162.
Distribution Office Expense	"	4	170.
			333.

1910. Rate Litigation Expense:

Special Litigation	Page	1	82.
Replacement Values	Pages	1-3	4,445.
Office Special	Page	4	513.
Expense General	"	4	561.
			5,602.
Total			$5,935.

Details.

Special Litigation:

1910, Dec. 29.	J. Haines Expenses to Council Bluffs with Carr & Read		53.
" 31.	Frank B. Clark U. S. Marshall Costs "7 Subpœna in Chancery 7 Restraining Orders Chancery"		28.
			82.

Service Investigation:

1909, Mar. 15.	Pay-roll—Time on records of services	61.
" 31.	Petty Cash—Car Tickets, etc	24.
" 31.	Pay-roll—Time on records of services	72.
May 31.	Stores Expense	4.
		162.

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Replacement Values:

1910, May 31.	United Gas Improvement Company—April time of W. F. Downs.....			6.00
July 31.	United Gas Improvement Company—June time of W. F. Broadnax.....			9.00
Nov. 12.	Yankee Furniture Store—Flat Top Desk.....		$8.00	
	Carried Forward.....		$8.00	15.00

1832 *Rate Litigation Expenses*—Continued.

Replacement Values, continued:

Brought Forward.....			$8.00	15.00
1910, Nov. 15.	Pay-roll—Labor (Services).		14.00	
" 22.	Langan Bros.—1 Doz. Counter Books.....		2.00	
" 18.	Chas. Weitz' Sons—Fee for estimate of construction of buildings.....		20.00	
" 30.	Baker Trisler Co.—Supplies for W. Broadnax.....		25.00	
" 9.	Elliott Anderson—6 chairs.		4.50	
" 8.	Rees Gabriell Co.—Lumber		2.50	
" 30.	Pay-roll—Labor.....		20.17	
" 30.	Petty Cash.....		26.61	
" 30.				123.93
	United Gas Improvement Company:			
	1 24 Yard roll Tracing Cloth		8.10	
	November time of E. L. Heyse		73.33	
				81.43
Dec. 1.	Iowa Telephone Company—Service		5.00	
" 1.	Excess Baggage Checks....		4.25	
" 15.	Pay-roll—Labor		116.31	
" 31.	Baker Trisler Co.—Supplies for W. Broadnax.....		8.70	
" 31.	W. H. Brereton, Contractor—services rendered W. Broadnax		20.00	
" 31.	Rees Gabriell Co.—Lumber.		1.30	
" 31.	Iowa Publishing Co.—Blue Prints		18.25	
" 31.	J. C. Mardis Co.—Services making itemized list of cost data.....		20.00	

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"	31.	Perkins Electrical Co.—Flash Lights	14.25	
"	31.	Woods & Wilson—159 Negatives—10 prints	112.10	
"	31.	Petty Cash	9.50	
"	31.	Pay-roll—Labor	309.38	
"	31.	Baker Trisler Co.—supplies for W. Broadnax	3.65	
"	31.	Des Moines Capital—Advertising	.48	
"	31.	Bankers Cabinet Supply Co. M Service cards punched.	27.65	
"	31.	Rees Gabriell & Co.—Lumber	1.55	
"	31.	Perkins Electrical Co.—Lamps and Batteries	4.50	
"	31.	United Gas Improvement Company:		676
		November expense of J. B. Klumpp	143.40	
		November time and expense of W. F. Broadnax	217.00	
Carried Forward			$360.40	897

1833 *Rate Litigation Expenses*—Continued.

Replacement Values, continued:

Brought Forward 897

1910, Dec. 31.	United Gas Improvement Company, continued:		
	Brought Forward	$360.40	
	November Expense of G. M. Harrison	116.05	
	November time of G. M. Harrison	55.00	
	November time and expense of W. Sturdevant	103.65	
	November time and expense of E. S. Umstead	128.86	
	November time and expense of E. L. Heyser	102.85	
	November time of S. G. Elliott	60.00	
	November expense of S. G. Elliott	98.87	
	November time and expense of E. P. Walter	144.40	

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	November Expense of C. S. Chrisman	.25	
	November expense of H. L. Hodge	104.19	
	November time and expense of W. F. Downs	154.10	
			1,428.62
1910, Dec. 31.	United Gas Improvement Company:		
	December time and expense of W. F. Downs	201.41	
	November time of H. L. Hodge	62.50	
	December time and expense of H. L. Hodge	152.66	
	December time and expense of S. G. Elliott	184.73	
	December time and expense of G. M. Harrison	212.85	
	December time and expense of W. F. Broadnax	233.83	
	December time and expense of W. E. Obeele, Draftsman	7.74	
			1,055.72
1910, Dec. 31.	United Gas Improvement Company:		
	December expenses of J. B. Klumpp		199.70
			3,581.27
	United Gas Improvement Company:		
	Expressage on Boxes	50.55	
	December time and expense—E. L. Heyser	218.84	
	December time and expense—E. P. Walter	214.40	
	December time and expense—E. S. Umstead	230.66	
	December time and expense—W. Sturdevant	179.84	
			864.29
			4,445.56
	Less:		
	Expense Stable		.50
			$4,445.06

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1834–1844 *Rate Litigation Expenses*—Continued.

Office Special:

1910, Nov.	15.	Pay-roll "Special Work"	$194.00
"	30.	Pay-roll "Special Work"	24.00
Dec.	1.	500 Ruled Sheets	3.25
"	31.	United Gas Improvement Company:	
		November time and expense of C. J. B. Dixon	42.50
		November time and expense of C. S. Jackson	249.67
			513.50

Expense General:

1910, Dec.	31.	November expenses as follows, account of trips to Chicago in re matter of rates:	
		W. H. Marshall	73.00
		W. F. Douthirt	210.00
		G. W. Curran	30.00
Nov.	1.	Expense of Jansen Haines to Chicago	34.30
"	7.	"	32.25
"	19.	"	56.50
"	29.	" Milwaukee	51.25
Dec.	22.	" Chicago	73.50
			561.30

Distribution Office Expense:

Oct.	31.	Time and expense of L. C. Heamer, March and April	$170.25

1845 DEFENDANT'S EX. 38.

J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Capital City Gas Light Company of Des Moines, Iowa.

Cash Invested in Construction and Working Capital, Dec. 31", 189

Tank & Holder No. 1	$15,000.
Tank & Holder No. 2	33,356.64
Old Gas Works	25,000.00
Real Estate	8,916.
Office Furniture	358.07
Gas Blds. and Machinery	91,123.50
Meters	16,849.17
Street Mains	120,512.29

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Services	35,504.82	
Street Lamp Extension	14,845.87	
Tank and Holder No. 3	40,057.41	
Water Gas Plant	27,903.06	
Inventory of Materials & Supplies	11,559.49	
Working Capital Consisting of Unpaid Gas & other bills and cash	25,546.61	
Total		$466,532.93

STATE OF IOWA,
Polk County, ss:

I, Edward G. Pratt, being duly sworn upon oath state that I am Manager of the Capital City Gas Light Company and that the foregoing statement is correct and true to the best of my knowledge and belief.

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the Circuit Court, of the United States for the Southern District of Iowa, hereby certify *to* the above and foregoing to be a full, true and complete copy of a statement contained in a volume of testimony and exhibits in cause No. 2033 Equity in the Circuit Court of the United States, Southern District of Iowa, Central Division, wherein the Capital Gas Light Company was complainant, and the City of Des Moines defendant, said volume of testimony being labeled, "In the Circuit Court of the United States, Southern District of Iowa, Central Division. Capital City Gas Light Company vs. the City of Des Moines. Affidavit of Edward G. Pratt with exhibits. Filed June 14, 1895. Ed. R. Mason, Clerk," as full, true and complete as the original thereof now on file in my office at the City of Des Moines in said district.

In witness whereof I hereunto set my hand and affix the seal of said court this 23rd day of August, A. D. 1911.

[SEAL.]

WM. C. McARTHUR,
Clerk as Aforesaid.

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1846 DEFENDANT'S EX. 39.

J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

In the Circuit Court of the United States in and for the Southern District of Iowa, Central Division.

CAPITAL CITY GAS LIGHT COMPANY, Complainant,
vs.
CITY OF DES MOINES, Defendant.

Affidavit of Edward G. Pratt.

UNITED STATES OF AMERICA,
Southern District of Iowa, Polk County, ss:

Edward G. Pratt being first duly sworn, upon his oath says that he is a resident of the City of Des Moines, Iowa, and is now and has been since 1887 the Manager of the Capital City Gas Light Company, having full charge of the operation and conduct of the works and affairs of the Company at Des Moines. That he has been connected with the manufacture and distribution of gas for more than nineteen years. That he is now and has been for many years familiar with the cost of constructing and operating gas works. That his experience and observation embrace both water gas plants and coal gas plants, and he knows the circumstances and conditions under which it is economical and proper to manufacture and distribute a combined gas or mixture of coal and water gas. That he is especially familiar with the gas plant under his charge at Des Moines, Iowa. That a large part of it has been constructed under his own supervision, and during his long connection with the works he has become fully familiar with all its details.

Deponent further says that the transcript hereto attached marked Exhibit "A," is a true and correct copy of the evidence of Lewis Lillie, Walton Clark, W. A. Stedman, Conrad Youngerman, S. A. Robertson, D. B. Lyons, Isaac Brandt, W. A. Munster, Geo.
1847 L. Jarrett, and deponent, taken and offered in a certain suit heretofore brought and determined in the District Court of Iowa, in and for Polk County, wherein the Des Moines National Bank was plaintiff, the Capital City Gas Light Company defendant, and the City of Des Moines intervenor. That said testimony was orally introduced upon an application for a temporary injunction, and the said several witnesses were subjected to a cross-examination by the attorneys of the plaintiff and the intervenor. That the papers hereto attached, marked Exhibit "B," contain a true and correct copy of the pleadings in said last named cause. That upon the said hearing for temporary injunction, which was unusually full and complete, the said District Court held that the ordinance, a

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copy of which is attached to the pleadings, and which was under consideration, was void and of no effect, for the reason that the price of gas fixed therein was unreasonably low, and thereupon denied the application for injunction. That thereafter the City Council of the City of Des Moines passed another ordinance of similar import fixing a net price of $1.35. That said ordinance was brought into the said case by way of an amendment to the petition of intervention filed by the City of Des Moines, and upon the final hearing of said cause the Court adjudged both ordinances invalid, for the reason that they were in conflict with a contract existing between the said City and the Capital City Gas Light Company.

Deponent further says that the contract just mentioned expired on the 9th day of January, 1895. That a short time prior to the expiration of the same the subject arose for discussion in the City Council, and the matter was referred to the proper committee for negotiation with the said Capital City Gas Light Company. That said negotiations proceeded as rapidly as possible, and deponent believes that if the members of the said City Council had been
1848 permitted to exercise their own judgments, the negotiations would have resulted in an agreement respecting the price of gas in the City of Des Moines for some future period. That about the time of the expiration of the said contract certain persons styling themselves as "citizens' " committee began to agitate the subject in Des Moines, and to demand of the City Council that the Gas Company should not be permitted to charge more than $1.00 for gas for illuminating purposes, and a less sum for gas for fuel purposes. That said citizens' committee soon became extremely partisan, and by false statements issued to the people of Des Moines endeavored to create a sentiment against the Company, and the belief that the Company had been charging and desired to charge an extortionate and unlawful price for gas. That the said citizens' committee, by influences which are perfectly well known to a city wherein the members of the Council are elected by the people, so worked upon the committee of the City Council having the matter in charge, and the Council as a whole, that after some months spent in an alleged investigation the citizens' committee reported to the City Council an ordinance, being the ordinance a copy of which is attached to the bill of complaint herein. That there were various meetings held by the City Council, and it was the custom of said citizens' committee to induce large numbers of the people of Des Moines to attend said meetings, for the purpose, as deponent believes, of intimidating the City Council and preventing the exercise of their fair and honest judgment. That on the night upon which the ordinance was passed the said citizens' committee presented to the City Council a petition signed by five or six hundred of the people of Des Moines, which was in substance a command to pass the ordinance so reported by the citizens' committee, although the people who signed said petition do not pretend to know what the price of gas in Des Moines should be; and under such pressure the ordinance, a copy of which is attached to the bill, was passed.

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1849 Deponent further says that the papers hereto attached, marked Exhibit "C", are the exhibits referred to in the testimony of Lewis Lillie, and that they correctly show the matters and things therein embraced. That the part of said papers marked Exhibit "D", are, a continuation of the said several exhibits, (excepting the Profit and Loss statements), from the 31st of December, 1891, to and including the 31st of December, 1894, and bring the history of the Gas Company in the respects shown in said Exhibits up to said last named date. That the said supplemental showing as contained in said Exhibits is true and correct to the knowledge of deponent.

Deponent further says that the papers hereto attached, marked collectively Exhibit "E", are the Profit and Loss statements of the complainant for the years 1892, 1893 and 1894. That they show for each of said years the total amount received by the Company for gas and from all sources, and the total amount expended, and therefore the net profits for said years. That said statements are true and correct to the knowledge of this deponent.

Deponent further says that under the circumstances and conditions existing in Des Moines economy and prudence require the manufacture and distribution of a combined water and coal gas, and this Company has for many years manufactured and sold such gas. That the gas plant with all its accessories is not larger than is necessary to fairly accommodate the demands of its business, with a reasonable provision for future growth. That he attaches hereto a statement showing an inventory of the property of the Company comprising its said plant marked Exhibit "F" and made a part hereof. That the actual cash invested by the Company in said plant was on the 31st of December, 1894, Four Hundred Sixty-six

1850 Thousand Five Hundred and Thirty-two and 93/100 Dollars ($466,532.93). That said investment has been carefully and prudently made, and in accordance with the highest requirements of the business in which the Company is engaged. That it would cost at the present time and with present prices for material, to reproduce the said plant at least Four Hundred and Seventy Thousand Dollars ($470,000.00).

Deponent further says that in the manufacture and distribution of the product he has exercised in every department the utmost economy consistent with efficiency. That as shown by the exhibits hereto attached it cost the Company during the year 1891 $1.056 per thousand cubic feet to manufacture and distribute its product. That it cost during the year 1892 $1.329 per thousand cubic feet. That it cost during the year 1893 $1.236 per thousand cubic feet. That it cost during the year 1894 93.06 cents per thousand cubic feet. That the cost for the year 1894 was abnormally low by reason of the unusually depressed prices of substantially all the materials out of which gas is made, and because the amount of repairs made by the Company during that year was less in the aggregate than the average repairs, taking one year with another. That in his opinion it is not probable that the Capital City Gas Light Company will be able to make and distribute gas within the next few years at a cost

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of less than $1.00 per thousand cubic feet, and it is more likely to exceed that sum than to fall below it.

Deponent further says that during the year 1894 of the Company's output about two-thirds was used for illuminating purposes, and about one-third for *duel* purposes; and he further says that substantially all gas bills are paid within the time necessary to give the consumer the benefit of the reduction for prompt payment; hence if the Company shall receive the maximum price for all its gas sold as prescribed in the said ordinance the average price
1851 received hereafter will be not more than $1.20. He further says that it will be impossible for the Company to receive such maximum price from all consumers, as is evidenced by the fact that although during the year 1894 the net price of illuminating gas was $1.70, and the net price of gas for fuel $1.50, the average price received by the Company for all its gas was $1.56.

Deponent further says that the profits that can be derived by the Company under the said ordinance after paying the expenses of operation and repairs will not be more than three per cent, and deponent is of the opinion that they will not reach two per cent.

Deponent further says that the consumption of gas per capita in Des Moines is very low. This condition is occasioned by the absence of any large manufacturing interests in the City, the excessive cheapness of fuel for general consum-tion, and the severe compet-ion of the -lectric light companies; it being well known that the three electric light companies in Des Moines have been doing business at a loss substantially all the time since their organization. There are other reasons which are apparent to every one who is acquainted with the City of Des Moines.

Deponent further says that the price charged by the company for gas during the year 1894 was greatly less than the average price paid by cities of like size (when the dissimilar conditions are reduced to a common basis) throughout the United States, as will be shown by documentary evidence which this deponent will submit upon the hearing.

Deponent further says that in stating herein the amount of the cash investment of the complainant he has included only the tangible property of the Company in Des Moines in use for the manufacture and distribution of gas, and has not included its investment of about One Hundred and Seventy-four Thousand Dollars, ($174,-
000.00) as shown in the exhibits attached hereto, in the ac-
1852 quisition of rights under Letters Patent, and for which the Company issued its bonds, which are now outstanding and unpaid, together with a large amount of interest.

Deponent further says that he believes that a reduction in the price of gas would have a tendency to increase the output, but not materially so, for the reason that, considering the price of other kinds of fuel and light in Des Moines, it is impossible for the Gas Company to compete upon even terms; that is to say, the consumer must prefer for some reason other than the price the use of gas, either for illumination or fuel.

(S'g'd) EDWARD G. PRATT.

Subscribed and sworn to before me by Edward G. Pratt this 7th day of June, 1895.

(S'g'd) C. O. WRIGHT,
[SEAL.] *Notary Public, Polk County, Iowa.*

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the Circuit Court of the United States for the Southern District of Iowa hereby certify the above and foregoing to be a full true and complete copy of the affidavit of Edward G. Pratt filed June 14, 1895 in case #2330 Eq. Capital City Gas Light Co. vs. City of Des Moines et al., excepting the exhibits referred to and attached to said affidavit which are not copied, that the affidavit as above set out is a full true and complete copy of the same on file in the office of the Clerk at Des Moines.

In Witness Whereof, I hereunto set my hand and affix the seal of said Court at my office in the City of Des Moines in said District this 15th day of September A. D. 1911.

[Seal U. S. Circuit Court, Southern District Iowa.]

WM. C. McARTHUR, *Clerk,*
By LOUIS J. ADELMAN, *Deputy.*

1853 DEFENDANT'S EX. 40.

J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Affidavit of Edward G. Pratt in Circuit Court of the United States, Case of Capital City Gas Light Company, complainant vs. City of Des Moines, defendant. June 7, 1895. Exhibit D, part of statement 2.

			Cash invested.	Profit or loss.	Per cent on cash invested per aunum.
January	26" 1878.		$168,792.36	508.82	.30
"	15" 1879.		176,507.93	9,295.87	5.26
"	" 1880.		183,786.23	14,127.97	7.68
"	" 1881.		198,193.37	20,366.64	10.25
"	" 1882.		187,652.68	15,185.14	8.09
"	" 1883.		237,909.61	26,346.26	11.07
"	" 1884.		263,939.08	23,211.17	8.71
"	" 1885.		274,161.32	21,526.33	7.85
"	" 1886.		273,854.61	21,197.79	7.74
June	30, 1887.	(1 yr. 6 mo.)	281,512.27	32,664.10	7.74
"	" 1888.		322,426.05	28,272.08	8.77
"	" 1889.		332,934.33	21,959.73	6.60
December	31, 1889.	(6 Mos.)	346,846.91	12,650.83	7.29
"	" 1890.		373,163.81	25,849.91	6.91
"	" 1891.		449,500.77	24,053.62	5.35
"	" 1892.		455,658.51	20,801.71	4.59
"	" 1893.		460,582.16	18,330.14	3.98
"	" 1894.		466,532.93	36,119.93	7.74

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NOTE—The cash invested is arrived at by taking the total for each year, as shown on Statement #1 less the items checked X.

The Profits are taken from the Profit and loss a/c on the books, after eliminating any charges for dividends, bond interest and interest on capitalization.

Exhibit D: (The items 508:82 & :30 are written in red ink on original.)

1854 UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the Circuit Court of the United States for the Southern District of Iowa, hereby certify the above and foregoing to be a true copy of the first four columns "Statement # 2" marked Exhibit "D" attached to affidavit of Edward G. Pratt a witness in behalf of the Complainant in cause #2330 Equity in the Circuit Court of the United States for the Southern District of Iowa Central Division, wherein Capital City Gas Light Company was complainant and City of Des Moines, respondent, said columns relating to the Period, Cash invested, Profit or loss, Percent profit on cash invested per annum, as full true and complete as said four columns appear in the original Exhibit "D" aforesaid, now on file in my office in the City of Des Moines, Iowa in said District.

In witness whereof, I hereunto set my hand and affix the seal of said Court at my office in the City of Des Moines in said District this 25th day of July A. D. 1911.

[SEAL.] (Signed) WM. C. McARTHUR,
Clerk as Aforesaid.

1855 DEFENDANT'S EXHIBIT 41.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

J. P. B.

Estimate of Cost to Reproduce Present Plant of Capital City Des Moines Gas Co., Excluding Land.

Buildings	$25,000
Water Gas Ap.	23,000
Oil Storage (16,000 g.)	1,350
Tar wells	900
50,000 cf. holder and tank (Relief holder)	13,000
175,000 of holder & tank	28,000
300,000 cf. " "	40,000
6 benches retorts	18,000
2 exhausters & engines	3,500
Coal gas scrubber and condenser	2,500
2 station meters	5,200
1 St. main Governor	100
Forward	$161,050

W. C.

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Page 2. Est. Cost to Reproduce, D. M. G. Co. Plant.

	Fow'd from Page 1	161,050
	Gen'l piping around wks.	13,000
	Including all connections, sewers, fire pumps, ap. etc.	
	Purifiers and trays	12,000
	Elevator	500
	2-50 H. P. boilers, set	1,800
	Feed water heater	300
	3 sets scales	650
	Separator for tar	350
	Water tank	200
1856	Photometer & Laboratory	1,500
	Stable and tools	2,500
	Peloaze and Andion Con	750
	Cost to reproduce	194,600

Gas Works, not including land, $194,600.

8–3–'95. Walton Clark.

Estimate of Cost of Total Plant, Excluding Land, Capital City Gas Co.

	Cost to reproduce works	194,600
	To reproduce mains	163,849
	" " services	23,800
	" " meters	18,750
	" " St. Lamps	11,075
		$412,074
	Office furniture, books, etc.	2,500
	Working Capital	25,700
	Total	440,274

8–3–'95. Walton Clark.

1857 *Estimated Cost of Distributing Gas at Des Moines.*

Sales, 56,632,000 cf.

	Cashier	$1,000
	Bookkeeper	720
	Comp. clerk	600
	2 Collectors, etc.	1,200
	Porter and gen'l help	480
	Com't man	720
	½ Supt.	1,500
	Sec'y	1,500
	Total office force	7,720

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Office rent	1,680
Supplies	500
Genl. Expense	600
Land Rental	2,502
Taxes	5,414
Bad Debts	500
Litigation and accident	1,716
St. Lamps, operating	1,200
Stable Acct.	400
Reps. meters	800
" services	800
" Mains	1,500
Store Acct.	200
Advertising	500
Donation	500
Total	$26,532

Or 46.8 ¢ per cf. sold.

8–3–'95. Walton Clark.

1858 *Estimate of Cost of Coal Gas Plant and of Water Gas Plant, Sufficient for Needs of Des Moines.*

		Water gas.	Coal gas.
Retort House	16,800		
Purifier Bldg. etc.	11,800		
Buildings, Coal shed (1500 tons)	5,000		33,600
Generator House	9,000		
Coal shed	2,500		
Purifier Bldg. etc	8,000		
		19,500	
12 benches retorts (72 retorts)			40,000
Tar extractor			1,000
2-20′ x 6′ condensers			2,500
Horizontal Mechanical scrubbers			4,500
Ammonia Plant			1,500
2 Exhausters and engines		4,000	4,000
2-50 h. p. boiler set			2,200
Station meter 96″		2,200	2,200
Street main Gov. 12″		800	800
Pumps and heater (feed water)			1,000
Scales		500	500
Piping, sewers, etc.		7,000	7,000
Stable, horses, tools, office, etc.		5,000	5,000
Wells, (tar)		1,500	1,500
Purifiers (4)		12,000	12,000
Tar separators		500	

CLOSE IN CENTER

Photometer and laboratory..... ..	1,500	1,500
Relief holder	8,000	
Elevator	500	
Water Gas Apparatus, boilers and Machinery	25,000	
Floor and foundations	2,500	
Holders 2-300000 cf. each	80,000	80,000
Oil tanks, 30000 G.	2,500	
	$173,000	$200,000
1859		
Mains	163,849	163,849
Services	23,800	23,800
Meters	18,750	18,750
Lamps	11,075	11,075
Office (city)	2,500	2,500
Working capital	25,700	25,700
	$418,674	$446,474

8-3-95. Walton Clark.

Estimate of Cost of Making Gas in Des Moines

	Coal gas per M cf.	Water gas per M cf.
Coal per ton 4.85		
Less coke 2.85		
" Tar 72 3.57 1.28 12.8¢.....	12.8¢	
Labor	12	5.80
Purification	1	1
Salaries	2.5	2.5
Rep. Works	5	3
Exp. Works, Water, Tools, etc.	4.50	3
Stable	.6	
Insurance	.7	.7
Engineer and Fireman	2	
Steam	2	1.25
Generator fuel		12
Oil		16.25
Gas in Holder, Total..... Leakage 8%.	43.1¢	45.5¢
Holder cost, Gas sold	46.8¢	49.4¢
Distribution	46.8¢	46.8¢
Cost of Meter.....	93.6	96.2

8-3-95. Walton Clark.

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1860 E. G. Pratt.

Works:

Land 279 feet x 280 ft, 6″	20,000	
Brick Building	25,000	
Frame building	2,500	
Retort arches and benches	19,440	
Water Gas apparatus, including two engines, pumps, and blowers, shafting, etc	25,300	
Scrubber and foundations, 10″ con	650	
Condenser and foundations 10″ con	1,800	
Exhauster and foundation (2) 10″ con	2,500	
Engines and foundations (2) 10″ "	750	
P. & A. Tar extracter	750	
Purifiers and trays 20 feet x 20 ft. x 5 ft	12,000	
Station meters and governors (7 ft. 6″) 10″ con	4,100	
Hydraulic elevator	725	
Station meter and bypass (7 ft. 6″) 10″ con	2,500	
250 H. P. Boilers (set)	1,100	
Tar Well 14 ft. x 10 ft	450	
Oil Tank 16 ft. x 10 ft	1,350	
Scales (3)	650	
W. G. Tar Separator 10 ft. x 8 ft	350	
Feed Water Heater 100 H. P	300	
Yard Connections	12,500	
Water, Steam and Sewer connections	4,550	
No. 1 holder (50,000) (60 ft. x 18 ft.)	15,000	
No. 2 " (175,000) (80 ft. x 36 ft.)	33,356	64
No. 3 " (300,000) (100 ft. x 36 ft.)	41,000	
Water Tank 9 ft. x 9 ft	1,500	
Ph-tometer and Chemical Apparatus	230,121	64

Purifying Building 101 ft. 2″ x 30 ft. 8″ x 27 ft. 9″.
Retort building 83 ft. 10″ x 33 ft. 4″ x 18 ft.
Generator building.

Brick:

Exhauster engine building 155 ft. 7″ x 26 ft. 4″ x 15 ft. 1″.
Engine, pump and blower building.
Scrubber, condenser and office.
Boiler building 25 ft. x 27 ft. — 20 ft.
Blacksmith building 15 ft. 6″ x 29 ft.
Oxide Lime and cement building 16 ft. 3″ x 24 ft.
33 ft. 1″ x 17 ft. 2″ x 7 ft. 6″.

Frame:

Coal shed 76 ft. x 42 ft. 4″.
Store room building 40 ft. 1″ x 26 ft. 2″ x 18 ft.

CLOSE IN CENTER

1861 Street Mains:

3515 ft.	16"	Pipe	8,436
1122 "	14"	"	2,244
2290 "	12	"	3,435
2260 "	10	"	2,712
7020	8		7,020
33867	6		25,400.2
106706	4		53,353
49964	3		19,385.6
18926 "	2½	Pipe	3,785.8
			125,771.6
Add 40 cts. per ft. for paving			45,133.4
			170,905.0

1862 Service Pipes:

2500 services at $6		15,000
Pipe	$1.00	
Labor	3.50	
Cock, etc.	.50	
Meter connection	1.00	
Add for Paving	1,250.00	8,500
		23,500

Street Lamps:

800 Inc. Lantern, Post, Cock, Burner, Etc., at $15.00 each	12,000
Add for paving	3,200
	15,200

1863 Meters:

2500

2	lights	6 at	$5.00	30.0
3	"	1063 "	5.00	5,315.0
5	"	893 "	6.33	5,652.6
10	"	187 "	8.00	1,496.0
20	"	40 "	11.00	440.0
30	"	14 "	15.00	210.0
45	"	8 "	22.00	176.0
60	"	7 "	30.00	210.0
80	"	1 "	41.33⅓	41.3
100	"	3 "	50.00	150.0
150	"	1 "	76.67	76.6
200	"	1 "	106.67	106.6
2000	"	1 "	400.00	400.0
				14,304.3
Ave. 6.10				
Add for setting $1.00 each				2,225.0
				16,529.3

COPY BOUN

1864 Recapitulation:

Works		230,121.64
Street Mains		170,905.05
Service Pipes		23,500.00
Street Lamps		15,200.00
Meters		16,529.37
Office furniture	$2,500.00	
Materials and supplies including working capital	25,000.00	
		27,500.00
		483,756.06

CLOSE IN CENTER

Manufacturing.

		Cost per thousand cu. ft.
Boiler Fuel	1,349.42	.0238¢
Expense Works	1,799.98	.0318
Fuel under retorts	625.17	.0110
Gas Coal	12,243.97	.2161
Generator Fuel	3,606.50	.0636
Insurance	410.03	.0072
Mfg. Labor Coal Gas	2,129.65	.0376
Mfg. Labor Water Gas	2,331.17	.0411
Mfg. Supplies	84.13	.0015
Oil	6,543.56	.1155
Exide	39.80	.0007
Purification Labor	44.80	.0008
Reps. Wks. Coal Gas	790.21	.0139
Reps. " Water "	1,124.80	.0199
Water Tax	242.98	.0043
Expense Stable	368.95	.0065
Tools	188.44	.0033
Exp. Store Room	6.89	.0001
Salaries (½ Supt.)	1,500.00	.0265
	35,430.45	.6253

COPY BOUND

THIS

Less Gas on hand Jan. 1, '95	302.82			
Less Gas on hand Jan. 1, '94	103.18			
		199.64		
		35,230.81		
Credit residuals		7,615.41		
			27,615.40	.4874¢

Distribution.

Exp. Gen-ral	1,310.89	.0231¢	
" Office	2,294.34	.0405	
Burner	123.48	.0022	
Distribution Labor	2,117.34	.0374	
" Supplies	7.79	.0001	
Reps. Meters	669.01	.0118	
" Services	629.34	.0111	
" Mains	1,242.16	.0219	
St. Lamp Oper.	1,596.73	.0282	
Salaries (less ½ Supt.)	4,416.00	.0779	
Exp. Stable	368.96	.0065	
Tools	188.44	.0033	
Exp. Store Room	62.03	.0011	
		15,026.51	.2652¢

Expense.

Gas sales (worthless bills, 1894)	479.54		.0085
Lamp " " " "	9.80		.0002
Lamp rent " " "	4.25		.0001
Tar sales " " "	5.00		.0001
Coke " " "	8.37		.0001
Meter rent sales " " "	.25		.000004
Exp. Extra	559.95		.0099
Gas Stoves	174.08		.0031
Interest	73.47		.0013
1866 City Litigation	617.50		.0109
Litigation	99.40		.0018
Soliciting New Business	350.92		.0062
Supt. Meeting	110.40		.0019
Taxes	5,414.90		.0936
House and Land Rental	2,184.91		.0386
		10,092.74	.1781
		52,734.65	.9307

E. G. PRATT.

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1867 *Valuation of Existing Gas Plant at Des Moines.*

Buildings, machinery, etc.	$194,600.00
Mains	165,845.15
Services	23,800.00
Meters	18,750.00
Street Lamps	11,075.00
Office furniture, supplies, etc.	2,500.00
Working capital, horses, wagons, tools, etc.	25,700.00
Land	20,000.00
	$460,270.15

Detailed Valuation of Buildings, Machinery, etc.

Office and Generator Bldgs.		8,000.00
Retort House		5,500.00
Purifying house		7,200.00
Lime and oxide store		1,200.00
Boiler House		1,500.00
Blacksmith shop		500.00
Store House (frame)		600.00
Coal shed		500.00
Oil storage		1,350.00
Exhausters & Engines		900.00
Scrubbers and condensers, coal gas		2,500.00
Tar extractors		750.00
2 Station meters		5,000.00
1 Street Governor		600.00
Piping about works		8,000.00
Gas, Steam and water connections		5,000.00
Purifiers and trays		12,000.00
Elevator		500.00
2 50 *A.* P. Boilers		1,800.00
Feed water heater		300.00
2 sets of scales		650.00
Tar separater		350.00
Over-head water tank		400.00
Photometer & Laboratory		1,500.00
Horses, wagons, tools, etc.		2,500.00
6 benches retorts		18,000.00
1 50-M. Holder	13,000.00	
1 175-M "	28,000.00	
1 300-M "	40,000.00	
		81,000.00
Water gas plant		23,000.00
		194,600.00

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1868 *Detailed Valuation of Mains Laid Complete, Inclusive of Material and Labor.*

3515	16″	$2.30 per ft.	$8,084.50
1122	14″	2.00	2,240.00
2290	12″	1.30	2,977.00
2260	10″	1.00	2,260.00
7020	8″	.85	5,967.00
33867	6″	.70	23,706.90
106706	4″	.45	48,017.80
49964	3″	.35	17,487.40
18929	2½″	.25	4,732.25
Pipes over bridges consisting of 10″, 14″ & 16″			2,838.00
Paving on 21 miles at 40¢ per lineal foot			45,534.40
			163,845.15

Cost of Reproducing Works on an Exclusive Coal Gas Basis.

Benches	40,000.00
Retort house	16,800.00
Tar Extractor	1,000.00
2 Exhausters, 500,000 cu. ft. capacity each	4,000.00
2 50 H.P. Boilers	2,200.00
2 Condensers 20′ x 6 and containing 260 2½″ tubes.	2,500.00
Standard Scrubber, 500,000 capacity	4,500.00
4 Purifiers 20′ x 20′ x 5′	12,000.00
1 98″ Station meter	2,200.00
1 12″ Street governor	800.00
Ammonia plant	1,500.00
Photometer, Laboratory, etc.	1,500.00
Boiler feed and water pumps	1,000.00
Pipes about works	7,000.00
Scales	500.00
Barn, horses, wagons, office furniture, etc.	5,000.00
Tar and Ammonia wells	1,500.00
Purifying and condensing room 108′ x 55′ x 2′	11,800.00
Coal Store	5,000.00
2 300,000 Holders in brick work bands	80,000.00
	200,800.00
Mains, Services, Meters, Lamps, Working Capital, etc.	260,338.00
Total	461,138.00

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1869 *Cost of Reproducing Works on an Exclusively Water Gas Basis.*

Generator House 35′ x 50′ x 35′	$9,000.00
Waters Gas plant, inclusive of Eng. Boilers, Blowers and Condensers	25,000.00
Hydraulic elevator	500.00
Oil Storage tank 30,000 gals.	2,500.00
Tar Separator	500.00
2 Exhausters and Engines 500,000 capacity each	4,000.00
4 Purifiers 20′ x 20′ x 5′	12,000.00
1 98″ Station Meter	2,200.00
1 12″ Street Governor	800.00
Photometer & Laboratory	1,500.00
Scales	500.00
Piping around works	7,000.00
Barn, Horses, Wagons, office furniture, etc.	5,000.00
Tar and Ammonia Wells	1,500.00
2 300,000 Holders, brick work tanks	80,000.00
Relief holder in store tank	8,000.00
Coal Store (Brick)	2,500.00
Purifying Building 80′ x 55′ x 25′ Wood & Iron	8,000.00
	170,500.00
Flooring and Foundations	2,500.00
	173,000.00
Mains, services, meters, lamps, working capital, etc.	260,338.00
	433,338.00
Coal Gas Works	461,138.00
Water Gas Works	433,338.00
Difference in favor of Water Gas	27,800.00

Estimated cost per 1,000 cu. ft. of water gas in holder on the basis of 61,000,000 cu. ft. made.

Generator fuel	$12.00
Boiler fuel	1.25
Oil, 5 gallons	16.25
Labour	5.80
Purification	1.00
Salaries	2.50
Repair Works	3.00
Expense Works, water, tool, etc.	3.00
Insurance	.70
Cost per 1,000 of gas made	45.50
Cost of leakage	3.90
Cost per 1,000 of gas sold	**49.40**

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Estimated cost per 1,000 cu. ft. of Coal Gas in holder on the basis of 61,000,000 cu. ft. made.

Coal	$12.80
General Labour, stokers and firemen	12.00
Exhausting	2.00
Exhausting engineers	2.00
Repaid works	5.00
General expenses	3.50
Tools	1.00
Salaries	2.50
Stable	.60
Insurance	.70
Purification	1.00
Cost per 1,000 of gas made	43.10
Cost of leakage	3.70
Cost per 1,000 of gas sold	46.80

1870 *Estimated Cost of Distribution per* 1,000 *cu. ft. of Gas Made, on the Basis of* 61,000,000 *cu. ft.*

Cashier	$1,000.00
Bookkeeper	720.00
Complaint clerk	600.00
2 Collectors	1,200.00
1 Janitor	480.00
1/2 Superintendent	1,000.00
1 Complaint man	720.00
Office Rent	1,680.00
Supplies	500.00
Secretary	1,500.00
General expense	600.00
Rent of Land	2,502.00
Taxes	5,404.00
Bad Debts	500.00
Litigation	716.00
Street Lamp Operation	1,200.00
Stable	400.00
Repair Meters	800.00
Repair Services	800.00
Repair Mains	1,500.00
Stove Account	200.00
Advertising	500.00
Donations	500.00

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$\frac{25,532.00}{61,000,000} = 45.06$ Cost of distribution of gas made.

$\frac{25,532.00}{56,000,000} = 45.60$ Cost of distribution of gas sold.

Average cost of manufacture per 1,000 of gas sold, mixed gas.	48.10
Average cost of distribution per 1,000 of gas sold.....	45.60
Cost of mixed gas at burner.....	93.70

Estimated cost at burner in general working, 95¢, according to proportion of mixture.

GEO. H. HARPER.

1871 *Estimated Value of Present Plant of the Capital City Gas Lt. Co. at Des Moines, Iowa.*

Office and Generator buildings	$8,000.
Retort House	5,500.
Purifying House	7,200.
Lime and Oxide House	1,200.
Boiler House	1,500.
Blacksmith Shop	500.
Frame Storehouse	600.
Coal Shed	500.
Oil Storage Tanks	1,350.
Tar wells	900.
50,000 cu. ft. holder and brick tank.....	13,000.
175,000 " " " " " "	28,000.
300,000 " " " " " "	40,000.
Water-gas apparatus	23,000.
Exhausters and Condensers	3,500.
Scrubbers and Condensers	2,500.
P. & A. Tar extractor	750.
2 Station Meters	5,000.
1 Connolly Governor	600.
General yard connections	8,000.
Amount forward to Sheet #2	$151,600.

W. H. W.

1872 *Estimated Value of Present Plant.*

Sheet No. 2.

Amount brought forward	$151,600.
4 Purifiers and connections	12,000.
Hydraulic Elevator	500.
2 50 H. P. Boilers set	1,800.
Feed Water Heater	300.

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Scales (3 sets)	650.
Tar Separator	350.
Water Tank and setting	400.
Photometer and Laboratory	1,500.
Tools, Stables, Wagons, Horses, etc.	2,500.
6 benches of "Sixes" semi-regulator furnaces	18,000.
Gas, Steam and Water connections, pumps, etc.	5,000.
Value of works	$194,500.
2500 services at $6.00 and paving 1250″ at 7.04	23,800.

Street Lamps.

300 complete at $18.00 each	$5,400.	
500 idle posts	3,625.	
200 lanterns	650.	
Paving 200 lamp services	1,400.	
		11,075.
Forward to Sheet #3		$229,375.

1873 *Estimated Value of Present Plant.*

Sheet No. 3.

Amount brought forward			$229,375.
2500 meters at $6.00		$15,000.	
" connections at $1.50		3,750.	
			18,750.
Street Mains:			
3,515 ft. 16″	$2.30	8,084.50	
1,122 " 14″	2.00	2,244.00	
2,290 " 12″	1.30	2,977.00	
2,260 " 10″	1.00	2,260.00	
7,020 " 8″	.85	5,967.00	
33,867 " 6″	.70	23,706.90	
106,706 " 4″	.45	48,017.40	
49,964 " 3″	.35	17,487.40	
18,929 " 2½″	.25	4,732.25	
225,673 "	costing	$125,771.65	
22 miles under paving estimated at 40¢ for re-paving		45,134.40	
			170,906.05
Office Furniture			2,500.00
Working Capital represented in cash and value of material kept on hand			20,000.00
Value of plant			$441,531.05

Not considering values of land.

WM. H. WHITE, *Engineer.*

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1874 *Estimate for a New Water Gas Plant, Having a Daily Minimum Capacity of 500,000 c. ft. to be Erected at Des Moines, Iowa.*

Generator House 55′ x 50′ x 35′	9,000
Water Gas Apparatus, complete 2–6″ sets, Boilers, blowers—condensers & Scrubbers	25,000
Floors and special foundations	2,500
Hydraulic Elevator	500
Relief Holder 50,000 c. ft.	8,000
Oil Storage, 30,000 gals.	2,500
Tar Separators	500
2 Exhausters & Engines, bye pass, Governors & Connections	4,000
4 Purifyers, complete Connections (″O′ x 20′ x 5) with seal & 16″ connections	12,000
1 Station meter 98″-16″ connections	2,200
Connolly Street Governor	800
Photometer & Laboratory appr.	1,500
Large & Small Scales	500
General Yard piping, drains, etc	7,000
Barn, storehouse, horses, wagons, harness, general tools & fittings	5,000
2-300000 ctf. Gas holders in masonry tanks	80,000
Amount forward, Sheet 2	$161,000

W. H. W.

1875 *Estimate Water Gas Plant, Sheet 2.*

Forward	161,000
Tar Wells	1,500
1 Brick coal shed	2,500
Building for purifyers, etc	8,000
Total cost	$173,000

Covering complete construction and equipment of the plant.

WM. HENRY WHITE, *Engineer.*

1876 *Estimate for Coal Gas Plant capable of producing* 500,000 *c. ft. daily, erected in Des Moines, Iowa:*

Retort House building of brick, Iron & Slate roof, iron & wood floor complete, 80′ x 60′ x 35′	16,800
Purifyer & Condenser house, brick, wood & slate roof, high basement, also Boiler, Engine & Exhauster house, complete	11,800
Brick Coal store house, wood & slate roof	5,000
Tar and Ammonia wells	1,500

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12 benches of "sixes," semi-regenerator furnaces, stack complete in foundations and iron work	40,000
4 Purifyers 20′ x 20′ x 5 with Centre-Seal and 16″ connections	12,000
2-500,000 cft. exhausters with engines, 16″ connections, Byepasses & Governors complete	4,000
2 Tar extractors	1,000
2 Condensers 20′ — 6″ complete	2,500
Amount forward sheet 2	$94,600

W. H. W.

1877 *Coal Gas Estimate Sheet No. 2.*

Amount forward	$94,600
1-96″ Station Meter	2,200
1-Connolly Street Governor	800
1-Ammonia Plant	1,500
2-300 cft. Gas holders, masonry tanks	80,000
2-50 H. P. Boilers set	1,800
Photometer & Laboratory appr	1,500
Pumps, feedwater heaters, Tank & Connections erected	1,000
Scales, large & small	500
Yard Mains & special castings, drains & general piping	7,000
Barn, Storehouse, horses, wagons, general tools & fittings, office furniture, etc	5,000
1 Scrubber (mechanical) complete	4,500
Total Cost	$200,400

Covering connections & Byepasses and individual foundations.

WM. HENRY WHITE,
Engineer.

1878 UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the Circuit Court of the United States for the Southern District of Iowa, hereby certify the above and foregoing to be full true and complete copies of the following pages of the transcript of the testimony in #2330 Equity, Capital City Gas Light Company vs. City of Des Moines, lately pending in the Circuit Court of the United States for the Southern District of Iowa, at Des Moines, as follows, to-wit: Page 421-422-423-424-425-426-427-428-429-430-431-432-449-450-451-452-453-454-455-456-457-458-459; as full, true and complete as the originals thereof now on file in my office in the City of Des Moines, Iowa, in said District.

In witness whereof, I hereunto set my hand and affix the seal of said Court at my office in the City of Des Moines in said District this 24th day of July, A. D. 1911.

[SEAL.]

WM. C. McARTHUR,
Clerk as Aforesaid.

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I further certify that pages 421 to 425, inclusive, of said transcript are figures submitted by witness, Walton Clark, in connection with his testimony; that pages 426 to 432, inclusive, of said transcript are figures submitted by E. G. Pratt; that pages 449 to 452, inclusive, are figures submitted by witness Geo. H. Harpir; that pages 453 to 459, inclusive, of said transcript, are figures submitted in connection with the testimony of Wm. Henry White, all of the aforesaid witnesses being witnesses for the complainant in the above entitled cause #2330 Equity.

WM. C. McARTHUR,
Clerk as Aforesaid.

1879 DEFENDANT'S — 42—J. P. B.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

In the Circuit Court of the United States in and for the Southern District of Iowa, Central Division.

CAPITAL CITY GAS LIGHT COMPANY, Complainant,
vs.
CITY OF DES MOINES, Defendant.

Affidavit of Edward G. Cowdery.

UNITED STATES OF AMERICA,
Southern District of Iowa, Polk County, ss:

Edward G. Cowdrey being first duly sworn, upon his oath says: That he is a resident of the City of Milwaukee, in the State of Wisconsin. That for twenty years last past he has been connected with the manufacture and distribution of gas, and is now the General Manager of the Milwaukee Gas Company, a corporation doing business in the City of Milwaukee, and supplying said city and its inhabitants with gas for illuminating purposes. That the said Milwaukee Gas Company manufacturers and distributes a combined coal and water gas, and he is therefore familiar with the manufacture of coal *coal* gas as well as water gas, and understands the conditions and circumstances under which a combined gas should be manufactured and sold. That in his management of the said Milwaukee Gas Company and his long connection with the business aforesaid he has become familiar and is now familiar with the cost of constructing and operating plants. That the present net price of gas for illuminating purposes in the City of Milwaukee is One Dollar per thousand cubic feet for illuminating purposes, and Eighty Cents per thousand cubic feet for fuel purposes. That the said city has a population of about two hundred and sixty thousand people, and the output of the said Milwaukee Gas Company for the
1880 last year was substantially seven hundred million cubic feet.

That the said Milwaukee Gas Company is not in any way interested in or connected with the United Gas Improvement Com-

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pany of Philadelphia, nor is this deponent in any way connected with or interested in said last named company.

Deponent further says that at the request of the Capital City Gas Light Company he spent two days, to-wit: June 5th and 6th, 1895 in the examination of the gas plant belonging to said last named Company, and in becoming acquainted with the conditions under which gas is manufactured and sold in the said City of Des Moines. That through his examination he has become familiar with the said plant except the mains, which are buried in the streets, and his information with respect to them and the number of consumers, the yearly output, the taxes paid by the Company, and the amount paid for street lamp operation, he has received from Edward G. Pratt, the Manager of the said Company.

Deponent further says that he believes that under the conditions existing in Des Moines, which conditions are permanent, the gas manufactured for the city and its inhabitants should be a combined coal and water gas. The reasons for this opinion are, that the difference between the cost of a combined gas and either coal or water gas of equal candle power at Des Moines is very small. The combined gas, mixed about half and half, produces the best effect in lighting it is more satisfactory to consumers, and is the easiest and most economical to distribute. It removes the producer from the substantial monopoly of the distributor of oil, and it is clearly for the best interests of the City of Des Moines that its Gas Company shall continue the manufacture of such combined gas.

Deponent further says that to fairly accom-odate a city of the population of Des Moines, it would cost at the present time to
1881 construct a coal gas plant, exclusive of mains and miscellaneous appurtenances (for the cost of which deponent refers to a subsequent statement made in connection with the valuation of the prese*b*t plant of the Capital City Gas Light Company) $237,293.00. This amount included an estimated cost of land necessary for the construction and operation of the works of $46,000.00. A sheet containing the items of the cost hereinbefore states is attached hereto, marked Exhibit "A" and made a part hereof. It would cost to construct at the present time a water plant sufficient to accom-odate a city of the population of Des Moines (excluding the cost of mains and miscellaneous expenditures as aforesaid), $191,250.00. The items of such cost are shown in a paper marked Exhibit "B" hereto attached and made a part hereof. In the City of Des Moines the holder capacity should be at least five hundred thousand cubic feet, and it will be observed that in the two sheets to which deponent has made reference some of the apparatus and machinery is intended to be duplicated. It is essential that in the machinery of a coal gas plant the retorts should exceed by from ten to twenty per cent, the capacity of the holders, and the machinery should be to a great extent duplicated, particularly so if no immediate extensions are required, as a gas plant is in operation twenty-four hours a day and three hundred and sixty-five days in a year. It is therefore necessary, to overcome the danger to a continuous supply occasioned by breakage or accidents of various kinds, that

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the important manufacturing machinery should be in duplicate. In a water gas plant it is absolutely necessary to have the manufacturing plant duplicated, and each portion large enough to supply the largest demand of any day in the winter.

Deponent further says that he has been requested to state whether the present plant of the Capital City Gas Light Company is of greater capacity than it should be. After carefully examin-
1882 ing it, he is clearly of the opinion that it is not larger or of greater capacity than prudence and good business management require.

Deponent has been further requested to state what it would cost to reproduce the existing plant in operation in the City of Des Moines. In his opinion it would cost more to reproduce it than the amount of the investment account as claimed by the Capital City Gas Light Company, for the reason that there are buildings and other appliances serving their full purpose which would cost largely more to reproduce than their present cash value, and he has therefore carefully inventoried the said plant, and applying to the plant the prices now prevailing for material and construction, but depreciating a portion of the plant by reason of long use, he states to the Court that the present cash value of the said plant, including street mains and miscellaneous parts of the system necessary to its use, is $454,414.35. This amount is properly divisible into three parts, as follows:

Present cash value of works	$226,601.00
Present cash value of mains	153,863.35
Present cash value of miscellaneous construction	73,950.00
Total	$454,414.35

He attaches an itemized statement of said values hereto, marks the same Exhibit "C," and makes it a part hereof.

Deponent further says that he has examined the conditions existing in the City of Des Moines with reference to the reasonable cost of producing and distributing gas in said City. That in so doing he has not examined the books of the Capital City Gas Light Company, and has received no other information with respect to the items of its actual cost save as hereinbefore stated. That the necessary and reasonable cost for the combined coal and water gas of twenty-two candle power in the holder is 47.2 cents per thousand cubic feet upon the gas actually delivered to consumers.
1883 That the cost of distribution and general expense not included in the cost of manufacture is 43.78 cents per thousand cubic feet; so that the whole cost to the Company in delivering gas to consumers in the City of Des Moines is 90.98 cents per thousand cubic feet. A statement showing the items of such cost as computed by him is hereto attached, marked Exhibit "D" and made a part hereof. In this connection deponent desires to state that it may be that the actual cost of the Company has been greater than the cost as so computed, inasmuch as there may be circumstances

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unknown to the deponent which would add to his estimate. He further desires to state that the cost of all kinds of materials entering into the manufacture of gas was during the year 1894 abnormally low, and that, to say the least, it is extremely doubtful whether in the near future it will be possible for any company to manufacture and distribute gas as cheaply as was done during the said year 1894.

Deponent further says that the price charged for gas in other cities is no guide to the price that should be charged in the City of Des Moines, unless the strictest attention is given to the varying conditions existing in the cities with which a comparison is made, and said dissimilarities are reduced to a common basis. For instance, the cost of gas coal, anthracite coal, furnace coke and oil is extremely high in Des Moines because of its remoteness from the sources of supply of these various elements in the manufacture of gas, and the consequent long haul by rail. It is to be noted, again, that the coke made by a gas company as a residual can be profitably or unprofitably sold, depending upon the prices of domestic fuel. In cities where coal for general consumption is cheap, the gas company ought to produce as small an amount of coke for sale as possible. Again, severe competition from the electric light may so restrict the consumption of gas as to make it practically im-
1884 possible to secure a large output. Again, that expense which is incident to the operation of street lamps is very different in different cities. Again, the taxes paid by gas companies are extremely unequal, it being within the knowledge of deponent that in some cities the taxes amount to no more than three cents per thousand feet; in others to as much as fifteen cents per thousand feet. Again, some companies, under stress of circumstances, are doing business at an actual loss, and therefore their prices present no criterion for a reasonable charge.

Deponent further says that it is his opinion that a company engaged in the business of manufacturing and distributing gas, after paying all expenses of operation and repairs, should earn not less than ten per cent. per annum upon the amount of money actually invested in the property; and in those places where money can be loaned upon unquestioned security at seven or eight per cent. per annum the fair return upon the gas business would not be less than twelve per cent. per annum upon the amount of the investment. His reasons for this opinion are, that the principal invested in a gas plant can never be returned. Whenever the business ceases the money invested in it is substantially lost, and in estimating the proper yearly return attention should be given to that fact. It is a hazardous business, subject to explosions, fires and accidents of various kinds, and these risks very sensibly affect the return that should be permitted. It is a competitive business that might be very largely destroyed by new inventions or discoveries. The past history of the manufacture of gas has been full of such incidents, and it will be remembered that within a few years the value of gas property was seriously impaired by the introduction of electric lighting. The investor, in determining whether to engage in the

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business, must necessarily consider these things, and due
1885 allowance for them should be made in determining the reasonable yearly return upon capital so employed. It will be found from the experience of gas companies that a yearly return of ten or twelve per cent., depending upon the locality, will not give to the investor the ordinary legal rate of interest, and eventually return to him his original capital.

Deponent further says that having had experience in the reduction of the price of gas, as is shown by the price now charged by the company with which he is connected, and knowing the probability of what the increase of consumption will be upon a reduction in price, he is of the opinion that the price of $1.30 for gas for illuminating purposes and $1.00 for fuel purposes in the City of Des Moines will not yield to the Capital City Gas Light Company more than one-third the yearly return to which deponent believes it is entitled as hereinbefore stated.

(S'g'd) E. G. COWDERY.

Subscribed and sworn to before me by the said Edward G. Cowdery this 6th day of Jund, 1895.

(S'g'd) E. R. SEATON,
[SEAL.] *Notary Public, Polk County, Iowa.*

1886 EXHIBIT "A."

Cost of Works—Coal Gas.

Retort House, fire-proof, iron roof and slate, 45 x 125 x 30	$15,187.50
Iron floor and wood floor combined, 2640 sq. ft.	1,056.00
Purify. House, brick, 35 x 60 x 25	4,200.00
Cond. " " 30 x 60 x 25	3,600.00
Boiler " " 30 x 20 x 20	960.00
Oxide shed, frame, 60 x 60 x 10	540.00
Coal shed, brick, 3,000 tons	5,000.00
Store House and Meter shop, frame	600.00
Tar wells	1,500.00
12 benches of 6's and found. comp., at $3,500.00	42,000.00
2 purifiers 20 x 20 x 5 and con. and found. comp.	6,500.00
2 Exhausters, capacity 500,000 per day, and con. and found. comp.	2,500.00
2 Tar Extractors and con. and found. comp.	1,000.00
2 Condensers, 500,000 ft. per day, and con. and found. comp.	2,000.00
1 Scrubber, 500,000 ft. per day, and con. and found. comp.	3,500.00
1 Meter, 500,000 ft. per day, and con. and found. comp.	2,000.00
1 street governor and con. and found. comp.	600.00
Concentrating apparatus for Ammonia	1,500.00
2 Holders, 200,000 ft. each, built to inc. to 400,000 each	80,000.00

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2 50 H. P. Boilers and con. and setting	1,200.00
Scales	450.00
1 feed water heater	250.00
1 Water tank, elevated	250.00
	$176,393.50

1887 Forward	$176,393.50
Pumps and settings	400.00
Miscellaneous piping around works, all kinds	8,000.00
Photometric and laboratory apparatus	1,500.00
Tools at works, horses and wagons and barn and outfit, and furniture	5,000.00
Land	46,000.00
Total	$237,293.50

1888 EXHIBIT "B."

Cost of Works—Water Gas.

2 Water Gas sets, each 500,000 cu. ft., comp.	$20,000.00
Building, brick, 30 x 50 x 30	3,500.00
Add. Purifiers (needing larger capacity than coal gas)	2,000.00
Coal Storage, brick 1,000 tons capacity	1,800.00
Oil " 30,000 gal.	3,000.00
Purify. House, brick 35 x 60 x 25	4,200.00
Boiler " " 30 x 20 x 20	960.00
Oxide shed, frame, 60 x 60 x 10	540.00
Storage House and Meter shop, frame	600.00
Tar Wells	1,500.00
2 Purifiers, 20 x 20 x 5 and con. and found. comp.	6,500.00
2 Tar Extractors and con. and found. comp.	1,000.00
1 Meter, 500,000 ft. per day, and con. and found. comp.	2,000.00
1 Street governor, and con. and found. comp.	600.00
2 Holders, 200,000 ft. each, built to inc. to 400,000 each	80,000.00
2 50 H. P. boilers and con. and setting	1,200.00
Scales	450.00
1 feed water heater	250.00
1 Water tank, elevated	250.00
Pumps and settings	400.00
Miscellaneous piping around, works, all kinds	8,000.00
Photometric and laboratory apparatus	1,500.00
Tools at works, horses and wagons and barn and outfit and furniture	5,000.00
Lands	46,000.00
Total	$191,250.00

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1889 EXHIBIT "C."

Cash Value of Capital City Gas Light Co. Plant Works.

Brick retort House, 46 x 80 x 20 (old)	$3,680.	
Purify. House, 26 x 100 x 25 (old)	3,250.	
Boiler & Eng. House, 60 x 30 x 18 (old)	1,296.	
Purifying House, 101 x 31 x 30 (new)	8,000.	
Frame Store House	625.	
Frame Coal Shed	500.	
		$17,351.00
Oil Storage		1,350.00
Tar Wells		1,350.00
1 #1 Holder, 50,000 capacity	8,000.	
1 #2 " 175,000 "	26,000.	
1 #3 " 300,000 "	40,000.	
		74,000.00
6 benches of 6's, at $3,000		18,000.00
Iron floor, 600 sq. ft., at $.50		300.00
Water Gas App.		20,000.00
2 Payne Eng. Blowers, Pumps and shafting		1,200.00
2 Exh. and 2 Eng. and found		3,500.00
Scrubber and condenser and found. (same room)		2,500.00
P. & A. Tar Extracter		750.00
2 Meters, 7½ x 7½, and found. and conn		5,000.00
1 Connelly gov		600.00
Miscellaneous gas connections around works		8,000.00
Gas, steam and water connections around works		5,000.00
Purifiers and trays		12,000.00
		$170,901.00
1890 Forward		$170,901.00
Hydraulic Elevator		800.00
2 50 H. P. Boilers and con		1,200.00
1 feed water heater		300.00
3 sets scales		450.00
1 water gas tar separator		250.00
1 elevated water tank		200.00
Photometric and laboratory, etc		1,500.00
Tools at works, horses, wagons and barn outfit		5,000.00
Land		46,000.00
Total		$226,601.00

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Street Mains.

Main pipe costing $26.00 per ton, delivered in Des Moines.

3,515 Ft.	16	at	$2.00	$7,030.00
1,122 "	14	"	1.70	1,907.40
2,290 "	12	"	1.40	3,206.00
2,260 "	10	"	1.20	2,712.00
7,020 "	8	"	1.00	7,020.00
33,867 "	6	"	.75	25,325.25
106,706 "	4	"	.50	53,353.00
49,964 "	3	"	.45	22,483.80
18,929 "	2½	"	.30	5,678.70
860 "	river pipe at $3.00 per ft.			2,580.00
112,836 "	ditch paved at $.20			22,567.20
Total cost of 42 $\frac{3913}{5280}$ miles main				$153,863.35

1891 Miscellaneous Construction.

2,500 services to lot line free, 35 ft. each, at $.20	$17,500.00
2,500 Meters, at $8.00 average	20,000.00
2,500 Meter connections, at $2.00	5,000.00
2,500 Meters set, at $.50	1,250.00
300 Lamp posts in use, complete, at $18.00	5,400.00
500 " " idle, at $6.00	3,000.00
200 Lanterns " " 4.00	800.00
Office furniture and books	4,000.00
Tools in street wagons, etc	2,000.00
Working capital to carry stock, oil, coal, pipe, purifying material, outstanding accts., etc	15,000.00
Total	$73,950.00

1892 EXHIBIT "D."

Cost of Manufacture.

Coal Gas.

6,365 tons coal, at $4.85		$30,870.25
Coke, 850 lbs. per ton, at $6.00 per ton coke, *coke*	$16,230.00	
Tar, per ton coal, $.60	3,819.00	
Ammonia, per ton coal, $.30	1,909.50	
Total received	$21,958.50	$21,958.50
Net cost coal		8,911.50
Purifying 61,100 M, at $.01		611.00
Miscellaneous material		500.00
Labor, 61,100 M, inc. Sup't, at $.18		10,998.00
Repairs, at $.05		3,055.00
Unload, coal 6,365 tons, at $.10		636.50
Total		$24,712.25

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Water Gas.

61,100 Water gas, at 42 lbs. coke, at $6.00 per ton...	7,698.00
61,100 M ft., at 28 lbs. steam coal at $1.10.....	940.94
61,100 M 4. 3/4 gal. crude oil at $.03½.....	10,157.87
61,100 M purifying at $.01	611.00
Labor at $.70 per M inc. Sup't	4,277.00
Repairs, at $.02	1,222.00
Miscellaneous Exp., material, water stable and Ins. at $.03	1,833.00
Total	$26,739.81

1893 Distribution and General Expenses.

Street and Meter Dep't.....	$4,900.00	
Reg. and Coll. at $.01 per M	566.62	
Soliciting new business	350.00	
Complaints	400.00	
Office, 1 bookk., *i* cash'r, 1 stenog.....	2,400.00	
Office supplies	500.00	
		$9,116.62
Salaries Sec'y and ½ Supt.	4,200.00	
Rent	1,200.00	
Gen. Exp. Travel, teleph., etc.	600.00	
		6,000.00
Taxes	5,414.90	
Law claims and accidents	1,000.00	
Bad debts	500.00	
Gas Stove business	200.00	
Stable Exp. for dist.	400.00	
Miscellaneous items	500.00	
Street Lamp operation	1,600.00	
Interest	75.00	
		9,689.90
		$24,806.52

Cost of Manufacture	47.2 cents	
" " Distribution	43.78 "	
Total	80.98 "	per thousand.

(Endorsed:) Filed Jun. 14, 1895. Ed. R. Mason, Clerk.

1894 UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the Circuit Court of the United States for the Southern District of Iowa, hereby certify the above and foregoing to be a full, true and complete copy of the affidavit of Edward G. Cowdery, a witness on behalf of the Complainants,

filed June 14, 1895 in cause #2330—Equity, Capital City Gas Light Co. vs. City of Des Moines, as full, true and complete as the original thereof now on file in my office in the City of Des Moines, Iowa, in said District.

In witness whereof, I hereunto set my hand and affix the seal of said Court at my office in the City of Des Moines in said District this 24th day of July, A. D. 1911.

[SEAL.] WM. C. McARTHUR,
Clerk as Aforesaid.

1895 DEFENDANT'S EX. 43.

9/20/11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

1896 DES MOINES GAS COMPANY
VS.
THE CITY OF DES MOINES.

September 19, 1911.

Edward W. Bemis, New Brighton, Staten Island, N. Y.

1897 *Index.*

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1898 In the Circuit Court of the United States in and for the Southern District of Iowa, Central Division. In Chancery.

THE DES MOINES GAS COMPANY, Complainant,
vs.
THE CITY OF DES MOINES, Defendant.

DES MOINES, IOWA, *September 19th,* 1911.

To Robert O. Brennan, Esq.; H. W. Byers, Esq., Solicitors for the Defendant, The City of Des Moines.

DEAR SIRS: As requested by you I have studied the testimony and exhibits of this case, and have prepared certain data and conclusions on the cost of the property, the operating expenses and other matters bearing on the reasonableness of the price of gas, Ninety Cents, as fixed by the City of Des Moines last December.

Respectfully,

EDWARD W. BEMIS.

1899 *Cost of Property to Des Moines Gas Company.*

With the exception of half a million dollars, the plant appears to have been entirely built from earnings. Passing that for the present, however, there is another way of considering the cost of the property.

On March 1, 1906, the Des Moines Gas Company assumed $400,000 of outstanding bonds of the Capital City Gas Company, and a debt to the parent company of $240,000 for property in the City of Des Moines. In addition to this, $800,000 was paid in 6% preferred stock contracts.

In other words, the property appears to have cost the Des Moines Gas Company the following amounts: This does not include the $45,000 in Valley Junction.

Bonds	$640,000.00
Preferred stock contracts	800,000.00
Total	$1,440,000.00

Little importance should probably be attached to the issuance of $2,250,000 of common stock in March, 1906. It has never paid a dividend and appears to represent no investment in the plant.

If to the above $1,440,000 of 5% and 6% securities, issued in 1906, there be added the $484,487.94 of extensions since March 1, 1906, (Defendant's Exhibit 30, page 21.) we have the total present cost of the property to the Des Moines Gas Company, of practically $1,925,000, less depreciation of say $75,000, since the purchase of the property five years ago.

1900 This net value, based on the cost less depreciation of $1,850,000, may be called the cost of the property to the present com-

pany. This figure will be henceforth referred to as the cost of the Des Moines Gas Company.

A sounder view, however, and the one more in line with Court and Commission rulings, is obtained by ignoring the changes in securities that came when the property was transferred from one subsidiary company to another, by the present parent company. We would then reach the true investment by taking the cost given below of $1,727,676, including Valley Junction, less an allowance for depreciation and with the addition of working capital.

1901 *Cost of the Plant.*

The history of the plant and its cost is naturally divided into four periods, the first preceding the year 1876; the second extending from that time until Dec. 31, 1894; the third from Jan. 1, 1895 to Feb 28, 1906; and the fourth from March 1, 1906 until Dec. 1, 1910.

Period Prior to 1876.

Respecting the first period, all I have been able to learn is from the testimony of Mr. Lewis Lillie, Accountant, at that time, for the United Gas Improvement Company, and now Fourth Vice-President and Treasurer. He testified in the case of the Capital City Gas Light Company vs. The City of Des Moines, as follows:

"Q. You have an item there, I see, old gas works. How much is that?

"A. $38,828.36.

"Q. Do you know what that item is?

"A. It represents the cost of the old Des Moines Gas Company I think the name was. It was bought at sheriff sale by this Company. It is the amount of the purchase price."

Period from 1876 to Dec. 31, 1894.

With respect to the second period, we have fairly complete information. Mr. Lillie, in this same case, testified:

"Q. Do you say that in addition to that $38,828.36 there was added during the year 1878 in gas building and machinery, $91,867.03?

"A. I do, Sir.

"Q. That was all added during the year?

1902 "A. During the time prior to that from 1878, or whenever they started, to this date. The works were being built. They commenced in 1876. This represents the amount they expended up to that time charged to this account, expended in cash. * * * the first closing of the books on January 26, 1878, and that was the time of the first statement."

He further stated that when the accounts of the Capital City Gas Light Company were thus closed for the first time. Jan 26, 1878, the cash investment was $168,792.36, and that the company, during the few months it had been operating, had failed even to cover

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operating expenses, by $508.82. The subsequent history of the plant is described in an affidavit in this same case in 1895, by Mr. Edward G. Pratt, who had been manager of the company since 1887. The important part of the affidavit was as follows:

"Deponent further says that the papers hereto attached, marked Exhibit 'C' are the exhibits referred to in the testimony of Lewis Lillie, and that they correctly show the matters and things therein embraced. That the part of said papers marked Exhibit 'D' are, a continuation of the said several exhibits, (Excepting the Profit and Loss Statements), from the 31st of December, 1891, to and including the 31st of December, 1894, and bring the history of the Gas Company in the respects shown in said Exhibits up to said last named date. That the said supplemental showing as contained in said Exhibits is true and correct to the knowledge of deponent.

"Deponent further says that the papers hereto attached, marked collectively Exhibit 'E', are the Profit and Loss statements of the complainant for the years 1892, 1893, and 1894. That they
1903 show for each of said years the total amount received by the company for gas and from all sources, and the total amount expended, and therefore the net profits for said years. That said statements are true and correct to the knowledge of this deponent.

"Deponent further says that under the circumstances and conditions existing in Des Moines economy and prudence require the manufacture and distribution of a combined water and coal gas, and this company has for many years manufactured and sold such gas. That the gas plant with all its accessories is not larger than is necessary to fairly accommodate the demands of its business, with a reasonable provision for future growth. That he attaches hereto a statement showing an inventory of the property of the Company comprising its said plant marked Exhibit 'F', and made a part hereof. That the actual cash invested by the Company in said plant was on the 31st of December, 1894, Four Hundred Sixty-six Thousand Five Hundred and Thirty-two and 93/100 Dollars ($466,532.93). That said investment has been carefully and prudently made, and in accordance with the highest requirements of the business in which the Company is engaged. That it would cost at the present time with present prices for materials to reproduce the said plant at least Four Hundred and Seventy Thousand Dollars ($470,000.00)."

1904 Mr. Pratt in his testimony referring to these exhibits was asked:

"Q. You may state whether in your opinion the amount shown by these statements to have been invested in cash in the gas company in plant, viz., $449,500.77, is a fair and reasonable presentation of the cost of the property, having reference to the time at which the investments appear to have been made, according to the books.

"A. I believe them to be so."

Mr. Lillie testified, in reply to interrogations 37-56, inclusive, in direct examination, that an electric light plant had cost, up to December 31, 1891, $65,717.21 and that gas patents had cost $172,096.94, and that the actual cash invested had been $449,500.77, up

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to December 31, 1891. Also in Exhibit "C", Statement 2, he gave the full cash investment for each year up to December 31, 1894, and the profit and loss thereon. He gave the same cash investment of $466,532.93, December 31, 1910, as did Mr. Pratt.

1905 The Ledger showed as investment in construction and working capital, December 31, 1894, of $681,646.04, but Mr Pratt, in his affidavit, gave the cash investment for both plant and working capital as $466,532.93. The balance of $215,113.11, as shown in Exhibit "C" of his affidavit was made up as follows:

Cost of stock of Capital City Electric Co., less cash dividends received	$2,553.00
Store room electricity	791.86
Advance Insurance	300.09
Stock issued without consideration, less undivided profits to Jan. 15, 1896	39,371.22
Rights under gas apparatus patents	172,096.94
Total	$215,113.11

Of this cash investment devoted to the gas business, of $466,532.93, which had never been reduced by any depreciation, charge material and supplies were $11,559.49, and cash and bills payable were $25,546.61. This left as the plant account devoted to the gas business, December 31, 1904, $429,426.83. It is probable that the nominal working capital, of materials, supplies, cash and bills payable just given, aggregating $37,106.10, should be to some extent reduced by certain other items, such as accrued interest and taxes, but for the purpose of the present computation it may be left as appears in Mr. Pratt's affidavit.

1906 Period Jan. 1, 1895-Feb. 28, 1906.

During this time the new construction was $648,760.90, as shown in Defendant's Exhibit No. 30, (Mr. Hall's). The books of the company agree with this, except that they show a writing up of the value of the property without any corresponding new construction of $131,744.44, on May 1, 1897, as explained on page 30 of Defendant's Exhibit No. 30, and in Defendant's Exhibit 35. Little if anything was written off for depreciation, save as it appeared in operating expenses under repairs and renewals.

Period March 1, 1906-Dec. 31, 1910.

During this time the books of the company in Des Moines show an expenditure of $529,487.94 for construction, including $45,000 in Valley Junction. It is the claim of the company that an additional amount of $120,000, not reported on the books of the company, was paid for the new holder of 1,132,000 ft. capacity. None of the company's witnesses in position to know about it has testified that the holder did cost this much. It would be well to see the

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vouchers covering this item. For the present, however, this $120,000 is conceded to the company.

On the other hand the other two items appearing on the books of the company as construction during this period are excluded. One of them is bond discount, $33,950.00 and the other is reorganization expenses of $6,922.82. Bond discount in the case of an old and strong company like that at Des Moines is a mere function of
1907 the rate of return on capital, and is no part of the construction costs. Reorganization expense connected with the sale of the plant by one company to another, both being entirely owned by a third company, is also not a matter of cost of construction.

1908 Summary of the Construction Costs.

Combining what has been said above and what is given in Defendant's Exhibit 30, pages 9, 18, 19, 21 and 29, it is possible to condense it into a table comprising the salient facts for the last three periods. The second period, ending with December 31, 1894, included the property bought for $38,828.36 at Sherriff's sale before 1878. Of this sum, $25,000 known in the early accounts as "old gas works" consisted, according to the testimony in 1895 of Mr. Pratt, chiefly of mains and services, but has been here included in the manufacturing plant because of the name of the account and because it has usually been so included. It makes no difference in the final analysis.

1909 *Construction from* 1876 *to December* 31, 1910.

Description.	Period from 1876 to Dec. 31, 1894.	Period from Jan. 1, 1895— Feb. 28, 1906.	Period from Mar. 1, 1906. — Dec. 31, 1910.	Total.
Street Mains	$120,512.29	$286,552.25	$242,686.12	$649,750.66
Meters	16,849.17	102,541.83	68,364.93	187,755.93
Services	35,504.82	150,796.07	72,493.28	258,794.17
Street Lamps	14,845.87	8,449.91	2,039.65	25,335.43
Land	8,916.00	25,200.00	1,649.26	35,765.26
Works	232,440.61	75,220.84	205,760.39	513,421.84
Office Furniture	358.07	.....	11,494.31	11,852.38
Valley Junction, 1906	.....	.....	45,000.00	45,000.00
Grand Total	$429,426.83	$648,760.90	649,487.94	1,727,675.67

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1910 In the absence of more definite information ot is probably not far out of the way to estimate that the $45,000 spent at Valley Junction was apportioned as follows:

Mains	$35,000.00
Meters	5,000.00
Services	5,000.00

This would raise the total investment above given, on mains, meters and services in both Des Moines and Valley Junction, to the following point:

Mains	$684,750.66
Meters	192,755.93
Services	263,794.17

If $45,000 was spent at Valley Junction about 1905 and 1906, as has been claimed, it is likely that some of the subsequent investments of the company have gone into further extensions to meet the growing business at Valley Junction. In that case, the investment in the City of Des Moines is correspondingly less than the $1,682,675.67 which it would be with the mere subtraction of the $45,000.

From the total investment of $1,727,675.67 in the plant of the company should be deducted depreciation. Appreciation possibly should be added; that would be considered later. Working capital should also be added. This was given by the company, Dec. 31, 1894, as $37,106.10. Mr. Hall *a*kes it at $50,000 from then until Jan. *i*, 1910, when he makes it $68,952.91. The company claims a working capital of $150,000. That question, together with the claims for appreciation in the matter of land, paving over street mains, overhead charges and going value will be considered later.

1911 *Depreciation.*

As has already been explained by several witnesses, it is not usual in gas companies to put into repairs and maintenances account sufficient to take care of the ultimate renewal of the larger and more valuable portions of the plant. This can only be taken care of by a special renewal or depreciation reserve fund, placed at interest in safe securities, or invested in the plant. If the latter method is adopted, care must be taken to set aside the earnings from this depreciation reserve for additions to the reserve, rather than for distribution and dividends. It is easy, for example, to find safe securities at 5%, like the bonds of the company itself, for the investment of this depreciation reserve. A 6% or possibly a higher return may be secured by the investment of this reserve in the plant itself.

When a company pays out in dividends the amount that should be set aside to meet depreciation, it is thereby withdrawing part of the capital from the business, and cannot justly claim any further return thereon.

The Des Moines Gas Company has set aside no depreciation re-

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serve. It has apparently charged into operating expenses for the last twenty-five years not only all repairs but all renewals, so far as the cost of renewal did not exceed the cost of the part renewed, less its scrap value. Various witnesses have fixed the following depreciation, however, that has not, in their opinion, been prevented by these repairs and renewals.

1912 *Accrued Depreciation.*

Authority.	Amount.	Reference.
Henry I. Lea.....	$380,009.	Lea's Exhibit, Introduction.
William A. Baehr....	310,325.	Complainant's Exhibit 21, p. 17.
William W. Randolph	282,331.	Complainant's Exhibit 22, p. 1.
William D. Marks...	364,363.	Defendant's Exhibit 23, p. 75.
James Hall.....	243,862.	Defendant's Exhibit 30, p. 18.

The problem before us is not so much the problem of depreciation as of how to finance depreciation, i. e., how much to allow the company to set aside yearly from operating expenses to finance depreciation in the way most expensive to the company and least advantageous to the consumer, viz., by a 4% sinking fund investment. This leaves the company free to secure a more profitable investment of the depreciation reserve, in either 5% securities of its own and other good companies, or in a 6% or better investment in extensions of its own plant.

Omitting real estate, working capital and going value, as not subject to depreciation, Mr. Lea estimated the cost, new, of the rest of the gas property, as $2,580,140, and the annual investment necessary to meet this in a 4% sinking fund as $37,385. This implies, according to sinking fund tables, an average life of thirty-four and one-third years, and an average payment into the sinking fund of 1.41%.

Similarly Mr. Baehr estimated the necessary sinking fund at $33,359, or 1.262% of his cost of reproduction new of the depreciable property, $2,642,467. This implies an average life of 36 1/3 years.

1913 Mr. Randolph estimated a depreciation of $282,331 on $2,520,514 of depreciable property. This implies 1.12% yearly payment to a sinking fund and an average life of nearly 39 years.

Under these circumstances no injustice is *due* to the company in assuming an average life of 36 years and consequently a yearly payment into the sinking fund of 1.289%. Indeed, I believe an average life of nearly 41 years, and a payment of 1% into a 4% sinking fund, or 38 1/3 years and a payment of 1% yearly into a 5% sinking fund, would be ample.

A further point has been conceded to the company. Owing to the difficulty of excluding the cost of the land, of over $35,000, that, too, has been included in the property on which depreciation is calculated.

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1914 *Valuation at Beginning of Each Year with One-half the Additions of the Year.*

Year.	Valuation at the beginning.	One-half of additional investment.	Average investment aside from working capital.	Depreciation at 1.289%.	Proceeds in sinking fund.
1895.....	$429,426.83	$4,451.58	$433,878.41	$5,592.69	$5,592.69
1896.....	438,329.98	21,098.71	459,428.69	5,922.04	11,738.44
1897.....	480,527.39	30,775.19	511,302.58	6,590.70	18,798.68
1898.....	542,077.76	15,279.65	557,357.41	7,184.33	26,734.96
1899.....	572,637.05	22,983.76	573,620.81	7,677.55	35,481.91
1900.....	618,604.56	17,161.64	635,766.20	8,195.02	45,096.21
1901.....	652,927.83	55,387.59	708,315.42	9,130.18	56,030.24
1902.....	763,703.00	27,819.07	791,522.07	10,202.72	68,474.17
1903.....	819,341.14	43,235.33	862,576.47	11,118.60	82,331.74
1904.....	905,811.80	22,966.02	928,777.82	11,971.95	97,596.96
1905.....	951,743.84	57,783.22	1,009,527.06	13,012.80	114,513.64
Jan. 1–Feb. 28, 1906.....	1,067,310.27	5,438.73	1,072,749.00	2,364.62	117,641.69
March 1, 1906.....	71,078,187.73	149,457.14	1,227,644.87	13,186.95	135,534.31
1907.....	81,377,102.01	46,857.92	1,423,959.93	18,354.84	159,310.52
1908.....	91,470,817.82	20,909.00	1,491,726.82	19,228.36	184,911.30
Mar. 1–Dec. 31, 1909.....	1,512,635.82	47,059.49	1,559,695.31	20,104.47	211,179.48
1910.....	1,606,754.80	60,460.44	1,667,215.24	21,490.40	241,117.06

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1915 It appears that the amounts thus set aside, aggregating $191,328.22, will amount at 4% at the close of 1910 to $241,117. The amount thus set aside in 1910, $21,490, is equivalent to 4¢ per 1,000 ft. of sales that year. It would be entirely proper to reckon the sinking fund at 5%, since the company could invest the depreciation reserve in its own 5% bonds or other equally good 5% securities selling at or about par. But the very conservative figure of 4% is here used.

The claim was made by Mr. Hagenah that it was impracticable to reckon interest on this depreciation reserve because it was liable to be drawn upon at any time for renewals. The answers to that are, first that in case of the Des Moines Company not a cent of this fund has been called for up to date,—in fact, it has not even been set aside,—and second, that if the life of each part of a gas plant is properly determined, all withdrawals before the end of the average life will be counterbalanced by the deferring of many withdrawals to much after the expiration of the average life.

The amount of depreciation arrived at by the above computation is nearly the same as that of Mr. Hall. It is smaller than that of the Company's witnesses, but their depreciation was based on an assumed value of the plant when new of nearly twice what the books of the company show was the actual cost, or what, outside of paving, would be the cost today. Making this allowance, the depreciation estimates of Messrs. Lea, Baehr and Randolph would not exceed the figure of $241,117, here taken. Prof. Marks obtained his high depreciation by giving the company the benefit of interest on
1916 the depreciation reserve, as pointed out by Mr. Guernsey in his cross-examination.

The following table gives the investment at the end of each year, as found by Mr. Hall; the proceeds of the investment yearly of 1.289% of this in a 4% sinking fund; and the investment less this accumulation in the sinking fund:

1917 *Net Investment at End of Each Year.*

Date.	Investment.	Proceeds of sinking fund.	Investment less depreciation.
Dec. 31, 1894.	$429,426.83	.....	$429,426.83
Dec. 31, 1895.	438,329.98	$5,592.69	422,737.29
Dec. 31, 1896.	480,527.39	11,738.44	468,788.95
Dec. 31, 1897.	542,077.76	18,798.65	523,279.11
Dec. 31, 1898.	572,637.05	26,734.96	545,902.09
Dec. 31, 1899.	618,604.56	35,481.91	583,122.65
Dec. 31, 1900.	652,927.83	45,096.21	607,831.62
Dec. 31, 1901.	763,703.00	56,030.24	707,672.76
Dec. 31, 1902.	819,341.14	68,474.17	750,866.97
Dec. 31, 1903.	905,811.80	82,331.74	823,480.06
Dec. 31, 1904.	951,743.84	97,596.96	854,146.88
Dec. 31, 1905.	1,067,310.27	114,513.64	952,796.63
Jan. 1–Feb. 28, 1906.	1,078,187.73	117,641.69	960,546.04
Mar. 1, 1907.	1,377,102.01	135,534.31	1,241,567.70
Mar. 1, 1908.	1,470,817.82	159,310.52	1,311,507.30
Mar. 1, 1909.	1,512,635.82	184,911.30	1,327,724.52
Mar. 1–Dec. 31, 1909.	1,606,754.80	211,179.48	1,395,575.32
1910.	1,727,657.67	241,117.06	1,486,558.61

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1918 *Working Capital.*

In a decision last year with respect to rates of charges for gas and electric light by the company, at Madison, Wisconsin, the Wisconsin Railroad Commission ruled that a reasonable working capital was only $45,000 to $50,000, or less than 15% of the $339,000 of gross income of that company.

Applying this percentage to the gross income of the Des Moines company in 1910 of about $538,983, this would give a figure of about $80,000 for Des Moines. The Wisconsin commission held:

"Coal can be contracted for in large quantities and paid for as delivered on terms that are about as favorable as any that can be had. In fact, such transactions are usually reported in about the same light as ordinary cash deals. Other supplies can probably be bought on thirty days on practically a cash basis. Wages and salaries are ordinarily paid monthly and about the time the bills for gas are current sold are collected, or can be so paid. Taxes, interest, and profits are not likely to be paid oftener than in one or two annual installments. The receipts taken as a whole, are about one-third greater than that part of the expenses which, when considered together, it would be of any advantage to the plants to pay as often as once a month." (Madison Gas and Electric Light Decision, Page 553.)

I do not see why the working capital should exceed two months expenses. Receipts come in all through the month. There are comparatively few bad debts or uncollectible bills and as stated in
1919 the Wisconsin decision, the supplies, while contracted for in large quantities, need be paid for, in fact are not paid for, but once a month on the deliveries of the previous month.

Now two-twelfths, or one-sixth of the operating expenses of the Des Moines Gas Company would be less than $60,000. I see no reason, therefore, to dissent from the view of Mr. Hall as to $68,952.91, or 13% per 1,000 ft. of sales. It is practically the same as the working capital per 1,000 ft. of sales allowed in the Consolidated Gas Company of New York. Since, however, this is a much smaller company, and further from the big markets than New York, I have conceded the amount granted by the Wisconsin commission of a trifle under 15% of the gross income, or $80,000. The Company claimed a working capital, Dec. 31, 1894, of $37,106.10. To reach the figure of $80,000 in 16 years would require substantially $2,700 a year, with the exception of the last year. That figure will be used, therefore, bringing the real working capital as a result of $2,700 yearly addition, to $80,306.10, in the following table:

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1920 *Net Investment with Working Capital.*

Date.	Net investment including allowance for depreciation.	Working capital.	Net investment with working capital.
Dec. 31, 1894	$429,427	$37,106.	$466,523.
Dec. 31, 1895	432,427	39,806.	472,233.
Dec. 31, 1896	468,789.	42,506.	511,295.
Dec. 31, 1897	523,279.	45,206.	568,485.
Dec. 31, 1908	[5*]545,902.	47,906.	593,808.
Dec. 31, 1899	583,123.	50,606.	633,729.
Dec. 31, 1900	607,832.	53,306.	661,138.
Dec. 31, 1901	707,673.	56,006.	763,67[0]*
Dec. 31, 1902	750,867.	58,706.	809,573.
Dec. 31, 1903	823,480.	61,406.	884,886.
Dec. 31, 1904	854,147.	64,106.	918,253.
Dec. 31, 1905	952,797.	66,806.	1,019,603.
Feb. 28, 1906	960,546.	67,256.	1,027,802.
Feb. 28, 1907	1,241,568.	69,956.	1,311,524.
Feb. 28, 1908	1,311,507.	72,656.	1,384,163.
Feb. 28, 1909	1,327,725.	75,356.	1,403,081.
Dec. 31, 1909	1,395,575.	77,606.	1,473,181.
Dec. 31, 1910	1,486,559.	80,306.	1,566,865.

1921 *Overhead Charges.*

The Company claims that the books show only what was actually charged to construction, and that the overhead expenses for interest and taxes during construction engineering and superintendence, legal work, casualty insurance, omissions and contingencies in all this construction were entirely charged into operating expenses, although properly charged into construction.

Mr. Lea thus charged into overhead $567,780, and Mr. Baehr $615,603. Deducting from these items the overhead applicable to paving, which will be separately considered, the overhead remaining on the property now, and on the depreciated property, according to these witnesses, I have computed as follows:

Overhead on new paving, according to Mr. Lea	$111,888
" " " " " " Mr. Baehr	112,669
Overhead on rest of property, new, acc. to Lea	455,892
" " " " " " " " Baehr	502,934
Depreciation of all property, acc. to Lea	14.73%
" " " " " " Baehr	11.75%
Overhead thus depreciated, acc. to Lea	387,739
" " " " " Baehr	4[3]*,839

[*Erased by pencil.]

It may be remarked that the overhead on paving by each of the above witnesses was found by taking for overhead the same percent, of their total allowance for paving new as they allowed for overhead in the entire distribution system. This was 26.66% in the case of Lea and 28.65% in the case of Baehr.

1922 Put in another way, Mr. Lea raises the cost of the physical property aside from land about 28%, and Mr. Baehr about 30% for overhead charges. This ignores the fact that the Chicago Traction ordinances only allow 16% of overhead and the Wisconsin Railroad Commission 12%, in all their appraisals for rate making purposes. The Wisconsin Commission made careful investigation of the subject in connection with their decision on the Madison Gas & Electric Light Company, in 1910, and the Racine Gas Light Company, in 1911, both companies being two-thirds the size of the Des Moines company.

Still more remarkable are the consequences that must logically follow any concession to the company of any increase of book or investment cost of its property by virtue of an allowance for these overhead charges. The first result would be that the consumer having already once paid for this $400,000 or $500,000 of overhead charges through operating expenses which have appeared in the price of gas, is now asked to pay interest on the same amount, from time to time. An even more important and significant result must also follow any allowance for overhead charges. If they have been included in operating expenses as witnesses for the Company have testified, then the operating expenses for the last five years must be rewritten on the books of the company, so as to take out the overhead charges applicable to construction. For example, in the last five years, March 31, 1906 to December 31, 1910, $650,000, in round numbers (Defendant's Exhibit 30, page 21) has gone into the plant. An additional 29% of this for overhead charges is the average

1923 amount allowed by Lea and Baehr, would mean $188,000. This divided over the 2,232,975,000 ft. of gas sold means over 8¢ per 1,000 ft. The public would lose nothing by conceding to the company the extravagant overhead charges asked for, provided 8c. per 1,000 ft. were deducted from the operating expenses to cover charges that belong to the construction account, if the company's claim is sound. At least a large portion of the 8c. would have to be deducted.

It is far more just to all concerned and far more in accordance with sound theory, to accept book records of the cost, save where it can be affirmatively shown by the Complainants that the records do not present the original cost, or present value.

1924

Discount on Bonds.

In a city the size of Des Moines today, there is no discount on gas bonds that would not be covered by 5½% interest, either in the form of direct interest or of 5% interest and a small amount set aside yearly to redeem the 5% or 10% discount and brokerage charge that might be paid in floating a 5% bond.

The whole question of discount in a company situated like the

Des Moines Company, is not a question of the cost of the property, but of the rate of return necessary to keep the securities at par or to ultimately cancel or amortize the discount by a small sinking fund.

Fortunately this issue is not an important one in the Des Moines Company, since the books show a total bond discount of only $33,950. The matter only becomes important in connection with theories of the cost of duplication. The rate of return necessary to meet such small discount (5%) as has attended the sale of 5% Des Moines Gas bonds the past two years will be considered later.

1925 *The Rise in the Value of Land.*

The testimony taken in 1895 and now, indicates that the land used by the company at its works cost only $35,765, as stated by Mr. Hagenah, and was valued at the beginning of 1911 at about $200,000 by the Company and from $85,000 to $100,000 by witnesses for the city.

During this time, in which the land has risen fully $50,000 in value, the company has sold 4,512,292,000 ft. of gas. The increase has been therefore at least 1.12¢ per 1000 ft. of sales. This rise in land value is likely to continue. If in fixing the reasonable price for gas at present there is added to the cost of land $60,000 or more to cover its increase in value, then we must recognize that an equal credit is likely to come to the company yearly, as an additional profit on its investment.

When another period of fixing rates arrives, the court presumably will concede to the company another increase in the value of the land, as a basis for rate making. If, however, the Court shall assume that the Company is not entitled to capitalize the increase in value of its land until it sells the same, there would be no increase in the capitalization and no occasion for adding this credit to the revenues from gas.

This view of adding to the revenue of the property the credit from the yearly increase in value of the land has just been taken in an important decision (Queensborough Gas & Electric Company, decided June 23, 1911).

1926 *Paving.*

In the valuation of the distribution system the following amounts were allowed for paving, by the company's witnesses:

Paving, New and Depreciated.

Witnesses.	New.	Present value.
Henry I. Lea	$419,685	$370,598
William H. Baehr	393,261	344,890

The above value of new paving is taken directly from the exhibits of the witnesses mentioned. They apparently did not give the present value of the paving separately from the present value of the entire street mains and services, but testified that they reck-

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oned the same depreciation on the pavement as on the mains and services. It is therefore a simply matter to apply the same percentage to the paving that these witnesses applied to the entire mains and services including paving, as follows:

Mains and Services, New and Depreciated.

Witnesses.	New.	Present value.	Per cent depreciation.
Henry I. Lea	$1,963,027	$1,732,963	11.72%
William H. Baehr.....	1,993,243	1,746,924	12.30%

It is by applying the percentage just found to the paving value when new that the present value of paving is determined as above, for each witness.

The city's witnesses assume that the mains and services, in almost every case, were laid before paving, and in the few cases where they were not, the books of the company will show the cost, what ever it was. Where the main has been relaid, or repaired, after
1927 paving was laid, the cost has been properly charged to repairs and paid for through operating expenses, and is no part of the construction account.

The question at issue is whether that which cost the company nothing and is not owned by it, should be included in the capital account. It is different from the case of land, for society recognizes private ownership of land and its increase of value by individuals or corporations. There is no such recognition of private ownership of pavement over the street mains. Indeed, the company does not claim to own it,—it does not pay the cost of its laying, nor keep it in repair, nor sprinkle nor clean it nor keep it free from snow, nor return it for taxation, nor assert any control over it.

The claim of the company amounts to this: If its mains are laid, in a city like Des Moines before paving, and the city in a year or two should lay $300,000 of paving over its mains, the company would at once assert its right to increase the price of gas by 6% or more on this amount, or say $18,000 a year. This would be about 3½¢ on the present sales. It is not conceivable that under a proper system of public regulation any such increase of rates would be allowed. To grant it would be to assume that the salaries and the rate of return on the investment were not sufficient to cover such reward as similar ability and capital would obtain with similar slight risk in competitive business.

But if it be correct that the market quotation show that 5% gas bonds and 6% gas stock can be sold on an average on a 6%
1928 basis, or upon whatever basis is adopted as a fair return on capital, then, to allow a further profit from the paving would be a simple gift to the Company.

If, however, the courts shall grant the paving claims and increase the capital by say $300,000, certain interesting results will follow:

1. In the first place, dividing this $300,000 of absolutely unearned gain by the sales of gas since June 30, 1885, of 4,512,292,000 ft.,

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there would be an increase to the stockholders of 6.65¢ per 1000 ft. of sales.

2. In the second place, an equally important result follows:—the value of the paving is likely to continue to increase from further paving of unpaved streets and from the improved and more costly character of paving placed upon the older streets, and with the increase of traffic and the growing wealth of the community. The courts should then allow a further credit to the revenue of the company from this source in the future, of say 6¢ per 1000 ft., in fixing the price of gas. With a nominal price of 90¢ there would be an ultimate revenue to the company of say 96¢ from sales of gas and from the increased value of the paving, and another 1¢ from the increased value of the land, or about 97¢ in all.

The company will hardly care to capitalize the paving when it is seen that these results will logically follow. It is both simpler and fairer not to allow a company to capitalize the paving at all as a basis of rate making. It is at best only an insurance against competition, which is made more difficult by paving.

1929 Paving is not allowed by any of the public service commissions, even in New York State, where the reference to the subject in the United States Supreme Court decision in the Consolidated Gas case is not considered at all clear or decisive. The Supreme Court of Iowa has rejected the paving claim in the Cedar Rapids gas case.

Even if the courts had declared, as they have not, that only the cost of duplication can be considered, it is a question of whether the Court would not consider as duplication the laying of mains of equal capacity between the sidewalk and the curb, and in alleys, or wherever they could be laid to avoid paving, as would probably be done by a competing company coming into the city at this time.

1930 *Going Value.*

The witnesses of the company have given the following estimates of the going value:

Henry I. Lea	$583,000.00
William A. Baehr	509,000.00
William W. Randolph	500,000.00
William J. Hagenah	530,000.00

The first two of the above witnesses reach the result by attempting to capitalize the cost of acquiring the business today. The more valuable the business, that is, the greater the profits—the larger the going value. Mr. Hagenah approaches the subject from directly the opposite point of view, and attempts to capitalize deficits in earnings below 8% during the history of the company. With his theory, therefore, the less profits the greater the going value. Thus going value is obtained, either going or coming. Mr. Randolph ignores both profits and losses, and bases his theory on expenditures per consumer that had been spent under the guise of "new busi-

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ness" for promotion purposes during the past year, after deducting a certain number of consumers that might have come to the company anyway. He then applies this unit to the entire number of meters in use.

With these witnesses, going value represents the difference between what the present company would earn and what a new company would earn that has just started to build. The present worth of the difference in the earnings during the seven years is the so-called "going value." At the start, three things should be noticed:

1931 1. It is more or less reasoning in a circle. The larger the profits of the existing company, the greater the margin during the seven years between those profits and that of the new, growing company, and therefore the higher the price which would thereby be justified, and the higher the price, within certain reasonable limits, the higher the profits. The very question at issue however, is the reasonableness of the price and the profits today. The theory assumes the present price, whether just or not, in order to establish a value on which the justice of the present price is to be determined.

2. Even if the present company was earning only 1% on its investment, and if its securities without water would only sell at 20¢ on the dollar, there would be, nevertheless, a margin on this theory between the profits of the present and hypothetical companies, and therefore a going value, to be paid for in addition to the physical value,—a somewhat absurd conclusion.

3. The magical character of the sacred number Seven, of the old Hebrew, Egyptian and Chaldean religions appear- to influence Mr. Lea and Mr. Baehr. The former assumes that in the hypothetical city there are no fixtures and other gas appliances and that the people have only a theoretical knowledge of gas. The latter assumes that the fixtures are all in place and that the people know as much about the use of gas as in Des Moines today, but that they have become temporarily weened away, to some extent, from its use because obliged to use coal, oil, electricity, etc., during the two or three years while the comparative plant is being built. To induce a city to use gas under the conditions assumed by Mr. Baehr would naturally take less time than under the conditions assumed by Mr. Lea; but the sacred number—seven years—is still used.

1932 Coming now to the fundamental proposition involved, it may be at once admitted that there is a value in established connections with the consumers. The point is, whether a gas company, under conditions practically a regulated monopoly, is entitled to capitalize it in the fixing of rates. A franchise, in a similar way, in a sale to another company has a value even though it does not guarantee a definite price, but it cannot be capitalized against the public in a rate case. A gas company is entitled to no more than similar capital, brains, and small amount of risk would obtain in a competitive business,—if we could imagine a competitive business where depreciation and all hazards are practically insured against out of earnings, which courts and commissions persist.

Having fixed a rate of return fair to the investor under such con-

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ditions as prevail in the gas business, we would be giving him a better protection than if he were in private business if we allow him a return on going value which either cost the gas company nothing or had been paid for by the consumer in operating expenses.

Any industry that has been established as long as has the gas business is not allowed, in the competitive world, to capitalize consumers' habits or education or possession of fixtures for the use of the commodity. Competition prevents that. Only the actual physical investment and the brains of the management count, in a business where good will is as much eliminated as in the gas business.

So far as I am aware, going value has not been allowed in any rate case except in Oklahoma and this month to a small extent in the Des Moines water case, although it has been directly and ably presented in many courts. Further, neither of the four 1933 great rate making commissions, of Massachusetts, the First and Second Districts of New York, and Wisconsin, have allowed it, except in the case of early losses in some Wisconsin Companies.

Judge Robert W. Taylor, of the United States District Court, refused to allow it in the most important appraisal that has been made, that of the street railways of Cleveland, Ohio. The latest decisions on the subject, those of the Public Service Commission, First District of New York, rendered June 23 and August 18 of this year, in the case of the Queens Borough Gas & Electric Company, the Brooklyn Borough Gas Company, and the Kings County Lighting Company, refused to allow it.

Mr. Randolph capitalizes the number of consumers at $20. to $30 per head. Since the company has already charged into operating expenses the development cost of getting the consumers, this theory amounts to holding that the consumer having once paid to get himself enrolled as a consumer on the books of the company, must forever after pay interest on himself to the company.

Mr. Hagenah has fixed upon 8% as the proper return for the Des Moines Gas Company, throughout its history, and where he finds by his mistaken method of treating depreciation, that the earnings are less than 8%, he not only capitalizes them, but computes interest on these so-called losses, at 8%. In other words, he makes, not only of the stock but of the entire investment of the property, a cumulative 8% interest bearing investment. There is no such gilt-edged security as that on the stock market. If there were, it would probably be worth 200.

Where a company, with the exercise of reasonable ability, has been unable to make a fair profit in its early years, the best 1934 treatment of the matter is that practiced for many years by the Massachusetts Gas and Electric Light Commission, the parent of our state systems of regulations of municipal monopolies. The Massachusetts Commission allows such a company to earn somewhat more than the ordinary rate of profit to make up for early losses, but does not dream of permitting these losses to be

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capitalized, or for capital to be issued to cover such losses. The Massachusetts method has just been endorsed by the New York Public Service Commission for the First District.

If we are to take the position that any failure to make some agreed-upon rate of profit is to be capitalized, then we must maintain that all profit above that agreed-upon percentage must be deducted from the capital, even to the extent, if the profits warrant, of wiping out the entire physical investment. Such a position the courts have never taken. From the history of the Haverhill, Mass., gas case, there is much doubt whether the courts ever will take such a position.

1935 *Profits*—1878 *to* 1910.

While not accepting the theory of capitalizing early losses, it is interesting to observe how large the profits in the aggregate have been, even with the inclusion of some years of small returns.

In the following table will be given the gross revenue and operating expenses as found by Mr. Hall (Defendant's Exhibit 30, page 29) save that his 6c. per 1000 ft. allowance for depreciation will not be included in the operating expenses, and the rate litigation expenses of $9,305, in 1895, and the $3,689 of accident expenses paid in January 1906, will be included.

With these changes the operating expenses will be practically the same as given by Mr. Hagenah, after omitting interest payments while there is very little difference in the gross revenue between Mr. Hall and Mr. Hagenah.

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Gross and Net Revenue Without Allowance for Depreciation.

Date.	Gross revenue.	Operating expenses.	Income.	Addition to sinking fund.	Net income.
1895	$95,414	$64,702	$30,712	$5,592.69	$25,119.31
1896	99,921	69,762	30,159	5,922.05	24,236.96
1897	109,901	73,591	36,310	6,590.70	29,719.30
1898	118,117	76,728	41,389	7,184.33	34,204.67
1899	138,521	101,250	37,271	7,677.55	29,593.45
1900	173,158	116,465	56,693	8,195.02	48,497.98
1901	197,623	133,788	63,835	9,130.18	54,704.82
1902	242,610	168,583	74,027	10,202.72	63,824.28
1903	289,486	200,549	88,937	11,118.60	77,818.40
1904	337,205	205,401	131,804	11,971.95	119,832.05
1905	369,375	221,784	147,591	13,012.80	134,578.20
Jan. 1–Feb. 28, 1906	59,159	43,326	15,833	2,364.62	13,468.38
March 1, 1906–7	390,833	252,218	138,615	13,186.95	125,428.05
1907–8	446,510	280,548	165,962	18,354.84	147,607.16
1908–9	471,734	278,333	193,401	19,228.36	174,172.64
March 1–Dec. 31, 1909	409,240	254,324	154,916	20,104.47	134,811.53
1910	538,893	346,785	192,108	21,490.40	170,618.40

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1937 The early history of the Capital City Gas Light Company is thus given in Mr. Pratt's Affidavit of the June 7, 1895. The total- are mine:

1938

Date	Cash Invested.	Profit or Loss.		Percent Profit.	
Jan. 26, 1878....	$168,792.36	$(508.82)	loss.	(0.30)	loss.
Jan. 15, 1879....	176,507.93	9,295.87		5.26	
Jan. 15, 1880....	183,786.23	14,127.97		7.68	
Jan. 15, 1881....	198,193.37	20,366.64		10.25	
Jan. 15, 1882....	187,652.68	15,185.14		8.09	
Jan. 15, 1883....	237,909.61	26,346.26		11.07	
Jan. 15, 1884....	263,939.08	23,211.17		8.71	
Jan. 15, 1885....	274,161.32	21,526.33		7.85	
Jan. 15, 1886....	273,854.61	21,197.79		7.74	
June 30, 1887....	281,512.27	32,664.10	1½ yrs.	7.74	
June 30, 1888....	322,426.05	28,272.08		8.77	
June 30, 1889....	332,934.33	21,959.73		6.16	
Dec. 31, 1889....	346,846.91	12,650.83	½ yr.	7.29	
Dec. 31, 1890....	373,163.81	25,849.91		6.91	
Dec. 31, 1891....	449,500.77	24,053.62		5.35	
Dec. 31, 1892....	453,658.35	20,801.71		4.59	
Dec. 31, 1893....	460,582.16	18,320.14		3.98	
Dec. 31, 1894....	466,532.93	36,119.93		7.74	
	$4,541,954.77	$371,450.40		6.81	

1939 The subsequent history of the earnings are given below, based on the tables above. Owing to the difficulty of separating the investment at the close of each year, after deducting the proceeds in the sinking fund and including working capital, the investment at the close is taken from the average investment of the year. In this way the earnings are made to bear a slightly lower percentage of the investment than they should.

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Date.	Investment with working capital and after deducting depreciation.	Net income.	Per cent.
1895 ...	$472,233	$25,199.31	5.32
1896 ...	511,295	24,236.96	4.74
1897 ...	568,485	29,719.30	5.23
1898 ...	593,808	34,204.67	5.76
1899 ...	633,729	29,593.43	4.67
1900 ...	661,138	48,497.98	7.64
1901 ...	763,679	54,704.82	7.16
1902 ...	809,573	63,824.28	7.88
1903 ...	884,886	77,818.40	8.79
1904 ...	918,253	119,832.05	13.04
1905 ...	1,019,603	134,578.20	13.20
	7,836,682	642,129.40	8.194
Jan. 1-Feb. 28, 1906 ...	1,027,802	3† 1[2]*,468.38	7.862
	8,007,983‡	655,597.78	8.187
March 1, 1906–7...	1,311,524	125,428.05	9.56
1907–8...	1,384,163	147,607.16	10.66
1908–9...	1,403,081	174,172.64	12.41
March 1 to Dec. 31, 1909 ...	1,473,181‖	134,811.57	10.98
1910 ...	1,566,865	170,618.40	10.89
	6,893,284	752,636.98	10.92

[*Figure in brackets erased in copy.]

[†In pencil in copy.]

‡In this computation the two months investment Jan. 1-Feb. 28 1906 is taken as equivalent to 1/6 of the investment, or $171,301 for a full year.

‖In the total for the four years and ten months Mar. 1, 1906-Dec. 31, 1910, this is taken as equivalent to $1,227,651 for a full year.

1941

Dates.	Sum of investments.	Sum of profits.	Per cent.
1878–1894..	$4,541,955	$371,450	6.81
1895-Feb. 28, 1906..	8,007,983	655,598	8.19
Mar. 1, 1906-Dec. 31, 1910..	6,893,284	795,618	10.92
Totals and Average....	$19,443,222	$1,774,685	9.15

This table concedes to the company the full investment claimed by Mr. Pratt in 1895, and only deducts such depreciation after that as is taken out of operating expenses and placed in a 40% sinking fund. It shows that the true profit before 1895 averaged 6.81%. During the second period ending with February 28, 1906, it was

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8.19% and during the last four years and ten months it has been 10.92%, or an average of 9.15% throughout the thirty-four years.

It will be easy to show that the Capital City Gas Light Company never paid any dividends of consequence, and the Des Moines Gas Company has paid none in its brief history. Nevertheless, the $800,000 of preferred stock contracts bearing 5% interest, issued in 1906, and the accumulated surplus today of over $300,000 (given by Mr. Hall at $429,036.91 before charging depreciation since February 1906: Defendant's Exhibit 30, pages 27-8) has been the equivalent of good dividends on the property from the start, so far as not paid for by outstanding bonds. On March 1, 1906, these outstanding bonds amounted to $685,000. bearing 5% interest,
and the preferred stock contract at 6% amounted to $800-
1942 000 more, or a total of $1,485,000 of interest-bearing securities, on a net investment at that time of only $1,027,802.

1943 *Cost of Reconstruction.*

The books show the entire cost of the work, i. e., of the buildings, from them can be found the unit costs of construction of the distribution system, which is about two-thirds of the value of the entire plant. If the cost as shown on the books did not include a sufficient allowance for overhead, then by the same amount, as elsewhere observed, must the operating expenses be reduced during the past five years; so the matter is as broad as it is long.

The books show the entire cost of the work, i. e., of the buildings, machinery, holders and office furniture, as $525,274 (Defendant's Exhibit 30, page 21). This is without any allowance for depreciation.

Mr. Baehr estimates the cost new without overhead as $504,891, or less than $20,000, or 4% less than the original cost of the property. Some of it, however, has been scrapped, such as the first holder, a water gas set, coal gas works, etc.

The books show a cost for meters of $187,755.93, while as Baehr estimates it, their cost without overhead charges is $206,472, or about 21% more. On the two items of works and meters, combined, the books show a cost of $713,030, while Mr. Baehr's figure for the cost of reproduction without overhead was $711,363. The difference of only $1,700, or less than one-fourth of one per cent is remarkable. It confirms the accuracy of the books and records and greatly tends to establish the fact that the overhead charge has been much exaggerated by the company's witnesses. It also confirms the position taken by the Wisconsin commission that 12% is ample
for overhead charges. The contention is also almost proven
1944 that overhead can only be allowed in the present case by assuming that it has hitherto been charged in operating expenses, and must be taken out of the latter in order to determine the operating cost of gas.

Turning next to house and street lamp services, Mr. Hall has shown from the books of the company (Defendants' Exhibit 30, page 21) that the cost was only $284,129.60 Mr. Baehr gives the

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cost new with paving as $375,453 (Complainant's Exhibit 21, page 63). Deducting, however, his estimate for paving of $42,322, there remains for the services, independent of paving, $333,131. His paving was 11.272% of his total reproduction new value. Deducting this from his total overhead on services and paving of $83,433, there remains as the overhead properly apportioned to services independent of paving, $74,028.42. The services then, without either overhead or paving, are estimated by Mr. Baehr at $259,102.57, or $25,000, or 9% less than the books show to have been the cost new. This may indicate the discontinuance of some services to street lamps and elsewhere, or it may indicate that a very small portion of the services were laid under pavement originally. In any event the matter is too small to call for further consideration.

The subject may be approached, however, in a different way. Mr. Lea, in his Exhibit, page 11, gave the investment of the last five years at a figure which is 28.263% of the total investment. The books show the cost of new services the past five years, Jan. 1, 1906 to Dec. 31, 1910, to have been $74,263.59. If this was 28.262% of the total investment, it would establish a cost on the basis of the last five years' construction of $262,758.15 or only $3,000 more than Mr. Baehr's estimate of overhead, and $22,000 less than the total book cost.

1945 Professor Marks, from an entirely independent investigation, reached the conclusion (Defendant's Exhibit 23, page 75) that the structural cost new of buildings and contents, yard structures and fixtures, in fact of the works, was $482,639, or about 12% less than the books show to have been the cost of all that property viz., $525,274. If, however, the tools and stable equipment of $15,192 should be added as probably they should be, to Professor Marks' computation, the difference is only about $28,000, or about 5½%. Moreover, some of the property originally in the works, and included in the book cost, has entirely disappeared, such as the first holder.

Mr. Marks estimated the meters new at $220,000, or $33,000 more than the book cost, while his house and street lamp services he estimated at about $293,000, or $59,000 more than the books show. Combining the two items of meters and services, Professor Marks estimated the structural cost of both as $513,672, while the books show a cost of $471,885.63.

There is a remarkable agreement between Professor Marks' estimate of structural cost, Mr. Baehr's without his overhead allowance, and the book records shown by Mr. Hall.

In the case of street mains, Professor Marks allowed $652,947 (Defendant's Exhibit 23, page 75). Mr. Hall finds a book cost of $649,750. Mr. Baehr's estimate of $1,346,823 is reduced to $774,577.78 if we deduct his paving allowance of $350,939 and his overhead on the mains alone, of $221,306.22.

If, however, we take the unit costs of 4″ and larger sizes of pipe the last five years, as appears on the books (Defendant's Ex-
1946 hibit 30, Schedule 5) but in the case 3″ and smaller pipe where the records are defective we use Mr. Baehr's estimate

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of $26,001 without overhead and paving, we reach a figure of $654,150.63 as applied to the services given in Mr. Lea's exhibit. The amounts of pipe of each size used by Mr. Lea and Mr. Baehr are practically identical, but Mr. Lea's happens to be before me at the time of computation.

This total, $654,150.65, representing duplication costs on the basis of the last five years' prices, is wonderfully close to the $649,750.66 shown by Mr. Hall to have been the total cost of the mains.

Approaching the matter, then, from the standpoint of duplication on existing prices, as well as from the books, we find remarkably close agreement with Professor Marks, and also, except in the case of street mains, with Mr. Baehr, if we omit Mr. Baehr's exaggerated allowance for overhead and his paving, which was never paid for by the company.

It is fair to use the unit cost of mains, meters and services for the company's experience of the last five years, because in that time about one-third of the distribution system has been constructed.

1947 *Investment vs. Duplication.*

The following table constitutes a comparison between the showing of the company's books as presented by Mr. Hall, the appraisal of Professor Marks, the appraisal of Mr. Baehr omitting paving and overhead charges, and finally, the cost of duplication, based on the cost of construction of the last five years.

Construction and Reconstruction Costs.

Description.	Books of the company.	Marks' appraisal new.	Baehr's appraisal new, omitting land, paving & overhead.	Duplication on basis of last five years' cost.
Meters	$187,756	$220,298	$206,472	$206,997
Services	284,130	293,374	259,103	262,758
Mains	649,751	652,947	774,578	654,151
Total ...	$1,121,637	$1,166,619	$1,240,153	$1,123,906
Works & Office.	525,274	497,831	504,891	
Grand Total ...	$1,646,911	$1,664,450	$1,745,044	

This table shows a striking equality between the totals of the first three items for the various columns. In other words there is not $2,000 difference between the book cost and the cost of duplication based on the last five years of unit prices. Professor Marks is only $45,000 above the book cost, and Mr. Baehr's base figure, omitting paving and overhead, which cost the company nothing, or was charged into operating expenses, was only $120,000 or 11% above the book cost.

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The last line of the table gives the grand total of cost, except for the last column. It was impracticable to work out a duplication cost for the works from recent construction. In this grand
1948 total there is again a remarkable uniformity between the figures from the books, the appraisal of Professor Marks, and Mr. Baehr's base figures. I was present when Professor Marks produced his totals, given on page 75 of his Exhibit, and for the first time learned from Mr. Sangster what the books showed in the totals; while Professor Marks did not know, up to the time of his testimony, and probably does not even now known, any of the details of the book costs save those that appear in his report.

The way the last column of duplication costs was figured, may be here stated.

With respect to meters, the number of each size in Mr. Lea's Exhibit is almost the same as that used by Mr. Baehr. The number of meters given by Mr. Hall was not employed, because they included 649 gas meters more than in Mr. Lea's list, evidently including Valley Junction. This was part of the property included in the $45,000 not embraced in this appraisal. The unit cost- of meters employed are those not given in Defendant'- Exhibit 30, Schedule 5, page 3, except 66 meters of certain sizes where the unit costs were not given and where instead Mr. Baehr's base figure was used. There was then added 45¢ for freight, $1.50 for setting, and 15¢ for locks upon pre-payment and standard meters. The unit cost, then, of each size of meter includes $1.95 for freight and setting, and in the case of pre-payment meters, 15¢ for locks.

Of these 20,748 meters, 853 are in stock, but the same cost of setting has been applied to them as to the others. This, of course, gives a value about $1,300 too large.

1949 *Cost of Duplicating Meters.*

Description.	Number.	Unit cost.	Total cost.
3-Light	1,093	$6.95	$7,596.35
5-Light	7,526	7.80	58,702.80
10-Light	1,166	10.50	12,243.00
20-Light	120	12.20	1,464.00
30-Light	76	18.05	1,371.80
45-Light	26	22.35	581.10
60-Light	12	48.45	581.40
80-Light	1	54.00	54.00
100-Light	3	66.00	198.00
150-Light	1	95.00	95.00
200-Light	1	125.00	125.00
5-Light Prepay.....	10,397	11.40	118,525.80
10-Light "	266	13.75	3,657.50
10-A	52	13.90	722.80
30-A	6	20.30	121.80
60-A	1	57.10	57.10
2000-C. I.	1	900.00	900.00
Total	20,748		$206,997.45

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1950 *Services.*

The only way the data at hand can be used for estimating the cost of duplicating the services on the basis of the cost of the last five years, was to compute from Mr. Lea's Report, page 11, that 28.263% of the cost of the services has been spent in the last five years. During that time, Mr. Hall has shown, the cost of the new services has been $74,263.59 (Defendant's Exhibit 30, Schedule 5). On this basis all the services could be duplicated for $262,758. This, of course, ignores any increased difficulty of duplication on account of paving laid since the services were first installed.

1951 The following table, based on the unit costs (Oefendant's Exhibit 30, Schedule 5) and adopting Mr. Baehr's base figures for wrought iron pipe of 3″ or less in size (Complainant's Exhibit 21, page 114) because of lack of unit costs on that, size, is submitted:

Size.	Length.	Unit cost per foot.	Amount.
3″ & Under	69,248′	45.30c	$26,001.00
4″	573,724′	45.30c	259,954.34
6″	162,004′	74.39c	120,514.78
8″	65,607′	104.36c	68,467.47
10″	32,008′	134.31c	42,989.94
12″	31,349′	120.65c	37,822.57
14″	622′	213.19c	1,326.04
16″	28,506′	213.19c	60,771.94
20″	6,036′	318.98c	19,253.63
24″	1,819′	937.27c	17,048.94
Totals	970,923′		$654,150.65

There being no unit cost in Mr. Hall's table for 14″ pipe, the figures for 16″ were used. The fact that 12″ is given slightly cheaper than 10″ frequently occurs, and is due to some difference in soil or other local conditions. Of the 970,923 ft., 522,110 ft., or a little more than half has still no pavement above it.

In addition to the pipe here valued, 34,811′ ft., or about six and a half miles, given by Mr. Hall, are probably located in Valley Junction.

1952 *Some Comparisons of Investment Cost.*

The Massachusetts companies are the only ones that can safely be employed in comparison of either construction or operating costs, because they are the only ones that have been under the direct control of the state commission for over twenty years, a commission, moreover, of undisputed honesty and considerable ability.

One may select the seven Massachusetts companies that for the last ten years have been next in size to Boston, of about the average size of the Des Moines Company, as will be shown later. None of them has a capital including both stock and bonds of over $2.58

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per thousand feet of sales. It would hardly be fair, however, to compare that with the assets of the Des Moines Company, which I have found to be $1,667,215. December 31, 1910, or $3.12 per thousand feet of sales. The Massachusetts companies, in consequence of state laws, have not issued even as much capital stock and bonds as their assets, but have obtained part of the latter by sales of stock at a premium and by accumulated profits. On the other hand, it is not exactly fair to compare their reported assets because all of the seven plants with the exception of Fall River, are mixed coal and water gas plants. These require more capital than a water gas plant. The difference on this account probably somewhat more than counterbalances the larger sales per mile of main in these companies.

1953 The following table gives the sales and the assets of these companies on June 30, 1910:

Place.	Sales in feet.	Amount of assets.
Cambridge	669,982,936′	$2,667,036.00
Fall River	495,612,338	1,435,586.00
Lawrence	417,864,700	2,032,593.00
Lowell	573,672,700	1,895,747.00
Lynn	605,591,700	1,653,229.00
Springfield	568,112,988	2,247,296.00
Worcester	637,570,200	2,023,113.00
Total	3,968,407,562	$13,954,600.00

Average 566,913,937. $3.52 per M′

The average assets in Massachusetts are reported as $3.52 per M′. This applied to the Des Moines property would mean assets of $1,872,608. On the other hand, Fall River, the only exclusively water gas plant, reported assets of only $2.90 per M′ of sales. This applied to Des Moines would mean $1,542,774.

Such comparisons are, of course, not conclusive but are certainly of some importance and tend to confirm the reasonableness of the valuations found by Prof. Marks or discovered on the books of the company by Mr. Hall, or computed in various ways from these books.

1954 *Operating Expenses.*

Broadly speaking, it is customary to divide the cost of gas into operating expenses and return on capital, or profits, operating expenses, again, may be divided into (1) manufacturing expenses, (2) all other operating expenses save depreciation, and (3) depreciation.

1. Manufacturing Cost.

The manufacturing expense has been steadily declining. In 1910 it was $165,466.44 (Hall's Report, Exhibit D) for the manufacture of 556,132,721′ of gas (Hall, Schedule 1). This was 29.75c.

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per 1000 ft. The same cost divided over the 531,991,054 feet sold (Hall, Schedule 2) means a cost of 31.10c. per 1000 ft. sold. The difference of 1.35c. is due to leakage and unaccounted for gas.

As the company only gets a revenue from the gas sold, the manufacturing cost of 31.1c. per 1000 ft. sold will be hereafter used. The cost of some items, however, in 1910, was much higher than the average of the previous four years. The following table, based on the cost per 1000 ft. of gas made and computed from Exhibit E of Hall's Report will illustrate the essential differences.

Description.	1906-9.	1910.
Repairs of Works.....	1.71c	2.55c
Oil	15.75c	11.49c
Other expenses	16.56c	15.72c
	34.02c	29.76c

As explained on Pages 11-12 of Mr. Hall's Report, this repair item of 1910, however legitimate, was certainly unusual. We might be justified in using as a proper figure for the next five years
1955 only the normal repairs account. But for the present the manufacturing expense may be left as it was in 1910, with over 0.8c. of repair costs above the normal.

It will be recalled that Mr. Lea, on page 109 of his exhibit, estimated that in 1911 558,000,000′ of gas at $1 would be sold at a manufacturing cost of $175,397, and that in 1917 735,000,000′ will be sold at a manufacturing cost of $220,657. This would mean a cost per thousand feet sold of 31.43c. in 1911, and 30.02c. in 1917. In other words, he sees nothing to prevent the continued decline in manufacturing, as also of the other costs with increase of business. If we go back to 1904 we find the total manufacturing cost was 42.35c. and 39.28c. respectively, per 1000 ft. of gas made, and somewhat more per 1000 ft. of gas sold. The manufacturing cost still further back for the four years, 1891-4 was $119,170.97 for the sale of 211,497,819 ft., or 51.6c. per thousand feet sold. The cost in the holder has steadily declined with increase of gas made and sold. There is no reason for supposing that it will rise during the next three or four years. It has been suggested that oil may rise, but Mr. Lea, in his exhibit, p. 109, gave the same cost of oil per 1000 ft.—11.5c.—in 1917 and in 1911.

1956 It has been further suggested in the cross-examination of the City's witnesses that the leakage, and therefore the expense on account of it, is likely to increase. The following table will establish the fact that the present percent of unaccounted for gas, 4.31% is slightly above that of the average rate of the eleven largest Massachusetts companies, ranging in size, with the exception of Boston, from 300,000,000 to 700,000,000 feet of sales in the last year reported, ending June 30, 1910. The data is given in the last report of the Massachusetts Gas & Electric Light Commission, Appendix, page CXCIV.

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Place.	Percentage unaccounted for.
Boston	2.94
Cambridge	4.15
Fall River	6.91
Lawrence	7.03
Lowell	1.97
Lynn	6.35
Malden	1.49
New Bedford	2.73
Newton	3.54
Springfield	2.66
Worcester	7.32
Average of 11 places	4.28
Des Moines	4.31

Since there is likely to be an increase of sales per mile of main with the growth of the city and of the business of the company and also a continuance of the present good management, there appears to be no good reason for assuming an increase in the amount of unaccounted for gas and of the cost thereof.

1957 *Operating Expenses Other Than Manufacturing and Leakage.*

On the basis of the average operating costs, other than manufacturing and leakage, of the last five years per thousand feet applied to the sales of 1910, Mr. Hall finds the distribution and other expenses $150,340.67 (Defendant's Exhibit, page 19). To this he adds a depreciation of 6¢ per M′ and adjusts the city tax to a 90c. basis. He thus reaches a reasonable cost, based on the manufacturing costs of 1910 and the average distribution and other costs of the last five years of $346,669.12. He has left all the increases of salaries and the payments to the U. G. I., but has not allowed the expenses, chiefly in 1910, incurred in the present rate litigation. He has adjusted the Federal taxes and appears to have covered every point so fully as to leave only three points upon which I would like to make some modification.

In the first place it seems fair to concede to the company the expenses on account of accidents and damages in the first two months of 1906. This amount of $3,689.00 divided over the 2,292,035′ of sales during the last five years means only 0.16¢ per M′ of sales. Applying this to the sales 531,991′, of 1910 is $851.19. The company, in complainant's Exhibit 54, has suggested 2¢ per M′ instead of the figures now used of 0.38¢ on the average for the five years plus 0.16¢ for the accidents paid for in 1906 but incurred in a previous year, or a total of 0.54¢.

In this connection it is interesting to note several things: The Company's expenditures on these matters in the only previous years
about which I have information, 1904-1905, showed only
1958 0.15¢ the first year per M′ of sales and 0.47¢ the second year, or an average for the two years of 0.31¢. Further-

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more, Mr. Lea allowed under this head of accidents and damages only 0.49¢ in 1911, gradually decreasing to 0.43¢ in 1917; and Mr. Baehr allowed 0.50¢ at the beginning of the period, gradually decreasing to 0.47¢. All of the 58 Massachusetts companies, with total sales to consumers of 11,687,845,000′, or an average of 205,146,000′, had a total expenditure for claims in 1910 of only $23,436.68, or 0.2¢ per M′ of sales. In the previous year it was only 0.3¢.

Evidently 0.54¢ for Des Moines is not only ample, but is far in excess of the probable expenditure in the future, as it has been in the past.

1959 *Donations.*

The amount spent by the company in donations in the last five years has been left intact, although donations by monopolies have often the appearance of an attempt to influence public opinion and come more or less under the general condemnation of political contributions by corporations, while donations by individuals for political or other objects are not usually so criticised.

The fact that the Traction ordinances of Chicago directly prohibit such contributions is significant.

Bad Debts.

It is contended that the abolition of a discount for prompt payment or a penalty for failure to pay promptly will much increase the losses and expenses. While I personally favor such penalty or discount in an ordinance, it is a fact that Boston, New York, Philadelphia and some other Eastern cities get along very well without it. The only figures I happen to have with me on the subject are for the Consolidated Gas Company of New York City, for 1905. At that time the losses from bad debts were only 0.63¢ per 1000 ft. of sales, while Mr. Hall and I left in the Des Moines expenses, as a basis for estimating the future, 0.64¢, which is the average of the last five years. The Iowa Supreme Court, in the Cedar Rapids case, indicated the legality and propriety of a company requiring deposits, or in other ways protecting itself, in case it cannot exact a definite penalty in the shape of a higher price for gas upon failure to pay promptly.

1960 *Rate Litigation Expenses.*

In the New York Consolidated Gas Case, the Courts recognized contests over rates and taxes as abnormal, and not to be considered in fixing rates for the future. The City of Des Moines, in fixing rates for 1909 and subsequently, had no reason to believe that the company would spend money at the rate of several thousand dollars a month for a year or more in contesting the decision. The company, not content with such profits as 90¢ may give, is willing to hazard a considerable sum to retain the monopoly profit on $1.00 gas. It is like a gamble in stocks. If the company loses it should settle the

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expenses out of its ordinary reasonable profits at 90¢, with what otherwise would go to dividends.

In other words, if the Court should find that it is legal under any circumstances to make the consumer pay the expenses of rate litigation, the Court should further consider, in this particular case, whether the company was making such a small profit on its actual investment as to make the proposed rate confiscatory and justify resistance to it. If the rate last December was not of this confiscatory nature, then surely the expense of resisting it should not fall upon the consumer.

If a merchant is competitive business enters an unsuccessful legal resistance to taxes, for example, he cannot raise the price of his goods and make the purchasers pay him for his lawsuit, or his trade will go to wiser, or better advised, competitors.

1961 *Taxes.*

In the history of the average gas company there is a tendency toward a reduction of operating cost, both manufacturing and other, with increase of sales, until at least a point has been reached far in advance of the present sales of the Des Moines Gas Company. One item of expenses, taxes, however, has a tendency to increase, but not sufficiently to counterbalance the downward tendency of other operating costs. But this tendency of taxes to increase is not so marked where companies submit readily to regulation, as where they strenuously resist the same, and thus tempt the city to increase taxes as the only available method of reducing the unearned monopoly profit.

In this connection it may be noticed that while Mr. Lea estimated taxes for 1911 at 6.91¢ or .31¢ per 1000 ft. less than is used in this computation, he estimates a gradual increase up to 1917, which a simple computation shows to be 9.67 in that year, or an increase of 2.75¢. But on the other hand he estimates that the total operating expenses, aside from taxes, will fall 5.86¢. At least that is the effect of the figures given of sales in feet and expenses in dollars.

Taxes do not always rise, even in the Des Moines Gas Company. During the four years 1891-1894 inclusive, they were 10.9¢ per 1000 feet, and have been between 5.56¢ and 7.22¢ during the last seven years, with the exception of 1909 when they were 7.66.

The assessment of the property of the Des Moines Gas Company recently made, of $1,375,000, is so near the present physical value of its property that it is by no means certain that in the years hence the taxes will be raised any more than the increase of sales during that period.

1962 *Expenses Other Than Manufacturing and Leakage Abnormal in* 1910.

The expenses other than manufacturing, leakage and taxes for the last five years, as shown in Defendant's exhibit 30, page 5 and from data for the previous two years obtained for me by Mr. Sang-

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ster from the books of the company, and for 1890 to 1894 inclusive given by Messrs. Pratt and Lillie, in 1895, are worthy of study. They are as follows:

Period.	Expenses other than manufacturing, leakage and taxes.
1904	19.57¢
1905	18.50¢
March 1, 1906-7	19.63¢
March 1, 1907-8	19.29¢
March 1, 1908-9	18.30¢
Mar. 1-Dec. 31, 1909	22.52¢
1910	26.86¢

The average of the rates of the five years preceding 1909 was 19.06. The cost in 1909 of 22.52¢ was a most unusual increase. Nothing like it had appeared during the previous five years, and perhaps not for a much longer time. But on top of this comes another enormous jump,—26.86¢ in 1910. That figure is 7.8¢ higher than the average of the five years preceding 1909, and is over 7% higher than the highest year.

In other words, the year 1910, is over 40% higher than the average of the five years before 1909. It is 37% higher than the highest of those five years. There is therefore overwhelming reason for holding that the year 1910, being such an absolute exception to the previous experience both of the Des Moines Company and of gas companies in general, excepting immediately preceding contests over rates, as to fully justify the throwing out of 1910
1963 and substituting for it 1904 and 1905. Even if the exorbitant expenses of 1909 were included in a six year average, the cost other than manufacturing, leakage and taxes would be 7¢ lower than in 1910, and even with the including of taxes would be over 1½¢ lower than the figures I have taken for the five year period.

An equally favorable situation for the company is obtained by taking the average expenses other than manufacturing, leakage and taxes for the four years preceding 1910, instead of for the six years.

It is to be greatly regretted that the lesson from the books of the company with reference especially to the extraordinary character of the 1910 expenses, and to some extent even of the 1909 expenses, was not fully realized sooner. The accounts of 1901, 1902, 1903, 1904 and 1905 should be investigated.

1964 *Profits at 90 Cents.*

It makes little difference whether Valley Junction be excluded or not. To exclude the small revenue in excess of 90¢ from that source would involve the exclusion also of all the operating expenses and capital connected with it. In the absence of sufficient data,

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and in the belief that a true separation would not change the result to Des Moines a quarter of a cent per thousand feet, Valley Junction is allowed to remain in the accounts.

Following thus far the method followed by Mr. Hall in his exhibit 30, page 19, we have the estimated & the next revenue available for interest and other charges, of $145,173.06, by the four year average of distribution and general expenses and $135,863.22 by the five year average. In either case certain adjustments may be made. The accident claims be increased by 0.16¢ or $851.19 and the taxes by 0.44¢ or $2,340.76 a total increase of expenses of $3,191.95. The depreciation may be reduced from $31,919.46 on the 6¢ per 1000 ft. basis to $21,490.40 on the sinking fund basis—a reduction of $10,429.06. The net reduction in expenses from these readjustments is $7,237.01.

The case then stands, with 90¢ gas in Des Moines as follows:

Description.	Four-year basis.	Five-year basis.
Net Revenue	$145,173.06	$135,863.22
Adjustments to be added	7,237.01	7,237.01
	$152,410.01	$143,100.23
Return on $1,566,865	9.61%	9.13%
The Profits are 8% on	1,905,125.00	1,788,753.00
" " " 6% "	2,540,168.00	2,385,004.00
" " " 7% "	2,191,572.00	2,044,289.00
Profit per 1000 ft. of sales in 1910 (531,996,000 ft.).....	28.65¢	26.9¢

1965 The first and larger of these estimates is called a four year estimate prior to 1910 on all expenses save manufacturing, taxes and leakage, where 1910 figures are always used. In reality the four year estimate might be called a six year or normal condition prior to 1910. If the Courts shall add $50,000 to the cost of the land, it will raise the investment to $1,616,865; but it will also mean an increased revenue of at least 1.1¢ per 1000 ft., as already explained. This would mean an increased revenue from last year's sales of $5,853, or 0.36% on the investment above of $1,616,865. The addition of the land value to the investment would reduce the return from 9.61% to 9.43% on the four year basis and from 9.13% to 8.85% on the five year basis. But the corresponding addition to a yearly revenue from increase in value of land, amounting to 0.36% on the total investment would bring back the return, on the four year basis, to 9.79% and on the five year basis to 9.21%. In other words, the company would gain more than it would lose by securing the increased value of the land in its capital account, and then being forced to see that yearly increase credited to revenue account, as has been done in the recent decision of the Public Service Commission for the First District of New York, which is the City of Greater New York.

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1966 *Market Return on Bonds.*

Latest Market Quotations.

Below are given the latest prices bid for all artificial gas bonds in the Bank and Quotation Section of the Commercial and Financial Chronicle, for August 5, 1911. This journal, published in New York, is the recognized authority for market quotations.

Nearly all gas bonds quoted in the journal are 5% bonds. If any such are omitted in the following table it is an oversight. The bonds of a few natural gas companies, however, may be in the list. If so, they will tend to lower the average, for the future of natural gas is not considered as bright as that of artificial gas.

Description.	Price bid.
Altoona Gas	97
American Gas and Electric	86⅛
Atlanta Gas Light	103
Atlantic City Gas	90
Bay City Gas	93
Binghamton Gas	98
Blackstone Valley Gas and Elec.	99½
Bronx Gas and Electric	96¾
Brooklyn Gas	100
Brooklyn Union Gas	107
Burlington (Vt.) Gas Light	89
California Gas and Electric	99⅞
	95⅞
	101½
Colorado Springs Light, Heat and Power	92
	97
Consolidated Gas of Baltimore	108¾
Cons. Gas, Elec. Lt. and Power, Baltimore	100
Consolidated Gas, New Jersey	93
Consolidated Gas, Pittsburgh	93
Dayton Gas	99
Denver Gas & Electric	93½
	100¾
Detroit Gas	98
	100½
Equitable Gas and Electric, Utica	102
Equitable Ill. Gas, Philadelphia	106½
1967 Evansville Gas and Electric Light	93
Gas and Electric Company of Bergen County	101
	97
Grand Rapids Gas	99
Haverhill Gas	90
Hudson County Gas	103¼
Hudson River Gas and Electric	95

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Description.	Price bid.
Indianapolis Gas	80
Jackson Gas	97½
Jacksonville, Fla., Gas	92½
Kankakee (Ill.) Gas and Electric	91
Kansas City, Mo. Gas	97½
Kansas City, Mo. Gas and Electric	95
Kenosha Gas and Electric	101
Knoxville Gas	85
Laclede Gas	103¾
	102
Lansing Fuel and Gas	93¾
Leavenworth Light, Heat and Power	94
Lockport Gas and Electric	95
	97½
Los Angeles Gas and Electric	97⅜
	99½
Louisville Light	90
Memphis Gas and Electric	99
	101
Michigan City Gas and Electric	94
Montreal Light Heat and Power	102½
Muskogee (Okla.) Gas and Electric	93
	97½
	97
National Light Heat and Power	92
	92
Newark Consolidated Gas	104
New Castle (Ind.) Light Heat and Power	96
	104
New London Gas and Electric	100
	100
New York Gas, Elect. Light Heat and Power	104⅛
Central Union Gas (N. Y.)	101
Equitable Gas Company (N. Y.)	105
New Amsterdam (N. Y.) Gas	101¾
New York and East River Gas	104½
	101¾
New York and Westchester Lighting	102½
Northern Union (N. Y.) Gas	100
Standard Gas	105
New York and Queens Gas	99½
	100
New York and Richmond	96
Northwestern Gas (Chicago)	99
	94½
Norwich, Conn., Gas	101
1968 Oakland Gas	101¾
Ogden Gas, Chicago	93¼
Oklahoma Gas and Electric	97

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Description.	Price bid.
Omaha Gas	97
Pacific Gas and Electric	98¾
Pacific Light and Power	98¼
Pacific Power and Light	92
Patterson and Passaic Gas and Electric	101
Pawtucket Gas	90
	101⅝
	103
	101⅝
Peoples Gas (Chicago)	101
	100¾
Peoria Gas and Electric	98½
Philadelphia Suburban Gas and Electric	91
Portland (Ore.) Gas and Coke	99½
Queenboro (N. Y.) Gas and Electric	97
Quincy (Ill.) Gas Electric and Heat	80
	94¾
Rochester Gas and Electric	100¼
Saginaw City Gas	95
St. Joseph Gas	92
St. Paul Gas	97½
San Diego Gas and Electric	97½
Seattle Lighting Company	100
Shelby County (Ind.) Water Gas and Electric	91
Springfield (Ohio) Light Heat and Power	92½
Suburban Gas of Philadelphia	98
Syracuse Gas	102
Tacoma Gas	88½
	98
Troy Gas	110
United Gas and Electric of New Jersey	94
	99
Utica Gas and Electric	100
Van Wert (Ohio) Gas Light	97
Washington Gas	109⅝
Westchester (N. Y.) Gas	103
Western United Gas and Electric	97
Wilkes Barre Gas and Electric	102⅝
Williamsport Gas	96
Wilmington (Del.) Gas	98½
Wyoming Valley Gas and Electric	100
Number of Companies represented	97
Number of Securities quoted	125
Average of Quotations	97.6

Note only conscious omission has been that of the Toledo (Ohio) Railways and Light Company, on whose bonds, covering gas, electric light and street railways, interest has not been paid for about two years.

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1969 It has just been shown that all the issues of 5% gas bonds in the market were quoted early in August at 97.6, but it has been assumed that the 5% bonds of the Des Moines Gas Company would sell at 93. This is strikingly confirmed by the testimony of Mr. Hagenah, given after the above quotation was worked out. He has shown that while all of the 412,000 par value bonds issued since 1906 were sold for $378,050, or at an average price of 91.76, yet the $145,000 worth of bonds sold in the last two years, since March, 1909, netted the company $137,750, or 95% of the par value.

In this connection the following quotation from a recognized organ of the Gas interests, the "Progressive Age," for April 15, 1911, may be quoted: "Gas bonds as a class are securities which merit a high degree of confidence, says the Wall Street Journal. Investors generally have been told by the banking houses the *the* business has aspects of security about it that make the bonds desirable, but there has not been that amount of information given to enable a full appreciation of the fact. The market standing of gas bonds generally is evidence of their investment position. Selling on a basis close to 5 per cent, they are among the most tried of the public utility securities. On the good record of many years and the development that has been noticeable in the business as municipalities have grown and the extension of the uses of gas have been multiplied the bonds have acquired a rather distinctive place in the ranks of public service obligations. Some considerations that investors must keep in mind touch upon such matters as the competition that the plant has, the character of franchises enjoyed and the record of the Co. for earnings over a period of years, etc. In some instances all of these questions seem almost unnecessary, especially where a company enjoys a virtual monopoly of the business in a large city.

1970 "Over the past few years many economies have been effected in gas production by the introduction of modern methods of manufacture. Operating costs have had a tendency to reach a lower average, thus making for the betterment of the margin of net earnings applicable to bond interest. Where the operations include electrical distribution in connection with the gas business, under a consolidation of companies, there are, of course, somewhat different and additional factors entering into the measurements of the value of bonds. Also where securities are based upon property producing natural gas there are still other qualifications necessary, as a new element of risk is present here.

"As an investment the bonds placed upon a plant artificially producing gas located in a community of growth and reasonable size, or covering several communities where the conditions for growth are very promising, constitute a public service investment that may be regarded as among the best."

1971 *Market Return on Stock.*

It is more difficult to determine the return on the market value of the stock than on the market value of the bonds of gas com-

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panies. There are several reasons for this. Few stocks are quoted in the markets. The price bid for the stocks quoted is affected by uncertainties as to the amount of future dividends even in prosperous companies. The attempt, therefore, will only be made to study the stocks of a few companies that for the most part, like the Des Moines Gas Company, have been long in the field and have shown a steady growth in business and in net earnings.

The Massachusetts Gas Company, controlling both the Boston Gas Company and other gas companies in Eastern Massachusetts, has for some time been paying 4% on both its common and preferred stock. The common is quoted at 95½ and the preferred at 96½. On this basis an investor in the common stock will secure 4.19% and in the preferred 4.14%.

The facts as to the Montreal Light, Heat and Power Company for the last three years, as given in the early August issues of the Progressive Age and the Commercial and Financial Chronicle (the authorities for all the companies quoted) are as follows:

Year.	Dividends.	Total earnings reported.
1908–9	6%	10.25
1909–10	7%	11.25
1910–11	7½%	12.37

The last bid on the stock was 167⅜. This indicates that an investor would at that price this year secure a return of 4.5%. Were the total earnings distributed, however, he would secure 7.4%. The investor is not sure of getting the full earnings, but may have a reasonable expectation of securing before long some increase 1972 in dividends. It is somewhat questionable whether he may expect more than an average return of 6%. It is likely that if a large increase of dividends is considered certain, the price of the stock will rise enough above the present quotation to leave little, if any, more than 6% to any investor at the time of the dividend.

The Brooklyn Union Gas Company pays 6% dividend, and its stock is quoted at 143, or a return of 4.2%. It claims an earning, however, in 1910 of 9.88%, which is a return of 7% on the price bid for the stock. Doubtless the investor in the stock feels confident that on his investment of $143 per share he will in time secure 5% or 6%.

The Consolidated Gas Company of New York pays 6% on stock which is quoted at 146½. This means a return of 4.1%. The ready sale of this stock, and the possibility of larger dividends in the future may explain the quotation.

The Peoples Gas Company of Chicago has been paying 7% dividends for about two years. Its stock has recently been 106, which nets the investor 6.6%. Last year, however, before the probability of a material reduction in price, the stock was considerably higher, so that the new investor was not able to secure more than 6%.

The Laclede Gas Company of St. Louis pays 7%, and its common stock is quoted at 106¾, which means a return to the investor of

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6.6% on the price now bid. The large amount of water in this stock and its possibility of public regulation of rates are doubtless responsible for the low quotation.

The first company to be considered, and one having an important bearing on the Des Moines case, is the United Gas Improvement Company, the owner of the Des Moines Gas Company.

This company has been paying 8% dividends for some years, although March 1, 1910 it paid an extra dividend of 10%. The earnings of the company are reported in the Progressive Age
1973 for July 1st as 13.05% during the last twelve months.

As investor in the stock today, paying 157½, the latest market quotation, would find his dividends at 8% equivalent to 4.56% on his investment, and the earnings 7.44%. His hope of extra dividends in the immediate future would be equivalent to some figure between these two. The average of the two rates of return on the present quotation of stock is 6%.

It seems fair to assume that the investor today in such a company is regarding it as something between a 4½% and a 7½% investment, or appproximately a 6% investment.

The above data shows that in an old and reliable company a 5% bond and a 6% stock will sell almost or quite at par. The 128 issues of 5% bonds in 98 different companies are shown to have an average value today of 97.4.

It is a little harder to give the exact value of a 6% stock, but it is practically at par. In order, however, to cover brokerage charges and discount and be on the conservative side, it may be assumed that a 5% bond and a 6% stock even in a company as old as that of the Des Moines Gas Company, would not net the company more than 93.

Let us further assume that half of the investment is raised by bonds and the other half by stock. The company can create a sinking fund at 4% to redeem the discount of 7% per share at the end of thirty years. If now $100,000 par value of all 5% bonds and $100,000 par value of 6% stock were sold at 93, the cost to the company for the $93,000 each obtained from the bonds and the $93,000 from the stock, or $186,000 in all, would be as follows:

1974	Interest at 5% on the par value of bonds.....	$5,000.00
	Annual dividend at 6% on the Par Value of Stocks	6,000.00
	Annual additions to Sinking Fund required to redeem $14,000 in 30 years.....	250.00
	Total charges on a cash investment of $186,000.	$11,250.00
	Percent of burden on $186,000.....	6.05%

In other words, even if the 6% stock and the 5% bonds sold at 93, the interest and dividend charge and the sinking fund on the discount would amount to only 6%.

With a property where the securities represent only the actual

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cost, bonds frequently cover more than half of the actual investment. It may be that a higher return than 6% is just on railroads in Minnesota and the Northwest where there is risk of partial failure of crops and the expense of unusual storms, snow and cold, and of financial disasters which may greatly lessen traffic. But the history of the Des Moines Gas Company, as of all such companies, shows that these risks are either non-existent or only to a slight degree present.

Moreover, and this is a very important point, if the issues of stock and bonds only cover the actual physical value or cost of the investment, which is not far from $1,500,000 in the case of the Des Moines Gas Company, the chances of floating a 6% stock and a 5% bond at par would be very much greater than in companies where the securities represent a large amount of water, or of so-called intangible values. Either in the public regulation of the rates or in condemnation proceedings there is little risk in an investment where the outstanding securities do not exceed the cost of the physical properties.

1975 Since writing the above on relation to stock and bonds, I have run across a further confirmation of the position taken. It is in the recognized organ of the gas interests, The Progressive Age, in their issue of May 1, 1911; in which they take the position that a return of 6.83% to the buyers of Laclede gas stock is very much in excess of the average return to the investor who buys stock today at market quotations. The Progressive Age says "Since September, 1910, the common stock has received dividends at the rate of 7 per cent. annually. Laclede Gas Stock, receiving 7 per cent. per annum, gives a return at the present price of about 102½ of 6.83 per cent. In view of the very substantial earning power shown, increased benefit in the matter of dividends may reasonably be expected, especially as the company recently paid off $1,000,000 of notes due February 1, 1911, thereby reducing the annual fixed interest charge. The return on some prominent public service corporation stocks is approximately:

Brooklyn Union Gas	4.23%
Consolidated Gas (New York)	4.14%
Detroit Edison	4.63%
Montreal Light	4.83%
Providence Gas	4.21%
United Gas Improvement (Phila.)	4.57%

"Hence it appears that although St. Louis is the fourth largest city in the United States and that the Laclede Gas Light Company has a monopoly of its local gas field, the stock of the company can be bought on the Stock Exchange on an investment basis seldom to be had in a stock of equal merit."

In view of all the above, it is evident that if today the company had the franchise for furnishing gas in a city of the size and character of Des Moines, and only proposed to issue securities to the extent of the actual investment necessary for the construction of the

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plant, a 6% stock and a 5% bond would be likely to sell at better than 93.

1976 *Future Growth and Profits.*

Mr. Lea has estimated that even with dollar gas the growth of sales will be 203,000,000 ft., or over 38%, in the next seven years following 1910. He also estimated a marked reduction in operating costs, and that to take care of this 40% more of business only 20% more of mains will be required. (Testimony, page 1044).

The increase of land, manufacturing and holder capacity, meters and services will not have to exceed the increase in sales. The investment per 1,000 feet is likely to decrease, and the profits available for interest and dividends are likely to increase both in cents per thousand feet and in the percentage on the investment over estimates based on 1910 or 1904-'10 conditions.

The question is not the reasonableness of 90¢ gas for the past, but for 1910 and the years immediately following.

Nearly all gas engineers, unless in rate cases, admit that reductions in price stimulate sales. Milwaukee, Grand Rapids, Detroit, Indianapolis, Boston, Brooklyn, New York and other cities abundantly prove this. With every reduction in price, new inroads are made on the use of coal, and the advance of electricity for lighting purposes is checked.

The Consolidated Gas Company of New York in 1908 was selling only 6% more gas at one dollar than in 1904, and claimed that its sales 9,000 feet yearly per capita indicated that the point of saturation had been reached. Yet in two years thereafter, under 80¢ gas, the consumption rose 2%. In Brooklyn the sales increased 22% during the last four years of dollar gas, 1903-'6, and 54% during the first four years of 80¢ gas, 1907-'10. Similar re-
1977 sults in Boston and Chicago might be cited. In all these cases the investment has not increased proportionately to the sales save in New York, where conditions, independent, in large part, of the growth of the business led to the erection of coal gas works at Astoria.

1978 *Massachusetts' Experience.*

There are seven companies in Massachusetts about the size of the Des Moines Company. They do not buy any of the gas that they sell, as do some other Massachusetts companies, and they sell less than 2% of their make to other companies. Only one of these companies, Fall River, makes exclusively water gas as does Des Moines. The candle power in less than in Des Moines, while the cost of coal and oil is higher, in Massachusetts. Nevertheless some legitimate and striking comparisons can be made.

These Eastern companies are in the only state which has for more than three or four years attempted careful and systematic collection and tabulation of data. The official gas reports of the State of Massachusetts go back to 1884, and have been very complete during the last five years.

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The first comparison will be on population supplied, as given by the State Census in 1895 and the national census of 1900 and 1910, as follows: The year given is for the twelve months ending June 30th of the year at the head of each column:

Population Supplied.

Place—	Population, 1900.	Population, 1905.	Population, 1910.
Cambridge	126,152	135,942	158,924
Fall River	104,863	105,762	119,295
Lawrence	74,314	89,972	100,170
Lowell	105,889	107,135	118,575
Lynn	78,145	88,436	104,771
Springfield	69,164	85,100	107,683
Worcester	118,421	128,135	145,986
Totals	676,948	713,482	855,404
Averages	96,707	101,926	122,201

1979 The Sales of these Seven Companies were as follows:

Place—	Sales, 1900.	Sales, 1905.	Sales, 1910.	Per capita, 1910.
Cambridge	276,284,562′	439,162,251′	669,982,936′	4,222′
Fall River	169,251,157	321,119,341	495,612,338	4.155
Lawrence	138,314,175	261,888,830	417,864,700	4,172
Lowell	345,359,900	482,088,600	537,672,700	4,830
Lynn	183,843,000	358,776,700	605,581,700	5,781
Springfield	152,272,000	311,678,930	568,112,988	5,276
Worcester	264,333,900	410,641,700	637,570,200	4,367
Totals	1,529,658,694	2,585,356,352	3,968,397,562	
Averages	218,522,671	369,336,622	566,913,937	
Per Capita	2,260	3,624	4,639	4,639

1980 *Sales Per Mile of Main and Per Meter.*

The total miles of main, the total meters, the sales per mile of main and the sales per meter during the three periods were as follows:

Mains, Meters and Sales.

Year.	Miles of main.	Meters.	Sales per mile of main.	Sales per meter.
1900	611	62,839	2,503,533	24,342
1905	825	103,222	3,133,765	25,046
1910	1,072	152,575	3,701,863	26,002

The last two tables are in line with the experience of Des Moines and other gas companies, in that the sales per capita and per mile of

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main tend to increase rapidly, while sales per meter do not increase very much. This means that with increase of business there are more meters and therefore more consumers per mile of main. Since mains are a far larger part of the investment that are meters there is a tendency for the investment per thousand feet of gas to fall with the increase of sales.

With the fall in price and the influence of an energetic management, present consumers use more gas per meter, but a new group of small consumers is added, which keeps down the average sales per meter, while increasing the sales per mile of main, and even per service. Several meters may be connected with one service in tenement and business blocks.

In Chicago, for example, the average sales per meter are 33,318 feet, but from 24.43 per cent of the meters the sales average only 9,280 feet.

1981 *Receipts From Gas.*

Place.	1900.	1905.	1910.
Cambridge ...	$275,823.71	$443,577.34	$588,574.89
Fall River ...	199,812.16	325,384.34	428,088.12
Lawrence	157,280.57	263,778.40	377,079.66
Lowell	347,193.69	438,572.53	539,741.23
Lynn	184,570.17	322,606.26	470,284.84
Springfield ..	191,453.80	311,254.53	481,228.95
Worcester ...	281,268.68	412,726.51	513,283.30
	$1,637,402.78	$2,517,899.91	$3,398,280.99
Sales	1,529,658,694	2,585,356,352	3,968,397,562
Average Price.	107.0¢	97.4¢	85.6¢

Prior to 1910 the sales were almost exclusively to consumers, but in 1910, 63,637,236 feet, or less than 2%, was sold chiefly to other companies, in Springfield, at an average price of 43.8¢. Eliminating these sales, the average price of gas sold directly to consumers in 1910 was 86.3¢. This represents a fall of 21¢ in ten years, and 11¢ in the last five years; and it surely helps to explain the large increase in sales, and in per capita sales, already given.

1982 *Operating Expenses & Gross Receipts.*

In the two tables which follow are given the operating expenses and the profits from operation after paying taxes but before allowing for depreciation.

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Operating Expenses.

Places.	1900.	1905.	1910.
Cambridge	$173,018	$290,956	$397,468
Fall River	139,643	223,232	270,117
Lawrence	113,488	203,641	272,630
Lowell	223,200	315,800	332,488
Lynn	124,003	186,262	286,907
Springfield	105,244	203,583	329,836
Worcester	162,128	285,840	339,442
Totals	$1,040,724	$1,709,314	$2,229,159
Averages	68.0¢	66.1¢	56.2¢

Profits From Operation.

	1900.	1905.	1910.
Cambridge	$103,242	$159,011	$191,111
Fall River	60,344	103,373	158,188
Lawrence	43,890	60,187	104,449
Lowell	123,994	122,773	216,623
Lynn	60,567	136,344	183,043
Springfield	86,544	108,330	151,393
Worcester	119,272	127,054	174,488
Totals	$597,853	$817,072	$1,179,295
Averages	39.1¢	31.6¢	29.7¢

Before Deducting Depreciation.

1983 The important feature in these tables is that the entire margin for return on capital and for meeting depreciation not covered by repairs and maintenance, in these prosperous Massachusetts companies, fell from 39.1¢ per 1000 feet of sales in 1900 to 29.7¢ in 1910.

1984 *Depreciation and Net Profits.*

In these seven companies the amount set aside to meet depreciation during the three years, and the net profits after deducting depreciation, were as follows:

Gross Profits, Depreciation & Net Profits.

Description.	1900.	1905.	1910.
Gross Profits	597,853	817,072	1,179,295
Depreciation	82,691	110,855	133,931
Net profits from Operation	515,162	706,207	1,045,364
Sales	1,529,658,694′	2,585,356,352′	3,968,397,562
Net profits per 1000 ft.	33.7¢	27.3¢	26.3¢

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This table shows that the Massachusetts companies were securing from the consumers in 1910, in the form of profits, whether divided into interest and dividends or put into surplus, only 26.3¢ per 1000 ft., after paying for repairs and maintenance and setting aside $133,931, or 3.37¢, for depreciation.

The fairest and largest generalization that can be made is to combine the entire seven Massachusetts companies next in size to Boston, for the last five years ending June 30, 1910, with the following striking results:

1985 *Seven Massachusetts Companies for Five Years.*

Average Cost, Profit and Price.

Description.	Amount.	Per 1,000 ft
Sales	16,925,880,932'	
Manufacturing cost	$6,369,168.43	37.63
Other costs	3,649,070.80	21.56
Total operating cost	10,018,239.23	59.19
Depreciation	521,089.56	3.08
Total operating expense and depreciation	10,539,328.79	62.27
Profit from operation	4,648,763.84	27.46
Price	15,188,092.63	89.73
Excess of price above manufacturing cost	8,818,924.20	52.10

Throughout the five years these typical companies have been content with a profit of 27.46¢ and with a margin between manufacturing cost and leakage on the one hand and price on the other of only 52.1¢.

1986–2016 The comparison with Massachusetts may be tabulated in cents per 1000 ft. of sales:

Des Moines' profit at 90¢ on five years' basis	26.90
Des Moines' profit at 90¢ on four years' basis	28.65
Massachusetts' profit in the seven largest companies below Boston, in 1906-10 inclusive	27.46
Same in 1910	26.30
Margin in Des Moines between price of 90.7¢ and holder cost plus leakage, 31.1¢	59.60
Margin in Massachusetts during the last five years	52.10
Same during 1910	53.40

The Des Moines company at 90¢ will have as large a margin for distribution and general expenses as do the seven Massachusetts companies, whose average price last year was 85.6¢ and who nevertheless have since then still further reduced their price, thou

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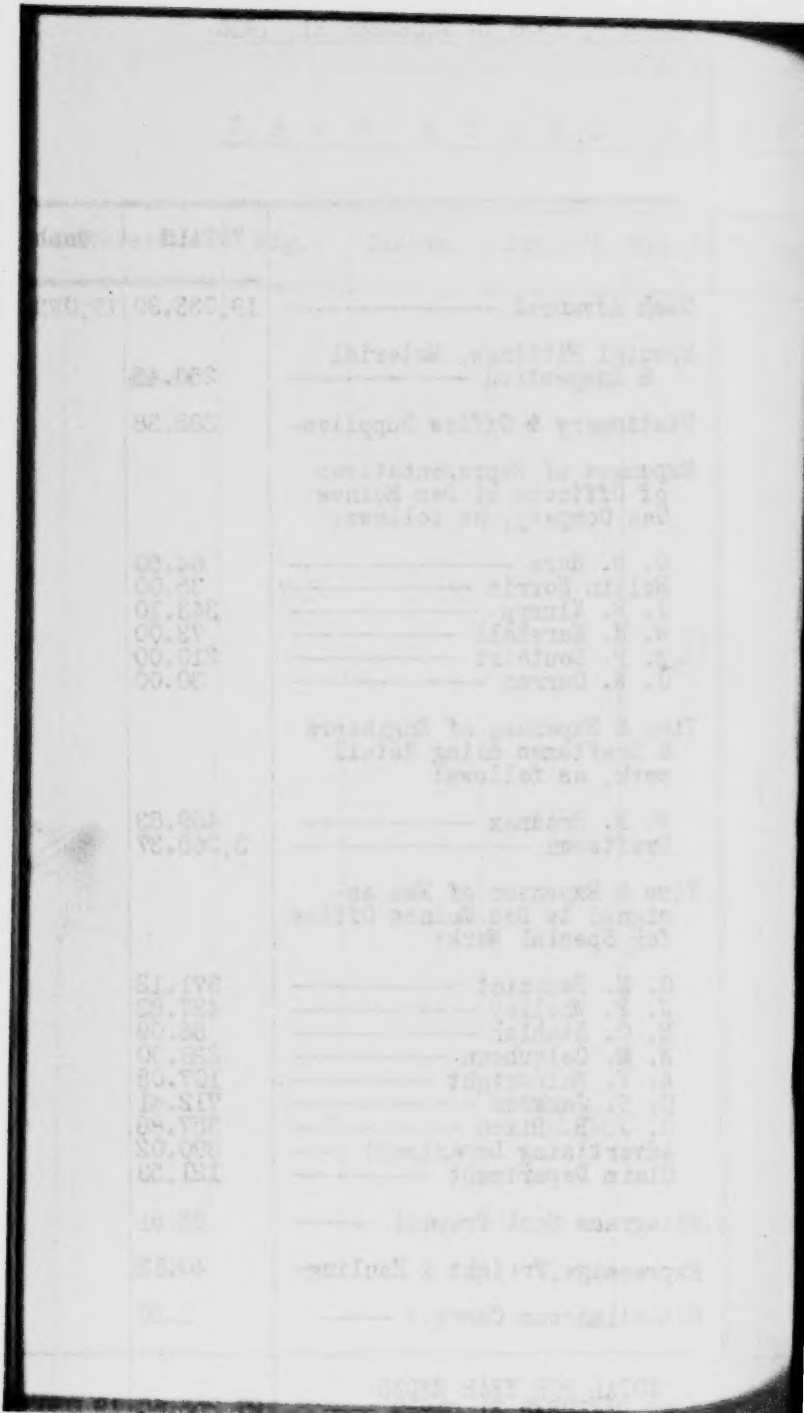

their average sales were no greater last year than in Des Moines in 1911, and although their manufacturing cost of 32.24¢ and their taxes and leakage combined were no larger than in Des Moines in 1910.

A company of this size, with the taxes and manufacturing costs prevailing here, would be expected to sell for 85¢ in Massachusetts.

(Here follow Defendants' Exhibits 48 to 59, inc., marked pages 2017 to 2026, inc.)

2027 (DEFENDANTS' EXHIBIT 67.)

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Comparative Statement of Cost per M. C. F. of Manufacturing a Distributing Gas. Eight Months to August 31, 1911, *and Ye Ended December* 31, 1910.

	Eight months to August 31, 1911.		Year 191
	Expense.	Per M. C. F.	Per M. C.
Manufacturing	$3,266.10	.90¢	.6
Boiler Fuel.....	6,663.96	1.83	2.8
Expense Works..	4,886.69	1.35	1.3
Generator Fuel..	34,839.64	9.59	10.3
Manufacturing Labor.....	7,070.15	1.95	1.9
Oil	41,825.81	11.51	11.4
Purification Supplies	711.61	.20	.1
Purification Labor	293.31	.08	.0
Repairs Works..	4,185.96	1.15	2.5
Water Tax.....	469.75	.13	.1
Total	104,212.98	28.68	31.6
Less: Residuals..	5,366.62	1.48	1.8
Total Manufacturing.....	98,846.36	27.21	29.7
Distribution	3,895.04	1.11	.7
Complaint Expense.....	1,815.45	.52	.6
Distribution Office Expense...	3,697.82	1.05	1.1
Gratuitous Work	3,059.88	.87	1.2
Forward	12,468.19	3.55	3.7

2028

Des Moines Gas Company.

	Eight months to August 31, 1911. Expense.	Per M. C. F.		Year 1910. Per M. C. F.
Distribution (Continued) Forward.....	$12,468.19	3.55		3.74
Repairs Mains...	4,407.89	1.26		1.76
" Services.	4,703.92	1.34		.98
" Meters..	3,930.18	1.12		.98
Setting and Removing Meters	3,700.83	1.05		1.01
Street Mains Abandoned ...	.....	....		.02
Total Distribution.....	29,211.01	8.32		8.49
Commercial Expense.	1,676.68	.48		.36
Expense Collection.....	4,615.62	1.31		1.20
Expense Office ..	9,006.76	2.57		2.85
Office Salaries...	16,716.97	4.76		4.60
Total Commercial.....	32,016.03	9.12		9.01
New Business.....	.....	....		.59
Promotion Management.....	1,791.10	.51		...
Promotion Office Supplies and Expense.....	2,838.63	.81		...
Miscellaneous Advertising	2,293.14	.65	Advertising	1.29
Newspaper Advertising	2,070.78	.59		
Soliciting	7,231.23	2.06		1.81
Appliance Demonstrations.....	928.35	.26		.32
Appliance Exhibitions.....	1,617.63	.46		...
Forward	18,770.86	5.34		4.01

2029 Des Moines Gas Company.

	Eight months to August 31, 1911. Expenses.	Per M. C. F.		Year 1910. Per M. C. F.
New Business (Continued) Forward.....	$18,770.86	5.34¢		4.01¢
Gas Appliances..	2,749.58*	.78*		.41*
Gas Engine Expense.....	.....	....		.01
House Fitting Expense.....	586.37*	.17*		.03*
Gas Arc Lamps..	161.23*	.05*		...
" Maintenance	1,049.27	.30	{ Rental and }	.94
" Depreciation	1,318.76	.38	{Maintenance}	
Lamps	605.05*	.17*		...
Gas Stove Depreciation	.....	....		.02
Total New Business.....	17,036.66	4.85		4.54

[*In red in copy.]

General Expense:				
Accidents and Damages.....	3,553.10	1.01		.49
Association Meetings.....	436.10	.12		.22
Expense General	568.04	.16		.28
" Extra..	1,773.40	.51		.75
Insurance	1,300.62	.37		.35
Litigation	691.64	.20		.19
Uncollectible Bills	1,964.40	.56		.62
Street Lamp Operating.....	474.64	.14		.12
Salaries General.	6,666.67	1.90		1.88
Total General Expense.....	17,428.61	4.97		4.90

DEFENDANTS' EXHIBIT No. 68.

10-4-11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Statement of Additions to Plant and Property, January 1st to August 31st, 191

	Total.	January.	February.	March.	April.
Pipe Threading Machine	130.25	.....	.....	130.25	.....
Feed Water Heater	2,819.38	2,296.91	289.56	189.70	43.21
Manhole	199.49	.....	.....	70.50	128.99
Draft Regulator	80.09	.....	.....	.....	33.93
New Set	1,083.69	.....	207.39	201.38	302.03
Coke Shed and Apparatus	5,883.50	318.20	2,033.92	165.90	138.01
Mains 4"	9,739.08	.41	.....	43.44	1,247.20
6"	3,071.06	.....	.....	33.89	.....
8"	3,378.54	.....	.....	32.16	571.93
10"	897.42	.....	.....	.....	.....
12"	1,010.00	.....	434.34	.....	.....
16"	1,052.43	1,052.43	.....	.....	.....
"	110.27	.....	.....	.....	.....
Services	8,140.50	189.94	467.59	711.70	1,059.61
Meters	7,126.08	982.68	373.47	6.65	991.24
New Meter Connections	1,297.11	92.90	185.28	118.–5	186.02
Street Lamp Extension	76.38	.....	.....	.....	52.34
Real Estate	100.06	.....	.....	100.–6	.....
Waste Heat Boiler	25.81	.....	.....	25.–1	.....
Photometer	129.75	.....	.....	.....	.....
Pump	786.33	.....	.....	.....	.....
Purifier Changes	19.60	.....	.....	.....	.....
Works Office Extension	12.00	.....	.....	.....	.....
Three Way Cock	150.67	.....	.....	.....	.....
Indicator	102.75	.....	.....	.....	.....
Improvement River Front	232.24	3.70	14.67	29.48	39.19
	47,654.48	4,937.17	4,006.22	1,845.77	4,793.70

DEFENDANTS' EXHIBIT No. 68.

10-4-11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Statement of Additions to Plant and Property, January 1st to August 31st, 1911.

Total.	January.	February.	March.	April.	May.	June.	July.	August.
0.25	.....	.....	130.25	.....	.....	.....	.....	.....
9.38	2,296.91	289.56	189.70	43.21	.....	.....	.....	.....
9.49	.....	.....	70.50	128.99	.....	.....	.....	.....
0.09	.....	.....	.....	33.93	39.61	6.55	.....	.....
3.69	.....	207.39	201.38	302.03	95.38	180.36	97.15	.....
3.50	318.20	2,033.92	165.90	138.01	327.45	1,187.26	1,384.87	327.89
9.08	.41	.....	43.44	1,247.20	967.69	3,316.22	1,191.90	2,972.22
1.06	.....	.....	33.89	.....	372.38	714.14	.....	1,950.65
8.54	.....	.....	32.16	571.93	428.86	2,336.31	1.78	7.50
7.42	.....	.....	.....	.....	27.25	.....	870.17	.....
0.00	.....	434.34	.....	.....	39.48	234.67	81.77	219.74
2.43	1,052.43	.....	.....	.....	.....	.....	.....	.....
0.27	.....	.....	.....	.....	.....	110.27	.....	.....
0.50	189.94	467.59	711.70	1,059.61	1,671.96	1,324.43	1,123.61	1,591.66
6.08	982.68	373.47	6.65	991.24	12.13	1,978.40	2,590.71	204.10
7.11	92.90	185.28	118.–5	186.02	274.72	137.34	189.97	112.73
6.38	.....	.....	.....	52.34	13.29	10.75	.....	.....
0.06	.....	.....	100.–6	.....	.....	.....	.....	.....
5.81	.....	.....	25.–1	.....	.....	.....	.....	.....
9.75	.....	.....	.....	.....	.....	.....	129.75	.....
6.33	.....	.....	.....	.....	.....	.....	.....	786.33
9.60	.....	.....	.....	.....	.....	.....	.....	19.60
2.00	.....	.....	.....	.....	.....	.....	.....	12.00
0.67	.....	.....	.....	.....	.....	.....	.....	150.67
2.75	.....	.....	.....	.....	.....	.....	102.75	.....
2.24	3.70	14.67	29.48	39.19	56.70	12.85	52.71	22.94
4.48	4,937.17	4,006.22	1,845.77	4,793.70	4,326.90	11,549.55	7,817.14	8,378.03

2030 Des Moines Gas Company.

	Eight months to August 31, 1911. Expenses.	Per M. C. F.	Year 1910. Per M. C. F.
Taxes:			
General†	$19,291.87	5.50¢	5.24¢
Special City Tax.	7,291.68	2.08	1.98
Total Taxes...	26,583.55	7.58	7.22
Leakage	.....	.96	1.35
	221,122.22	63.01	65.27
Miscellaneous Sales..	86.76	.02	.08
Total Operating Expenses.....	$221,035.46	62.99¢	65.19¢

†Including Federal Tax for year 1910, $1,287.37, paid in 1911.
The above Statement does not include Rate Litigation Expense charged during the period $47,131.16.

Total Gas Manufactured during period to Aug. 31, 1911 363,261,636′
Total Gas Accounted for " " " " 350,908,353′

(Here follows Defendants' Exhibit No. 68, marked page 2031.)

2032 DEFENDANTS' EXHIBIT No. 69.

10-4-11.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Des Moines Gas Company.

Note of Gas Sales for Twelve Months to February 28th in Each Year 1907 to 1911.

Year Ended February 28, 1907	388,892,406
29, 1908	441,877,493
28, 1909	465,970,133
28, 1910	496,919,282
28, 1911	543,943,236
	2,337,602,550

2033 DEF'TS' EXHIBIT 74.

D. 74.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Mistakes in Complainant's Exhibit #65.

1. Minor Errors:

A few minor errors in Table #1 are made, with regard to sale and miles of mains. This has come about with respect to sale in Cambridge, Lawrence and Lynn, and with respect to miles of mains in Lawrence, by not taking anything over one-half as the next higher figure. The number of meters for Cambridge is given as 26,590, when it should be 26,560.

2. Current Assets:

Serious mistakes are made with regard to current assets in Cambridge, Lawrence, Lowell and Lynn, as follows:

Current Assets.

Place.	Exhibit #65.	Corrected figures.
Cambridge	$284,864.62	$249,456.20
		720,680.48
Lawrence	749,411.37	262,695.40
Lowell	263,051.60	177,313.35
Lynn	236,046.67	113,755.98
Total	$1,533,374.26	$803,220.98

COPY BOU

In Cambridge there were included in current assets certain investments, doubtless outside the gas business, of $30,631.54, and for new work in process of construction, $4,776.88. The latter is more in the nature of permanent than of current assets.

The mistakes with regards to Lawrence grow out of the inclusion of an office building of $50,118.10 and of investments of $98.10 as current assets, and perhaps, also, in placing in the list of current assets a large amount of electric assets. A more correct apportionment of these assets is shown on another page.

2034 Lawrence, Mass., Gas Assets.

Fixed Gas Assets.

Real Estate	$209,209.71	
Machinery and Manufacturing Appliances	308,467.86	
Street Mains and Services	621,416.10	
New Work	457,985.02	
Meters	144,087.96	
Total	$1,741,166.65	$1,741,166.65

Some Current Gas Assets.

Due for Gas	$62,144.79	
Gas Coal	22,660.25	
Gas Coke	17,102.40	
Tar	9,308.70	
Ammonia	613.69	
Enrichers	3,563.84	
Purifying Materials	1,924.93	
Other Gas Materials	25,807.34	
Stoves	7,158.80	
Gas Fixtures, etc.	2,494.15	
	$152,778.79	152,778.79
Total of Fixed and some Current Gas Assets, as above		$1,893,945.44
Brought Forward		$1,893,945.44

D CLOSE IN CENTER

2035 Brought Forward.

Forward		$1,893,945.44

Fixed Electric Assets.

Real Estate	$24,048.81	
Steam Plant	76,766.26	
Electric Power Plant	543,665.25	
Electric Plant	253,034.73	
Electric Lines	341,180.85	
Transformers	33,812.69	
Electric Meters	40,956.36	
Arc Lamps	34,917.73	
	$1,348,382.68	$1,348,382.68

Some Current Electric Assets.

Due for Electric Light and Power	$37,143.04	
Fuel on Hand	2,414.67	
Carbons	1,323.61	
Oil and Waste	38.10	
Incandescent Lamps	5,865.22	
Globes on hand	492.74	
Motors on hand	11,280.38	
Other Electric Materials	17,930.70	
Total	$76,488.46	$76,488.46
Total Fixed and some Current Electric Assets		$1,424,871.14
Ratio of Gas Assets above to total Gas and Electric Assets above		57.07%

2036 Additional Items.

Office Building	$50,118.10	
Investments	98.10	
Total	50,218.20	$50,218.20
Other Assets		192,599.74
57.7 Per Cent of $192,599.74	109,915.67	
Some Current Gas Assets, Above	152,778.79	
Total Current Gas Assets	262,695.46	262,695.46
Total Used in Exhibit #65		$749,411.34

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Possibly the explanation of the difference may be in large measure due to including, in current gas assets, new work, of $457,985.02, instead of confusing gas and electric assets as previously suggested.

In any event, however, new work is not a current asset.

2037 In the case of Lowell, Exhibit # 55 includes as current assets $85,738.25 of investments, presumably outside of the gas business, while in the case of Lynn, an office building of $87,218.93 is included as current assets.

Since there are no such investments as the above in the Des Moines Gas Company, any inclusion of such investments in the Massachusetts companies is too favorable to the Des Moines Company. I included the permanent investments, (but not the Lawrence Electric assets) in tabulations on page 60 of my Report, although the inclusion of such office buildings and investments was unduly favorable to the Company; but in my rearrangement such as in Exhibit #65, it will be fairer to exclude them.

3. Meters and Services:

In Complainant's Exhibit #65, machinery and manufacturing appliances, mains and services are increased to conform to Professor Marks' unit costs. But if his figures are to be used, it should be observed that he depreciated his meters new by one-third, and his services by 50 per cent, to get the present value. This would reduce the total figure for mains and services, given in Exhibit #65, by $1,610,043.

4. Real Estate:

If the meters, services and mains are to be changed from the Massachusetts figures to those of Professor Marks, or unit costs, the real estate ought also to be changed. The real estate in the Massachusetts cities bought after those cities had attained considerable age and size, averaged $548,382.25, instead of about $100,-

2038 000 or less as testified by the City's experts in Des Moines or $200,000 claimed by the Company. A reduction of the real estate to an average of $100,000 for each of the seven Massachusetts companies would mean a total reduction of $3,138,675.75.

The total reduction from Complainant's Exhibit #65 would therefore be as follows:

Total Reduction from Complainant's Exhibit #65.

Current Assets	$730,153.27
Meters & Services	1,610,043.00
Land	3,138,675.75
Total	$5,478,872.02

If these reductions are made from the total assets of $17,689,-724.70, given in Exhibit 65, there would remain only $12,210,-852.68, or total assets of only $3.08 per 1000 ft. of sales, instead of $4.46 as given in the company's exhibit. Even if, for compari-

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son purposes, the land in each of the Massachusetts cities be valued at $200,000, as claimed by the company for Des Moines, the assets would only be increased by 17¢.

Furthermore, if all the new work that may have been classed as current assets were included, the addition would be only $462,761.90, or 12¢ per 1000 ft. of sales.

2039 D. 75.

Corrected Figures.

Page 92, Defendants' Exhibit 43.

Filed Apr. 5, 1912, Wm. C. McArthur, Clerk.

Some of the errors found were favorable to the Company, and some to the City, but one of the two points involved in the whole page, viz., the profits per thousand feet of sales that the Massachusetts companies are content with, is now found to be slightly more favorable to the City than the original figures, which were compiled in great haste merely for purposes of illustration. The corrected table follows:

Seven Massachusetts Companies for Five Years' Average Cost, Profit and Price.

Description.	Amount.	Per 1000 ft.
Sales	$16,929,868,846	
Manufacturing Cost	6,083,760.67	35.93
Other Costs	3,973,792.30	23.47
Total Operating Cost	10,056,852.97	59.40
Depreciation	545,472.78	3.22
Total Operating Expense & Depreciation	10,602,325.75	62.62
Profit from Operation	4,586,766.88	27.10
Price	15,189,092.63	89.72
Excess of Price above manufacturing Cost	9,106,031.96	53.79

Throughout the five years the typical companies have been content with a profit of 27.10¢ and with a margin between manufacturing cost and leakage on the one hand and price on the other hand of only 53.79¢.

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2040 DEFENDANTS' EX. No. 76.

D. 76.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Margin Between Price of Gas on the One Hand and Manufacturing Expenses, Leakage, and Taxes on the Other Hand in Des Moines and in These Seven Massachusetts Companies.

Taking the actual receipts from gas in Des Moines, as given in Defendants' Exhibit #30, Exhibit B, and the actual expenses of operation as shown in Defendants' Exhibit page 5, we have the following:

Description.	Des Moines Gas Co. 1906-10.	Des Moines Gas Co. 1910.	Seven Massachusett Cos. 1906-10.	Seven Massachusett Cos. 1910.
Price	101.06¢	101.30¢	89.72¢	85.63¢
Manufacturing, Leakage and Taxes	41.86	38.33	42.17	39.50
Other expenses and Profits	59.20¢	62.97¢	47.55¢	46.13¢
Margin for Other Expenses and Profits with 90¢ sales in both Des Moines and Valley Junction	48.14¢	51.67¢	.....	.....

Sales.

	Des Moines Gas Co. 1906-10.	Des Moines Gas Co. 1910.	Seven Massachusetts Cos. 1906-10.	Seven Massachusetts Cos. 1910.
Total	2,292,034,290′	531,991,000′	16,929,868,846′	3,968,397,562′
Average.	2,292,034,290′	531,991,000′	2,418,552.692′	566,913,937′

2041 *Comparative Manufacturing Costs, Other Than Coal and Oil, of Fall River and Des Moines Water Gas Plants.*

1910.

Description.	Fall River.	Des Moines.
Manufactured	535,495,500′	556,132,721′
Repairs	0.918¢	2.55¢
Other Expenses aside from Coal & Oil	4.235	4.37
Total aside from Coal and Oil	5.153	6.92
Same Items for 1909	5.444	6.41

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2042 (DEFENDANTS' EXHIBIT No. 77, 10-4-11.)

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

Rate Regulation Expense.

Summary of Expenses, January 1 to August 31, 1911.

1. United Gas Improvement Co., p. 6		11,714.54
2. Accounts Payable:		
United Gas Improvement Co., p. 6	140.10	
Court Costs, p. 6	453.60	
W. A. Baehr, p. 6	8,180.00	
Henry I. Lea, p. 6	6,796.00	
W. W. Randolph, p. 6	5,000.00	
W. J. Hagenah, p. 7	1,546.00	
N. T. Guernsey, p. 7	1,500.00	
Hotel Chamberlain, p. 7	4,436.20	
J. G. White & Co., p. 10	224.50	
Storeroom, etc., p. 10	15.70	
General, p. 10	7,124.52	
		35,416.62
		47,131.16

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Des Moines Gas Company.

Rate Regulation Expense—January 1 to August 31, 1911.

1. United Gas Improvement Company:

1911, Jan. 19.	5	14 x 17	Negatives @ $5.00	$25.00	
	5	"	Prints @	3.00	
	30	16 x 20	" @ .90	27.00	
27.	219	Large brown line prints	@ .08	17.52	
	222	Small " " "	@ .06	13.32	
					85.84
16.	Telegrams from J. B. Klumpp to J. Haines			2.10	
21.	Sharpening paper cutter knife			.40	
31.	Sundry suppers during month of January, 1911, for engineer's force			45.00	
				45.40	
	January expenses of W. F. Douthirt in connection with injunction against ordinance reducing price of gas			270.00	
	January expenses of G. W. Curran			211.50	
	" " " Thos. S. Genay			25.50	
	" " " F. N. Morton			8.10	
	" " " E. L. Heyser			3.00	
	" time of E. L. Heyser, draftsman			100.00	
	" " " W. E. Oberle, draftsman			60.00	
	" " & Expenses of W. F. Broadnax			136.75	
	" " " " E. P. Walter			229.50	
	" " " " E. S. Umstead			210.34	

	" " " "	W. Sturdevant	194.90	
	" " " "	G. W. Harrison	106.50	
	" " " "	W. F. Downs	100.50	
	" " " "	S. G. Elliott	82.50	
	Telegrams sent prepaid during January, 1911		42.15	
				1,828.44
February 28.	Mounting 5 photos—enlargements on muslin		.75	
	Call to phone #4303 Chicago, Ill., by Mr. Lewis Lillie		8.00	
	Labels	1.00		
	Iron Clamps	.40		
	Cutting & retopping brass posts and drilling holes in strips	.50		
	1 Drill and handle for same	.49		
			2.39	
	Expressage on package to New York		.30	
	" " " from Treasurer's Dept. to Jasen Haines, Des Moines		1.40	
	Lunches during month of Feb., 1911		34.50	
	6 Binders @ $3.25		19.50	
	500 Sheets of paper ruled		11.50	
	2000 " " commercial bond		20.00	
	4000 " " " "			
	Forward		98.34	1,914.28

1. United Gas Improvement Company: Forward				1,914.28
1911, Feb. 28, Forward			98.34	
Time of draftsmen working on maps:				
Jan. Replacement revaluation maps showing value of ground		2.00		
Paving map		3.00		
Checking miles of main		30.00		
Entering mains on street maps		1.50		
			36.50	
Feb. Corrections to street main maps		1.25		
Entering mains on trunk main maps		3.50		
" " for Des Moines replacement		2.50		
			7.25	
Services of stenographer 40 days at $3			120.00	
Telegrams sent repaid during February			32.80	
February expenses Messrs. Douthirt, Curran, Klumpp, Broadnax & Hemminger			608.20	
February expenses of T. S. Genay			16.40	
" " J. B. Klumpp			135.98	
" time and expenses of D. Cooley			65.45	
" " W. F. Downs			128.04	
" " E. L. Heyser			114.85	
" " E. M. Harrison			85.82	
" " S. G. Elliott			81.64	
" " E. S. Ulmstead			104.50	
" " W. Sturdevant			62.36	
" time of W. E. Oberle draftsman			38.57	
				1,736.70
" " & expenses of J. F. Wholley 86.02½				56.35

Telegrams prepaid during March, 1911		11.26	
Feb. Expenses of J. B. Klumpp		100.35	
March " " "		115.35	
" " " G. W. Curran		105.00	
" time and expenses of W. F. Broadnax		212.96	
" " " " " W. F. Downs		169.75	
" " " " " J. F. Wholley		154.94	
" " " " " D. Cooley		40.64	
" " " " " E. S. Umstead		89.06	
April " " " " W. F. Broadnax		139.65	
" " " " " W. F. Downs		155.50	
" time of E. L. Heyser, Draftsman		100.00	
April " " S. G. Elliott, "		60.90	
" " " G. M. Harrison, "		69.30	
" expenses of G. R. Hemminger		170.50	
Six 14" x 20" Prints mounted @ 80¢		4.80	
Expressage on package consigned to Baehr & Lea Chicago, Ill. from Sept. of Third Vice Pres	.35		
Expressage on package to W. W. Randolph NewYork City from above Dept	.30		
Expressage on package consigned to J. B. Klumpp from above Dept.	.60		
Screws and ferrule, etc	3.59		
		4.84	
Forward		1,704.80	5,643.20

1. United Gas Improvement Company: Forward				**5,643.20**
1911, April: Forward			1,704.80	
Making 8 leather binders		**26**		
" 8 set fly leaves lettering, etc		**8.20**		
			34.20	
Time & material, etc., four boxes for shipment of books			13.72	
4000 Blanks two forms (63787)			12.00	
Expressage			5.95	
				1,770.67
May 31. 2 black line prints (mounted)		3.36		
10 " " "		16.02		
			19.38	
Repairs to typewriter			.70	
16 small brown line prints 6¢		.96		
32 large " " " 8¢		2.56		
8 brown line prints 42" x 72" mounted		20.16		
			23.68	
3 doz. ferrules 1½" long 3.00; 3 doz. 2" long 3.00			6.00	
2 negative of Des Moines Cuves			.73	
2 brown line prints mounted			5.04	
1-10 yd. roll 36" #120 blue print paper			.80	
2 " " " " " " " "			1.60	
4–14" x 17" negatives at 5.00		20.00		
32–14" x 20" prints on muslin 90¢		28.80		
			48.80	
15 brown line prints at 6¢		.90		
Making one fly leaf		.15		
			1.05	

May.	Time of G. M. Harrison	21.77		
May.	" " H. H. Hewitt	24.20		
"	" " H. H. Baker	24.19		
"	" " S. G. Elliott	50.80		
"	" and expense of E. L. Heyser	127.08		
"	" " " " G. R. Heminger	343.25		
"	" " " " H. L. Siddell	7.75		
			599.04	
				706.82
June 30.	June, time and expense of W. F. Downs	128.50		
"	" " " " G. M. Harrison	14.00		
"	" " " " E. L. Heyser	89.33		
"	" " " " S. G. Elliott	54.75		
"	" of H. A. Baker	7.50		
"	" " H. L. Sidell	6.00		
"	" " H. H. Hewitt	5.00		
				305.08
	350 brown line prints (large) at 8¢ ea		28.00	
	310 " " " (small) " 6¢ ea		18.60	
	Screws, screw posts, etc		4.28	
	Making 9 black leather binders	29.25		
	" 10 prs. fly leaves	1.25		
	Lettering 10 binders	4.00		
			34.50	
	2 brown line prints mounted 42 sq. ft. at 12¢	5.04		
	1 ream 2½ wove paper	4.20		
			9.24	
	Telegrams sent prepaid during month		23.01	
	April expenses of J. B. Klumpp		148.30	
	Forward		265.93	8,425.77

1. United Gas Improvement Company: Forward		$8,425.77
1911, June 30: Forward	265.93	
May expenses of J. B. Klumpp	142.65	
May time and expenses of W. F. Downs	141.00	
June Expenses of G. R. Hemminger	9.00	
		558.58
20—14″ x 20″ Prints, mounted on muslin @ 80¢	16.00	
Expressage on packages, lunches, etc	7.20	
June Expenses of W. F. Douthirt	80.00	
		103.20
July 31:		
20—14″ x 20″ Prints, mounted on muslin @ 80¢	16.00	
2 Brown line prints (Des Moines) 42 sq. ft. @ 7¢	2.94	
Call to phone Cl. 3020 New York, Mr. Vincent	1.00	
12 Brown line prints, 165.6 sq. ft. @ 7¢	11.59	
12 " " " (Map) 25.2 " " @ 7¢	1.77	
12 " " " 84. " " @ 7¢	5.88	
Rental of Brunsviga Machine #6698 May 30th to June 30th	10.00	
48 Keystone Binders for sheet 11 x 8¼ @ $24. per doz.	96.00	
50 sheets #55 Black carbon paper 18″ x 24″	2.80	
12 Brown line prints (Des Moines curves)	4.62	
Expressage, etc.	.98	
Making and Delivering white pine box	4.65	
Telegrams prepaid during month	33.86	
Services of Miss Richter June 14th to July 6th	56.00	
June time of Ralph Knapp	11.67	
July time of S. F. Bonnett	3.87	
July " " J. V. G. Postles	3.87	

" " " J. H. Talley		13.55	
" " " G. M. Harrison		9.68	
" " " E. L. Heyser		63.87	
" " " H. H. Hewitt		4.84	
" " " W. F. Downs		75.00	
" " " H. L. Siddell		7.74	
" Expenses of E. P. Walter		74.00	
" Time & Expenses of W. H. Wholey		98.51	
" Time & Expenses of W. H. Taylor		382.65	
		997.34	
Less Credit		10.00	
			987.34
(Standard Blue Print Co. refund of overpayment.)			
August 31:			
1 Negative	.56		
1 Box for returning vouchers	.75		
		1.31	
July expenses of W. F. Downs		65.00	
" " " G. W. Curran		153.94	
" " " E. L. Heyser		101.50	
" time & Expenses of G. R. Hemminger		422.95	
August Expenses of J. H. Smith		130.84	
July & August time of E. P. Walter		109.96	
July & August Expenses of J. B. Klumpp		341.20	
			1,326.70
Forward			11,401.59

THIS PAG

	1. United Gas Improvement Company: Forward		11,401.59
1911, Aug.	Expressage	2.20	
	Telegrams prepaid during month	35.34	
	August expenses of G. W. Curran	126.00	
	" " " E. G. Windle	6.60	
	" Time & Expenses of W. F. Downs	158.81	
			328.95
			11,730.54
	Deduct:		
June 30.	Bill entered in month of June for 20—14" x 20" prints mounted on muslin @ 80¢		16.00
			11,714.54
	2. Accounts Payable:		
	1. U. G. I. Co.:		
1910, Dec. 31.	Prints		3.60
1911, Jan. 31.	140—10/12 Prints		70.00
Mar. 6.	23 Prints		10.70
May 31.	Photographic Work		34.00
June 30.	"		21.80
			140.10
	2. Courts' Costs:		
1911, Jan. 4.	Wm. C. McArthur, Clerk	26.10	
Mar. 6.	"	127.50	
May 23.	Court Expenses	300.00	
			453.60

	3. Wm. A. Baehr:			
1911, Mar. 30.	On account of services		2,500.00	
June 7.	"		2,500.00	
Aug. 15.	"		2,500.00	
31.	10 days' time W. A. Baehr @ $100	$1,000		
	112 days' do. @ $50	5,600	680.00	
	Expenses for help, traveling and hotel at actual cost	1,580		8,180.00
		8,180		
Less:	Cash to date	7,500		
	4. Henry I. Lea:			
1911, Jan. 16.	On account of services		100.00	
18.	"		200.00	
Feb. 2.	On account of services during Jan	1,700		
	Exp. " "	96		
		1,796		
	Less Paid on A/c	300		
			1,496.00	
Mar. 13.			1,000.00	
Apr. 19.			1,000.00	
June 5.			1,000.00	
July 6.			1,000.00	
Aug. 16.			1,000.00	
				6,796.00
	5. W. W. Randolph:			
1911, Aug. 5.	On account of services			5,000.00
	Forward			20,569.70

THIS PAG

Rate Regulation Expense—Continued.

2. Accounts Payable: Forward				20,569.70
	6. W. J. Hagenah.			
1911, Aug. 1.	Services Auditing Accounts, reports and expenses to July 1		1,000	
	Do. and expenses for month of July		546	
	7. N. T. Guernsey			
	1911, May 10: Retainer Fee			1,546
	8. Hotel Chamberlain.			1,500
1911, Feb. 1.	W. L. Brown, Hotel Sundries, expense of experts and officials of Company and of U. G. I. Co		152.40	
M'ch 1.	"		430.20	
Apr. 1.	"		871.25	
May 1.	"		274.45	
" 31.	"		90.25	
June 30.	"		170.00	
July 31.	"		1,189.30	
Sept. 1.	"		1,258.35	
				4,436.20

9. General:

1910, Dec.	31.	Koch Bros. Ptg. Co. 300 Guide Cards	1.20	
1911, Jan.	16.	Jansen Haines, Expenses to Council Bluffs & to Chicago	158.40	
"	15.	Pay Roll, Special Clerks, etc	231.52	
	23.	B. F. Kauffman, Services Real Estate Appraisal	100.00	
"	31.	Pay Roll, Labor, Special Clerks, etc	21.25	
	"	Jansen Haines, Expenses to Chicago, Jan. 24 & 25	92.60	
	12.	American Surety Co. Prem. on Court Bond	500.00	
	31.	Pay Roll: Labor	27.08	
	"	Petty-Cash	17.90	
	"	Baker-Trisler Co. Supplies	5.20	
	16.	Iowa Pub. Co. 3 Maps C. of D. M	4.50	
	5.	Perkins Elec. Co. 4 lamps flash	2.00	
	31.	Telegrams	31.30	
	5.	Smith-Premier Type Co. paper	5.93	
	31.	F. J. Wells Livery Co. Auto hire	2.00	
	"	Younker Bros. framing pictures	3.75	
Feb.	8.	4 Rubber stamps	.40	
Jan.	31.	Toll Service	8.65	
Feb.	16.	G. J. Vincent, Exp. to Chicago, 10-11 & 12	71.10	
	15.	Pay Toll, Labor	4.73	
	23.	A. G. Newbell, services	25.00	
	28.	Stamps, mailing booklets $420, Express, etc. $36.10	456.10	
	"	Pay Roll Labor	109.33	
	"	Baker-Trisler Co. Supplies	4.80	
	24.	Chase & West Table	16.20	
		Forward	1,900.94	28,051.90

		2. Accounts payable: Forward		28,051.90
		9. General: Forward	1,900.94	
1911, Feb.	14.	S. Davidson & Bros., Desk, screen, etc	35.30	
"	25.	D. M. Stationery Co., typ. paper	4.90	
"	6.	Garver Hdw. Co. 1 tape line	3.50	
"	25.	Toll Service	6.40	
"14-24.		Largan Bros. Co. Supplies	10.35	
"	28.	Telegrams	17.92	
"	22.	Smith Premier Co. Tpw. paper	14.31	
"	22.	Younker Bros. 2 rugs	104.00	
"	22.	Stenographic work 4.00 6.00 6.00	16.00	
"	22.	S. Davidson & Bros. table & Seat	40.00	
M'ch	1.	D. M. Realty & Sec. Co. Rent Rooms 403-409-410	48.83	
"	8.	Jansen Haines Expenses to Chicago with Mr. Guernsey	66.00	
"	1.	Heilhecker Pub. Co. 23 M Books, 23 M envelopes	886.59	
"	15.	Carr, Carr & Evans, Expenses & outlays	68.52	
"	15.	Payroll, Labor	42.50	
"	31.	" "	42.50	
"	31.	Petty-Cash	39.40	
"	31.	Baker Trisler Co. supplies	27.90	
"	31.	S. C. Burrows Stenographic work	42.00	
"	6-20.	D. M. Stationery Co.	7.30	
"	28.	Iowa Publishing Co. prints & Negatives	13.84	
"	25.	Toll service	2.40	
"	31.	Telegrams	23.88	
"	23.	B. F. Swanson Co. rent twp. writer	2.50	
"	31.	Tuttle's Letter Shop, 430 copies gas statistics	2.50	
"	27.	Della Wolf Stenographic work	58.60	

" 15.	Chas. W. Malotte & Co. for binders	17.10	
Apr. 14.	Ronald Press Co. copy Dicksee's Auditing	5.00	
" 14.	Spon & Chamberlain, Mathersons' Depreciation	4.00	
" 14.	Telegram	4.93	
" 12.	John W. Alvord, Chicago, Services, Consultation $150.00 Expenses 19.70.	169.70	
" 1.	D. M. Realty A Sec. Co. Rent	35.00	
" 1.	Della Wolf Stenographic work	8.55	
" 24.	J. Haines, expenses to Chicago	83.30	
" 30.	Pay roll labor	27.50	
" 30.	" " "	21.89	
" 30.	J. Haines Expenses to Chicago	131.67	
" 1.	Blaise & Blaise, Services taking testimony of witnesses, Feb. 22 to M'ch 1	222.15	
M'ch 10.	Luella Nash Sten. work	4.80	
Apr. 30.	Telegrams	32.45	
" 29.	Trisler's supplies	2.50	
May 1.	D. M. Realty & Sec. Rent	35.00	
" 15.	Pay roll labor	27.50	
Feb. 13.	S. Davidson & Bros. Furniture	47.00	
	Forward	4,408.92	28,051.90

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	2. Accounts Payable: Forward			28,051.90
	9. General: Forward		4,408.92	
1911, Mar. 24.	S. Davidson & Bro. Furniture		69.70	
May 31.	Payroll Labor		27.50	
" "	" "		.30	
" 8.	Smith Premier Typ. Co. Supplies		7.12	
June 1.	D. M. Realty & Security Rent		35.00	
May 31.	Telegrams Postal Co		15.59	
" 27.	Woods Studio Photos		10.00	
June 15.	Payroll Labor		27.50	
" 17.	John A. Alvord services. Consultations $250 exps. $1.89		251.89	
" 30.	Payroll Labor		27.50	
" 30.	Expenses		.45	
July 1.	" G. I. Vincent to Phila. 6/4 to 7/1 1911		115.10	
May 29.	Std. Blue Print Co. blue prints		2.94	
July 1.	Hatton McCutcheon, Real Estate Expert, services		25.00	
" 1.	D. M. Realty & Security Co. Rent		35.00	
" 1.	Telegrams		42.54	
" 1.	Wilkinson Bros. & Co. 15,000 sheets 8½ x 11 paper		20.25	
" 15.	Payroll Labor		47.50	
" 18.	Jansen Haines' expenses		176.50	
June 29.	Callaghan & Co. Pub. Serv. Corp. 2 Vols		12.50	
July 15.	Pay roll Labor		2.00	
" 25.	Hatton McCutcheon, real estate expert, services		50.00	
" 31.	Pay roll Labor		48.50	
" 31.	Jansen Haines, expenses to Chicago $38.70, expenses in D. M. $76.40		115.10	
" 31.	Pay roll Labor		74.31	
" 31.	" "		36.90	

"	31.	Jansen Haines' Sundry expenses $179.75 and exps. to Chicago $55.00....	234.75	
"	11.	Chase & West one bookcase.....	39.00	
"	5.	Citizens' Elec. Co. 2—12" fans.....	27.00	
"	7.	" 1—12" fans.....	17.00	
"	11.	" 2—12" fans.....	27.00	
"	12.	" 1—16" fans.....	15.50	
"	13.	" 4—12" fans.....	54.00	
"	31.	D. M. Statny. Co. supplies.....	4.00	
"	24.	E. Side Carpenter Shop 7 window screens.....	9.60	
"	13.	Iowa Publishing Co. 6 maps.....	3.00	
"	20.	Lang Bros. 2 baskets.....	4.85	
"	8.	Midland Elec. Co. 1 reading lamp.....	5.00	
"	31.	McNamara & Kenworthy Co. supplies.....	17.80	
"	31.	Telegrams	32.85	
Aug.	1.	J. H. Welch Printing Co. supplies.....	11.75	
July	13.	The Blackstone 1 Vacuum Carafe.....	6.00	
		Forward.....	6,194.71	28,051.90

	2. Accounts Payable: Forward			28,051.90
	9. General: Forward		6,194.71	
1911, July 19.	Callaghan & Co. Pub. Serv. Cop		12.50	
" 8.	F. H. Flood & Co. 5 Dillon on Muncipal Corps		32.50	
" 12.	Geo. W. Nock Co. 4 Keys		.40	
" 21.	Wilkinson Bros. & Co. 15 A. A. Sheets paper		20.25	
Aug. 1.	D. M. Realty & Security Co. Rent		101.65	
" 15.	Payroll Labor		27.50	
" 12.	G. W. Curran expenses trip to Chicago		62.85	
July 8.	Telegrams		1.26	
Aug. 15.	Payroll labor		32.50	
" 1.	Chase & West desk $22.50, chair $18.00		40.50	
" 9.	Hatton McCutcheon, Agency services		32.00	
" 14.	H. M. Byllesby Co. services as expert witness on financing of public utility cos. $1.00 expenses $35.05		135.05	
" 1.	Dr. Eli Grimes, professional services		13.00	
" 1.	Dr. James T. Priestley		5.00	
" 26.	Geo. A. Green expenses		18.00	
" 31.	Payroll labor		27.50	
" 16.	W. F. Brodnax services as Engineer		225.00	
" 31.	Payroll labor		32.50	
" 31.	" "		45.28	
" 2.	Iowa Publishing Co. mtg. 2 maps		.85	
" 25.	Toll service		10.20	
" 31.	McNamara & Kenworthy Co. paper		5.10	

" 21 to 30.	Remington Teypewriter Co. paper	11.50	
" 11 to 24.	Smith Premier Typewriter Co. paper	16.42	
" 18 to 28.	Underwood Typewriter Co. Rental	3.00	
July 31.	Wood's Photo Studio Negatives and prints	17.50	
			7,124.52
			35,176.42
10. Storeroom: Material January 31, 1911		.74	
Expense Storeroom January "		.07	
" Stable " "		7.34	
" " July 31 "		7.55	
			15.70
11. J. G. White & Co.			
1911, July 25.	Exps. W. F. Brodnax July 3 to 25th, San Francisco to D. M. and return		224.50

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2054 DEFENDANTS' EXHIBIT No. 79.

10/14/11.

D. 79.

Capital City Gas Light Company.

Authorization of Improvements and Repairs.

Requisition No. 511. Date 11–13–1901.

Subject: Holder. No. 460.

9–23–1902.

Mr. E. G. Pratt, Mgr.

DEAR SIR: Your requisition of the above number has been received and the expenditure you recommend is approved by the Works Committee. You are hereby authorized to proceed with the work as follows:

To erect one 1,000,000 cu. ft. holder in steel tank, including inlet and outlet connections.

(Work to be under G. R. Roberts' Contract No. 52.)

Estimated Cost.

For the above ..... ——

Annual Estimate 1902.
(We will order.)

Amount authorized.

Compare this authorization with your requisition.
Work to be charged to account, Holder.
This account to be closed into, Improvement account.
(Signed) "THOS. S. GENAY,"
Chief Clerk General Sup't's Department.

Filed Apr. 5, 1912. Wm. C. McArthur, Clerk.

2055 Capital City Gas Light Company.

Authorization of Improvements and Repairs.

Requisition No. 544. Date 9–22–'02.
Subject: Governor. No. 467.

2–10–1903.

Mr. Jansen Haines, Mgr.

DEAR SIR: Your requisition of the above number has been received and the expenditure which you recommend is approved by

E BOUND
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the Works Committee. You are hereby authorized to proceed with the work as follows:

Enlarge works outlet and install new 4" street main governor. (Annual Estimate 1903.)

Estimated Cost.

For the above ..... ——

(Closed into G. J. Roberts' Contract No. 52.)

Amount authorized.

Compare this authorization with your Requisition.
Work to be charged into account—Governor.
This account to be closed into—G. J. Roberts' Contract No. 52. acct.

(Signed) "THOS. S. GENAY,"
Chief Clerk General Sup't's Department.

2056 & 2057 Capital City Gas Light Company.

Authorization of Improvements and Repairs.

Requisition No. 504. Date 11-13-1901.

Subject—Water Gas, Apparatus, etc. No. 439.

2-12-1902.

Mr. Jansen Haines, Mgr.

DEAR SIR: Your requisition of the above number has been received and the expenditure you recommend is approved by the Works Committee. You are hereby authorized to proceed with the work as follows:

To install one set of water gas apparatus, 8' 6", one 125 H. P. boiler, complete, an present house, increase oil storage by erecting one 100 M gal. tank and connections, also re-locate oil pumps in new isolated brick oil house.

(Annual Estimate 1902.)

Estimated Cost.

For the above ..... ——

(We will order.)

(Work to be done under G. R. Roberts' Contract No. 37.)

Amount Authorized.

Compare this authorization with your requisition.
Work to be charged to account—Water Gas, Apparatus, etc.
This account to be closed into—G. J. R. Contract No. 37 account.

Unsigned.
Executive Clerk.

Initials.

Form No. 222.

DES MOINES GAS COMPANY

DES MOINES, IOWA

Defendants Ex. No. 83
11/14/11.

To Blaise & Blaise.
City.

Order No. 5/602

DATE			ACCOUNT
1911. April 1	To services, taking testimony of witnesses on Feb.22-23-24-25-26-27 Mch 1 = 7 days,	56.00	
	To transcript Mr Lea's testimony, 106 pp.2 carbons,	42.40	
	To transcript Mr. Brodnax testimony 86 pp.2 carbons,	38.70	
	To transcript Mr. Baehr " 73 pp.2 carbons,	32.85	
	" transcript Mr. Hagenah " 62 pp.2 carbons	27.90	
	" transcript Mr. Moul " 54 pp.2 carbons,	24.30	$222.15 Rate Reg.Ex
			ASC WMcK

FILED
APR 5 1912
Wm C. McArthur
Clerk

PAID BY CHECK No 7743 MAY 18 1911 ON IOWA NATIONAL BANK

APPROVED:

CORRECT: G. I. Vincent MANAGER. W. B. Keffer. Engr. ASST. TREAS. S.

CORRECT: ..... PURCHASING AGENT.

PAYMENT APPROVED: ..... TREASURER.

RECEIVED May 23rd 1911 FROM DES MOINES GAS COMPANY

Two hundred twenty-two & 15/100 DOLLARS IN FULL FOR ABOVE BILL.

$ 222.15

Blaise & Blaise
Per J. P. Blaise.

2059

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2058 DEFENDANTS' EXHIBIT No. 82.

11-14-'11.

Filed Apr. 5, 1912. W. C. McArthur, Clerk.

4-11-1911.
G. H. C.

DES MOINES, IOWA, *April* 1, 1911. *190–*.

M Des Moines Gas Company, City, in Account with Blaise & Blaise, General Stenographers, 802 Fleming Bldg.

M Mutual Phone 573.

(478)

(1123)

O. K., J. H.
4-21-'11.

To services, taking testimony of witnesses on Feb. 22-23-24-25-26-27 M'ch 1—7 days								56.00
To transcript Mr. Lea's testimony, 106 pp. 2 carbons								42.40
"	"	Mr. Brodnax	"	86	"	"	"	38.70
"	"	Mr. Baehr	"	75	"	"	"	32.85
"	"	Mr. Hagenah	"	62	"	"	"	27.90
"	"	Mr. Moul	"	54	"	"	"	24.30
								$222.15

Rate Regulation Exp.
Received payment, (154)

(Here follows fac-simile, marked page 2059.)

2060–2167 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Clerk's Certificate to Part Three (3) of Transcript.

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the District Court of the United States for the Southern District of Iowa, and as successor in office of the Clerk of the Circuit Court of the United States for said District and State, hereby certify the foregoing, designated as part three of the transcript (Appellant's exhibits pages 1 to 894 inclusive; Appellees' exhibits pages 895 to 2167 inclusive; Appellant's exhibits consisting of 55 separate exhibits numbered 5-6-15-16-17-18-19-20-21-22-23-24-25-26-27-28-29-30-31-32-33-34-35-36-37-38-40-41-42-43-44-44A-45-46-47-56-59-64-65-65 A-69-72-73-77-83-84-85-86-87-88-89-90-91-92-and 93; Appellees' exhibits consisting of 51 separate exhibits numbered 2-3-5-6-8-9-10-11-18-22-23-24-(same as 41 of Appellant's) 25-26-27-28-29-30-31-33-34-38-39-40-41-42-43-44-48-51-53-54-59-67-68-69-74-75-76-77-78-79-81-82-83-84A-84B-84C-84D-84E- and 84F) to be a full, true and complete copy of all exhibits, save such as are read into the record and enumerated in the index to this transcript, as called for in the Appellant's præcipe and the Appellees' præcipe for a transcript in the cause numbered 71-M Des Moines Gas Company versus the City of Des Moines, Iowa, et al. lately pending in said District Court of the United States for the Southern District of Iowa as successor of the Circuit Court of the United States
2168 for said District and State, as full, true and complete as the originals thereof now on file and of record in my office in the City of Des Moines in said District. Appellant's exhibits Nos. 17, 18, and 19 (large maps) in separate package.

In testimony whereof, I have hereunto set my hand and affixed the seal of said Court at my office in the City of Des Moines in said District this 30th day of November A. D. 1912.

[Seal U. S. District Court, Southern District of Iowa.]

W. C. McARTHUR,
Clerk as Aforesaid.

2169 In the District Court of the United States for the Southern District of Iowa, Central Division.

No. 71-M. In Equity.

DES MOINES GAS COMPANY, Complainant,
vs.
CITY OF DES MOINES et al., Defendants.

Clerk's Certificate to Entire Record.

UNITED STATES OF AMERICA,
Southern District of Iowa, ss:

I, Wm. C. McArthur, Clerk of the District Court of the United States for the Southern District of Iowa and as successor in office of the Clerk of the Circuit Court of the United States for said District and State, hereby certify the foregoing, designated as parts, One, Two and Three, consisting of 7,720 pages, to be a full, true and complete copy of the record as designated in writing by the Appellant and Appellees in a cause lately pending in the District Court of the United States for the Southern District of Iowa, as successor of the Circuit Court of the United States for said District and State, numbered 71-M Equity, Central Division, entitled Des Moines Gas Company versus City of Des Moines, et al., as full, true and complete as the originals thereof, now on file and of record in my office in the City of Des Moines in said District.

I further certify that I transmit herewith as a part of said record the original Citation with acceptance of service thereof.

In testimony whereof, I hereunto set my hand and affix the seal of said Court at my office in the City of Des Moines in said District this 30th day of November A. D. 1912.

[Seal U. S. District Court, Southern District of Iowa.]

W. C. McARTHUR,
Clerk as Aforesaid.

Endorsed on cover: File No. 23,459. S. Iowa D. C. U. S. Term No. 397. Des Moines Gas Company, appellant, vs. City of Des Moines et al. Filed December 14, 1912. File No. 23,459.

Office Supreme Court, U. S.
FILED.
DEC 14 1912
JAMES H. McKENNEY,
CLERK.

IN THE

SUPREME COURT OF THE UNITED STATES

OCTOBER TERM, A. D. 1912.

NO. ~~804~~ 397 75

DES MOINES GAS COMPANY,
Appellant,
vs.
CITY OF DES MOINES, JAMES R. HANNA, JOHN MAC VICAR, CHARLES W. SCHRAMM, JOHN WESLEY ASH, ZELL G. ROE and ROBERT O. BRENNAN,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

APPLICATION FOR AN ORDER TO MAINTAIN THE STATUS QUO, AND TO ENJOIN THE DEFENDANTS FROM PUTTING INTO EFFECT THE ORDINANCE RATES IN CONTROVERSY, PENDING THIS APPEAL.

GEORGE H. CARR,
WILLIAM L. READ,
NATHANIEL T. GUERNSEY,
Solicitors for Des Moines Gas Company.

Geo. Hornstein Co., Printer, Chicago.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1912.

NO.....

DES MOINES GAS COMPANY,
Appellant,
vs.
CITY OF DES MOINES, JAMES R. HANNA, JOHN MAC VICAR, CHARLES W. SCHRAMM, JOHN WESLEY ASH, ZELL G. ROE and ROBERT O. BRENNAN,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

Application for an order to maintain the status quo, and to enjoin the defendants from putting into effect the ordinance rates in controversy, pending this appeal.

Now comes the Des Moines Gas Company, appellant, and makes this, its application for an order which shall maintain the *status quo* pending this appeal by enjoining and restraining the appellees from attempting to put into effect or to enforce, pending this appeal, the rate for gas sought to be established by the ordinance in controversy in this suit.

In support hereof the appellant states the following reasons and facts:

First: The Des Moines Gas Company, hereinafter referred to as the Company, is a corporation created and existing under the laws of the State of Iowa; and is, and was at all of the time hereinafter mentioned, the owner of a gas plant in the City of Des Moines, Iowa, and engaged in the business of manufacturing, distributing and selling gas for general use in said city.

Second: That the appellee, the said City of Des Moines, hereinafter referred to as the City, is and was at all of the times hereinafter mentioned, a municipal corporation created and existing under the laws of the State of Iowa; and was in the year 1910 and still is authorized by the laws of said State to regulate and fix the price at which gas shall be sold in said City.

Third: That during the years 1906 to 1910 inclusive the Company charged for the gas manufactured and sold by it in said City at the net rate of $1.00 per 1,000 cubic feet.

Fourth: **December 27, 1910**, there was introduced in the council of said City an ordinance fixing the price to be charged for gas sold in said City at 90 cents per 1,000 cubic feet on and after January 1, 1911, which ordinance required the Company to also pay to the City a license or occupation fee of 2 per cent. of its gross receipts, and provided severe penalties for its violation.

December 27, 1910, the day it was introduced, said ordinance was passed by said council, and approved

by the mayor of the City. A copy of said ordinance is found at page 129 of the special master's report and is printed commencing at page 1 of the appendix hereto.

December 29, 1910, the appellant filed its bill in the United States Circuit Court for the Southern District of Iowa (by operation of law the suit was later transferred to the United States District Court for the said district), alleging that the enforcement of the rate fixed by said ordinance would confiscate its property, and would result in depriving it of its property without due process of law and in denying it the equal protection of the laws, setting up and claiming the benefits and immunities of the Fourteenth Amendment to the Constitution of the United States, and praying that the said ordinance be decreed void, and that the City and its officers and agents be enjoined from enforcing it.

December 31, 1910, upon the Company's application the court below entered an order restraining the enforcement of the ordinance in controversy pending an application for a temporary injunction.

January 6, 1911, upon the Company's application, the court below granted a temporary injunction, restraining the enforcement of the ordinance in controversy, and providing for charging the old rates pending the final disposition of the suit. The Company filed the bond provided for and continued to charge the old rates. A copy of this order is set out in the appendix hereto at page 4.

May 16, 1911, the case was referred to Honorable Robert Sloan, special master, to hear the evidence and report his conclusions of law and fact.

April 5, 1912, the special master filed his report, a certified copy of which is filed herewith, which contained among others the following findings of fact and conclusions of law:

(a) That the cost of reproducing the physical property of the Company used and useful in its business of manufacturing and distributing gas in the City (report, p. 39), after deducting depreciation, was $2,240,928

(b) That this included on account of appreciation in the value of mains because of paving over them after they were laid, $140,000, which should be disallowed (report, pp. 40-42), leaving as what the special master called the physical value..... $2,100,928

(c) That the element of "going value," defined by the special master as "that enhancement which results from a well developed and paying business" (report, p. 121, line 19) amounted to (report, p. 44, line 26) ..... $ 300,000

Total in round figures was (report, p. 115) $2,400,000

(d) That the Company is entitled to earn a return of 8 per cent. upon the value of its property, used and useful in its business of manufacturing and distributing gas, and that this would be relatively less, in view of the differences in local conditions, than the return of six (6) per cent. approved by this court in *Willcox* v. *Consolidated Gas Company*, 212 U. S., 19, saying in this connection (report, p. 64, line 19):

> "And really, under the circumstances, six per cent. of return therein would be a greater return accordingly than eight per cent. in the plant and business of the complainant herein."

(e) That at the proposed 90 cent rate the Company would not, according to the estimates of the special master, earn a fair return upon its investment during either of the years 1911, 1912, 1913 or 1914.

(f) In discussing the claim that a decrease of 10 cents per 1,000 cubic feet would increase the volume of the sales the special master said (report, page 88):

> "While a slight increase in consumption may result from a reduction of ten cents per M. C. F. in price, in my judgment, it is much more apt to result in an increase of customers, and the table in Schedule 4 very clearly shows it, in the increase thereof, in proportion to the inhabitants of the city, as shown by the first column on the right of the table."

He says further (report, p. 89):

> "It is clear to me that in the future the annual gain will largely depend upon the increase in population, and the erection of new residences, for their accommodation and consequently the extension of mains to accommodate them."

(g) That the Company was bound to establish each material matter of fact beyond a reasonable doubt.

(h) That (report, p. 119, line 31)

> "Should the court hold that the $140,000 for taking up and replacing mains [paving] where none existed at the time the mains were laid, then a decree for the complainant would be imperative should 'going value' be included in the basis for a return."

(i) That this court in *Cedar Rapids Gas Company* v. *Cedar Rapids*, 223 U. S., 655, held that

> "going value should not be considered in determining the basis upon which the complainant is entitled to have its return reckoned." (Report, p. 121, lines 1 to 23.)

(j) That the bill should be dismissed without prejudice as in the *Consolidated Gas Company* case. (Report, p. 121, line 29.)

August 21, 1912, the court below filed an opinion overruling the exceptions of the Company and the City to this report, and at the same time filed a final decree in the case, which dismissed the bill "with prejudice." A copy of this opinion is printed in the appendix beginning at page 9, and a copy of the decree beginning at page 22. Counsel were not afforded any opportunity to make any suggestions as to the form of this decree before it was filed.

October 8, 1912, the Company presented to the court below a request that the decree of August 21, 1912, be so modified as upon proper terms to relieve the Company, pending this appeal, from the obligation to repay to its consumers the amounts collected from them for gas after January 1, 1911, in excess of the 90 cent rate provided by the ordinance in controversy. A copy of this application is printed in the appendix commencing at page 24.

That said application did not include a request that the decree be further modified so as to permit the Company upon proper terms to continue to charge the $1.00 rate, pending this appeal, because it was believed by counsel for the Company that such

a request would be futile; and that no request for such a modification of its decree has been made to, or passed upon, by the court below.

October 10, 1912, the court below, the term at which said decree of August 21, 1911, was entered not having ended, entered its final decree in this suit as follows:

IN THE DISTRICT COURT OF THE UNITED STATES,
SOUTHERN DISTRICT OF IOWA,
CENTRAL DIVISION.

Des Moines Gas Company, *Complainant*,
against
City of Des Moines and others, *Defendants*.
No. 71-M.
Decree.

Now on this October 10th, 1912, the court being fully advised, orders and decrees:

The decree herein filed August 21st, 1912, be and the same is hereby vacated and in lieu thereof the following is ordered, adjudged and decreed:

1. The bill of complaint herein is dismissed with prejudice.

2. The complainant will pay the costs herein made to be taxed by the Clerk, which will include moneys paid by defendants on account of stenographers and typewriters, and moneys paid by defendants on account of Master's compensation and

expenses, for which, after forty (40) days, a writ of execution will issue.

3. The restraining order and temporary injunction heretofore issued herein are both vacated; such vacation to be effective on and after November 15th, 1912.

4. At any time on and after three years from this date, complainant, its successors or assigns, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable.

5. If complainant elects to appeal from this decree or any part thereof, a *supersedeas* bond properly conditioned in the penal sum of five thousand ($5,000) dollars, with ample surety, will be approved; said approval to be by the Judge of this court; said bond when thus approved will stay the said writ of execution as to said costs as covered by paragraph 2 of this decree.

6. It is further decreed that the orders heretofore made as to refund of ten (10) cents per thousand feet of gas in excess of the rate fixed by the ordinance herein in controversy be superseded, providing the complainant file a bond for that purpose in the penal sum of one hundred and fifty thousand ($150,000) dollars, properly conditioned with ample surety, to be approved by this court or a Judge thereof.

7. Any other *supersedeas* than those provided for in paragraphs 5 and 6 of this decree is denied and

shall only be allowed by the Supreme Court of the United States or a Justice thereof.

8. In the event an appeal is not taken perfected and filed within sixty (60) days of the date hereof, or if said appeal is taken and this decree should be affirmed as to said refund as set forth in paragraph 6 of this decree, then the city and all parties claiming such refunds shall present such claims to this court within such time as will be hereafter fixed for allowance. And said city and all defendants and the officers and agents of such city and all persons are prohibited from presenting or urging the same in any other court than this court. And for such hearings this court retains jurisdiction over the parties and the subject matters. Each party excepts to all the foregoing insofar as adverse.

Done this October 10th, 1912.

(Signed) SMITH MCPHERSON,
Judge.

(Endorsed)

Filed October 10, 1912.

WM. C. MCARTHUR, *Clerk.*

UNITED STATES OF AMERICA,
SOUTHERN DISTRICT OF IOWA. } ss.

I, Wm. C. McArthur, Clerk of the District Court of the United States for the Southern District of Iowa, hereby certify that the above and foregoing is a full, true and complete copy of the decree filed October 10, 1912, in the above entitled cause, as full, true and complete as the original thereof now on file and of record in my office in the City of Des Moines, in said district.

IN WITNESS WHEREOF, I hereunto set my hand and affix the seal of said court this 4th day of November A. D. 1912.

WM. C. MCARTHUR,
Clerk as aforesaid.

(Seal)

Fifth: That the evidence presented to the special master showed the results of the operation of the Company's property for about twenty-five years preceding the hearing, and showed in minute detail the operating expenses and revenues for the five years preceding January 1, 1911.

That the special master to secure a basis for his estimates as to the results of the future operations of the Company's property made certain deductions from its actual operating costs.

These adjustments cover, speaking generally, three items: (a) rate regulation expense; (b) donations to various public organizations; (c) certain salaries paid to general officers of the Company residing in Philadelphia. It was the contention of the Company that these items should be allowed, the rate regulation expense to be spread over a period of years, so as to afford an average as a basis for future estimates; but this contention was overruled by the special master, and by the court below. It is our purpose merely to call attention to the fact that none of these items of operating costs are included in such costs taken by the special master as the basis of his estimates for the future.

The operating costs used by the special master in making his estimates of the results of the future operations of the Company were (1) the average actual operating costs of the Company for the five years preceding January 1, 1911, less the adjustments aforesaid, giving a net revenue of 20.75 cents per 1,000 cubic feet; (2) the actual operating costs for the first ten months of 1911, less the adjustments aforesaid, giving a net revenue of 21.60 cents per

1,000 cubic feet; (3) the actual operating costs of 1910, less the adjustments aforesaid, giving a net revenue of 20.35 cents per 1,000 cubic feet; and (4) the lowest actual operating costs of any of the preceding five years, giving a net revenue of 22.90 cents per 1,000 cubic feet. This estimated net revenue is in each instance based on the proposed 90 cent rate.

The special master, as a further basis for the determination of said future results, estimated the probable future sales of the Company for each of the years 1911 to 1914 inclusive. Bearing upon this question there was shown by the proof the detailed history of the operations of the plant from the year 1886 down to the date of the hearing. A part of this information is shown by "Exhibit E," hereto, giving the population of the city, the annual sales, the annual increases in sales, the number of meters, the sales per meter, the sales per capita and the population per meter for each of the years 1895 to 1910 inclusive. These statistics afford a basis for determining the effect upon the volume of sales of decreases in rates, as, during this period the rate was decreased from $1.30 to $1.00 per 1,000 cubic feet, by gradual steps.

The significant things appearing from Exhibit E, as to future sales, are (1) that the sales per meter have not substantially increased either with decreases in rates or with increase in population; but (2) that the population per meter has radically decreased, showing that the increased volume of sales has been due to new consumers and not to increased sales to old consumers.

The population of 4.50 per meter shows substantially one meter in every family and affords the

basis for the special master's statement that substantial increases in sales must in the future come from increases in population.

The special master, however, in making his estimates, assumed normal increases in sales, as shown by the third column in Exhibit A, and all of his estimates are based upon these, or substantially these, figures as to sales. The diagram, Exhibit I, shows the special master's estimates of future sales graphically. The years appear at the bottom of the diagram, and the volume of sales is represented by the perpendicular line at the right. The diagonal line represents the actual sales from 1895 to 1910 inclusive, and its projection as a broken line, marked "master's estimate," shows the sales as estimated by the special master for the years 1911 to 1914 inclusive.

The detailed estimates of the special master, supporting our general statement (division fourth, section 2 *supra*), that he found that the 90 cent rate would not afford a fair return, with reference to the pages and lines in his report, are as follows:

(1) Estimates based upon a net revenue of 20.75 cents per 1,000 cubic feet of gas sold, founded upon the results of the average actual operating costs for five years, adjusted by the special master.

RATE	NET RETURN	DEFICIT	
.90	$108,208.50 (l. 6, p. 75)	$83,791.50	
.90	120,350.00 (l. 27, p. 107)	72,799.00	(l. 30, p. 107)
.90	125,537.50 (l. 11, p. 109)	77,192.56	(l. 12, p. 109)
.90	132,385.00 (l. 18, p. 110)	84,238.00	(l. 19, p. 110)

(2) Estimates based upon a net revenue of 21.60 cents per 1,000 cubic feet of gas sold, founded upon the actual operating costs for the first ten months of the year 1911, adjusted by the special master.

YEAR	RATE	NET RETURN	DEFICIT	
1910	.90	$114,912.00 (l. 14, p. 75)	$77,088.00	
1911	.90	118,968.16 (l. 22, p. 106)	73,031.84	(l. 24, p. 10
1912	.90	125,280.00 (l. 21, p. 107)	67,869.50	(l. 23, p. 10
1913	.90	130,680.00 (l. 8, p. 109)	72,050.00	(l. 10, p. 10
1914	.90	137,808.00 (l. 8, p. 110)	78,815.20	(l. 10, p. 11

(3) Estimates based upon a net revenue of 20.35 cents per 1,000 cubic feet of gas sold, founded upon the actual operating cost of the year 1910, adjusted by the special master.

YEAR	RATE	NET RETURN	DEFICIT	
1910	1.00	$168,327.20 (l. 13, p. 105)	$27,272.80	(l. 17, p. 10
1911	.90	106,122.45 (l. 32, p. 74)	85,877.55	
1912	.90	118,230.00 (l. 12, p. 108)	75,119.50	(l. 13, p. 10
1913	.90	123,117.50 (l. 13, p. 109)	79,612.56	(l. 14, p. 10
1914	.90	129,833.00 (l. 12, p. 110)	86,790.20	(l. 13, p. 11

(4) Estimates based upon a net revenue of 22.90 cents per 1,000 cubic feet of gas sold, founded upon the operating costs of the lowest one of the five years preceding the date when the ordinance was to become effective.

YEAR	RATE	NET RETURN	DEFICIT	
1912	.90	$132,820.00 (l. 8, p. 108)	$60,329.50	(l. 9, p. 10
1913	.90	138,545.00 (l. 15, p. 109)	64,185.06	(l. 16, p. 1
1914	.90	146,102.00 (l. 15, p. 110)	70,521.20	(l. 16, p. 1

If the appellant is entitled to no return upon the element in the value of its property usually known as "going value" or "going concern value," each of the foregoing deficits should be reduced $24,000.

COPY BOUND CLO

Note the special master's conclusion in estimate 3 supra as to the year 1910, where he finds that with the actual sales, and actual operating expenses, less his deductions, that is, with no factor estimated, the Company at the $1.00 rate failed to earn a fair return.

Sixth: Exhibits A, B, C and D, hereto attached, are computations based upon the four conclusions of the master above set out as to operating cost, his estimated future sales and the net return in cents per 1,000 cubic feet of gas, which would be realized at the 90 cent rate. Each of these exhibits bases the computation upon three valuations, founded upon the values determined by the master as above set out. These values are $2,540,000, which includes appreciation in the value of mains and services on account of paving over them; $2,400,000, which excludes the paving item; and $2,100,000, which excludes both the paving item and going value.

The significant things about these computations are (a) that in no instance does it appear that the property will earn a fair return; (b) that the amount of the deficit increases in the future annually, beginning with the year 1912, just as soon as increased investment, necessitated by increased sales, is taken into account by the special master in making his estimates; (c) that the per cent. of the total property which would earn no return, and which would therefore be confiscated, is large, ranging from a minimum of about 21½ per cent. to a maximum of over 47 per cent.

Looking at this from another aspect, Exhibit F shows, in the first column, the date; in the second

OSE IN CENTER

column the volume of sales necessary to earn a fair return upon the various valuations; in the third column, the sales as estimated by the special master; and in the final column, how much these sales would fall short of affording the revenue necessary to constitute a fair return. **This shows that to afford a fair return, the volume of sales estimated by the special master must be increased, upon the average, more than 50 per cent.**

If the matter be approached for a third point of view the same result follows. It is not alone necessary, in order to earn a fair return, to manufacture gas; it is necessary also to sell it; and to render such sales possible there must exist the population necessary to consume the gas sold.

Exhibit G, hereto attached, shows the population which would be requisite in order to furnish consumers for enough gas to earn a fair return. The computation is based on the sales per meter for the year 1910, 26,960 cubic feet, and also upon sales per meter of 28,080 cubic feet, which is obtained by adding to the 26,960 cubic feet, 1,120 cubic feet, the amount the sales per meter increased during the five-year period after January 1, 1896, when the price of gas was reduced 10 cents per 1,000 cubic feet, to $1.00.

This table shows that while the actual population of Des Moines in 1910 was 88,900 (Exhibit E), to earn a fair return at the lowest valuation, $2,100,000, estimating an increase in sales per meter of 1,120 cubic feet per annum, there would have been required in 1911 a population of 124,605; while if the paving item and going value were included, the nec-

essary population would be 150,769. The method adopted in this computation is shown in Exhibit H in somewhat greater detail.

Exhibit I shows graphically the annual sales for the last fifteen years preceding January 1, 1911, the future sales as estimated by the special master, and the sales which would be necessary to earn a fair return upon the basis of his findings, showing conclusively that no normal increase in sales could produce this result.

In a similar manner, Exhibit J shows graphically the population since 1895, what would be a normal increase in population, and the increased population requisite in order to consume enough gas to earn a fair return. It is obvious at a glance that no such increase in either sales or population is within the range of human probabilities.

Seventh: There has been filed herewith the affidavit of Mr. Haines, the president of the Company, a copy of which is, for convenience, printed in the appendix hereto, commencing at page ....

This affidavit shows that for the first nine months of 1911 the actual cost of producing and distributing gas, including depreciation as fixed by the special master (report, p. 94) was 83.08 cents per 1,000 cubic feet of gas sold.

This includes the disputed item of rate regulation (the other disputed items amount to less than three cents per 1,000 cubic feet) which the special master disallowed. Deducting this item, this affidavit shows the most recent operating costs to be 74.67 cents, which at a 90-cent rate would leave a

net revenue of only 15.33 cents per 1,000 cubic feet of sales.

This affidavit shows further no abnormal increase in sales, the increase of 1911 over 1910 having been 4.35 per cent., and of the first nine months of 1912 over the corresponding period of 1911, only 2.29 per cent.

As compared with actual sales of 1911, 555,150,057 cubic feet, the sales which would be required to earn 8 per cent. and 6 per cent. on the several valuations are:

VALUATION	NECESSARY TO EARN 8 PER CENT.
$2,540,000	1,325,506,000 cubic feet
2,400,000	1,252,446,000 cubic feet
2,100,000	1,095,890,000 cubic feet

VALUATION	NECESSARY TO EARN 6 PER CENT.
$2,540,000	994,129,000 cubic feet
2,400,000	939,335,000 cubic feet
2,100,000	821,918,000 cubic feet

To have earned 6 per cent. on the lowest valuation, in the year 1911, would have required sales 1.48 times the actual sales for that year.

Reversing the process, the actual sales of 1911 would have earned upon the several valuations returns of 3.3 per cent., 3.5 per cent., and 4.0 per cent., the highest being barely half what the special master held the Company entitled to receive.

On top of this, an increase in the price of oil has added 5.178 cents per thousand feet to the manufacturing costs, an amount which will decrease this net revenue of 15.33 cents per 1,000 cubic feet more than one-third.

Eighth: To grant the relief asked for will not injure the public; to refuse it will irreparably injure the appellant. If the *status quo* is maintained pending the disposition of this appeal, as shown by the affidavit of Mr. Haines, each consumer will be required to pay annually $2.64 more than if the contested ordinance were in force. The bills are paid monthly so that the average excess per month would be 22 cents. This would be a burden to no one and its repayment can be absolutely secured by a bond in a proper amount; on the other hand, if the Company is successful upon this appeal it can collect only part of these back bills, and their collection will entail extraordinary expense, so that it is believed, as shown by the affidavit of Mr. Haines, its net permanent loss will be not less than $30,000 per annum.

Ninth: It, therefore, clearly appears:

(a) That the facts found by the special master point clearly to the conclusion that the 90-cent rate will not afford appellant a fair return.

(b) That the subsequent experience of the Company confirms this conclusion, and shows that the actual net revenue is only about 75 per cent. of the special master's estimates.

(c) That to maintain the *status quo* will not injure the public, while not to maintain it will work great and irreparable injury to the Company. Under these circumstances the court will, by proper order, maintain the *status quo* pending an appeal. *Omaha and Council Bluffs Street Railway Company et al.* v. *Interstate Commerce Commission et al.*, 222 U. S., 582, and cases there cited.

Wherefore, the appellant prays this court to grant an appropriate order enjoining and restraining the City of Des Moines, its officers, agents and employes, pending the determination of this appeal, from enforcing or attempting to enforce the ordinance in controversy in this suit, upon the giving of such bond, and upon such terms as this court shall order and direct in the premises.

DES MOINES GAS COMPANY,

By GEORGE H. CARR,
WILLIAM L. READ,
NATHANIEL T. GUERNSEY,
Its Solicitors.

STATE OF IOWA, }
COUNTY OF POLK. } ss.

I, George H. Carr, being first duly sworn, depose and say that I am one of the solicitors for the appellant in this suit, and have been such solicitor ever since the commencement of this suit. I further state that the matters of fact stated in the foregoing application are true, and that the additional matters therein stated as upon information and belief and by way of argument and inducement I believe to be true.

Geo. H. Carr

Subscribed and sworn to before me this 23rd day of November, 1912.

Orlando M. Brockett
Notary Public for Polk County, Iowa.

Notarial Seal

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FOR

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APPENDIX.

(Ordinance of December 27, 1910.)

ORDINANCE NO. 1767.

AN ORDINANCE to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the city in supplying or distributing such gas, and prescribing penalties for a violation thereof.

Be It Ordained by the City Council of Des Moines:

Section 1.—From and after the first day of January, A. D. 1911, the rate to be charged and collected for gas by any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, is hereby fixed as follows, to-wit: Ninety (90) cents for each thousand cubic feet.

Sec. 2.—If any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, shall reduce the price of gas to its patrons below the priced fixed in this ordinance, then any such person, firm or corporation shall not charge any person or persons for gas a price in excess of that which said person, firm or corporation has charged any other person. The provisions of this section shall not be construed to prohibit special contracts for lower rates to large consumers.

SEC. 3.—Any person, firm or corporation using the streets, highways, avenues, alleys or public places of said city in supplying or distributing gas shall pay to the City Treasurer for the use of said City of Des Moines, as a license or occupation fee, for each year that the streets, highways, avenues, alleys or public places of said city are used in supplying or distributing gas, beginning January, A. D. 1911, two (2) per cent of the gross receipts for gas sold during such year; the same to be paid semi-annually and within thirty (30) days after the expiration of the preceding six (6) months.

SEC. 4.—Any person, firm or corporation supplying or distributing gas to said City of Des Moines or its inhabitants, shall furnish gas of not less than twenty-two (22) candle power.

SEC. 5.—Nothing in this ordinance contained shall ever be construed to in any manner recognize any franchise or other rights claimed by any person, firm or corporation to use the streets, highways, alleys, avenues or public places of said city for the purpose of laying or maintaining mains and pipes in supplying or distributing gas to said city or its inhabitants.

SEC. 6.—Any person, firm or corporation supplying or distributing gas to said City of Des Moines, or its inhabitants, or any officer, agent, collector or employe of such person, firm or corporation, who shall charge, demand, collect or receive any rate or compensation for gas supplied or distributed to said City of Des Moines, or to any inhabitant thereof, in excess of the rate fixed by this ordinance, or any

such person, firm or corporation or officer thereof failing to pay the license fee provided for herein, shall be deemed guilty of a misdemeanor and upon conviction thereof shall be punished by a fine in a sum not exceeding one hundred dollars ($100.00), or by imprisonment in the city jail for a period not exceeding thirty (30) days.

SEC. 7.—All ordinances or parts of ordinances in conflict herewith are hereby repealed.

SEC. 8.—This ordinance being deemed urgent for the immediate preservation of the public peace, health and safety, shall be in full force and effect from and after the first day of January, A. D. 1911, and after its passage and publication as provided by law.

Passed December 27, 1910.

Signed December 27, 1910.

JAMES R. HANNA, *Mayor.*

Attest: NEAL JONES, *City Clerk.*

I, Neal Jones, City Clerk of the City of Des Moines, hereby certify that the above and foregoing is a true copy of an ordinance passed by the City Council of said City at a meeting held December 27, 1910, signed by the Mayor December 27, 1910, duly recorded and published as provided by law, February 4, 1911.

NEAL JONES, *City Clerk.*

PRELIMINARY INJUNCTION.

IN THE CIRCUIT COURT OF THE UNITED STATES,
SOUTHERN DISTRICT OF IOWA,
CENTRAL DIVISION.

Des Moines Gas Company, *Complainant*, *vs.* The City of Des Moines, James R. Hanna, John MacVicar, C. W. Schramm, J. W. Ash, Zell G. Roe, R. O. Brennan, *Defendants.*	#71-M Order.

This cause coming on for hearing upon the application of the complainant for a preliminary writ of injunction pursuant to the order of the court heretofore made, notice of which hearing was duly given as required by said order, and the parties now appearing by their solicitors and being heard upon said application, and it appearing that cause exists for the granting of the writ of injunction pending the final hearing of this cause:

It is therefore ordered, adjudged and decreed that the restraining order heretofore granted herein be continued in full force and effect upon a bond being given by the complainant within ten days from this date in the penal sum of one hundred thousand dollars, with sureties to the approval of the Clerk of this court, conditioned as hereinafter provided.

That upon the filing and approval of said bond a writ of temporary injunction shall issue herein as prayed, restraining and enjoining the defendant, the City of Des Moines, and each of the other defendants and their successors in office, from putting into effect or in any wise enforcing or attempting to enforce the provisions of the ordinance referred to in the bill of complaint passed by the city council of the City of Des Moines on the 27th day of December, 1910, being an ordinance entitled

"An ordinance to fix the price of gas supplied or distributed to the City of Des Moines, or its inhabitants, and to prescribe the payment of a license or occupation fee by any person, firm or corporation occupying or using the streets, highways, avenues, alleys or public places of the city in supplying or distributing such gas, and prescribing penalties for the violation thereof,"

and that said writ remain in force until the further orders of this court.

To the end that the rights of the respective parties may be and remain in *statu quo* pending the final hearing, it is further ordered, complainant consenting thereto, that until the further orders of the court in the premises it shall continue the manufacture, sale and distribution of gas in the City of Des Moines under and in accordance with the provisions of the ordinances of the City of Des Moines in effect on the 27th day of December, 1910, prior to the passage of the ordinance on December 27th, 1910, above referred to by title and date of passage. That it shall be permitted to charge and receive for gas sold and distributed by it at the rate of one

dollar and ten cents per thousand cubic feet, provided that on all bills paid on or before the 15th day of the month following the month in which the gas was used, a discount of ten cents per thousand cubic feet shall be allowed, and shall continue the payment to the city of the two per cent. license fee for use of streets in distributing gas provided in the ordinances of the city prior to the passage of the said ordinance of December 27th, 1910, but in the event the said ordinance of December 27th, 1910, is held valid, then on final decree the amounts of license fee from January 1st, 1911, shall be adjusted on the basis of said ordinance. Provided, however, that in the event that it shall be determined by the final decree in this cause that said ordinance of December 27, 1910, is valid, that complainant shall refund on demand to the persons by whom payment was made, all sums of money collected by it for gas sold and delivered from and after the first day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910. That the bond required to be given by complainant shall, in addition to the usual provisions of such bonds, be conditioned for the performance of the obligations hereby imposed upon the complainant.

It is further ordered that defendants' demurrer to the complainant's bill of complaint is overruled *pro forma* and without passing upon the merits of the questions thereby presented. To the end that a speedy determination of this controversy may be had, it is further ordered, by and with the consent of both parties, that the defendants shall file answer to the bill of complaint as amended by the first day

of February, 1911, and complainant shall plead thereto within five days thereafter.

It is further ordered that this cause be referred to a special master to be later appointed to take the evidence and report his findings of fact and conclusions of law. The taking of said testimony to be begun at Des Moines on the first day of March, 1911, and continue with all reasonable diligence until completed. The master shall file his report containing his findings of fact and conclusions of law thirty days prior to the first day of the May, 1911, session of this court at Des Moines.

Signed this 6th day of January, 1911.

(Signed) SMITH MCPHERSON, *Judge*.

(Endorsed)

Filed Jan. 6, 1911.

WM. C. MCARTHUR, *Clerk*.

UNITED STATES OF AMERICA, }
SOUTHERN DISTRICT OF IOWA. } ss.

I, Wm. C. McArthur, Clerk of the District Court of the United States for the Southern District of Iowa, hereby certify that as successor of the Clerk of the Circuit Court of the United States for the Southern District of Iowa, I have in my custody and control the files, records and proceedings of said former Circuit Court of the United States for the Southern District of Iowa, and that the foregoing is a full, true and complete copy of the order continuing in force the restraining order heretofore granted with the condition that a bond be given in the sum of one hundred thousand dollars to be approved

by the Clerk of the court, as full, true and complete as the original thereof now on file and of record in my office in the City of Des Moines, in said District.

IN WITNESS WHEREOF, I hereunto set my hand and affix the seal of said court this 4th day of November, A. D. 1912.

W. C. MCARTHUR,
Clerk as aforesaid.

(Seal.)

OPINION OF AUGUST 21, 1912.

In the District Court of the United States,
Southern District of Iowa,
Central Division.

Des Moines Gas Company, *Complainant*,
vs.
City of Des Moines and others, *Defendants*.
No. 71-M.

Mr. Geo. H. Carr, Mr. W. L. Read, Mr. N. T. Guernsey, for complainant.

Mr. Robert Brennan, Mr. H. W. Byers, Mr. E. C. Carlson, for defendants.

Opinion.

Smith McPherson, Judge.

A gas plant for lighting purposes was established in Des Moines a number of years ago, and now and for several years has been owned by complainant. At one time the rates were $1.30 per thousand; then $1.25; then $1.20; $1.15; $1.10, and finally $1.00. The City Council, by ordinance of December 27, 1910, fixed the rate at 90 cents. Then this action was brought to enjoin the enforcement of the ordinance for the reason, as is alleged, that a 90-cent rate will not be remunerative.

The case was referred to Robert E. Sloan as spe-

cial master, to take the evidence, reduce it to writing, and report the same to the court, together with his findings of fact and conclusions of law.

It is most gratifying to the court to learn that counsel on both sides agree that learning, patience, fairness and all those qualifications a Master in Chancery should possess, are evidenced by nearly one year of work by Judge Sloan in this case. And the report of the master now pending on exceptions fully warrants the correctness of the compliments of counsel as respects the work and report of the master. The court deems it appropriate to make of record the statement that the administration of justice has been furthered by the untiring industry of the master, whose record in this case is in keeping with his long time service as an Iowa Judge.

While counsel on both sides and the court unite on the foregoing, no one means to say that the report of the master is not subject to criticism and exceptions. Neither party is satisfied with all of his findings. But the real test of judicial action is not in the fact that a litigant is not satisfied, nor in the fact that a tribunal in proceedings to review may otherwise conclude.

I deem it appropriate to call attention to another phase of this litigation. The ordinance was adopted within a few minutes from its introduction. Quite likely it had been considered by the members in their individual capacities. But in open session it received but little consideration, and without the presence of any one for the Gas Company. And every member voting to reduce the earnings had a direct personal and moneyed interest in thus reduc-

ing the rates. If a Judge were to so act, his acts would be absolutely void, because of the long time maxim, "No man can be judge in his own cause." And this ought to apply to those who act in an administrative or legislative capacity. This litigation has cost both the Gas Company and city extravagantly large sums, most of which cannot be taxed as costs, nor recovered back by the party successful in the end. Much of this kind of litigation, and practically all of the expense would be avoided if Iowa, like so many of the other, including some neighboring states, had an impartial and city non-resident commission or tribunal with power to fix these rates at a public hearing, all interested parties present, with the tribunal selecting its own engineers, auditors and accountants. Too often we have selfish, partisan, prejudiced and unreliable experts engaged for weeks at a time, at $100.00 or more and expenses per day, exaggerating their importance and making the successful party in fact a loser. With all of our boasted advancement, Iowa is a laggard in this matter, and will continue as such until these rate makings are taken from the power of city councils. Appeals to the courts will seldom be taken from the findings of such a tribunal.

But at present, the city councils have the duty and power to fix rates. And when rates are thus fixed by them, there is a presumption, greater or less according to the character and methods of their work that such rates are remunerative. And in any event the corporation whose rates are reduced has the burden to show that the rates thus fixed are not

remunerative, failing in which the rates must be observed and enforced.

And this was the matter referred to the master. He reports that a 90-cent rate is sufficiently high for a sufficient return to the Gas Company. The order appointing Judge Sloan required him to take all the testimony, including exhibits, return the same to the court, and make findings of fact with his conclusions of law. All these he has done. Both the City and the Gas Company have filed exceptions to the report.

In many cases courts themselves have heard the rate cases under 67 of General Equity Rules as amended. But in districts like this, with but a single Judge, the time would all be devoted to such cases, with other litigation at a standstill. And the Supreme Court has said that it is a seemly and orderly and commendable course to refer such cases to a master. *R. R.* v. *Tompkins,* 176 U. S., 167; *Lincoln Gas Co.* v. *Lincoln,* 223 U. S., 349. And in case of such a reference the report of the master stands for something substantial, and something besides recommendations. His conclusions have every reasonable presumption in their favor, and are not to be set aside or modified unless there clearly appears to have been error or mistake on his part. *Camden* v. *Stuart,* 144 U. S., 104, *119,* and cases therein cited.

So that it is incumbent on such party to make it clearly appear that the report of the master is erroneous as respects the matters covered by exceptions. The City has filed several exceptions to the report; largely on questions of fact. But they were not argued orally, nor by brief, and the alleged er-

rors are not made clearly to appear. Every of said exceptions of the City is denied.

There are some propositions now so firmly established by the courts as not to be longer within the limites of debate.

The net earnings according to the duration of the franchise, the earning power of moneys in the vicinity, the hazards, moral and physical and otherwise, should vary from four to eight per cent. beside that set aside for depreciation and maintenance. But there is and can be no rigid or inflexible rule as to the per cent. to be thus earned. *Stanislaus County* v. *San Joaquin Company*, 192 U. S., 201, *216; Knoxville* v. *Knoxville Water Company*, 212 U. S., 1; *Wilcox* v. *Consolidated Gas Co.*, 212 U. S., 19; *Railway Commission* v. *Cumberland Telephone Company*, 212 U. S., 414; *San Diego Land Company* v. *National City*, 174 U. S., 739; *Lincoln Gas Co.* v. *City of Lincoln*, 223 U. S., 349; *Cedar Rapids Gas Co.* v. *Cedar Rapids*, 223 U. S., 655.

The "good will" and that which the corporation enjoys as being from the only source from which gas can be obtained is not an element of value on which profits should be earned in estimating whether the rates are remunerative or confiscatory. *Wilcox* v. *Consolidated Gas Co.*, 212 U. S., 19, *52*. All concede that the present value is the basis on which returns are to be estimated. And with the findings of the master on that matter there are but two matters which merit consideration. And on those two questions the great weight of the argument by counsel has been made.

One of these is what is called the "reproduction

theory'' as determining the present value. When the gas mains were laid many of the streets were unpaved, but which are now paved streets (21 per cent.). To reproduce the system at this time it would be necessary to take up something like a yard in width and for the length of 21 per cent. of the streets, place the mains the proper depth, fill in with earth and replace the paving. The extra cost on account of the paving would amount to $140,000.00. The master declined to allow this sum as forming part of the value of the plant.

It is claimed the true value of any building, structure or plant is that sum which it takes to reproduce it, less the depreciation of the one to be replaced. But little assistance is obtained from the authorities, although it is claimed the case of *Wilcox* v. *Consolidated Gas Company*, 212 U. S., 19, is in point. The opinion does not show this to be so. Something of a showing is made in favor of that contention, by going to the original record, and the assignments of error. But it is not easily understood how the Supreme Court in that great case, so ably argued, with so much involved, meant to be so understood without expressly so declaring in the opinion.

No one doubts but that the cost of reproduction may in many cases be considered, and in some cases is a solution of the controversy.

What makes value, and what is the evidence thereof?

Metaphysical distinctions as to terms as used with reference to value by political economists aid but little. Exchange value, selling value, cost value,

value for use as an utility, value as to income and so on are too often used loosely.

But the question is as to its value today with reference to income. What it may have cost is pertinent. What it will sell for is to be considered. And if destroyed by any agency, such as rust, crystallization, or other forces, what must be paid to reproduce it is a subject of inquiry. All of these may be considered. In my opinion those who maintain that what it will cost to reproduce the plant, less depreciation, is the true value, in many instances confound the real question with one of many evidences of the real value. Reproducing cost is an evidence of what the real value is after subtracting the depreciation. But what is to be done with the value of stocks and bonds on the reproductive theory? And what becomes of the original cost on the reproduction theory? And what becomes of the question of the increase or falling off in numbers of consumers? And the same as to increased or diminished expenses?

The theory at first thought in all cases is plausible and attractive, but in the end oftentimes utterly illogical and unreliable, originally adopted as a mere time-saver by mere theorists, and sought to be enforced as against substantial and unbending facts. If the plant is to be reproduced, when is it to be done? If when reproduced, will the streets then be paved, and if paved, paved with what? Must it all be reproduced at once, or the same covered by a number of years? If but gradually reproduced, why should not such cost go into either the operating or maintenance account? No one can state when it

must be reproduced, and a material question arises: What, then, as compared with the present, will be the price of labor, material and freight? But finally and to my mind the conclusive reason against the soundness of the reproduction under paved streets theory is, that to allow that theory to prevail, and to increase the capitalization now to the extent of $140,000.00, is to allow such gas rates as will pay a dividend on such sum from and after this date. But the sum of $140,000.00 is not put in the capital or value account until the plant is reproduced.

As, of course, streets paved or unpaved make no difference in the earning power of the gas plant, and but little if anything goes more directly and accurately to the question of value of any structure or plant than its rental, earnings, or as a dividend producer.

There are many instances in which the reproduction theory is the best of all methods for getting at the present value, and in other instances the most misleading. And it is deceptive, in my opinion, to now add the cost of taking up and replacing pipe under paved streets at an estimated cost of $140,000.00 extra, and does not warrant an increased dividend of $8,400.00 or some greater sum. Such a dividend is a mere paper dividend, and is arrived at, not because of increased earnings, not because of increased capital or investments, not because of increased operating or maintenance expenses, but solely by reason of a supposed necessity of at some time, in some manner, under a then some kind of street, on a mere guess of what labor and material would then cost. Many of the principles with rela-

tion to railway rates are applicable to gas rates. And perhaps the latest analysis of the reproduction theory is found in the recent case of *Louisville R. R.* v. *Railway Commission*, 196 Fed. Rep., 800, in an opinion of Judge Jones of the Alabama District. He shows the value of this theory, but likewise shows that it is not a hard and fast rule covering all phases. Finally, pipes under a paved street are of very long life; many times longer than if the street were not paved.

The theory applied to paved streets is but a theory, is illogical and against facts, and was properly denied by the master.

The master finds that the "going concern" value of the plant is $300,000.00, but the Gas Company, by its exceptions, contends that this sum is not in the total of items making $2,240,928.00, the value placed on the entire plant. A "good will" value, and a "going concern" value, are often confused and used interchangeably, and I am inclined to believe that in some instances the master's report is subject to this criticism. But whether this is so or not, is not of much importance, and it is more of a verbal criticism than a practical one. Under the authorities cited, as well as others easily found, from those cited, a "good will" value, by reason of being a monopoly, such as a Gas Company has under an ordinance, is not to be reckoned. The item of $300,000.00 for "going value" is quite important in this case. It is contended that if this $300,000.00 must be added and the consumption of gas remains the same, and the percentage of dividends allowed by the master should stand, there will then be a

shortage. The authorities already cited, and which in my opinion are in accord with good sense, favor the allowance of a "going value." Every kind of business, with no exception, has a value known as "going value," and such "going value" is in no way connected with the monopoly or "good will" value. The Gas Company contends that this "going value" of $300,000.00 was erroneously omitted by the master in his totals, while the City contends that the sum of $300,000.00 has already been considered in making up the grand total of $2,240,928.00. I am of the opinion that the contention of the City is a correct one. This matter has received from me most earnest attention and consideration, and I will briefly present the reasons for my conclusion.

The master fixes the physical value at $2,240,-928.00. He means thereby and to my mind clearly states that as the value of the *Gas Plant*. There are but five items making this grand total. Counsel on both sides and I agree that "going value" is a part of the present value. The master so held. It would be strange that the master would hold that the "going value" of $300,000.00 entered into the actual value, and then by inadvertence omit it. And it would be the more strange, after considering the items set forth in the report.

By the report he lists the following:

1.	Working capital,	$140,000.00,
2.	Real Estate,	150,000,00,
3.	Organization expenses,	6,923.00,
4.	Meters in stock,	6,603.00,
5.	Present value of physical property, aside from above items,	1,937,402.00.

Evidently because the master used the word *physical,* counsel seem to conclude that he did not include "going value." If he had omitted the word "physical" as an identification, then no one would doubt but that he did include "going value." But why would the master include five items, and omit one that he meant to include? But the criticism is too refined and technical to stand as against his entire report. After enumerating the four items he adds "present value of physical property *aside from* above items, $1,937,402.00." This is as though he had said "all other items of value to be considered."

How can it be said that he meant "junk value"? Or "Bare bones" value, as used in some of the cases? It is not fair to say that he meant junk value, or bare bones value. He meant that was the value coupled with the preceding items of the gas plant; a plant making and selling gas. He meant that, and neither more nor less than that.

If the question were now for decision, I would have much doubt as to the item of working capital, $140,000.00. The master was liberal with the Gas Company by allowing that item. I fail to find satisfactory evidence in this tremendous record as to that item, although there is evidence bearing thereon. But every business man knows that the Gas Company daily makes deposits, and daily checks out for expenses, and at stated periods for interest on its bonds, and for dividends. Whether it receives interest on its daily balances, does not appear, nor does it appear whether it must pay interest on its overdrafts if it has such. And if it has on hand

$140,000.00 as working capital, why such sum would not earn interest is not made to appear. I only mention this to show that the master has not borne down on the Gas Company.

When the restraining order was issued herein to be in force pending litigation, it was done with full consideration. An actual test is the highest degree of proof as to some phases, and some phases only of litigation like this. But it was made to appear that a very large number of gas consumers paid cash without waiting for the presentation of bills. This was made easy to do by the meters having annexed thereto a mechanism so adjusted that by dropping any sum of metal money through a slot, the requisite amount of gas could be used on the basis of $1.00 per thousand. And the mechanism would correctly measure the gas on that basis. As, of course, to allow the consumer to have 1,000 feet of gas at 90 cents, the wheels and appliances must be changed. To do this persons familiar with such mechanism must be employed. And it was made to appear that it would take more than a month of time to do this, and at much expense.

Every of the exceptions of the Gas Company is overruled.

The bill of complaint is dismissed with prejudice, and the interlocutory writ of injunction and restraining order vacated.

But the vacation of such writs will not be effective for sixty (60) days from the decree this day entered, to the end that such mechanisms may be adjusted to the ninety-cent rate.

And to the further end that if said decree by

actual test may prove that a ninety-cent rate is not remunerative, the decree will provide that after three years of such actual test this case may be reinstated, and the pleadings and evidence now on file, used as of full probative force, supplemented by such additional pleadings and evidence as may be deemed by either party advisable.

This will so materially reduce the expense as to make it almost nominal.

In the event of an appeal, a *supersedeas* bond in the penalty of five thousand ($5,000.00) dollars will be approved. But such a bond will only supersede the payment of the costs. Any other *supersedeas* must be applied for to the Appellate Court.

Such will be the decree.

Des Moines, Iowa, August 21, 1912.

IN THE DISTRICT COURT OF THE UNITED STATES,
SOUTHERN DISTRICT OF IOWA,
CENTRAL DIVISION.

Des Moines Gas Company, *Complainant*,
vs.
City of Des Moines, and others, *Defendants*.
No. 71-M.

DECREE.

Now on this August 21, 1912, the court being fully advised, files an opinion herein finding the equities of the case to be with the defendants.

It is therefore considered, ordered, adjudged and decreed as follows:

1. The bill of complaint herein is dismissed with prejudice.

2. The complainant will pay the costs herein made to be taxed by the Clerk, which will include moneys paid by defendants on account of stenographers and typewriters, and moneys paid by defendants on account of master's compensation and expenses, for which after forty (40) days, a writ of execution will issue.

3. The restraining order and temporary injunction heretofore issued herein are both vacated, and such vacation to be effective sixty (60) days from this date.

4. At any time on and after three years from this date complainant, its successors or assigns, may on

motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable.

5. If complainant elects to appeal from this decree or any part thereof, a *supersedeas* bond properly conditioned, in the penalty of five thousand ($5,000.00) dollars, with ample surety, will be approved. But the approval and filing of such bond will only stay said writ of execution for said costs. Any other *supersedeas* than as aforesaid is by this court denied.

To each, all and every of the foregoing, in so far as adverse, complainant excepts.

Done this August 21, 1912.

(Signed) SMITH MCPHERSON,
Judge.

A true copy.
Attest:
W. C. MCARTHUR,
Clerk.

IN THE DISTRICT COURT OF THE UNITED STATES,
SOUTHERN DISTRICT OF IOWA,
CENTRAL DIVISION.

Des Moines Gas Company, *Complainant,* *vs.* City of Des Moines *et al.,* *Defendants.*	*Application for Modification of Decree Rendered Herein on the 21st day of August, 1912.*

To the Honorable Judges of the District Court of the United States for the Southern District of Iowa:

Complainant shows to this Honorable court that on the 6th day of January, 1911, there was signed and entered of record in this case an order temporarily restraining defendants from putting in force the ordinance of December 27, 1910, and until the further order of the court, permitting complainant to charge for gas sold and delivered, at the rate of $1.10 per thousand cubic feet, provided that upon all bills paid on or before the 15th day of the month following the month in which the gas was used, a discount of 10 cents per thousand cubic feet should be allowed. Said order of January 6, 1911, contained the following recitals:

> "Provided, however, that in the event that it shall be determined by the final decree in this cause that said ordinance of December 27, 1910, is valid, that complainant shall refund on demand by the persons by whom payment was

made, all sums of money collected by it for gas sold and delivered from and after the first day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910."

Complainant shows to this Honorable court that it has, since the entry of said order on the 6th day of January, 1911, charged and received for gas sold and distributed in accordance with the provisions thereof. The several sums paid to complainant by individual consumers in excess of the rates fixed in the ordinance of December 27, 1910, are small, but the aggregate of said sums so collected constitutes a very large amount of money.

In the decree filed herein on the 21st day of August, 1912, is the following provision:

> "If complainant elects to appeal from this decree or any part thereof, a *supersedeas* bond properly conditioned, in the penalty of five thousand dollars with ample surety, will be approved. But the approval and filing of such bond will only stay said writ of execution for said costs. Any other *supersedeas* than as aforesaid is by this court denied."

Complainant intends as soon as possible to perfect an appeal from said decree, and unless the requirement of said order and decree that it shall refund on demand to the persons by whom payment was made all sums of money collected for gas sold and delivered from and after the first day of January, 1911, in excess of the rate specified in the said ordinance of December 27th, 1910, be superseded, complainant will be compelled, before the determination of said appeal, to refund on the demand of the

persons by whom payment was made, all sums of money collected in excess of the rate specified in said ordinance of December 27th, 1910. In the event that complainant obtains a decree in its favor upon the trial of this case on appeal, and in the event said ordinance of December 27th, 1910, shall be declared invalid, complainant will be unable to recover all or the greater portion of the money so refunded. No obligation ought to rest upon complainant to refund said sum of money until the determination of this case upon appeal, and until it has been adjudicated upon the trial of this case on appeal that the ordinance of December 27th, 1910, is a valid ordinance.

In the third paragraph of said decree it is provided as follows:

> "The restraining order and temporary injunction heretofore issued herein are both vacated, such vacation to be effective sixty days from this date."

The vacation of the said order and temporary injunction become effective on the 20th day of October, 1912.

WHEREFORE, complainant prays that the decree of August 27th, 1912, be so modified that the requirement of said order and decree that it refund on demand the sums of money collected for gas sold and delivered from and after the first day of January, 1911, in excess of the rate specified in said ordinance of December 27th, 1910, may be superseded on such terms and conditions as to bond as may to the court appear just and equitable, and that the provisions of said decree fixing the time when the vacation of

the restraining order and temporary injunction heretofore issued herein become effective shall be extended thirty days.

(Signed) W. L. READ,
N. T. GUERNSEY and
GEO. H. CARR,
Solicitors for Complainant.

(Endorsed)
Filed Oct. 8, 1912.
WM. C. MCARTHUR, *Clerk.*
By LOUIS J. ADELMAN, *Deputy.*

AFFIDAVIT OF JANSEN HAINES.

STATE OF IOWA, } ss.
POLK COUNTY. }

I, Jansen Haines, being duly sworn, on oath state: That I am the president of the Des Moines Gas Company, which is the appellant in the case of the Des Moines Gas Company against the City of Des Moines *et al.*, in which a final decree was rendered by the District Court of the United States for the Southern District of Iowa on or about the 10th day of October, 1912.

I further state that Exhibit "A" hereunto attached is a full, true and correct statement of the actual operating expenses of the Des Moines Gas Company for the first nine months of the year 1912, showing such operating expenses in the aggregate and also an analysis of them in cents per thousand feet of gas sold.

That the total cost of manufacturing and delivering gas sold by the Company in the City of Des Moines, Iowa, was 76.41 per thousand cubic feet; that the said 76.41 includes 8.41 per thousand cubic feet on account of rate regulation expenses paid by the said Company.

That upon the basis of allowing 6.67 per thousand cubic feet of gas sold for depreciation, the net revenue which the Company would derive from each thousand cubic feet of gas sold during the said nine months, if the price at which it had been sold had been ninety cents (90c) per thousand cubic feet, would have been as follows:

		Cents.
Gross revenue per thousand cubic feet.		90.00
Operating expenses	76.41	
Depreciation	6.67	83.08
Net revenue per thousand cubic feet of sales		6.92

That the foregoing statement included rate regulation as a part of the operating costs. If this item be deducted, then the said net revenue, leaving out of account this item, is as follows:

		Cents.
Gross revenue per thousand cubic feet..		90.00
Operating expenses, excluding rate regulation expenses	68.00	
Depreciation	6.67	74.67
Net revenue in cents per thousand cubic feet of gas sold		15.33

That the actual sales of gas in the City of Des Moines made by the said Company during the said nine months were, as shown by the records of the said Company, 410,804,719 cubic feet; that such sales for the corresponding months for the year 1911 were 401,592,973 cubic feet; increase, 9,211,746 cubic feet, which is 2.29 per cent of said 1911 sales.

That the total sales of gas in the City of Des Moines by the said Des Moines Gas Company during the year 1911 were, as shown by the records of said Company, 555,150,057 cubic feet, and that said sales were 104.35 per cent of the like sales for the year 1910.

That I have computed the amount of gas which it will be necessary to sell in a year in the City of Des Moines upon the various valuations of the prop-

erty of the Des Moines Gas Company used in connection with the argument of said case, and have set opposite each valuation the amount of such sales, said computation being as follows:

VALUATION.	SALES NECESSARY TO EARN 8%.
$2,540,000	2,936,417,000 cu. ft.
2,400,000	2,774,567,000 " "
2,100,000	2,427,746,000 " "

A like computation based upon a return of 6 per cent gives the following results:

VALUATION.	SALES NECESSARY TO EARN 6%.
$2,540,000	2,202,313,000 cu. ft.
2,400,000	2,080,925,000 " "
2,100,000	1,820,810,000 " "

Computations made upon the basis of a net revenue of 15.33 cents per thousand cubic feet of gas sold show that the volume of annual sales required to earn an annual return of eight per cent (8%) upon said valuations would be as follows:

VALUATION.	SALES NECESSARY TO EARN 8%.
$2,540,000	1,325,506,000 cu. ft.
2,400,000	1,252,446,000 " "
2,100,000	1,095,890,000 " "

Computations made upon the basis of a net revenue of 15.33 cents per thousand cubic feet of gas sold show that the volume of annual sales required to earn an annual return of six per cent (6%) upon said valuations would be as follows:

VALUATION.	SALES NECESSARY TO EARN 6%.
$2,540,000	994,129,000 cu. ft.
2,400,000	939,335,000 " "
2,100,000	821,918,000 " "

I have computed the rate of return which the actual sales for the year 1911 of the said Company would have afforded upon each of said valuations if the net return per thousand feet of gas sold has been 15.33 cents, and the results of this computation are as follows:

VALUATION.	RATE OF RETURN.
$2,540,000	3.35 per cent.
2,460,000	3.55 " "
2,100,000	4.05 " "

In making these computations I have used the operating costs for the first nine months of 1912, because they are the latest operating costs which the Company has, and I have used the sales for the year 1911, because that is the latest complete year.

Taking rate regulation expenses as a constant factor, so as to make the other factors comparable, the operating expenses for the first nine months of 1912 were .61 of a cent more per thousand cubic feet of gas sold than for the year 1911. This is due to the fact that a very favorable contract which the Company had for oil, which is used in large quantities in manufacturing gas, did not expire until about July 15, 1912. The price which the Company paid for such oil under said expired contract was 2.80 cents per gallon, but for the oil purchased since said contract expired, it has been compelled to pay 4.05 cents per gallon.

During the first nine months of 1912, the Company used 1,786,462 gallons of oil, from which there were made 431,308,781 cubic feet of gas. If this oil had all been charged for at the old rate, the cost of oil for each 1,000 cubic feet of gas made would have

been 11.597 cents. If this oil had all been charged for at the new rate, the cost of oil for each 1,000 cubic feet of gas made would have been 16.775 cents. That is, this increase in the price of oil will, in the future, increase the cost of producing gas 5.178 cents for each 1,000 cubic feet of gas made.

On account of the Company's method of keeping its accounts, this increase has not yet fully manifested itself in the accounts. That the price of oil has been gradually increasing as the limitations upon the supply have become fixed, and the use of it has increased, and it is not probable that this price will decrease in the future.

That the number of consumers of the Des Moines Gas Company in the City of Des Moines was on the first day of January, 1912, 20,601; that the average revenue which the Company received for the year 1911 from each consumer was $26.73.

That to reduce the price of gas from $1.00 per thousand to ninety cents (90c) per thousand would reduce the total annual bills of each consumer in the City of Des Moines approximately $2.64 for each year pending the disposition of the appeal in this case, and that the same reduction would reduce the net revenue of the said Company during each said year approximately $54,329.00. That consumers' bills are rendered and paid monthly.

That because of the small amount which would be due from each consumer, and because of the changes which are constantly taking place in the consumers, and the difficulty in finding those who are no longer patrons of the Company, and because of the fact that many of them are wholly irresponsible finan-

cially, and because of the relatively large expense involved in an attempt to enforce collection of a large number of small bills which are not recent, if the ninety cent (90c) rate should be put into effect pending the determination of the appeal, I believe that the Company would, if it were successful in the appeal, suffer a permanent loss of approximately $30,000 per annum in net revenue.

JANSEN HAINES.

Subscribed and sworn to before me this eleventh day of November, A. D. 1912.

JENEVIEVE WILLIAMS,
Notary Public of Iowa in and for Polk County.

Exhibit "A."

Expenses of Operation for First Nine Months of Year 1912.

Manufacturing—	Cost per M. C. F. Gas Made.	Dollars.
Manufacturing	.0109	4,711.49
Boiler Fuel	.0185	7,986.13
Expense Works	.0129	5,577.24
Generator Fuel	.0962	41,484.98
Manufacturing Labor	.0172	7,398.84
Oil	.1183	51,037.23
Purification Labor	.0012	527.11
Repairs Works	.0313	13,492.71
Water Tax	.0015	646.64
Total Manufacturing	.3080	132,862.37
Gas in Holder	.0001	134.61
Residuals	*.0196*	*8,473.00*
Leakage 20,773,286 cu. ft. @ .2885 = $5,991.02	.2885 .0146	124,523.98
	.3031	

Distribution—	Cost per M. C. F. Gas Sold.	Dollars.
Distribution	.0115	4,736.25
Complaint Expense	.0130	5,331.27
Distribution Office Expense	.0115	4,732.53
Gratuitous Works	.0153	6,284.28
Repairs Mains	.0229	9,375.09
" Services	.0122	4,997.71
" Meters	.0159	6,531.38
Setting and Removing Meters.	.0115	4,741.47
Street Mains Abandoned	.0002	90.00
Total Distribution	.1140	46,819.98

COMMERCIAL EXPENSE—		
Commercial Expense	.0046	1,886.22
Expense Collection	.0142	5,823.22
" Office	.0281	11,545.33
Office Salaries	.0499	20,513.38
Total Commercial Expense.	.0968	39,768.15

NEW BUSINESS—	COST PER M. C. F. GAS SOLD.	DOLLARS.
Promotion Management	.0049	2,009.53
Promotion Office Supplies & Expenses	.0089	3,645.50
Miscellaneous Advertising	.0041	1,697.49
Newspaper Advertising	.0040	1,658.81
Soliciting	.0180	7,408.43
Appliance Demonstrations	.0038	1,574.20
Appliance Exhibitions	.0017	707.90
Gas Ranges	*.0120*	*4,950.66*
Circulating Water Heaters	*.0025*	*1,019.37*
Special Appliances	*.0077*	*3,148.28*
Connecting New Ranges	.0040	1,657.22
Connecting New Circulating Water Heaters	.0020	823.40
Connecting New Special Appliances	.0031	1,275.13
Connecting Consumers' Appliances	.0004	154.63
Gas Appliance Repairs	.0006	256.75
Housepiping	*.0017*	*716.42*
Fixtures		*7.05*
Gas Arc Lamps		4.27
Lamps	*.0012*	*528.45*
Incandescent Burner Repairs	*.0015*	*636.74*
Arc Lamp Maintenance	.0017	685.60
Incandescent Burner Maintenance	.0011	467.41
Uncollectible Sundry Sales Bills	.0015	627.55
Gas Arc Lamp Depreciation	.0018	739.61
Special Reflex Expense	.0001	48.53
Total New Business	.0351	14,434.99

EXPENSE—		
Accidents and Damages.....	.0101	4,160.17
Association Meetings	.0015	594.36
Expense General	.0027	1,117.85
" Extraordinary	.0055	2,270.60
Insurance	.0032	1,309.49
Interest	*.0001*	*23.41*
Litigation	.0018	751.67
Salaries General	.0183	7,500.00
Uncollectible Bills	.0050	2,050.11
Rate Regulation Expense.....	.0841	34,549.45
Total Expense	.1321	54,280.29
Special Tax	.0202	8,312.15
Taxes	.0615	25,216.71
Street Lamp Operating.....	.0013	548.31
Operating Expenses	.7641	313,904.56

DEC 16 1912
JAMES H. McKENNEY,
CLERK.

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1912.

No. ~~884.~~ ~~387~~ 75

DES MOINES GAS COMPANY,
Appellant,

vs.

CITY OF DES MOINES, JAMES R. HANNA, JOHN MAC VICAR, CHARLES W. SCHRAMM, JOHN WESLEY ASH, ZELL G. ROE and ROBERT O. BRENNAN,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

RESISTANCE TO APPLICATION FOR AN ORDER TO MAINTAIN THE STATUS QUO, AND TO ENJOIN THE DEFENDANTS FROM PUTTING INTO EFFECT THE ORDINANCE RATES IN CONTROVERSY, PENDING THIS APPEAL, AND BRIEF AND ARGUMENT IN SUPPORT THEREOF.

ROBERT O. BRENNAN,
H. W. BYERS,
Solicitors for Appellees.

O'Donnell Printing Company, Des Moines

IN THE

Supreme Court of the United States

OCTOBER TERM, A. D. 1912.

No.....

DES MOINES GAS COMPANY,
Appellant,

vs.

CITY OF DES MOINES, JAMES R. HANNA, JOHN MAC VICAR, CHARLES W. SCHRAMM, JOHN WESLEY ASH, ZELL G. ROE and ROBERT O. BRENNAN,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

Resistance to appellant's application for an order to maintain the status quo, and to enjoin the appellees from putting into effect the ordinance rate in controversy, pending this appeal.

Now come the appellees in the above entitled suit and resist the application of the appellant for an order herein to maintain the *status quo*, and to enjoin the appellees from putting into effect the ordinance rate in controversy in the said suit, pending this appeal, and as grounds for such resistance, show:—

First: That the decree of the lower court in the said suit was rendered after a full and complete hearing before a Master and is in all of its provisions just and proper and fully warranted by the record.

Second: Because had the lower court refused a restraining order or temporary injunction prior to the hearing before the Master, and before the rendition of the decree in the lower court, it would not have furnished any grounds for appeal. Therefore, the fact that the temporary restraining order and temporary injunction were dissolved by the court after a hearing upon the merits furnishes the conclusive reason for denying the present application of the appellant.

Buffington v. Harvey, 95 U. S., 99, 24 Law Ed., 381.

Third: The record shows that the Master finds that the ninety cent rate for gas fixed in the ordinance in controversy, will afford the appellant more than a fair compensation for its service.

Fourth: Because the decree of the lower court in the said suit grants to the appellant all the rights to which it is entitled under the laws and Constitution of the United States as is disclosed by the record upon which said decree is based.

Fifth: There is nothing in the decree of the lower court in the said suit that deprives the appellant of any right it has under the law to apply to said lower court for relief whenever conditions justify such application. It being provided in Paragraph four thereof that at any time on and after

three years, the complainant may, on motion, reinstate said case with all the pleadings and evidence now on file with the same and like effect as though filed for such subsequent hearing, and each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable.

Sixth: The provision in the decree of the court below in the said suit, granting to the appellant the right to supersede and retain the moneys collected for gas sold and delivered from and after the first day of January, 1911, to the 15th day of November, 1912, in excess of the rate specified in the said ordinance of December 27, 1910, in controversy, satisfies all reasonable requirements of the law and is agreeable to the usages and principles of law, maintains the *status quo* of the parties and affords full opportunity for this court to exercise its jurisdiction in respect of the appeal.

Seventh: That the said application of the appellant herein fails to show that irreparable injury will follow the enforcement of the Ordinance in controversy and the decree of the lower court, or that this court will lose jurisdiction of the parties to the said suit or the subject matter thereof.

Eighth: Because the appellant is seeking, by said application, to have this court, in advance of the hearing on the appeal, review the action of the trial court in dissolving a restraining order and temporary injunction after a hearing upon the merits and after said court has exercised its discretion with respect thereto.

Ninth: Because the ordinance of the Defendant. City of Des Moines, complained of in said suit was enacted on or about December 27, 1910, and Appellant's bill was filed in the lower Court on or about January, 1911, and at the same time an application for restraining order and temporary writ of injunction was filed, upon which a restraining order was granted, and later a temporary writ of injunction issued; that thereafter, on or about May, 1911, the Hon. Robert Sloan was appointed by the Court, as Special Master, to take and hear the testimony, make findings of fact and to state conclusions of law; that thereafter and on or about July 12, 1911, the taking of testimony was begun and continued throughout the months of July, August, September, October and a large part of November, at which time the taking of testimony was closed, arguments of counsel concluded and the cause fully submitted; that thereafter and on or about the 5th day of April, 1912, the Master filed his preliminary report and fixed a time for hearing thereon, at which time counsel for both sides appeared and were fully heard with respect to all matters covered by such preliminary report. That thereafter and on or about the 12th day of April, 1912, the Master filed a supplemental report, together with his final conclusions, to which report the findings by the Master and his conclusions of law both parties, within the time allowed, filed their exceptions and on or about July, 1912, His Honor, Judge Smith McPherson, in whose Court said cause was pending, heard said exceptions and after the same were fully submitted handed down his decision and decree, under date of August 21, 1912, confirming and approving the report of the Master and dis-

missing Appellant's bill, with prejudice. That thereafter and on or about October 7, 1912, Appellant made application to His Honor Judge McPherson, requesting modification of the decree theretofore rendered, so as to permit Appellant to supersede and stay the enforcement of its obligation to refund the money collected by it after January 1 1911, in excess of the rate specified in the ordinance complained of, and by striking from the decree the time limit of sixty days and substituting therefor the words "ninety days." That said application was fully heard, arguments made on both sides and on the 10th day of October, 1912 decree was rendered by His Honor, Judge McPherson, granting the application of the Appellant in so far as to modify the former decree, with respect to the refunding of the excess collections for sales of gas and permitting such refund to be superseded and granting to the Appellant additional time in which to make the neces sary preparation to put the ninety cent rate into effect and denied a supersedeas from so much of the decree vacating and setting aside the restraining order and temporary injunction. The additional time above referred to expiring on the 15th day of November, 1912. That by reason of all the foregoing and in view of the presumption which obtains in favor of the validity of the ordinance of which complaint is made, it would be unjust to the consumers of gas in the City of Des Moines to now permit the Appellant herein to enjoin the said ordinance and delay the operation of the same until the final decision herein on appeal.

Tenth: Because under equity Rule 93 it was within the discretion of His Honor, Judge Smith McPher-

son, to dissolve the restraining order and temporary injunction theretofore granted and in the absence of a showing of abuse of said discretion, his action in the premises ought not be interfered with.

Eleventh: Because the Master, at page 109 of his report, finds:

> "While this case is close to the border line, I cannot say on the whole case that the evidence beyond any just and fair doubt, satisfies me that the rates will prove confiscatory, should the ordinance be put into effect and an actual test thereof be made."

Twelfth: Because the Master, at page 105 of his report, after stating certain existing conditions, finds:

> "These conditions lead me to believe that with economy and care, the cost (of making gas) may be reduced below sixty cents, as it was in the year ending February 28, 1909, without detriment to the service. At least, the future cost of gas is not clear and satisfactory to me. It is true, that in this matter we are entering the realm of prophecy, and none of us has that gift. **What a trial under the present rates would produce is not before us, and cannot be determined until it is so tried.**"

And again, on the same page, the Master finds:

> "That an increase of sales to existing customers would result in greater profits, is perfectly true. It would practically double the profits per M. C. F. on the increase. On new customers it ought to do the same, only it would at the same time, cause additional value to be added to the plant, however, it would increase the profits materially in the final result."

Thirteenth: Because the Master, after the most careful weighing of all the evidence introduced during the months of hearing, finds in effect, that in the absence of an actual test by trial of the rates prescribed in the ordinance complained of, it is impossible to determine whether Appellant's revenue from the sales of gas will be increased or diminished.

Fourteenth: Because the Master in his findings and report, has not only placed a valuation on Appellant's property, greatly in its favor, by allowing a large amount of appreciation in the item of real estate, but in addition thereto has included in said valuation the sum of approximately, $140,000 for operating capital.

Fifteenth: Because, if we substitute the value of Appellant's property, as finally allowed by the Master, to-wit: $2,100,000, for the amount used by the Master in his first illustration or estimate, on page 94 of his report, to-wit: $2,400,000, and then substitute 6 per cent for 8 per cent, the estimate would stand thus:

Total gross revenue, year ending December 31, 1910		$ 538,893.00
Operating expenses		335,082.00
Balance		$ 203,811.00
Depreciation at 6.67 cents per M. C. F. upon 531,991,000 M. C. F.		35,483.80
Net revenue for 1910		$ 168,327.20
This includes Valley Junction	$ 2,100,000	
At 6 per cent, is	126.000	
45,000 at 6 per cent is	2,700	128,700.00
Surplus		$ 39,627.20

And the estimate or illustration on page 95 would stand thus:

Total amount of gas sold during the ten months of the year ending Oct. 31, 1911 is		450,011,489
Total gas as per schedule No. 2, defendant's exhibit 30, November 1910	50,214,035	
Also for Dec. 1910	52,577,873	
Estimated increase 4.84 per cent of above	4,975,132	
	107,767,040	
Total		557,778,529
Less Valley Junction		7,000,000
Des Moines Gas		550,778,529
After eliminating the charges to operating expenses the cost is shown to have been at the rate of	61.73	
Add depreciation	6.67	
Total cost	68.40	
Net revenue per M. C. F. for 90c gas	21.60	118,968.16
6 per cent of $2,100,000.		126,000.00
Deficit, omitting Valley Junction		$ 7,031.84

Without pursuing this method throughout all of the illustrations and estimates made by the Master, it is sufficient to say that the same adjustments would produce the same, or substantially the same, decrease in the so-called deficit and if we were to use a de-

preciation figure of four cents per M. C. F., instead of the 6.67 cents, used by the Master, and which would be fully justified by the evidence, the deficits would disappear entirely. Then too, it should be remembered that in these estimates no account is taken of increased sales due to reduced price. This is shown conclusively on page 107 of the Master's report, where he says:

> "While reckoning under the valuations at the past rates will show a deficit, it must not be forgotten that there are certain elements therein that have not been demonstrated."

In other words, it is not pretended by the Master that these estimates represent what, even in his judgment, would be the results, if the rate prescribed by the ordinance was put into actual operation.

Sixteenth: Because, inasmuch as it is the settled policy of the Appellate Court to remand cases of this character for a practical test, where the line may be said to be close between remuneration and possible confiscation, to now permit the injunction to issue herein, might result in unnecessarily postponing action which may be required on the further hearing and decision by said court.

Seventeenth: Because every presumption must be indulged in favor of the Master's report, and it should not be modified or interfered with unless for some mistake or a prejudicial error which clearly appears. The application herein fails to point out any such error or mistake to support appellant's right to relief additional to that already provided for in the decree of the lower court.

Eighteenth: Because the appellant has failed to produce that degree or weight of evidence on the trial in the lower court as entitles it to longer arrest the operation of the ordinance of which complaint is made; and, further, because appellant is now attempting to support its said application for said injunction by the *ex parte* affidavit of its manager as to alleged earnings and operating expenses and the table of figures predicated thereon, covering a period of time subsequent to the trial and decision in the lower court, as will more fully appear by reference to the record herein.

Nineteenth: Because on the question of the value of appellant's property the Master was most liberal in its favor. This clearly appears by reference to the opinion of His Honor Judge Smith McPherson at page 9 thereof, wherein he says:

> "If the question were now for decision, I would have much doubt as to the item of working capital, $140,000.00. The Master was liberal with the Gas Company by allowing that item. I failed to find satisfactory evidence in this tremendous record, as to that item, although there is evidence bearing thereon. * * * * * I only mention this to show that the Master has not borne down on the Gas Company."

II.

BRIEF AND ARGUMENT IN SUPPORT OF RESISTANCE TO APPELLANT'S APPLICATION FOR AN ORDER TO MAINTAIN THE STAUS QUO, AND TO ENJOIN THE APPELLEES FROM PUTTING INTO EFFECT THE ORDINANCE RATE IN CONTROVERSY, PENDING THIS APPEAL.

Appellant petitions this court for an order to enjoin the appellees from putting into effect the ordinance rate in controversy, pending the appeal.

The application is predicated upon the theory that such an order is a proper one to maintain the *status quo*, as was done in the case of *Omaha & Council Bluffs Street Railway Company, et al. v. Interstate Commerce Commission*, et al., 222 U. S. 582; 56 Law Ed. 324, and other cases there cited.

The present application represents the second attempt on the part of the appellant since the decree of the court below to enjoin the enforcement of the ordinance passed by the city council of the city of Des Moines on the 27th day of December, 1910, which, by its terms, was to become effective January 1, 1911.

On the 14th day of November, 1912, an application in behalf of the appellant was presented to His Honor, Mr. Justice Van Devanter, for permission to supersede so much of the decree of the court below in the said suit as sets aside the restraining order and temporary injunction granted therein and requires the appellant on and after November 15, 1912, to put into effect the ordinance rate which is in con-

troversy in the said suit. Said application for said supersedeas was presented by counsel for the appellant and at which hearing, counsel for appellees were present. No formal order was entered in respect of said application,—the same being withdrawn. Such withdrawal being prompted, we have no doubt, by reason of the well settled rule that, neither a decree for an injunction nor a decree dissolving an injunction, is suspended in its effect by an appeal, although all the requisites for a supersedeas are complied with. And, that where the injunction has been dissolved, it cannot be reviewed, except by the new exercise of judicial power.

Hovey v. McDonald, 109 U. S., 150, 27 Law Ed., 888;

Slaughter House cases, 10 Wall., 273, 19 Law Ed., 915;

Knox County v. Harshman, 132 U. S., 14, 33 Law Ed., 249;

Leonard v. Ozark Land Co., 115 U. S., 465, 29 Law Ed., 445.

But, be that as it may, it is obvious that counsel for the appellant with a persistency worthy a better cause are attempting in every possible manner to prevent the operation of the decree of the court below before the hearing upon the appeal, even if it shall involve some inconvenience to the parties and considerable travel to and from Washington.

We recognize the rule that this court, in a proper case, has the power to modify a decree below dissolving an injunction in advance of a final hearing of an appeal on its merits, where it is found to be indispensable to maintain the *status quo* of the parties and to preserve its jurisdiction.

We note the provisions of Section 716 of the revised statutes of the United States, which confers upon this court the power to issue all writs not specially provided for by statute, which may be necessary for the exercise of its jurisdiction and agreeable to the usages and principles of law.

But we understand this court to have said that if such a practice were to be permitted, it would oftentimes involve an examination of the whole case and necessarily take much time of the court. These considerations created the necessity for the promulgation of the present equity Rule No. 93, which is as follows:

> "When an appeal from a final decree in an equity suit, granting or dissolving an injunction, is allowed by a justice or judge who took part in the decision of the case, he may, in his discretion, at the time of such allowance, make an order suspending or modifying an injunction during the pendency of the appeal, upon such terms as to bond or otherwise, as he may consider proper for the security of the rights of the opposite party."
>
> *Leonard v. Ozark Land Co.*, 115 U. S., 465, 468, 29 Law Ed., 445, 446.

In the instant case, the judge who took part in the decision, instead of continuing the preliminary injunction pending the appeal, dissolved the same, and took occasion to give special notice that no supersedeas other than that provided for with reference to costs and the refund of ten cents per thousand feet of gas in excess of the rate fixed by the ordinance in controversy, should be allowed.

The action of the lower court, it occurs to us, controls the question with which this court is concerned with respect to said application.

III.

We shall now take up and present additional reasons which, in our judgment, show that the appellant is not entitled to the relief which it asks in its said application.

Appellant rests its application for an order enjoining the appellees from putting into effect the ordinance rate in controversy, pending the appeal, upon substantially two grounds:

First. That the facts found by the Master demonstrate that the ordinance complained of will, in its operation, deprive the appellant of a fair return upon the value of its property.

Second. That no substantial hardship will result to any consumer of gas if the temporary injunction is continued in force; while, on the other hand, appellant may suffer great and irreparable injury if the same is set aside.

In support of these propositions, counsel attach to its application many pages of tabulations, computations and tables of figures in an effort to show that the Master and the court below erred in their findings and conclusions and, that on the whole, the ninety cent rate will deprive them of a just return upon their investment.

All these questions were fully and thoroughly covered in the months of hearing and weeks of argument before the Master and the lower court, and it does not now seem necessary to go over this ground again or to follow counsel further than to offer as a full and conclusive answer to all the claims

made, the following facts which have been established and stand out prominently in the record:

(a) The books of the company show a cash investment in this property, exclusive of earnings, to the amount of $168,255.56 and no more. While the total investment in the property, according to the books after reducing the amount by the depreciation figures used by the Master, did not exceed in round numbers $1,500,000.00, the stockholders have taken out in cash between $500,000 and $600,000 and the Master in his liberality now finds the value of the property to be $2,100,000. In other words, the owners of this property have put into it in cash and earnings in round numbers a total of $1,700,000; have taken out between $500,000 and $600,000, and have a property left, the value of which the Master has found to be $2,100,000.

(Hall's report, Exhibit 30, pages 2 to 30. The Master's report, pages 40-41.)

(b) The Master concludes that with economy and care the cost of manufacturing and distributing gas may be reduced below sixty cents, and both Lea and Baehr, witnesses for the complainant, agree with him. Lea finds that it will cost for 1911 in round numbers fifty-nine cents; 1912, fifty-eight cents; 1913, fifty-seven cents; 1914, fifty-six cents; 1915, fifty-five cents; 1916, fifty-four cents; 1917, fifty-three cents.

(Master's report page 105, complainant's exhibit 20, Lea's report page 110.)

(c) The Master finds and concludes:

That an increase in sales to present consumers would practically double the profit per M. C. F. on the increase.

That what a trial under the ordinance rates would produce cannot be determined, except upon actual test.

That while the computation made at past rates shows a deficit, there are certain elements therein that have not been demonstrated.

That as to the increase and use of gas by existing consumers the past is of little value either way on the subject.

That no estimates are made with reference to the increase from existing customers.

That he has been unable to reach any satisfactory conclusion as to the future cost of gas.

That "while this case is close to the border line I cannot say on the whole case that the evidence beyond any just and fair doubt satisfies me that the rates will prove confiscatory should the ordinance be put into effect and an actual test thereof be made."

IV.

As is usual in the trial of cases of this character, the question of value was the principal one. That is to say, the reasonable value of the property actually used and useful in connection with the manufacture and distribution of gas in the city of Des Moines, Iowa.

Volumes of testimony was taken on this subject, the testimony of many expert witnesses introduced and certain theories and methods of measuring such value advanced. It would not be practicable at this time to attempt anything like an analysis of the testimony of the several experts with respect to the value of the appellant's property. A discussion of that character would involve an investigation and examination of the entire record covering some six thousand pages. But this much may be said in connection with the Master's findings which will serve to prove that the decree of the lower court in the circumstances is in all its provisions, just and proper, and fully warranted by the record, and that the appellant was not entitled in the court below, nor is it entitled in this court, to have a preliminary injunction in its favor to longer suspend the operation of the ordinance in controversy.

During the investigation by the city council of the rates charged for gas by the appellant, and before the adoption of the ordinance in controversy, some correspondence was carried on between a member of the council and Jansen Haines, the then manager and now president of the Des Moines Gas Company, the appellant herein. This correspondence was collected and printed in book form and copies

mailed to patrons of the Gas Company throughout the city. A copy thereof was introduced in evidence in this case and identified as Complainant's Exhibits 7 to 14, inclusive, and Defendants' Exhibit 44.

In a letter under date of November 22, 1910, from said Haines to John MacVicar, a member of said council, appears, among other things, the following:

> "The gross revenue from the sale of gas for twelve months ended September 30, 1908, was $457,105.95; for twelve months ended September 30, 1909, was $491,944.49; and for twelve months ended September 30, 1910, was $526,293.50. The average annual gross revenue for the three year period ended September 30, 1910, was $491,781.31.
>
> "For the twelve months ended September 30, 1908, the operating expenses and taxes were $281,613.48; for the twelve months ended September 30, 1909, were $283,339.06; and for the twelve months ended September 30, 1910, were $345,282.43. The average annual operating expenses and taxes for the three year period ended September 30, 1910, were $303,411.66.

NET EARNINGS OF THE GAS COMPANY.

> "Deducting from the average annual gross revenue, for the three year period, the average annual expenditure for operating expenses and taxes, there remains an average annual net earning for the period of $188,369.65. From this sum there must be deducted for depreciation, the sum of $49,178.13, which sum is ascertained by taking ten per cent of the average annual gross revenue from the sale of gas. That this is no more than a reasonable allowance for depreciation will hereafter appear.

"This leaves $139,191.52 as the average annual NET AMOUNT RECEIVED BY THE GAS COMPANY FOR INTEREST AND PROFITS, WHICH AMOUNTS TO 8 PER CENT ON $1,739,094.

"The above amount of $49,178.13 deducted for depreciation is only 2.82 per cent upon this sum and cannot therefore be regarded as an unreasonable allowance for that purpose.

"However, I am clearly of the opinion that the present value of the company's property and assets is largely in excess of $1,739,894."

Again, under date of November 26, 1910, in a letter from said manager to said member of the council, is the following:

"Dear Sir:—In reply to your published letter of yesterday, copy of which I have not yet received, I beg to call you attention to my letter of the 22nd inst. to you, in which I submitted figures showing the gross revenue derived by this company from the sale of gas, together with figures showing the net revenue after deducting operating expenses, taxes and depreciation, and also computation showing that this amount of net revenue would yield but 8 per cent upon $1,739,894. I expressed the opinion that the present value of the plant and assets of the company was largely in excess of this sum. I assumed that you (and the council) would be interested in knowing the value of the property and the net revnue received under the present rate, as it is apparent that the question, as to what is a reasonable rate for gas, could only be determined from these facts."

V.

It is rather singular in this case to note that the appellant apparently did not have what might be said to be a fair conception of the value of its own property. A few days after the passage of the ordinance in controversy an application was made to the court below for a restraining order, which was granted. Following the granting of the restraining order, an application for a temporary injunction was set for hearing. The bill as originally exhibited contained the following in paragraph IV thereof:

> "Your orator, under and by virtue of its charter and articles of incorporation is empowered to construct, own, operate, and maintain gas works in the city of Des Moines and it has established, erected and owns, and is now maintaining and operating within the city of Des Moines, gas works, consisting of a manufacturing plant, holders, mains, pipes and a large amount of other property in the city of Des Moines, used in its business of manufacturing and distributing gas for illuminating and fuel purposes to consumers. The present value of its said property exceeds the sum of $2,700,000.00."

In Paragraph VI of said original bill, after stating the amount of the annual gross revenue, and the average annual operating expenses and taxes, covering the period of three years, and after deducting $49,178.13 for annual depreciation, it is charged and averred that there remains the sum of $139,191.52 as the annual net amount received by said company for an average of three years, which would amount to upon said valuation of its property 5.15 per cent annually.

At the time of the hearing on said application for a temporary injunction, the joint and several demurrers of the defendants in the said suit were interposed, when an amendment to the bill of complaint was filed, in which it was averred that the value of complainant's property was the sum of $4,092,000.00. Both the original bill as exhibited to the court below and the amendment thereto were verified by Jansen Haines, the then manager of the complainant company, and now president thereof.

VI.

An examination of the report of the Master and the opinion of the court below clearly show that the valuation placed upon the appellant's property for the purposes of this hearing was more than liberal. To begin with, the valuation of $2,100,000.00 found by the Master includes the sum of $140,000.00 for operating capital allowed upon the theory that in fixing the value of the appellant's property, the duplication method should be followed to a greater or less extent, and that a hypothetical plant as distinguished from the operating plant would be required to have as operating capital an amount of approximately $140,000.00. And, that therefore, this was a proper item to be considered on the subject of value.

The court below takes occasion to criticise this item in the opinion, at page 9 thereof, wherein he says:

> "If the question were for decision, I would have much doubt as to the item of working capital, $140,000.00. The Master was liberal with the Gas Company by allowing that item. I fail to find satisfactory evidence in this tremendous record, as to that item, although there is evidence bearing thereon. * * * * * I only mention this to show that the Master has not borne down on the Gas Company."

Moreover, the Master expressly states at page 109 of his report that,

> "The physical value as hereinbefore determined ($2,100,000.00) is reckoned upon the fact that the plant was in 'successful operation' when the ordinance was enacted, otherwise its value

> would be much less. The 'going value' is that enhancement which results from a well developed and paying business. This would result in reducing the estimated deficits for each year $24,000.00 and yield a return to the complainant of, at least, 6 per cent on $2,100,000.00."

This answers the suggestion of appellant that the Master has not given due consideration to the several items entering into and forming a part of appellant's gas works and property used in connection with the service. As a matter of fact the record discloses that the valuation placed upon the appellant's property of $2,100,000.00 is very liberal indeed.

VII.

In addition to what has already been said, the appellant's application herein should be denied:

First. Because both the Master and the Court below have found against it upon every question on which relief could be justly based.

Second. After a full hearing on the merits, the court below denied the very application presented by dissolving the restraining order and temporary injunction.

Third. Temporary injunctions being granted only when danger of irreparable injury is apparent, and the universal rule being that the court must exercise a sound judicial discretion in granting or refusing the same, no interference should now be had with the order and decree of the lower court in vacating and setting aside the injunction after hearing and trial.

Fourth. The findings of the Master have the force and effect of the verdict of a jury and no case of this kind will be found anywhere in the books in which a decree vacating and setting aside a temporary injunction based upon a Master's report has been rendered in which this court has continued such preliminary injunction pending the appeal.

Peter L. Kimberly v. Charles D. Arm, et al., 129 U. S., 512;

John T. Davis, et al., v. John H. Swartz, et al., 155 U. S., 636;

Des Moines Water Company v. City of Des Moines, 194 Fed. Rep., 557;

Camden v. Stuart, 144 U. S., 104, 119.

Fifth. The situation presented by appellant's application is ruled by the doctrine announced in the *City of Louisville v. Cumberland Telegraph & Telephone Co.*, 225 U. S., 430, 56, Law Ed., 1151.

Sixth. That the appellant is attempting to secure from this court the exercise of original jurisdiction in respect of a matter where this court does not have original jurisdiction, in that said appellant invokes the aid of this court to restrain or suspend the enforcement of an ordinance of the defendant city during the pendency of the appeal under the guise of an application to maintain the *status quo*.

VIII.

The application of the appellant does not present anything like the same facts as were disclosed by the record in the case of *Omaha & Council Bluffs Street Railway Company v. Interstate Commerce Commission, supra.* In that case, if we understand it rightly, the Commission had ordered into operation a rate below that which the railroad had theretofore received for the service. There was no practicable way by which the company could keep a record of the divers persons tendering fares or transfers at the reduced rates, nor by which it might demand reimbursement from its patrons in the event it should gain the appeal.

The operation of a street railway is so vastly different from the operation of a gas works that the reasons for an injunction to prevent enforcement of a schedule of rates in the former would have no proper place as applied to the latter.

The Gas Company has a regular list of patrons entered upon its books and the places of business or residences of each completely identified.

Even if we shall assume that appellant will succeed in this court, it would still be in position to add to the amount of the bills rendered its customers an amount which would represent that to which it was found entitled during the pendency of the appeal, just as the lower court has made provision in its decree for restitution by the company of the excess rate collected between January 1st, 1911, and November 15th, 1912, in the event of the affirmance of said decree by this court.

The fact that appellant is given the right to retain this latter amount pending the appeal ought to offset the demand for the right to continue to charge the excess rate pending the appeal.

IX.

The case of *Ex Parte Milwaukee v. Minnesota Railroad Company*, cited in the *Omaha & Council Bluffs Street Railway* case, merely recognizes the rule that where a case is properly in the supreme court by appeal, by the 14th section of the Judiciary Act, the right exists to issue any writ which may be necessary to render appellate jurisdiction effectual.

In this case the lower court had refused to approve a bond and allow a supersedeas, on the grounds that the sureties were non-residents of the district, and was before this court on petition for a mandamus to compel the district judge to approve the bond and allow a supersedeas.

While the court did not concur in the opinion of the district judge that the fact of the non-residence of the sureties was a sufficient reason for rejecting the bond, this court was not inclined to interfere by mandamus with the discretion of the judge in rejecting the bond offered for his approval. All that this case holds is, that where a case is properly in the supreme court, it has a right to issue any writ which may be necessary to render its appellate jurisdiction effectual.

Leonard v. Ozark Land Co., 115 U. S., 465, 29 Law Ed., 445, is also cited in said *Omaha & Council Bluffs Street Railway Company* case, in support of the right to restrain the enforcement of the order of the Interstate Commerce Commission pending the appeal.

In this case a decree had been entered in the lower court, by the terms of which the defendants were

perpetually enjoined from cutting or removing any timber from lands. The same judge who rendered the decree allowed the appeal and in doing so, directed that it should not operate to suspend or affect so much of the decree as enjoins the defendants from cutting or otherwise trespassing on the lands in controversy or removing staves or timber cut thereon.

The appellant moved the supreme court to vacate so much of the decree of the court below as qualified said appeal and prevents the same from superseding the decree and prevented the appellant from removing the staves made on the land in controversy by the entry of the decree in favor of the appellees.

This case recognizes the rule that the injunction ordered by the final decree was not vacated by the appeal.

As bearing upon the right of the appellate court to modify an injunction granted by a decree of the lower court in advance of a final hearing of an appeal on its merits, the court says:

> "This court no doubt has the power to modify an injunction granted by a decree below in advance of a final hearing of an appeal on its merits. An application to that effect was made to us at the October term, 1878, in the case of the *Sandusky Tool Company v. Comstock,* and finding that such a practice, if permitted, would oftentimes involve an examination of the whole case, and necessarily take much time, we promulgated the present Equity Rule 93, which is as follows:
>
> " 'When an appeal from a final decree in an equity suit, granting or dissolving an injunction, is allowed by a justice or judge who took part in the decision of the cause, he may, in his dis-

cretion, at the time of such allowance, make an order suspending or modifying an injunction during the pendency of the appeal upon such terms as to bond or otherwise, as he may consider proper for the security of the rights of the opposite party.'

"Here the judge who heard the case allowed the appeal, and instead of suspending or modifying the injunction, he took occasion to give special notice that it was to continue in force, and if the facts are correctly stated in his opinion, it was quite proper he should do so."

This case not only does not support the appellant's application in the instant case, but on the contrary supports the resistance of the appellees thereto, in that it states clearly the reasons for the promulgation of Rule 93 and affirms the doctrine that where the court below exercises a discretion with respect to continuing or dissolving a temporary injunction, such discretion will not be reviewed or set aside except in a case where it is necessary to the exercise of appellate jurisdiction.

Re Claasen, 140 U. S., 200, 35 Law Ed., 409, states the principle that the appellate court has power to issue a writ of supersedeas under Section 716, U. S. Rev. Statutes, and that a justice of said court has authority not only to allow a writ of error but also to grant a supersedeas in a criminal case.

Re McKenzie, 180 U. S., 536, 45 Law Ed., 657, the court reaffirms the doctrine that under Section 716 of the Rev. Statutes it has the power to issue a writ of supersedeas under special circumstances and in furtherance of justice.

U. S. v. Shipp, 203 U. S., 563, 51 Law Ed., 319, is to the same effect.

X.

Inasmuch as the court below has dissolved the restraining order and temporary injunction, after a hearing of the said suit on the merits, and that Mr. Justice Van Devanter, who allowed the appeal, made no order with respect to continuing said temporary injunction during the pendency thereof, we submit that this court is now without power or jurisdiction in the premises.

The appellate court will interfere in those cases only where it is necessary to the exercise of its jurisdiction and agreeably with the usages and principles of law.

Merrimac River Savings Bank v. Clay Center,
219 U. S., 527; 55 Law Ed., 320.

The appellant is not, as a matter of fact, attempting to maintain the *status quo* by this application. On the contrary, it is endeavoring thereby to suspend the operation of an ordinance pending the appeal where the question presented has been determined adverse to it in the lower court. If such an application may be entertained, then, of course, in every case in which an appeal may be prosecuted and incidentally involves the dissolution or continuance of a temporary junction, this court will be called upon to review decrees of that character and to exercise new judicial powers in advance of the hearing on appeal.

It is our contention that such proceedings are not contemplated by the statutes or rules of practice of this court.

We respectfully submit that under the foregoing facts and authorities the application of the appellant for an injunction to restrain the operation of the ordinance in controversy should be denied.

Respectfully submitted,

ROBERT O. BRENNAN,

H W. BYERS,

Solicitors for Appellees.

Supreme Court of the United States.

No. 75
OCTOBER TERM, 1913.

Office Supreme Court, U. S.
FILED
MAR 28 1914
JAMES D. MAHER
CLERK

DES MOINES GAS COMPANY,
Appellant,

vs.

CITY OF DES MOINES *et al.*

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

BRIEF AND ARGUMENT FOR APPELLANT.

DIVISION I.

NATHANIEL T. GUERNSEY,
Solicitor for Appellant.

GEORGE H. CARR,
of Counsel.

Stillman Appellate Printing Co., 51 Broad St., N. Y.

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Supreme Court,

OF THE UNITED STATES.

No. 397.

DES MOINES GAS COMPANY,
Appellant,

against

CITY OF DES MOINES, *et al.*,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

BRIEF AND ARGUMENT FOR APPELLANT.

DIVISION I.

Statement.

The appellant is engaged in the business of manufacturing, distributing and selling gas in the city of Des Moines. The plant was constructed in 1864, and was operated by the Capital City Gas Light Company until March 1, 1906 (transcript, page 41), when the appellant was organized. It, immediately after its organization, acquired the property and has since operated it.

The price of gas in the city of Des Moines was for the years 1896 and 1897, $1.30 per m. c. f.; for the years 1898 and 1899, $1.25; for the years 1900 and 1901, $1.20; for the years 1902, 1903 and 1904, $1.15; for the year 1905, $1.10, and for the years 1906 to 1910 inclusive, $1.00; with a provision authorizing an additional 10 cents per m. c. f. if the bills for each month were not paid on or before the 15th of the succeeding month.

On the 27th of December, 1910, the ordinance in question (transcript, page 113) was introduced, reducing the price to be charged for gas from $1.00 to 90 cents per m. c. f., on and after January 1, 1911. At the same meeting this ordinance was finally adopted, under a suspension of the rules.

Thereupon, the appellant filed its bill asserting that the 90 cent rate would not afford to it a fair return upon the value of its property used and useful in the performance of this service. The case was referred to a master, who, after a very exhaustive hearing, reported his conclusions upon the law and facts, and recommended that the bill be dismissed without prejudice (transcript, page 109).

The master found that the value of the property on January 1, 1911, was in the aggregate $2,540,000. This included going value, which he estimated at $300,000, and enhancement on account of paving over mains where the streets had not been paved when the mains were laid, which he estimated at $140,000. His conclusion was that if these two elements of value should be included, a decree for the complainant was imperative, but because he determined that they should be excluded, he recommended that the bill be dismissed without prejudice.

The court below held with the master as to the paving item, and as to the matter of going value that this factor should be taken into account, and further determined that it was included in an amount of $2,240,928 which the court understood to be the value found by the master. This was a misapprehension. This sum was not the value found by the master, nor did it include the going value item.

The court below confirmed the master's report, but entered a decree dismissing the bill "with prejudice" (transcript, page 173). The master determined with great detail the facts not only as to value, but as to operating expenses, and sales, and estimated the sales for four years in the future.

The fundamental questions which will be presented here are:

(a) Should the paving item have been excluded?

(b) Should the going value item have been excluded?

(c) Upon the facts as found by the master and confirmed by the court below, was the appellant entitled to a decree upon the merits?

(d) If it was not, did the court err in dismissing the bill upon the merits?

The brief will be divided into two divisions. In the first these fundamental questions will be urged; in the second the facts will be argued, not for the purpose of inducing the court to disturb the findings that have been made, but for the purpose of showing that these findings are so clearly established that they may be accepted for the purposes of this case.

SPECIFICATIONS OF ERRORS RELIED UPON.

First. That the court erred in adjudging and decreeing that the bill of complaint in the said cause be dismissed with prejudice.

Second. That the court erred in adjudging and decreeing that the complainant pay the costs of the said suit and in awarding execution therefor.

Third. That the court erred in adjudging and decreeing that the bill of complaint in the said cause be dismissed.

Fourth. That the court erred in adjudging and decreeing that complainant be denied the relief prayed for in its bill of complaint.

Fifth. That the court erred in refusing to adjudge and decree that the ordinance of the city of Des Moines of the 27th of December, 1910, complained of in complainant's bill of complaint, is and was invalid, and void, and erred in refusing to permanently enjoin its enforcement.

Sixth. That the court erred in not adjudging and decreeing that the rates fixed in said ordinance of the city of Des Moines, of December 27, 1910, were and are confiscatory of complainant's property.

Seventh. That the court erred in adjudging and decreeing that the master's report should be approved.

Thirteenth. That the court erred in adjudging and decreeing in the fourth paragraph of the said decree:

> "At any time on and after three years from this date, complainant, its successors or as-

signs, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable."

Relating to the Enhanced Value Due to the Enhanced Cost of Reproducing Mains Located in Paved Streets.

Fourteenth. That the court erred in adjudging and decreeing that the estimated cost of reproduction, less depreciation, when taken as a measure of value, is not such estimated cost as of the date of the valuation and subject to the conditions which then existed.

Fifteenth. That the court erred in adjudging and decreeing that from the amount of $2,240,928 (which the master found to be the cost of reproducing the physical property, less depreciation, without taking into account the element of value usually known as going value) there should be deducted the sum of $140,000, because this did not represent an expense incurred in the original construction of the property; said $140,000 being the estimated additional cost, less depreciation, which would be incurred on account of removing and replacing, paving in the reproduction of mains in streets which were paved at the date of the valuation, but were not paved when the mains in them were originally laid.

Sixteenth. That the court erred in adjudging and decreeing that complainant is not entitled to earn a fair and reasonable return upon the present

value of that portion of its investment and property which consists of mains under paved streets, where the pavement was put down after the mains were laid.

Seventeenth. That the court erred in adjudging and decreeing that the twelfth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

> "Twelfth. That the master has in said report stated and certified that there should be deducted from what is called the 'total physical value' as found by him, the sum of $140,000, representing the cost of removing and replacing pavements, where pavements existed over the mains at the date as of which the valuation is made, but where no such pavements existed at the dates when the mains were laid; whereas, the master ought to have found that no deduction should be made on this account and that the value of the mains should be determined with reference to existing conditions and not with reference to the conditions which existed at the time the mains were laid."

Eighteenth. That the court erred in adjudging and decreeing that the thirteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

> "Thirteenth. That the master has in said report stated and certified as to the said item of $140,000:
>
> > 'But where pavements are laid after the mains are installed, they have expended no money in taking up and replacing pavements. An allowance, therefore, makes reproduction the ultimate question, and not the reasonable value of the mains, unless

it further appear that the value of the mains are enhanced thereby to the extent of the cost of taking up and replacing pavements, which is not shown in this case. When the whole evidence is considered, the contrary is shown';

whereas, the master ought to have found that the value of the mains in question as of the date of the valuation is determined, not by what may have been expended in installing the said mains but by what it would cost to reproduce them, less the proper charge on account of depreciation, and ought to have found that changes in conditions since the mains were laid resulting in enhancing the cost of reproducing them, result in corresponding enhancements in the value of the existing mains, and ought to have found that the evidence which shows that because of placing of pavement over these mains, the cost of reproducing them would be enhanced $140,000, showed that the value of these mains had been enhanced."

Nineteenth. That the court erred in adjudging and decreeing that the fourteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Fourteenth. That in the consideration of the said item of $140,000, the master has in his said report adopted as the basis for determining the present value of the mains in question as to the matter of paving, their original cost less depreciation, and as to other items, their cost of reproduction, less depreciation; whereas, he should, in order to ascertain present value, in view of the difference in the conditions, existing at present and when said mains were laid, have consistently applied the cost of reproduction, less depreciation, as to all of the items going to the value of the mains."

Relating to Going Value.

Twentieth. That the court erred in adjudging and decreeing that the master found that the value of the complainant's property is $2,240,928 and should have determined that the master found that the said amount represented the value of the property in question exclusive of the item of going value found by the master to be $300,000, and that the master found that the total value of the property in question was the sum of $2,540,000.

Twenty-first. That the court erred in adjudging and decreeing that the eighteenth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

> "Eighteenth. That the master has, in said report, stated and certified that:
>
> > 'The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the "Going Value" of this concern is worth more, but I cannot feel satisfied that such is the case and regard $300,000 as every dollar it is worth over and above its physical value, and in my judgment, it is worth that much more than a plant would be that had to develop its business;'
>
> whereas, the master ought to have found the said item of going value to be not less than the sum of $530,932, as clearly shown by the preponderance of the evidence."

Twenty-second. That the court erred in adjudging and decreeing that the nineteenth exception of the complainant to the report of the special mas-

ter in the said cause be overruled, which exception was as follows:

> "Nineteenth. That the master has in said report stated and certified:
>
> > 'The opinion in the recent case of the Cedar Rapids Gas Co. vs. Cedar Rapids, adds additional emphasis thereto. Not only so, but it also renders it extremely doubtful that "Going Value" will be included in valuation of such a plant as the basis of return, beyond the fact that it is in "successful operation." That would exclude the sum of $300,000 estimated in this case, on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.
> >
> > In my judgment, after considering the able and thorough arguments of counsel, that it is decisive of the question, and holds that "Going Value" should not be considered in determining the basis upon which the complainant is entitled to have its return reckoned, and feel that it is my duty to so state;'
>
> whereas, the master ought to have found that the said opinion of the Supreme Court of the United States does not hold that going value should be excluded in determining the basis upon which the complainant is entitled to have its return reckoned, but on the contrary, recognizes the fact that going value should be considered in determining the said basis."

Twenty-third. That the court erred in adjudging and decreeing that the twentieth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

> "Twentieth. That the master has in said report stated and certified, in substance, that

the fact that the property in question is a going concern, characterized by an established business, with a large number of consumers attached to it, and a developed business, should not be taken into account; whereas, the master ought to have found that in ascertaining the value of the complainant's property upon which the rate of return afforded by the ordinance in question should be computed, all of the elements affecting that value should be taken into account, including whatever is contributed by the fact of the connection of the items, making a complete and operating plant."

Twenty-fourth. That the court erred in adjudging and decreeing that the twenty-first exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Twenty-first. That the master has in said report stated and certified in effect that the value of the complainant's property as of the date of the inquiry, upon which its return should be computed, is the mere cost of purchasing the land, constructing the buildings, putting in the machinery and installing the mains, meters and services with the working capital—in other words, the mere cost of reproducing the physical property, less depreciation; whereas, the master ought to have found that in order to ascertain said value there must be taken into account the additional value created by the fact of many connections with buildings, and actual earnings, including whatever is contributed by the fact of the connection of the items making up a complete and operating plant."

Twenty-fifth. That the court erred in adjudging and decreeing that the twenty-second exception of

the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

> "Twenty-second. That the master has in said report in effect, stated and certified that the item designated by him as 'going value' is something separate and apart from the physical property; whereas, he ought to have found that it is an element contributing to the value of each tangible part of the property and that its existence is solely as a characteristic of the structure and that the structure is a structure whose value is affected by the fact that it is in use."

Relating to a Fair Return.

Thirty-second. That the court erred in adjudging and decreeing that the rate of return to which the complainant is entitled is not a matter of fact which may be shown by testimony with the same definiteness and certainty as other controverted matters of fact.

Relating to the Master's Conclusions.

Fifty-seventh. That the court erred in adjudging and decreeing that the fifty-eighth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

> "Fifty-eighth. That the master has in said report stated and certified that:
>
> > 'Should the court hold that the $140,000 for taking up and replacing mains where none existed at the time the mains were laid, then a decree for the complainant would be imperative, should "going value" be included in the basis for a return;'

whereas the master ought to have held that both the $140,000 item referred to and going value should be included in the basis for a return, and ought to have found that a decree for the complainant is imperative."

Fifty-eighth. That the court erred in adjudging and decreeing that the fifty-ninth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Fifty-ninth. That the master has in said report stated and certified that:

'Should the court hold that "salaries general" and the contribution to the Greater Des Moines Committee be included in the future cost of gas, then a like result should follow. So, also would rate regulation require a like result, should it be held a proper matter to be considered and 2 cents per M. C. F. be allowed therefor;'

whereas, the master ought to have found that the said items are necessarily included in the future cost of gas, and therefore he should have found that a decree for the complainant is imperative."

Fifty-ninth. That the court erred in adjudging and decreeing that the fiftieth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Fiftieth. That the master has in said report stated and certified as a conclusion of law that:

'This action having been brought and a temporary injunction granted restraining the enforcement of the ordinance without having first tried the effect of the rates there-

> in prescribed, the complainant must establish by clear and satisfactory evidence that such rates are inadequate and confiscatory, and if upon the whole evidence there remains a reasonable doubt of the correctness of complainant's contention, then the bill should be dismissed without prejudice to a future action, and complainant required to try the same before instituting another action;'
>
> whereas, the master ought to have found as a matter of law, that the complainant is only bound to sustain the correctness of the ultimate facts upon which its contention is founded by clear and satisfactory evidence."

Sixtieth. That the court erred in adjudging and decreeing that the fifty-first exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

> "Fifty-first. That the master has in said report stated and certified as a conclusion of law that:
>
> > 'If, however, upon the whole case, there remains no reasonable doubt of the correctness of complainant's contention that the rates prescribed by the ordinance, will not afford an adequate rate of return, either in whole or in part, then it is entitled to have the injunction made perpetual, and the ordinance annulled as confiscatory;'
>
> whereas, the master ought to have found as a conclusion of law that if upon the whole case the correctness of complainant's contention that the rates prescribed by the ordinance will not afford an adequate rate of return, either in whole or in part, appears by clear and satisfactory evidence, then it is entitled to have the injunction made perpetual and the ordinance annulled as confiscatory."

Sixty-first. That the court erred in adjudging and decreeing that the sixty-sixth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

> "Sixty-sixth. That the master has in said report stated and certified that:
>
> > 'While this case is to the border line, I cannot say on the whole case that the evidence, beyond any just and fair doubt, satisfies me that the rates will prove confiscatory should the ordinance be put into effect and an actual test thereof be made;'
>
> whereas, the master ought to have found and certified that there is no evidence which tends to indicate or which could afford the basis for a fair assumption that there will be any material increase in the consumption of gas by existing consumers sufficient to alter or modify the results of operation under the ordinance in question as found; and ought to have found further that beyond any just or fair doubt the ordinance in controversy if enforced will be confiscatory in its effect."

Sixty-second. That the court erred in adjudging and decreeing that the sixty-third exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

> "Sixty-third. That the master has in said report erred in finding that the testimony does not show clearly and satisfactorily that the rates fixed by the proposed ordinance will not afford to the complainant a fair return upon the present actual value of the property constituting its investment and would not afford

such return upon such value at the date when the ordinance in question was to go into effect."

Sixty-third. That the court erred in adjudging and decreeing that the sixty-fourth exception of the complainant to the report of the special master in the said cause be overruled, which exception was as follows:

"Sixty-fourth. That the master has in said report in effect certified and found that the material question is whether in the remote future the rates fixed by the ordinance in controversy may not afford to the complainant a fair return; whereas the only material question is whether those rates at the time the said ordinance purported to go into effect, and at the present time will afford to the complainant a reasonable and fair return upon the value of its property devoted to the use of the public."

Sixty-fourth. That the court erred in adjudging and decreeing that the sixty-fifth exception of the complainant to the report of the special master in said cause be overruled, which exception was as follows:

"Sixty-fifth. That the master has in said report stated and certified that there should be a decree in this case dismissing the complainant's bill without prejudice; whereas, the master ought to have found that there should be a decree annulling the ordinance in controversy."

Sixty-fifth. That the court erred in adjudging and decreeing that the master found that a 90c. rate is sufficiently high for a sufficient return to the gas company, and should have found that the

master determined that the testimony was not sufficient to enable him to find whether said rate would be confiscatory or not; and that therefore the master recommended the bill should be dismissed without prejudice to permit a trial of the rates.

Sixty-sixth. That the court erred in adjudging and decreeing that the bill of complaint in the said cause be dismissed with prejudice upon the merits. If it should be finally held that the complainant is not entitled to a decree as prayed, still the bill should not be dismissed upon the merits, but should be dismissed without prejudice to the right of the complainant to institute another suit if a trial of the rates in question should warrant it.

BRIEF OF ARGUMENT.

I.

The facts found by the master.

The testimony showed exhaustively the history of the plant for a long term of years. The master held that the facts must be established by the appellant beyond a reasonable doubt.

The salient facts found by his report were:

(a) That the reasonable value of the appellant's property at the time of its use by the public (transcript, page 60, $2,240,928 plus, transcript, page 63, $300,000) was $2,540,000.

> (The statements of the court that the master found the value to be $2,240,928 and that this sum included the the item of $300,000 on account of going value (transcript, pages 165-166) are mistakes of the court below as to what the master determined. See *infra*, page 61.)

(b) That this total included $300,000 on account of what is known as going value.

(c) That this total further included $140,000, the cost of removing and replacing paving in reproducing the property, which it had not been necessary to remove or replace when the plant was originally constructed.

(d) As to fair return that "the evidence in this case clearly justifies 8 per cent. under the rule established in the *Consolidated Gas case*," and that

"really under the circumstances 6 per cent. of return therein would be a greater return accordingly than 8 per cent. in the plant and business of the complainant herein." (Transcript, page 73.)

(e) That at the old $1.00 rate the appellant did not earn a fair return in the year 1910, and that taking into account the probable increased sales, the appellant would not earn a fair return at the new rate in either of the years 1911, 1912, 1913, or 1914. (Transcript, pages 98, 103.)

II.

Some fundamental propositions stated, but not discussed.

(a) At the time in question the city of Des Moines had the power to establish reasonable rates to be charged by appellant for gas sold and distributed in the city.

Code of Iowa, 1897, Supplement, Sections 724, 725.

(b) Rates so established must be sufficient to afford to the appellant a fair return upon the value of its property.

The Minnesota Rate Cases, 230 U. S. 352, 434;
Smyth vs. Ames, 171 U. S. 361;
San Diego Land and Town Company vs.

National City, 174 U. S. 739;
San Diego Land and Town Company vs. Jasper, 189 U. S. 439;
Stanislaus County vs. San Joaquin, etc., Company, 192 U. S., 201;
Knoxville vs. Knoxville Water Company, 212 U. S. 1;
Willcox vs. Consolidated Gas Company, 212 U. S. 19.

(c) A fair return, broadly speaking, is a return which is relatively equal to what money devoted to other like investments will earn.

See the cases above cited.

(d) The value to be ascertained is the fair value of the property used in performing the public service.

See many of the cases above cited.

(e) The appellant was bound to establish each ultimate fact necessary to sustain a decree in its favor by clear and satisfactory evidence.

See the cases above cited.

In holding the appellant bound to establish these facts beyond a reasonable doubt (transcript, paragraph 10, page 98; *Id.*, next to last paragraph, page 107), the master went beyond the established rule.

III.

The item of paving.

The depreciated cost of reproduction included $305,870 as the cost of removing and replacing pavements (transcript, page 61) from which $140,000 was deducted, because portions of the streets were unpaved when the mains were laid.

(a) The character of this item is clear.

It is an expense incident to excavation and back-filling.

(b) The cost represented by this item is inevitably a part of the cost of reproduction.

(c) This factor must be taken into account in arriving at present value.

Present value is determined by present conditions and is distinguished from cost, which is determined by original conditions.

It is the fact that value, not cost, controls which requires depreciation as well as appreciation to be taken into account.

The illogical confusion of cost and value has depreciated by 14.7% or $150,382.47 the item of $1,023,010 representing the value of the mains (transcript, page 128, transcript, page 59), and then has further deducted $140,000, making a total deduction of $290,382.47, or roughly, 29%.

This item should not have been deducted.

Willcox vs. Consolidated Gas Company, 212 U. S. 19;
Consolidated Gas Company vs. New York, 157 Fed. 849;
Omaha vs. Omaha Water Company, 218 U. S. 180;
Steenerson vs. Great Northern Railway Company, 69 Minn. 353;
State vs. Minneapolis and St. Louis Railroad Company, 80 Minn. 191;
Cotting vs. Kansas City Stock Yards, 82 Fed. 850, 854;
People ex rel. Kings County Lighting Company vs. Willcox, et al., 156 App. Div. (N. Y.) 603; 141 N. Y. S. 677.

The case of

Cedar Rapids Gas Light Company vs. City of Cedar Rapids, 144 Iowa 426,

does not hold the contrary.

IV.

The Court erred in its conclusion that the total of $2,240,928 was stated by the master as the value of the plant, and in the conclusion that this included the item of $300,000 on account of going value.

Transcript, pages 53, 54, 57, 59, 60, 63, 105, 91, 99, 100 and 109.

V.

The item of going value.

The master used this term in its established sense (transcript, page 63).

It is "an element contributing to the value of each tangible part."

> *Omaha vs. Omaha Water Company,* 218 U. S. 180.

(a) The Cedar Rapids case.

This court did not hold in

> *Gas Company vs. Cedar Rapids,* 223 U. S. 655,

that this item should be disallowed.

It is demonstrated from the items stated by the Iowa court in its opinion in this case that both going value and paving over mains were allowed.

(b) The authorities all recognize going value as an element in the value of such a property.

> *National Water Works vs. Kansas City,* 62 Fed. 853;
>
> *Omaha vs. Omaha Water Company,* 218 U. S. 180;
>
> *Public Service Gas Company vs. Board of Public Utility Commissioners, et al.,* 87 Atl. 651 (not yet officially reported);
>
> *People ex rel. Kings County Lighting Company vs. Willcox, et al.,* 156 App. Div. (N. Y.) 603; 141 N. Y. S. 677;

Monongahela Water Company's case, 223 Pa. St. 323;

Appleton Water Works Co. vs. Railroad Commission of Wisconsin, 142 N. W. 476 (not yet officially reported);

Gloucester Water Company vs. City of Gloucester, 179 Mass. 365;

Norwich Gas Company vs. City of Norwich, 76 Conn. 565;

Spring Valley Water Works vs. City and County of San Francisco, 124 Fed. 574;

Spring Valley Water Company vs. City and County of San Francisco, et al., 165 Fed. 657;

Kennebec Water District vs. City of Waterville, 97 Me. 185;

Galena Water Co. vs. City of Galena, 74 Kan. 644;

Town of Bristol vs. Bristol and Warren Water Works, 23 R. I. 274;

Newburyport Water Co. vs. City of Newburyport, 168 Mass. 541;

Venner vs. Urbana Water Co., 174 Fed. 348;

Spring Valley Water Works vs. City and County of San Francisco, 192 Fed. 137;

Bonbright et al. vs. Geary et al., 210 Fed. 44.

(c) The rule is the same in rate cases and condemnation cases.

Omaha vs. Omaha Water Company, 218 U. S. 203.

The word "property" describing what is protected in condemnation cases involving the fifth amend-

ment, and in confiscation cases involving the fourteenth amendment, means the same thing in each amendment.

Willcox vs. Consolidated Gas Company, 212 U. S. 19;
Monongahela Navigation Company vs. United States, 148 U. S. 312;
Fairbanks vs. United States, 181 U. S. 283;
Minnesota Rate Cases, 230 U. S. 352.

VI.

What is a fair return?

For the distinction between a reasonable rate and a fair return, see

Public Service Gas Company vs. Board of Public Utility Commissioners, et al., 87 Atl. 651 (not yet officially reported).

It will vary under varying conditions.

Willcox vs. Consolidated Gas Company, 212 U. S. 19, 48.

What it is, is a question of fact, to be determined by the testimony in each case.

Gas Light Company vs. Cedar Rapids, 144 Ia. 426, 448.

Under the rule in the *Consolidated Gas case,* 8% was justified by the evidence here (transcript, page 73). A public utility must constantly increase its investment and must pay for the new money required, what such money is worth in the market.

VII.

Upon the facts found, the complainant was entitled to a decree upon the merits in its favor.

The master required each fact to be established beyond a reasonable doubt.

The testimony was exhaustive, covering the history of the property for twenty-five years, and left nothing open to conjecture. Under such circumstances, what will happen in the immediate future is not, within reasonable limits, a matter of speculation but is definitely established.

The fact that capital is attracted to this business by rates not much in excess of those afforded by well-secured loans, shows that experience has demonstrated this to be a stable business.

No hypothesis applied by the master to the facts indicated that the property would earn a fair return. He stated (transcript, page 108) that if the two items of paving and going value should be included "a decree for the complainant would be imperative."

(a) The estimates as to future net revenue and deficits.

These showed upon every hypothesis a failure to earn a fair return (transcript, pages 98, etc.). The case is not on the border line. The deficits were large.

(b) Future increased sales.

In making his estimates, the master took into account normal future increases in sales. .

The history of the plant demonstrates that increases in sales in amounts sufficient to earn a fair return would have been impossible.

(c) The finding that increased sales must be due to increased population.

The facts show and the master determined (transcript, pages 89 and 90) that substantial increases in sales could only come from increases in population.

(d) The population necessary to a fair return.

To sell gas there must be persons to buy it.

The population was insufficient to afford a market for the gas necessary to earn a fair return.

(e) The plant had not the capacity to manufacture enough gas to afford a fair return.

Transcript, pages 87 and 88.

A large additional investment would have been required, increasing the amount upon which the return must be earned.

VIII.

The inevitable conclusions from the established facts.

Computations predicated upon the facts found by the master demonstrate that upon no reasonable hypothesis could a fair return be anticipated.

IX.

What does the clear and satisfactory evidence rule require?

This rule relates to the testimony necessary to establish the ultimate facts.

Where facts have been established by testimony of this character, the rule may not be invoked to discredit sound and legitimate inferences from them.

> *Willcox vs. Consolidated Gas Company,* 212 U. S. 19;
> *Lincoln Gas Company vs. Lincoln,* 223 U. S. 349,

both recognized the proposition that these facts may be established without evidence deduced from a trial of the rates.

X.

The peculiar nature of the decree.

The court erred in dismissing the bill upon the merits and then in attempting to provide for a reopening of the case after three years.

> *Bronson vs. Schulten,* 104 U. S. 410.

XI.

The situation so far as the appellant is concerned.

If the appellant is not entitled to a decree in its favor upon the merits, it is entitled to an opportunity to try the rates and to definitely establish the facts upon which the rights of the parties depend.

Stanislaus County vs. San Joaquin C. & I. Company, 192 U. S. 201;
Knoxville vs. Knoxville Water Company, 212 U. S. 1;
Willcox vs. Consolidated Gas Company, 212 U. S. 19;
Cedar Rapids Gas Company vs. Cedar Rapids, 223 U. S. 655;
Minnesota Rate Cases, 230 U. S. 352;
Missouri Rate Cases, 230 U. S. 474;
In re City of Louisville, 231 U. S. 639;
City of Louisville vs. Cumberland Telephone & Telegraph Co., 231 U. S. 652;
Northern Pacific Railway Company vs. North Dakota, 216 U. S. 579.

ARGUMENT.

I.

The facts found by the master.

The testimony introduced before the master, in addition to other matters, covered with great detail the history of the property, its cost, the cost of its reproduction, the amount of depreciation, its capitalization, stock and bonds, and its earnings and operating expenses. In connection with the showing as to operating expenses, there was a detailed analytical showing of each item of the operating costs for the five (5) years ending December 31, 1910, and for the first ten (10) months of the year 1911, down to less than one (1) month prior to the submission of the case to the master. Among other things the master determined:

(a) That the reasonable value of the appellant's property at the time of its use by the public (transcript, page 60, $2,240,928, plus transcript, page 63, $300,000) was $2,540,000.

(The statements of the court that the master found the value to be $2,240,928 and that this sum included the item of $300,000 on account of going value (transcript, pages 165-166) are mistakes of the court below as to what the master determined. See *infra*, page 61.)

(b) That this total included $300,000 on account of what is known as going value.

(c) That this total further included $140,000, the cost of removing and replacing paving in reproducing the property, which it had not been necessary to remove or replace when the plant was originally constructed.

(d) As to fair return that "the evidence in this case clearly justifies 8 per cent. under the rule established in the Consolidated Gas case" and that "really under the circumstances 6 per cent of return therein would be a greater return accordingly than 8 per cent in the plant and business of the Complainant herein" (transcript, page 73).

(e) That the costs in cents per thousand cubic feet, after making deductions for debatable items of operating expenses, and including 6.67 cents which the master determined to be proper for depreciation, and the corresponding net revenue at a 90 cent rate, were for various periods as follows:

	Cost in cents per m. c. f.	Net return in cents per m. c. f.
1910, operating costs (transcript, page 80, paragraph 6),	69.65	20.35

Average for five (5) years ending December 31, 1910, (transcript, page 80, paragraphs 4 and 8),	69.25	20.75
Lowest year ending February 28, 1909 (transcript, page 80, paragraph 10),	67.10	22.90
1911—first ten (10) months up to submission of case to master (transcript, page 80, line 2),	68.40	21.60

(f) That the sales of gas for the year 1910 were 521,486,354 cubic feet (transcript, page 80, paragraph 7), which would afford net revenues on the respective bases above set out, as follows:

1910, operating costs (transcript page 80, paragraph 7),	$106,122.45
Five year average (*Id.*, page 80, paragraph 8),	108.208.50
Lowest year (*Id.*, page 80, paragraph 10),	119,420.35
1911, first ten (10) months (*Id.*, page 80, paragraph 9),	114,912.00

(It will be noted that these returns vary from 4.2% to 4.6% of the value of $2,540,000.00.)

(g) That "more and more people were using gas each year until the close of the year 1910 there was a meter to every 4.50 of its people, and that during the last five years there was a marked decrease in the gain, except for the year 1907 * * *.

From 1906 to 1910 inclusive, there is only a difference of .83 of a person to the meter. It is clear to me that in the future the annual gain will largely depend upon the increase in population and the erection of new residences for their accommodation, and consequently the extension of mains to accommodate them" (transcript, page 90).

(h) That the company in 1910 did not in fact earn, and in the future would not earn a fair return upon the value of its property used for the public, the deficits as computed by the master being as follows:

The results for the three (3) years, based on the average operating costs of the five (5) years terminating December 31, 1910, after certain deductions had been made from them by the master, were:

	Deficit.
1910, *At the old $1.00 rate* (transcript, page 99, line 4),	$27,272.80

Note that at the proposed 90 cent rate, this deficit would have been $79,421.43.

1911, At the 90 cent rate (transcript, page 99, last line),	$73,031.84
1912 (transcript, page 100, last line),	72,799.00
1913 (transcript, page 102, line 6),	77,192.56
1914 (transcript, page 103, line 5),	84,238.00

1910 and the first ten (10) months of 1911 were based upon actual sales. For the years 1912, 1913 and 1914, the master was compelled to make estimates. In making these estimates, he took into account increases in sales and investment, and used the various operating expenses determined by him.

These computations are based upon $2,400,000 as the value of the property for the years 1910 (transcript, page 99, line 1) and 1911 (transcript, page 99, next to last line) and for the succeeding years upon the same amount, plus new construction less depreciation.

> (See for 1912, transcript, page 100, lines 12 *et seq.;* for 1913, transcript, page 101, heading "New Valuations"; for 1914, transcript, page 102, lines 11 *et seq.*)

This $2,400,000 includes the item of going value (transcript, page 105, heading "Conclusions," line 9) and is arrived at by deducting from the master's valuation of $2,540,000 the paving item of $140,000 already mentioned (transcript, page 61).

After the master had formulated these conclusions, this court decided

> *Cedar Rapids Gas Company vs. Cedar Rapids,* 223 U. S. 655.

The master concluded that this case (transcript, page 109, line 10)

> "* * * holds that 'Going Value' should not be considered in determining the basis upon which the Complainant is entitled to have its return reckoned, * * *"

saying that this would reduce the estimated deficit for each year $24,000 (8% upon $300,000, the amount of this item), which in his judgment brought the case "close to the border line" inducing him to recommend that the bill be dismissed without prejudice.

The opinion of the court below shows that the court was mistaken as to some important matters of fact, namely:

(1) In his statement that the master found the value of the property to be $2,240,928 (transcript, page 165, fourteenth line from bottom);

(2) In his statement that this $2,240,928 included $300,000, the going value item (transcript, page 165); and

(3) In his statement that "he (the master) reports that a 90 cent rate is sufficiently high for a sufficient return to the gas company" (transcript, top of page 163).

The conclusion of the court was based on false premises as to matters of fact and law; the conclusion of the master on false premises as to law. We shall therefore in this division of our brief take the facts found by the master and approved by the court, and attempt to show from them that the ultimate conclusion of the court below that the bill should be "dismissed with prejudice" (transcript, page 167, line 22) is erroneous.

II.

Some of the fundamental propositions stated but not discussed.

(a) At the time in question the city of Des Moines had the power to establish reasonable rates to be charged by appellant for gas sold and distributed in the city.

Code of Iowa, 1897, Supplement, Sections 724, 725.

(b) Rates so established must be sufficient to afford to the appellant a fair return upon the value of its property.

The Minnesota Rate Cases, 230 U. S. 352, 434;
Smyth vs. Ames, 171 U. S. 361;
San Diego Land and Town Company vs. National City, 174 U. S. 739;
San Diego Land and Town Company vs. Jasper, 189 U. S. 439;
Stanislaus County vs. San Joaquin, etc., Company, 192 U. S. 201;
Knoxville vs. Knoxville Water Company, 212 U. S. 1;
Willcox vs. Consolidated Gas Company, 212 U. S. 19.

(c) A fair return, broadly speaking, is a return which is relatively

equal to what money devoted to other like investments will earn.

See many of the cases just cited.

(d) The value to be ascertained is the fair value of the property used in performing the public service.

See many of the cases above cited.

(e) The appellant was bound to establish each ultimate fact necessary to sustain a decree in its favor by clear and satisfactory evidence.

See many of the cases above cited.

We submit, however, that the master, in holding the appellant bound to establish these facts beyond "a reasonable doubt" (transcript, paragraph 10, page 98; *Id.*, next to last paragraph, page 107), went beyond the established rule. Although it may be difficult to define it, there is a well recognized difference between what the rule applicable to criminal cases requires, and the clear and satisfactory proof necessary in suits in equity to reform contracts, to set aside transactions because of fraud, and to annul rates as confiscatory.

With these fundamental matters out of the way, we pass to the controverted questions.

III.

The item of paving.

The master used the cost of reproduction less depreciation as the means for ascertaining the value of the buildings, their contents, yard structures and the mains, house and street lamp services and meters (transcript, page 49). He determined that the cost of reproducing the mains included $305,870 as the actual cost of removing and replacing pavements, after deducting depreciation (transcript, page 61). Of this amount, he found that $140,000, though an inevitable part of the cost of reproduction, should be deducted, because portions of the streets were unpaved when the mains were laid, so that this expense was not incurred as a part of the original cost of the plant. The court below sustained the master in this conclusion (transcript, top of page 165).

This presents the first question to which we wish to call the court's attention.

(a) The character of this item is clear.

It is an expense incident to excavation and back filling. To dig the trench, the paving must be removed, just as the soil under it, and to fill the trench, it must be replaced, as the soil is. It is true the appellant does not own the paving; but neither does it own the soil below it.

(b) The cost represented by this item is inevitably a part of the cost of reproduction.

This is true because the mains can not be reproduced without removing and replacing the pavements any more than this can be done without removing and replacing the earth under the pavements.

(c) This factor must be taken into account in arriving at present value.

What is to be determined is present value. The first and fundamental question is—does the present value of a main in a street, so far as the question of paving is concerned, depend upon present conditions, or is it controlled by conditions which do not exist to-day but which may have existed at any time up to forty or fifty years ago?

If cost were the factor to be determined, it would be necessary to resort to the conditions when the mains were laid, but because it has been authoritatively held that what is to be determined is *present* value, present and not past conditions control.

A few out of an indefinite number of available illustrations will demonstrate the soundness of this conclusion.

A owns a gas main in a street which to-day is paved. B places by its side a main which is identical with it in every respect, including the factors affecting depreciation.

The value of B's main is not less than its cost, assuming the work to be done reasonably and economically, and this cost inevitably includes the cost of removing and replacing the pavements.

A's main, identical with B's in every particular, is worth exactly what B's is; and this is true because the two mains are identical in every particu-

lar; and reference to their cost cannot affect this conclusion.

To vary the facts a little, suppose that the street was paved when A's main was laid, but that this pavement was removed so that there was no pavement when B's main was laid. A's main, which in this case has cost more than B's, is identical with B's in every respect and is still worth exactly what B's is, and no more.

If the court below is right, the fact that two mains, or two other pieces of property are identical in every particular does not compel or even warrant the conclusion that they are of equal value. Before a conclusion could be reached upon this question, it would be necessary to inquire further as to original conditions and original costs.

What determines a thing's value is what it is, in its existing condition and relations, and not what it may have cost under different conditions.

The reasoning of the master and the court below upon this item would require them to compare costs as to every other item going to the cost of the mains. The cost of removing and replacing paving is nothing more nor less than a part of the cost of excavating and back filling. The reasoning that requires this factor in the cost of reproducing mains to be controlled by original cost would apply to every other item in the cost of reproduction. Cast iron pipe costs much less than it did thirty or forty years ago; labor costs much more; engineering and other factors vary; and all of these things would have to be reduced to original cost if the theory of the court below is correct. Nothing would be left of the present cost of reproduction; it would be reduced to an estimate of original cost.

Let us take another illustration. Suppose that we have in the system two consecutive blocks of mains, and that one block was put in the ground before the street was paved, and the other after the street was paved, but that at the date of the valuation the conditions with respect to each of these two blocks of mains are exactly the same, and either that there is then no pavement over either of them, or that there is identical pavement over both. If we are dealing with value as distinguished from cost, can it be said that the value of each block is not now identical?

It is because cost is not controlling that depreciation as well as appreciation must be taken into account in ascertaining present value. The item under consideration illustrates the gross inequity involved in illogical combinations of the two factors. The master arrived at his total reproduction cost by the combination of low items (transcript, page 53, last paragraph). The distribution system which includes the mains, was covered by the item $1,505,966 (table, transcript, page 54). Exhibit L (transcript, page 128) shows that this item included for mains $1,023.010. The master's factor representing the present depreciated value was 85.3% (transcript, page 59) of the value new, making the depreciation 14.7%.

Upon the value theory, therefore, this item of $1,023,010 is depreciated 14.7 per cent., or $150,382.47. Reverting to the cost theory, another $140,000 is cut off, making a total reduction of $290,382.47, or roughly 29 per cent. on this item.

The same considerations which compel the deduction of the depreciation, compel the allowance of this item of $140,000.

This exact question was, we submit, decided in

Willcox vs. Consolidated Gas Company, 212 U. S. 19.

Turning to the record in this case, we find that this question was first raised before the master (see his report, page 177, printed transcript in that case, filed here) where it is said:

> "The fact that reproduction cost is so greatly in excess of the cost of original construction *is due largely to changes in the character of the City's pavements.* Formerly, when the gas companies had occasion to open the streets for the purpose of laying new mains or repairing old mains or services, it was their custom to replace the pavement at a cost of from 15 to 25 cents per square yard. Now about 88 per cent. of the streets are covered with new styles of pavement, chiefly asphalt. The gas companies are permitted to open the streets only on condition that the pavements shall be relaid by the contractors for asphalt paving. The expense of this work is paid by the gas companies and amounts to from $2.70 to $7.00 per yard, the latter price being for pavement on Broadway. Pavements consisting of granite blocks on concrete, are replaced by the City's employees, and for this work the Complainant is charged $8.00 for the first square yard and $4.00 for each additional yard. Another source of additional cost is the congested condition of the sub-surface of the streets, in view of the multiplication in recent years of various forms of underground construction. In addition to sewer and water mains there are now conduits for electric light,

telephone and telegraph wires, underground trolley ducts, and salt water mains, besides, in certain streets, the elevated railroad columns, and structures of the rapid transit railway. The result is that in many streets the entire sub-surface is so filled with these structures that the replacement or repairing of existing mains is attended with great difficulty and consequent expense.

Taking the testimony on this subject as a whole, the preponderance of evidence is very clearly with the Complainant, and its estimate of the replacement value of the mains may be taken as reasonable."

Following this matter, we find the question elaborately discussed in the opinion of the circuit court, in

Consolidated Gas Company vs. New York, 157 Fed. 849.

At page 854 under the heading, "Method of Valuation," the court says:

"As to the realty, the values assigned are those of the time of inquiry; not cost when the land was acquired for the purposes of manufacture, and not the cost to the complainant of so much as it acquired when organized in 1884, as a consolidation of several other gas manufacturing corporations.

"It is objected that such method of appraisement seeks to confer upon complainant the legal right of earning a fair return upon land values which represent no original investment by it, does not indicate land especially appropriate for the manufacture of gas, and increases apparent assets without increasing earning power. *Analogous questions arise as to plant, mains, services and meters; the reported values whereof are the reproductive cost*

less depreciation, and not original cost to the complainant or its predecessors.

"It appears by undisputed evidence that some of these last items of property cost more than new articles of the same kind would have cost at the time of inquiry; that some are of designs not now favored by the scientific and manufacturing world, so that no one now entering upon a similar business would consider it wise to erect such machines or obtain such apparatus. *In every instance, however, the value assigned in the report is what it would cost presently to reproduce each item of property, in its present condition, and capable of giving service neither better nor worse than it now does.* As to all of the items enumerated, therefore, from real estate to meters, inclusive, the complainant demands *a fair return upon the reproductive value thereof, which is the same thing as the present value properly considered.* To vary the statement: Complainant's arrangements for manufacturing and distributing gas are reported to be worth the amounts above tabulated if disposed of (in commercial parlance) 'as they are.'

"Upon authority, I consider this method of valuation correct. What the court should ascertain is the 'fair value of the property being used.' *Smyth vs. Ames*, 169 U. S. at page 546, 18 Sup. Ct. at page 434. (42 L. Ed. 819); the 'present' as compared with 'original' cost; what complainant 'employs for the public convenience,' 169 U. S. at page 547, 18 Sup. Ct. at page 434 (42 L. Ed. 819); and it is also the 'value of the property at the time it is being used.' *San Diego Land Co. vs. Natl. City*, 174 U. S. at page 757, 19 Sup. Ct. at page 811 (43 L. Ed. 1154). And see also, *Stanislaus Co. vs. San Joaquin Co.*, 192 U. S. 201, 24 Sup. Ct. 241, 48 L. Ed. 406. It is impossible to observe this continued use of the present tense in these decisions of the highest court without feeling

that the actual or reproductive value at the time of inquiry is the first and most important figure to be ascertained, and these views are amplified by *San Diego Land Co. vs. Jaspar*, (C. C.) 110 Fed. at page 714, and *Cotting vs. Kansas City Stock Yards*, (C. C.) 82 Fed. at page 854, where the subject is more fully discussed. Upon reason, it seems clear that *in solving this equation the plus and minus quantities should be equally considered, and appreciation and depreciation treated alike.* Nor can I conceive of a case to which this procedure is more appropriate than the one at bar. The complainant by itself and some of its constituent companies has been continuously engaged in the gas business since 1823. A part of the land in question has been employed in that business for more than two generations, during which time the value of land upon Manhattan Island has increased even more rapidly than its population. *So likewise the construction expense not only of buildings, but of pipe systems under streets now consisting of continuous sheets of asphalt over granite, has enormously advanced.*

"The value of the investment of any manufacturer in plant, factory, or goods, or all three, *is what his possessions would sell for upon a fair transfer from a willing vendor to a willing buyer, and it can make no difference that such value is affected by the efforts of himself or others,* by whim or fashion, or (what is really the same thing) by the advance of land values in the opinion of the buying public. *It is equally immaterial that such value is affected by difficulties of reproduction. If it be true that a pipe line under the New York of 1907 is worth more than was a pipe under the city of 1827, then the owner thereof owns that value, and that such advance arose wholly or partly from difficulties of duplication created by the city itself is a matter of no mo-*

ment. Indeed, the causes of either appreciation or depreciation are alike unimportant, if the fact of value be conceded or proved; but that ultimate inquiry is oftentimes so difficult that original cost and reasons for changes in value become legitimate subjects of investigation, as checks upon expert estimates or bookkeeping inaccurate and perhaps intentionally misleading. *Cf. Ames vs. Union Pac. R. R.* (C. C.) 64 Fed. at pages 178, 179. If fifty years ago, by the payment of certain money, one acquired a factory and the land appurtenant thereto, and continues to-day his original business therein, *his investment is the factory and the land, not the money originally paid;* and unless his business shows a return equivalent *to what land and building, or land alone, would give if devoted to other purposes (having due regard to cost of change), that man is engaged in a losing venture, and is not receiving a fair return from his investment, i. e.,* the land and building. The so-called 'money value' of real or personal property is but a conveniently short method of expressing present potential usefulness, and 'investment' becomes meaningless if construed to mean what the thing invested in cost generations ago. Property, whether real or personal, is only valuable when useful. Its usefulness commonly depends on the business purposes to which it is or may be applied. Such business is a living thing, and may flourish or wither, appreciate or depreciate; but, whatever happens, its present usefulness, expressed in financial terms, must be its value.

"As applied to a private merchant or manufacturer, the foregoing would seem elementary; but some difference is alleged to exist where the manufacturer transacts his business only by governmental license—whether called a franchise or by another name. Such license, however, cannot change an economic law, un-

> less a different rule be prescribed by the terms of the license, which is sometimes done. No such unusual condition exists here, and, in the absence thereof, *it is not to be inferred that any American government intended, when granting a franchise, not only to regulate the business transacted thereunder, and reasonably to limit the profits thereof, but to prevent the valuation of purely private property in the ordinary economic manner, and the property now under consideration is as much the private property of this complainant as are the belongings of any private citizen. Nor can it be inferred that such government intended to deny the application of economic laws to valuation of increments earned or unearned, while insisting upon the usual results thereof in the case of equally unearned, and possibly unmerited, depreciation.*
>
> "I think the method of valuation applied by the report to land, plant, mains, services, and meters lawful."

There are several expressions in this opinion so striking that they are worth special comment. The court is right in saying that

> "in solving this equation the plus and minus quantities should be equally considered, and appreciation and depreciation treated alike."

In the case at bar, the court below considered the minus quantity but ignored the plus quantity.

Note again the statement:

> "It is equally immaterial that such value is affected by difficulties of reproduction. If it be true that a pipe line under the New York of 1907 is worth more than was a pipe under the city of 1827, *then the owner thereof owns that value,* and that such advance arose

wholly or partly from difficulties of duplication created by the city itself is a matter of no moment."

And this further statement, which is absolutely sound and very significant:

"Indeed, the causes of either appreciation or depreciation are alike unimportant if the fact of value be conceded or proved."

Returning now to the history of the *Consolidated Gas case*, we find that upon the appeal taken to this court from Judge Hough's decision, the 19th, 20th, 21st, 22nd and 23rd assignments of error (printed transcript, *Consolidated Gas case*, Vol. 1, pages 452-454) presented this question. We quote parts of them:

"*Nineteenth:* In sustaining the report of said Master in Chancery finding that the complainant is entitled to *a return on the present value of the plant, based on the cost of reproduction*, and not on the original cost less depreciation; whereas he should have found that where such present value based on the original cost less depreciation, is less than the present value based on the reproduction cost, that the complainant is entitled to a return as against the consumer only on the smaller amount. * * *"

"*Twentieth:* In sustaining the report of said Master in Chancery finding *the value of the mains of the complainant* on which it is entitled to a return as against the consumer, *to be the replacement value based on the cost of reproduction of the same; whereas said Master should have found said value of the mains to be the actual cost of investment therein by the complainant, less the depreciation*, as the only fair basis between the complainant and the

consumer, * * *. That in no sense can the mains of the complainant, many of which have been in the ground for fifty years, be said to be at the present time of a greater value than the actual cost, *merely because modern conditions would not permit duplication of such identical mains at the same cost at the present time;* * * *"

"*Twenty-first*: In sustaining the report of said Master in Chancery refusing to find that the appraisal value of both mains and services at the time of consolidation in 1884, was far in excess of their cost; and that the value of mains and services devoted by complainant to the public use was as of December 31, 1905, $6,359,324.46, which represents the original cost of mains and services transferred by the constituent companies to the complainant plus the expenditures of the complainant since 1884 on account of new construction thereof; whereas he should have found that such figures represented the then value of such mains and services on the basis of cost less depreciation, as carried on the books of the constituent companies, and that any figure in excess of such amount which the complainant claimed therefor at that time was in excess of the real value of such mains and services and such excess should not be included in the investment on which a return is to be allowed, *for the reason that it does not represent a cash outlay by the complainant,* and any capital stock issued for such excess by complainant was unwisely and wastefully issued; and in overruling the Twentieth Exception of this defendant to the report of said Master in Chancery."

"*Twenty-second*: In sustaining the report of said Master in Chancery finding that the complainant is entitled to *a return from the consumer on an amount for services based on the*

cost of reproduction at present prices; whereas he should have found that if the basis of present value is to be taken, no amount at all could be charged by the complainant, as such services are no longer owned by such complainant, inasmuch as so much thereof as are in the public streets are considered as separate from the franchises, and the balance thereof are on private property and belong to the owners of said property, and that it is only when the basis of actual cost, less depreciation, is adopted that any amount for services can be included by the complainant in the amount on which a return is to be provided by the consumer; and in overruling this defendant's Twenty-second Exception to said report of said Master in Chancery."

"*Twenty-third*: In sustaining the report of said Master in Chancery fixing the value of the services on which the complainant is entitled to a return at $1,994,000, that such amount is based on the cost of reproduction and is excessive in that *it capitalizes pavements* and allows no depreciation, that complainant has claimed such services depreciate to the extent of 25 per cent., that the proper present valuation is the cost less depreciation, and such value does not exceed $1,222,228.37, as shown on the books on December 31, 1905; and in overruling in this respect this defendant's Twenty-third Exception to said report of said Master in Chancery."

Note in passing that the argument of these assignments of error is the argument of the master and the court below in the present case.

These assignments of error were argued in this court. See pages 33-59 and page 84 of the brief of the attorney general.

This matter having been argued consistently at each stage of the case from the hearing before the

master to the final hearing in this court, this court said in its opinion at page 48 in this case:

> "That court found the value of the tangible assets actually employed at the time of the commencement of this suit in the business of supplying gas by the complainant *to be $47,831,435, to which it added the $12,000,000 as the value of the franchises* as found by it, making the total of $59,831,435, upon which it held that the company was entitled to a return of 6 per cent, being $3,589,886.10. It also found its total net income for the year 1905 amounted to $5,881,192.45, almost 10 per cent upon the sum above named. Altering the finding of the court *so far only as to place the value of the franchises at the time agreed upon in 1884, $7,781,000*, the total value upon that basis of the property employed by the company would be $55,612,435."

The only modification which this court made in the valuation was with reference to the franchises, but this is not all; this court expressly approved the method of valuation adopted by the circuit court in that case, saying at page 52:

> "And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase."

The valuation which this court adopted in the *Consolidated Gas* case was $55,612,435, and the estimated return was $3,024,592.14, which this court says "is nearly 5½% on the above total of $55,612,435." To be exact, it is 5.439%.

The appreciation in mains and services due to enhanced cost of reproduction in that case was $5,555,771.63, and this was included in the valuation, $55,612,435, approved by this court. If it were deducted, there would remain as the value of the property $50,056,663.37. The net return of $3,024,592.14 is 6.042% of this amount. Therefore, not only was this item allowed in the valuation, approved by this court in the *Consolidated case* after the question had been squarely presented here, but it is essential to everything in the opinion based on the conclusion that the return shown was slightly less than 6%.

In

Omaha vs. Omaha Water Company, 218 U. S. 180,

the cost of removing and replacing pavement, based on conditions at the date of the valuation and without reference to whether the streets were paved when the mains were laid, was included in the valuation, though the opinion does not discuss the question.

In

Steenerson vs. Great Northern Railway Company, 69 Minn. 353,

the supreme court of Minnesota in a railroad rate case, after discussing the matter generally, says:

> "Then the material question is not what the railroad cost originally, but what it would now cost to reproduce it."

It says further:

> "Let us now proceed to apply these general principles to this case. The four great ques-

> tions involved are: (1) What would it cost to reproduce the railroad? (2) What is a reasonable income on such cost? (3) What amount of income will the maximum rates fixed by the commission produce? (4) Is such amount so much below what is a reasonable amount that the court can say, as a question of law, that the rates so fixed are confiscatory?"

State vs. Minneapolis and St. Louis Railroad Company, 80 Minn. 191,

reaffirmed the doctrine of the *Steenerson case,* holding that proof of cost alone did not make a *prima facie* case of value. We quote the following:

> "One other suggestion in respect to defendant's failure of proof in rebuttal of the order. The rule laid down in the *Steenerson case* for ascertaining and determining whether the rates fixed are reasonable, and not confiscatory, was wholly ignored. Defendant's counsel did show what the road had cost up to June 1, 1899. This included every item of expenditure from the start. Cost of construction, repairs, equipment, additions and all other items were included. But not a particle of proof was presented as to present value or cost of reproduction."

In

Cotting vs. Kansas City Stock Yards, 82 Fed. 850, 854,

the court said:

> "On the other hand, however, when property is valued for the purpose last stated, it is clear that the owner thereof is entitled to the benefit of any appreciation in value above the original cost and the cost of improvement, which is due to what may be termed natural causes.

If *improvements made in the vicinity of the property, the growth of the city or town where it is located*, the building of railroads, the development of the surrounding country, and other like causes, give property an increased value, the owner cannot be deprived of such increase by legislative action which prevents him from realizing an income commensurate with the enhanced value of his property."

A recent case in New York, exactly in point, is

People ex rel. Kings County Lighting Co. vs. Willcox et al., 156 App. Div. (N. Y.) 603, 141 N. Y. S. 677.

We quote all that the opinion contains on this question (page 608 *et seq.*):

"II. *The present value of the city paving over mains and services.* While as to other items of physical property the Commission professed to appraise at its full value, and to apply the rule of cost of reproduction new, less accrued depreciation, it refused to include in the value of mains under paved streets more than the original cost of repaving when mains were laid. When the mains were laid, the streets were unpaved, sandy tracts in an unbuilt-up community. Mr. Connette, the engineer for the Commission, placed the cost for restoring pavement as it existed when the mains and services were laid, at $12,717. That amount was allowed by the Commission in its valuation. Mr. Baehr estimated the cost of reproducing the existing paving over mains and services as they existed January 1, 1911, at $264,666. Mr. Connette's figures upon that basis were $212,808. The relator claims that the valuation should have included this amount to the extent of at least $200,000.

In *Consolidated Gas Co. v. City of New York*, 157 Fed. 849, the difference between book value or original cost and the replacement cost or cost of reproduction of mains and services was about $5,560,000. Judge HOUGH said:

> 'The complainant demands a fair return upon the reproductive value thereof, which is the same thing as the present value properly considered. * * * Upon authority I consider this method of valuation correct. What the court should ascertain is the 'fair value of the property being used;' (*Smyth v. Ames*, 169 U. S., at page 546 * * *); the 'present' as compared with 'original' cost; what complainant 'employs for the public convenience' (169 U. S., at page 547 * * *); and it is also the 'value of the property at the time it is being used' (*San Diego Land Co. v. National City*, 174 U. S., at page 757 * * *). And see also *Stanislaus County v. San Joaquin Co.*, 192 U. S. 201 * * *. It is impossible to observe this continued use of the present tense in these decisions of the highest court without feeling that the actual or reproductive value at the time of inquiry is the first and most important figure to be ascertained. * * * The complainant, by itself and some of its constituent companies, has been continuously engaged in the gas business since 1823. A part of the land in question has been employed in that business for more than two generations, during which time the value of land upon Manhattan Island has increased even more rapidly than its population. So likewise the construction expense, not only of buildings, but of pipe systems under streets, now consisting of continuous sheets of asphalt over granite, has enormously advanced. The value of the investment of any manufacturer in plant, factory or goods,

or all three, is what his possessions would sell for upon a fair transfer from a willing vendor to a willing buyer; and it can make no difference that such value is affected by the efforts of himself or others; by whim or fashion; or (what is really the same thing) by the advance of land values in the opinion of the buying public. It is equally immaterial that such value is affected by difficulties of reproduction. If it be true that a pipe line under the New York of 1907, is worth more than was a pipe line under the city of 1827, then the owner thereof owns that value; and that such advance arose wholly or partly from difficulties of duplication created by the city itself is a matter of no moment. Indeed, the causes of either appreciation or depreciation are alike unimportant, if the fact of value be conceded or proved.'

The Supreme Court said (*Willcox vs. Consolidated Gas Co.*, 212 U. S. 19):

'And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase. This is, at any rate, the general rule.'

It seems to me that we ought to regard that question as settled. The fact that these streets have been paved and the region generally improved has caused sales of land, the building of houses, and the increase in population, which has enabled the company within the last few years to make profits and declare dividends which for many years it was unable to do. The argument that streets paved or un-

paved make no difference in the earning power of a gas company is unsound. The earning power of a gas plant depends upon its constituency. If it has nobody to sell gas to it can make no profits; and if there are no decent streets there will be few people. The value of a plant of any kind is certainly affected by its location and the demand for its products. If a new company undertook to install a duplicate plant the cost of repaving under the present streets would properly be allowed for. Hence it is a necessary element of reproduction value. It is a valuable advantage which the present owner has which a prospective buyer would have to pay for. Like increased land values, a school of thought might condemn it as 'unearned increment,' but the law does not yet refuse to include it in its definition of property capable of ownership and entitled to protection."

The claim that the case of

Cedar Rapids Gas Light Company vs. City of Cedar Rapids, 144 Iowa 426,

sustains the court below upon this proposition, is based upon a misapprehension. We quote all that case says upon this subject:

"The sum of $43,580 was added owing to the alleged increase of value of pipes and mains because of being underneath the pavement. The company had laid them before the paving was done, but it is argued that, as the value of the mains and pipes are to be estimated when in the ground, what it would now cost because of the pavement to put them there should be included in determining present value. If so, the contingency of having to remove them at the expiration of the franchise also should be taken into account. Moreover, the fact that

most of the paved streets are paralleled by unpaved alleys or parkings in which pipes might be laid without removing the pavement, and possibly with less danger from electrolysis, is entitled to consideration. Nor is it to be forgotten that pavements yield to the ravages of time, and that with new pavements new pipe may be laid. *Undoubtedly the values of the pipes are somewhat enhanced because of their location, but the entire immediate cost of opening and replacing the pavement is not the criterion for value which should be adopted.* The contention illustrates how inequitable would be a rule arbitrarily fixing the value as that for which a system might be replaced. Aside from this being impractical it may safely be said that there is hardly an enterprise of this character, which, were it destroyed, would be restored as it was before. In ascertaining values in this way, the worth of a new plant of equal capacity, efficiency and durability, with proper discounts for defects in the old and depreciation for use, should be the measure of value rather than the cost of exact duplication."

The substance of what the court says is that if the cost of removing and replacing pavement is to be included, the contingency of being compelled to remove the mains should also be taken into account, as well as the fact that the mains might have been laid elsewhere and that pavements depreciate.

The suggestion that mains might be laid elsewhere has never been practically adopted by any engineer in actual work. Whether pavements depreciate is immaterial. They are always replaced by new pavements and the life of the main, which is practically unlimited, is unaffected. Mains are not laid elsewhere; and a fair deduction from this is that common experience has demonstrated that

where consumers on both sides of the street are to be reached, a place near the center of the street is on the whole best. The contingency of being compelled to remove the mains, if such a contingency exists, would apply to every item going to the cost of reproduction with equal force and has no special significance as to this item.

The master's discussion of this question commences at page 61 of the transcript. The statement that the company does not own the pavements requires no consideration. It does not own the soil under the pavement which it is required to remove and replace in laying a main, but the cost of removing and replacing both the soil and the pavement is, as he concedes, an inevitable part of the cost of reproduction.

The fundamental idea of the master apparently was that because the appellant had not paid for the paving over the mains, it would be inequitable to take into account this element of value. It did not seem inequitable to the master to deduct the depreciation for which the appellant had paid. He took into account minus but not plus quantities.

The discussion of this question by the court below indicates that it failed to apprehend the precise question presented. (See transcript, bottom of page 164 and top of page 165.) The court says:

> "If the plant is to be reproduced, when is it to be done? If when reproduced, will the streets then be paved, and if paved, paved with what? Must it all be reproduced at once, or the same covered by a number of years? If but gradually reproduced, why should not such cost go into either the operating or maintenance accounts? No one can state when it must be reproduced, and a material question arises; what then, as compared with the pres-

> ent, will be the price of labor, material and freight? But finally and to my mind the conclusive reason against the soundness of the reproduction under paved streets is, that to allow that theory to prevail, and to increase the capitalization now to the extent of $140,000.00, is to allow such gas rates as will pay a dividend on such sum from and after this date. But the sum of $140,000.00 is not put in the capital or value account until the plant is reproduced."

The first three questions indicate an entire misconception of what is ordinarily meant by the cost of reproduction. The plant is to be reproduced as of the date of the valuation; whether the streets will then be paved and with what is shown by the then existing conditions, and it is reproduced as rapidly as is economically possible. This is the method adopted by every witness in the case who testified as to the cost of reproduction, and by every witness in every other case who has testified on that subject, we think.

The cost should not go into the operating or maintenance accounts because the expense of building a plant is a capital expense. There is no question as to the price of labor, material and freight as between the time of reproduction and the present, because the date of the reproduction is the date of the valuation, and these factors must be fixed as of that date, and this was done by every witness who testified in the case.

Finally, the court says that the conclusive reason against the allowance of this item is that it allows a return upon something that is not now in the plant and will not go into it until the plant is reproduced. This item is now in the plant, just as

much as any other item going to the cost of the mains. The court seems to have thought that it was intended to actually reproduce this plant, and does not seem to have grasped the idea that the cost of reproduction is an estimated cost necessary because present value is determined by present conditions, and is intended to be used as a criterion in forming a conclusion as to that value.

The cost of reproduction as a factor in determining present value has a well defined meaning. It is an estimate of the cost which would be incurred if the property were reproduced as of the date at which the valuation is made. The property is not actually reproduced, and it is not contemplated that it ever will be actually reproduced. It is because present conditions determine present value that the cost of reproduction, which is predicated upon these conditions, is of so much weight in determining value. It is the involuntary test which one applies in order to determine the reasonableness of a price put upon most things which are offered for sale. The prospective purchaser consciously or unconsciously says to himself, what would it cost me to obtain this same thing from some other source, or what would it cost me to reproduce it—and the answer to this question determines his conclusion as to the reasonableness or unreasonableness of the price asked.

IV.

The court erred in its conclusion that the total of $2,240,928 was stated by the master as the value of the plant, and in the conclusion that this included the item of $300,000 on account of going value.

The court's discussion of this matter is found at the bottom of page 165 of the transcript.

The master's report unfortunately in no one place assembles all of the items which he took into account in reaching his valuation, and it is therefore necessary to go through the report in order to demonstrate the court's error as to this matter.

In working out his reproduction cost items, the master followed what had been the practice of most of the engineers; that is, he took what are called their base figures, which are the cost of labor, and material, and added to them certain other costs such as interest during construction, engineering and other so-called overhead charges, and then took up the paving and going value separately. We propose to follow him through the outline of this valuation.

He first arrived at his base figure, $1,975,026 (transcript, page 54). He defines this base value (transcript, page 53) as follows:

> "'The Base Value' of any of the buildings, machinery, apparatus, or other property, is what it would cost to produce it at the present time new, without adding thereto, any overhead charges."

The master took the combination of the lowest base figures to arrive at his item of $1,975,026 (transcript, page 54).

He then took up the question of overhead charges (*Id.*, page 54) and concluded that 15% should be added on this account (transcript, page 57, second paragraph). He then takes up (transcript, page 57) depreciation, saying:

> "'The Base Value' with the 'Overhead Charges' added, give us the present value of the physical plant new, and in order to get the present value of the physical plant, it becomes necessary to determine to what extent this amount should be depreciated."

He concludes that the present per cent condition should be 85.3%, making depreciation 14.7%. See transcript, page 59, where he says:

> "In estimating the life of the buildings and depreciation, both Lea and Baehr have shown great care in their estimates, and the latter makes the rate 88.2 per cent on the entire physical plant, excluding real estate, while Lea makes it 85.3 per cent. In my estimate thereof, the rate found by Lea has been adopted."

Adding 15% overhead to his base figure of $1,975,026, gives him $2,271,280, to be used in ascertaining his depreciation (transcript, page 59):

> "Total cost new, with the overhead charges is $2,271,280
> Present value 85.3 per cent..... 1,937,402
>
> Depreciation ..... $333,878"

He has to add to this real estate, working capital, organization expenses and meters in stock, which he does, giving him a total of $2,240,928, which was the amount taken by the court (tran-

script, page 60). He then takes up this paving item which we have discussed. He says:

> "My conclusion is that this amount of $140,000 should be deducted from the total amount hereinbefore given" (transcript, page 62).

It will be noted that the master says (transcript, page 60, last line):

> "Total physical value..... $2,240,928"

After disposing of his paving item, he takes up going value, and says (transcript, page 63):

> "But I am not inclined to accept without discounting, any of these estimates, but fix the 'Going Value' at $300,000. It may be asked on what basis this amount is determined. The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the 'Going Value' of this concern is worth more, but I cannot feel satisfied that such is the case, and regard $300,000 as every dollar it is worth *over and above its physical value,* and in my judgment, it is worth that much more than a plant would be that had to develop its business."

Note that this item which he is discussing on page 63 is something which he says is over and above the physical value, which before deducting the paving he found was $2,240,928, the amount which the court below says includes this item of $300,000.

Going further, we find (transcript, page 105) that the master says:

> "There is so much doubt in one item, in the Base Values, that is included in the item No. 18 for $21,057, that the same is reduced to

$20,657, and the *value of the physical property is made in round numbers $2,100,000,* and *Going Value at $300,000, making $2,400,000,* January 1, 1911, upon which the Rate of Return is reckoned. *The deduction of $140,000* on account of taking up and replacing mains [pavements] where none existed when the mains were laid is fully stated under that head."

The figures to which we have referred, tabulated, are as follows:

Total base figures (transcript, page 54)	$1,975,026	
Add 15% for overhead (transcript, page 57).	$296,254	
		$2,271,280
Depreciation (transcript, page 59)		333,878
Balance		$1,937,402
Working capital (transcript page 60)		140,000
Real estate (*Id.*)		150,000
Organization expenses (*Id.*)..		6,923
Meters (*Id.*)		6,603
Total (transcript, page 60, last line)		$2,240,928
Going value (transcript, page 63)		300,000
		$2,540,928
Deduct correction item (transcript, page 105).....		928
		$2,540,000

Deduct paving (transcript, pages 61, 105).....	140,000
	$2,400,000
Deduct going value, on account of Cedar Rapids Gas Light Company decision (transcript, page 109).....	300,000
	$2,100,000

We think that it is absolutely clear that the master's final valuation, after the deduction of both paving and going value, was $2,100,000; that his valuation, including these items, was $2,540,000; and that his final conclusion was *not* that $2,240,928 represented either what he called the total physical value or this total physical value plus the going value.

This is confirmed by further examination of the master's report (transcript, page 91); the master discusses the amount of the additional investment which would be required for the year 1911, and says:

> "It depends upon the growth of the city very largely. Eighty thousand M. C. F. of gain indicates an increase of capital to the amount of $176,800. This, in my judgment, is less than the evidence of the engineers, testimony will justify according to the references heretofore given. It makes the physical value at that time $2,276,800 and including going value $2,576,800, in which the Complainant is entitled to a reasonable return, after deducting depreciation."

If the additional investment of $176,800 be deducted so as to give his values January 1, 1911,

these amounts would be $2,100,000 and $2,400,000, which, taking into account the paving item of $140,000, check exactly with that we have heretofore said.

Returning to page 98 of the transcript, we find the master's computations as to future net revenue. For the year 1911, which is the year of the valuation, he takes (transcript, first line at page 99) $2,400,000 as the amount upon which he computes 8% to ascertain his fair return. Note the next paragraph, where he says that this computation is based upon the assumption that the property was worth as much January 1st, 1910, as at the close of the year, the date of the valuation when the new rates were to be effective, and makes a deduction for the additions during the year.

Passing on, the master computes, beginning at page 100 of the transcript, the additional investment for the year 1911 less depreciation, and adds the balance to $2,400,000 to obtain the value of the plant for 1912, $2,414,368.80. This balance goes forward into his new valuations for 1913, and 1914, so that it appears that in all of these computations made prior to the decision of the *Cedar Rapids case,* the master treated as his value $2,400,000 and arrived at it as follows:

Total value physical property.....	$2,240,928
Deduct adjustment	928
	$2,240,000
Deduct paving item	140,000
	$2,100,000
Add going value	300,000
	$2,400,000

After the *Cedar Rapids case* was decided, the master said, referring to the deficits and to his conclusion that the going value item should be excluded (transcript, page 109):

> "This would result in reducing the estimated deficit for each year $24,000, and yield a return to the complainant of, at least, 6 per cent. on $2,100,000."

These deficits were based upon a valuation of $2,400,000. When the master deducted going value it became $2,100,000. Upon neither contingency could it be $2,240,928.

The court below held that the appellant was entitled to this item and then through a misunderstanding of the master's report, took it away from it.

V.

The item of going value.

Perhaps a substantially correct definition of this element in the value of this property would be the difference between the value of the plant as it was with its established business at the time in question, and what would have been the value of the same physical property tested out and in a condition to operate, but without business, or developed earnings.

The master, in his statement that the plant

> "is worth that much more than a plant would be that had to develop its business" (transcript, page 63),

and in his statement on the same page,

> "I think a purchaser would be willing to add this amount for its developed business, and that a seller would not be willing to sell unless he got that much more than its physical value,"

and in his further statement at the bottom of the page,

> "The element of 'Good Will' as applied to the ordinary merchant or manufacturer dealing with the public generally is not considered in estimating the 'Going Value' of complainant's plant,"

has shown clearly that he ascribed to this term the established meaning, and that our definition is substantially correct. This is the sense in which the term was used throughout the evidence.

Bearing in mind that it can not be contended that a plant with a developed business is not worth more than the same physical property without the business, and that this element of value has been referred to by this court as "an element contributing to the value of each tangible part" (*Omaha Water Case*, 218 U. S. 180), it would seem to be equally clear that this element of value may not be confiscated; but the master decided that this court had held to the contrary in

> *Gas Company vs. Cedar Rapids*, 223 U. S. 655,

and we therefore discuss this question.

(a) The Cedar Rapids case.

If we comprehend it correctly, what the *Cedar Rapids* case decides is:

1. That because constitutional questions not frivolous appear upon the record the motion to dismiss the appeal should be overruled;

2. That there was no contract on the part of the city that the price should be kept high enough to allow a discount for prompt payment;

3. That the facts were not open to re-examination except as such re-examination might be incidental to the questions of law raised by the assignments of error;

4. That it was not such a clear case as to warrant the reversal of a decree which, though final in form, merely postponed a decision upon the merits.

As supporting the conclusion that the case did not require its interference, this court says:

> "To refer in the first instance to the point just mentioned, we cannot say as matter of law that at ninety cents a thousand feet the company will be unable to collect payment without losses that will amount to a taking of its property. **Then again, although it is argued that the court excluded going value, the court expressly took into account the fact that the plant was in successful operation. What it excluded was the good will or advantage incident to the possession of a monop-**

oly, so far as that might be supposed to give the plaintiff the power to charge more than a reasonable price."

This, as we understand it, instead of holding that the court below excluded going value and approving that holding, holds that the court below did not exclude it and in support of that statement calls attention to the fact that that court expressly took into account the fact that the plant was in successful operation.

The supreme court of Iowa recognized going value as an element in the value of the plant, but held that good will could not be included and held therefore that evidence as to an item of $100,000 which included both without indicating how much should be ascribed to good will and how much to going value, was not competent. That court says (144 Iowa 434):

> "Also the sum of $100,000 was included by these witnesses as enhancement of value by reason of being a 'going concern.' As previously intimated, the value of the plant is to be estimated in its entirety, rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value. Advantages have accrued through the sagacity of its management as contended by appellant. So, too, there are the inevitable mistakes which would not be likely in the construction of a new plant; but to put a new plant in profitable operation time would be required, and **aside from the intangible element of good will, the fact that the plant is in successful operation constitutes an element of value.**

As said, the value of the system as completed, earning a present income, is the criterion. Insofar as influenced by income, however, the computation necessarily must be made on the basis of reasonable charges, for whatever is exacted for a public service in excess of this is to be regarded as unlawful.

Save as above indicated, the element of value designated a 'going concern' is but another name for 'good will' which is not to be taken into account in a case like this, where the company is granted a monopoly. *Cedar Rapids Water Company vs. City of Cedar Rapids,* 118 Iowa 234; *Willcox vs. Consolidated Gas Co.,* 29 Supt. Ct. 192. **The witnesses for plaintiff took into account 'good will' in giving their opinion of the enhancement in value because of being a going concern, and we have no means of separating these so as to ascertain their estimate of the separate advantage of completion so as to earn a present income."**

Any doubt as to the proper construction of the *Cedar Rapids Case* is resolved by an analysis of the figures contained in the opinion of the state court. If we take the figures that are there set out, and, making such deductions as the court makes, compare the total of the items of the physical property with the total valuation, it is inevitable that the court allowed both going value and paving over mains.

We insert a computation, with reference to the pages of the opinion which is reported in 144 Iowa, where the various items may be found:

"Plaintiff's chief expert estimated the physical properties to be worth" (p. 438, last line)		$365,564.41
This included $43,580 "Increase of value of pipes and mains because of being underneath the pavement" (line 25, p. 437).		
Deduct the following items included in the foregoing total of $365,564.41 and definitely disallowed by the state court:		
(1) Working capital included at $25,000 and allowed at $2,500 (p. 433, line 23) .	$22,500.00	
(2) The so-called annex, real estate intended for future use, unnecessary for present use (p. 435, line 22, and p. 436, line 9)	16,500.00	
(3) Deductions made by the court from the valuation placed by the complainant upon its real estate $15,000 or $20,000 (p. 436, line 20) say	17,500.00	
(4) Purifiers (p. 436, line 27)	1,600.00	
(5) Deductions on account of excessive price of cast iron mains (p. 436, last paragraph) say	5,000.00	
(6) Marion high pressure line ¾ of $5,483 (p. 437, line 23)	4,112.00	
(7) Promotion and organization (p. 438, lines 21 and 31-2)	14,943.69	
		$82,155.69
		$283,408.72

This amount, $283,408.72, is the maximum valuation of the physical property because only those deductions have been made that are specifically warranted by the opinion.

In the foregoing no deductions are made for either of the following items included in the $365,564.41 although the references to these items in the opinion unmistakably indicate that they were not allowed to their full amount:

Brought forward		$283,408.72
(8) Interest during construction (p. 438, lines 20 and 24)	$22,415.00	
(9) Engineering (p. 438, lines 21 and 28)	18,679.61	
(10) Increased value of mains because of being underneath paving (p. 437, line 25)	43,580.00	
		84,674.61
		$198,734.11

The court found (p. 439, line 33) that a fair valuation of the entire plant is somewhere between $300,000 and $350,000. A deduction from this value of some amount between $283,408.72 and $198,734.11 will leave what the court allowed for going value. The following conclusions are inevitable:

1st. If interest during construction, engineering and increased value of mains because underneath paving were allowed in full, then the value of the physical property, aside from going value, is $283,408.72, and there is allowed as going value some amount between $16,591.28 and $66,591.28.

2nd. The adoption of this theory would compel the abandonment of the contention that this case is an authority for disallowing paving over mains, and at the same time compel the concession that the valuation fixed included something on account of going value.

3rd. To contend that the entire item of paving over mains was disallowed in this case, involves increasing the allowance for going value by the amount of this item, $43,580, which would make it somewhere between $60,171.28 and $110,171.28, an amount relatively so large as to render this hypothesis extremely improbable.

4th. If the items, interest during construction, engineering and increased value of mains because underneath paving, be substantially reduced, which in view of what is said about them in the opinion is clearly what was done, then the amount of such reduction must be added to what otherwise was allowed for going value.

This case, which was affirmed by this court, allowed both of the items which are in dispute here.

This mathematical demonstration removes all doubt as to the construction of the language in this opinion of the Iowa court that has been already referred to. The court says (p. 434):

> "The fact that the plant is in successful operation constitutes an element of value."

Again it is said:

> "The value of the system as completed, earning a present income, is the criterion."

And again when it stated its conclusion at page 439 the court uses the significant language which we italicize:

> "A careful review of the entire record which has been repeated, has led to the conclusion that *a fair valuation of the entire plant* is somewhere between $300,000 and $350,000."

This language, when read in connection with the computation made from the court's opinion makes it impossible to infer that it was the purpose of the supreme court of Iowa to exclude either going value or appreciation due to paving over mains.

The master says as to real estate (transcript, bottom of page 48):

> "In my judgment, should the Complainant sell their property, and undertake to change their location, they could not get as good a place for less than $150,000 and it is very doubtful if they could get it for that."

He says as to going value (transcript, page 63):

> "I think a purchaser would be willing to add this amount for its developed business, and that a seller would not be willing to sell unless he got that much more than its physical value."

In fixing going value he has applied the same test to this element that he has applied to the other elements. It is a real element in the value of the property and cannot be excluded without abandoning value as the basis for reasonable rates. The master's conclusion is that the basis of rates should be as low as only seven-eighths of what the property would sell for. What would be the basis for the purchasers' rates?

(b) The authorities all recognize going value as an element in the value of such a property.

The leading case is

National Water Works Company v. Kansas City, 62 Fed. 853,

in which Mr. Justice Brewer wrote the opinion. It was a case involving the acquisition of a water plant under an ordinance which required the city to pay for it "the fair and equitable value of the whole works." The franchise had expired. The court said:

> "Nor would the mere cost of reproducing the water works plant be a fair test, because that does not take into account the value which flows from the established connections between the pipes and the buildings of the city. It is obvious that the mere cost of purchasing the land, constructing the buildings, putting in the machinery, and laying the pipes in the streets—in other words, the cost of reproduction—does not give the value of the property as it is to-day. A completed system of water works, such as the company has, without a single connection between the pipes in the streets and the buildings of the city, would be a property of much less value than that system connected, as it is, with so many buildings, and earning in consequence thereof, the money which it does earn. The fact that it is a system in operation, not only with a capacity to supply the city, but actually supplying many buildings in the city—not only with a capacity to earn, but actually earning—makes it true that 'the fair and equitable value' is something in excess of the cost of reproduction. *The fact that the company does not own the connections between the pipes in the streets and the*

buildings—such connections being the property of the individual property owners—does not militate against the proposition last stated, for who would care to buy, or at least give a large price for a water works system without a single connection between the pipes in the streets and buildings adjacent? Such a system would be a dead structure, rather than a living and going business. The additional value created by the fact of many connections with buildings, with actual supply and actual earnings, *is not represented by the mere cost of making such connections.* Such connections are not compulsory, but depend upon the will of the property owners, and are secured only by efforts on the part of the owners of the water works, and inducements held out therefor. The city, by this purchase, steps into possession of a water works plant—not merely a completed system for bringing water to the city, and distributing it through pipes placed in the streets, but a system already earning a large income by virtue of having secured connections between the pipes in the streets and a multitude of private buildings. It steps into possession of a property which not only has the ability to earn, but is in fact earning. It should pay therefor not merely the *value of a system which might be made to earn,* but that of a system which does earn. Our effort has been to deduce from the volume of testimony that which, in this view of the situation, can be safely adjudged 'the fair and equitable value.' "

Every dollar that the master in the instant case and the court below (through its misapprehension of the facts) have allowed was the mere cost of reproduction less depreciation. Referring to this opinion, in

Omaha vs. Omaha Water Company, 218 U. S. 180,

Mr. Justice LURTON said:

> "We can add nothing to the reasoning of the learned justice, and shall not try to."

In this same case, this court said further, at page 202:

> "The option to purchase excluded any value on account of unexpired franchise, but it did not limit the value to the bare bones of the plant, its physical properties, such as its lands, its machinery, its water pipes or settling reservoirs, nor to what it would take to reproduce each of its physical features. The value in equity and justice must include whatever is contributed by the fact of the connection of the items making a complete and operating plant. The difference between a dead plant and a live one is a real value, and is independent of any franchise to go on, or any mere good will as between such a plant and its customers. That kind of good will, as suggested in *Willcox vs. Consolidated Gas Co.*, 212 U. S. 19, is of little or no commercial value when the business is, as here, a natural monopoly, with which the customer must deal, whether he will or no. That there is a difference between even the cost of duplication, less depreciation, of the elements making up the water company plant, and the commercial value of the business as a going concern is evident."

Note the last sentence. It is this difference between the cost of duplication less depreciation and the commercial value of the business as a going concern which the appellant claims it is entitled to have considered in this case.

Note this further extract from the *Omaha case:*

> "The appraisers in making their estimate of valuation included $562,712.45 for the 'going

value.' This separation of *an element contributing to the value of each tangible part* was done because required to be done under an order made in the circuit court in a suit in which the water board of the city of Omaha was complainant and the members of the board of appraisers and the water company were defendants."

If this element contributes to the value of each tangible part of the plant, and it clearly does, to hold that it should not be considered is to hold that the company must submit to a return upon something less than the value of the property used for the public.

We digress for a moment to note a statement in the master's report (transcript, page 83), that the assessor would be justified in increasing an assessment of this property at $1,300,000 by over $1,000,000 if he assessed the property at its correct value. This brings the total to $2,400,000, which included going value, so that this element in the value of the physical property may be taken into account for purposes of taxation, and sale, but may be confiscated for rate purposes if the master is not in error.

A recent and very well considered case is

> *Public Service Gas Company vs. Board of Public Utility Commissioners, et al.* (not yet officially reported), 87 Atl. 651.

On the point of going value, the court said:

> "For going value or cost of developing the business $1,025,000 was allowed. The cities claim that no allowance at all should be made and their writ was prosecuted to

secure the correction of this alleged error. For reasons already stated we cannot, in these proceedings, lower the rate fixed by the commissioners, and it would be useless, therefore, to reject this item of the valuation as counsel for the cities ask. The company insists that there should be allowed about twice as much including preliminary expenses and cost of development.

It is necessary, therefore, to determine first whether any allowance at all for going value is proper. We think both on weight of authority and on reason there should be such an allowance."

In support of this position, the court cites the cases referred to by us of

National Water Works Co. vs. Kansas City, supra;

Kennebec Water District vs. City of Waterville, infra;

Gloucester Water Company vs. City of Gloucester, infra;

Town of Bristol vs. Bristol & Warren Water Works, infra;

Norwich Gas & Electric Company vs. City of Norwich, infra;

Omaha vs. Omaha Water Company, supra.

The court then continues:

"The cost of a gas plant includes not merely the loss of interest while the plant is in course of construction and is building up a paying business, but even in the case of an old-established plant, for the manufacture and distribution of a commodity to the use of which the public has become so accustomed that it seems a necessity, there must be loss while pipe lines are extended to await the coming of consumers as the city extends. There

is the cost of securing and retaining customers, of encouraging the greater use of gas for fuel and for light by the introduction of new and improved appliances, the necessary loss attending experiments that promise improvement, the obsolescence of plant apart from that ordinary calculable depreciation which may be charged to current expenses instead of being capitalized, the expense that must attend, and the additional value that arises from the uniting of separate concerns, and the organization of a great industry with a view to economical production, and the cost of procuring capital for the original works or subsequent extensions.

What items should be charged to construction, what to business development, how much to current expenses, and how much to permanent investment of capital, are all most important practical business questions. However these questions may be solved, all the expenses must be met. Whether they shall be met at the expense of present consumers by being charged at once to current expenses, thus reducing the net return and making necessary a higher rate, or whether they shall be capitalized in whole or in part and constitute a permanent addition to capital, or be capitalized and gradually amortized, are business questions. The legal question is whether these items constitute a going value upon which the company is entitled to a return if the individual rate is to be just and reasonable. To this we answer, yes.

The argument addressed to us on the other side is that all the so-called going value appears in the valuation of the physical plant at the cost of reproduction; the suggestion is that unless there was going value the physical plant would be mere junk, and that the difference between the valuation of the physical

plant at its cost of reproduction and its valuation as junk is the true going value. The argument seems to us specious rather than sound. We think that if by value we mean what the economists call exchange value, then a buyer would undoubtedly give more for a plant already doing a profitable business than for a plant of equal cost, capacity, and future possibilities, but without the established business. To a purchaser the assurance of an immediate return is worth paying for, and we see no reason to doubt the correctness of the ruling of the United States Supreme Court in *Omaha vs. Omaha Water Co.*, 218 U. S. 180. We agree with the view expressed for that court by Mr. Justice Lurton, 'that the difference between a dead plant and a live one is a real value, and is independent of any franchise to go on, or any mere good will as between such a plant and its customers.' It is true that that was a condemnation case and not a rate case, and involved, therefore, a question of exchange value, and not the question of a fair and reasonable valuation as between a public service company and the public. The two bases of valuation may properly be different, since upon a sale or condemnation the probability of an assured income and a continuance of the existing rates enters into and affects the exchange value; while in the case of a valuation for the purpose of fixing a rate, the question is what valuation and rate will tempt the investment of capital, and to what extent existing rates may with justice be lowered. In this view the fallacy of the argument on behalf of the cities is that it requires the investor to suffer all the loss if the enterprise fails, and deprives him of the chance of additional gain if the enterprise succeeds; and it fails to allow any recompense for the skill shown in developing and conducting the business or even for the value of experience, which is proverbially expensive.

Even in a business as well established and as necessary as the gas business, there is competition with other methods of obtaining light, heat, and power, and there are few of us who have not ourselves had experience of the extension in the use of gas due to the efforts of the company to introduce new appliances. Moreover, we think counsel for the company are right in their contention that the value of an assembled and united plant may be greater than the total value of the separate parts. The examples given of the increased value of the New York Central Railroad over the value of its constituent parts (*Cleveland Ry. Co. vs. Backus*, 154 U. S. 439, 444), of the increased value of an express company's property in a single state due to its connection with property of the same company in other states (*Adams Express Co. vs. Ohio*, 165 U. S. 194; 166 U. S. 185; and the recent case in this court of *West Shore Railroad Company vs. State Board of Assessors*, 82 N. J. Law 37) suffice to illustrate the difference between the value of a whole plant and the sum of the value of its parts."

The commissioners' going value, which was affirmed by the court in the case just cited, amounted to thirty per cent. of the value of the other property, as against a little less than fifteen per cent. allowed in the instant case.

In

People ex rel. Kings County Lighting Company vs. Willcox et al., 156 App. Div. (N. Y.) 603; 141 N. Y. Supp. 677,

which we have already quoted, it was held again in a rate case that this item of value must be taken into account. In that case the court said:

"I am unable to perceive a logical difference between allowing 'going value' in the valuation

of a plant when it is to be taken entirely by the public and allowing the same element when valuing the same plant for rate making purposes. In each case the thing to be done is the fair appraisement of present value. What difference in principle can there be because in one instance all is taken for the use of the public and in the other the public limits the earnings?"

Monongahela Water Company's Case, 223 Pa. St. 323,

was a condemnation case. Here a report of the appraisers which stated that the appraisers had taken into account this element of value was approved by the court.

Appleton Water Works Co. vs. Railroad Commission of Wisconsin, 142 N. W. 476 (not yet officially reported),

contains an interesting discussion of this question. As to going value in general, the court says:

"The term 'going value' is somewhat vague, and is a comparatively recent addition to the terminology of the subject. It is not the value of the franchise, and it is not the good will of the business; certainly it cannot be the latter in the case of a monopoly like the present. It has been variously spoken of as the 'difference between a dead plant and a live one' (*Omaha vs. Omaha Water Co.*, 218 U. S. 180), or 'the element of value which comes from the fact that the property is sold as a going concern' (*Gloucester W. S. Co. vs. Gloucester*, 179 Mass. 365, 60 N. E. 977); 'the added value because of the company's being a going concern' (Commissioner Roemer in his testimony in the present case).

> The existence of the term as designating a substantial element of value seems to be largely due to the fact that in appraisal cases like the present, as well as in rate-making cases, there has been a very general adoption, both by courts and commissioners, of the plan of ascertaining by expert evidence the cost of reproduction of the existing plant, and then making a deduction for depreciation, and thus arriving at what is called the present physical valuation. This has been universally recognized, not as fixing the present physical value of the property or the business, but only as an important and helpful consideration which may throw much light on the question. It has the advantage of comparative ease and certainty of ascertainment. It is said by Whitten (Valuation Pub. Serv. Corps. §639) to be at present the most generally accepted basis of valuation for purchase or rate making. Construing the word 'basis' to mean simply a fundamental fact or starting point not in any sense exclusive or controlling, the statement seems to be substantially correct. Important as it may be, however, this physical valuation so obtained is but one of numerous facts to be considered in reaching the final result."

Proceeding, the court states the rule as to value for the purposes of making rates, saying:

> "The commercial value of the business in full operation and entitled to charge reasonable rates for its service must, however, be considered as approximating the compensation which should be allowed for the property; in other words, the sum which the business should be capitalized for in order that the owner should receive a reasonable return on the investment, when the business is conducted with reasonable business skill, and charges such reasonable rates for service as the law permits."

In

Omaha vs. Omaha Water Company, supra.

this court cited with approval,

Gloucester Water Company vs. City of Gloucester, 179 Mass. 365;

Norwich Gas Company vs. City of Norwich, 76 Conn. 565.

The *City of Gloucester case* was a proceeding for the determination of the value of the property upon a purchase by the city under a statute of Massachusetts. In this case the act required the city to pay the fair value of the property and said "such value shall be estimated without enhancement on account of future earning capacity or future good will on account of the franchise of said company." Under this act it was held that going value should be taken into account. The court says:

> "It is plain that the real, commercial, market value of the property of the water company is, or may be, in fact, greater than 'the cost of reproduction, less depreciation, of the different features of the physical plant.' Take, for example, a manufacturing plant: suppose a manufacturing plant has been established for some ten years and is doing a good business and is sold as a going concern; it will sell for more on the market than a similar plant reproduced physically would sell for immediately on its completion, before it had acquired any business. *National Water Works of New York vs. Kansas City*, 10 C. C. A. 653; 62 Fed. 853; 27 U. S. App. 165. We think it is plain that there is nothing in the provisions of section 16 of the act in question (St. 1895, c. 451) forbidding the commissioners considering this element of value, which, as we have

seen, in fact exists. * * * It is plain that the element of value, which comes from the fact that the property is sold as a going concern, in which case it has, or may have, in fact, a greater market value than the same property reproduced in its physical features, is not excluded from consideration by that provision of the statute.

It is also plain that the commissioners, in allowing the $75,000 allowed by them in addition to the cost of duplication, less depreciation, of the plant in its physical features, did not go beyond this."

The total valuation in that case was $576,544.60, including $75,000 for going value. This was about 15 per cent. of the remainder, the amount allowed for going value being relatively a little more than allowed by the master here.

In

Norwich Gas & Elec. Co. vs. City of Norwich, supra,

the court says:

"It was also proper for the commission to pay regard to the fact that the plaintiff has an established business, built up after experiments and changes during a long period. *Gloucester Water Supply Co. vs. Gloucester*, 179 Mass. 365; 60 N. E. 977. This tended to strengthen the presumption that the actual earnings at the time of the city vote could be relied on as an important factor in determining the earning capacity of the plant. A manufacturer seeking to sell his works and anxious to enhance their apparent value when estimated at a particular day, might, by extraordinary efforts, get special orders to be filled on that day, which would give his operations a temporary and fictitious magnitude.

> It is only in case of an established business, based upon the use of well-tested and long-tested apparatus, perfected by many trials, experiments and changes, that the net earnings of a day are a fair index of the net earnings of a year. The commission reports that it considered, in connection with these facts, that the plaintiff's business had been thus 'built up at the risk of private capital.' It indisputably had been so built up, and whatever had been sunk in experiments in order to secure and with the result of securing a good working plant was properly considered as entering to some extent into the value of that plant."

A very recent case heard by Morrow, circuit judge, and Van Fleet and Sawtelle, district judges, on an application for a preliminary injunction is

> *Bonbright et al. vs. Geary et al.*, 210 Fed. 44.

Their holding that the exclusion of one or more of the necessary elements of value is to that extent a taking of private property for a public use without just compensation is so pertinent that we quote what they say upon this subject:

> "The inquiry will also be aided by another rule, that if the valuation of any one of the necessary elements of the public service plant is fixed by the rate-making authorities at an amount unjustly and unreasonably low in a substantial amount, or if the value of an element of substantial value used and useful in maintaining or operating such a plant is entirely omitted by the rate-fixing authority, such unreasonable and unjust valuation or omission of valuation is the taking of private property for a public use without just compensation."

They hold that going value is one of the elements that must be considered in determining the value of the property. We quote the following upon this question:

> "As has been stated, this is the valuation of a going concern as distinguished from the bare bones of the corporation. The courts recognize a difference between the value of a plant of this character, without customers or business, and a plant that has been fully established and connected up with a municipal lighting system and with the houses, business places, and factories of regular customers. The present corporation was in August of last year a going concern; it was connected up with the municipal lighting system, the houses, business places, factories, and other institutions of a prosperous community, and there was nothing more to do except to deliver the service, for which the corporation was fully and efficiently equipped. We think this element of valuation should be considered in connection with the other elements of valuation with the view of determining the actual present value of the whole plant."
>
> *Spring Valley Water Works vs. City and County of San Francisco*, 124 Fed. 574,

was a rate case and there it was evidently sought to distinguish between rate cases and condemnation cases upon this proposition. In that case the court said at page 595:

> "The complainant next contends that it has an established business as a water company and as a going concern in supplying water to consumers, and that its plant has a value by reason of these advantages beyond the mere cost of reproducing the plant. In support of this view the complainant cites the case of

National Water Works Co. vs. Kansas City, 62 Fed. 853; 10 C. C. A. 653; 27 L. R. A. 827. The opinion is by Mr. Justice BREWER of the supreme court. On page 865 he says:

> 'A complete system of water works, such as the company has, without a single connection between the pipes in the streets and buildings of the city, would be a property of much less value than that system connected, as it is, with so many buildings, and earning, in consequence thereof, the money which it does earn. The fact that it is a system in operation, not only with a capacity to supply the city, but actually supplying many buildings in the city—not only with a capacity to earn, but actually earning—makes it true that "the fair and equitable value" is something in excess of the cost of reproduction.'

This was also a condemnation proceeding, but, as before stated, the principles of compensation applicable to such a case appear to be applicable to the present case.

In another San Francisco case,

> *Spring Valley Water Company vs. City and County of San Francisco, et al.*, 165 Fed. 667,

the question of rates was involved and the court squarely decided that the element of going value must be taken into account. In that case the court says that this item must be allowed. We quote merely the statement of the court's conclusion:

> "It also appears to be the law that whatever discoverable value may attach to the concern as a going business is proper to be considered in determining the value of complainant's plant for rate-fixing purposes. *National*

Waterworks Co. vs. Kansas City, 62 Fed. 853, 865, 10 C. C. A. 653, 27 L. R. A. 827; *Spring Valley W. W. vs. San Francisco* (C. C.) 124 Fed. 574, 595."

In

Kennebec Water District vs. City of Waterville, 97 Me. 185,

the supreme court of Maine had before it a proceeding for the acquisition of a water property. Under the statute the parties were allowed to apply to the court for instructions as to the legal propositions to be applied in making the valuations. The court instructed them to include going value, but to exclude good will. We quote the following:

"Defendant's request 8 is in effect that in estimating even the *structure value* of the plant, allowance should be made, in addition to the value as otherwise established, for the fact, if proved, that the water system is a going concern, with a profitable business and good will already established, and with a present income assured and now being earned. We think this instruction, with a modification to be noted should be given. *Newburyport Water Co. vs. Newburyport, supra; National Water Works Co. vs. Kansas City, supra; Gloucester Water Supply Co. vs. Gloucester, supra; Bristol vs. Water Works,* 23 R. I. 274; 49 Atl. 974. But the term 'good will' may be misleading. Lord Eldon said that good will is nothing more than the probability that the old customers will resort to the old place. *Crutwell vs. Lye,* 17 Ves. Jr. 335. See *Flagg Mfg. Co. vs. Holway,* 178 Mass. 83; 59 N. E. 667. Under any possible definition, it involves an element of personal choice. This phrase is inappropriate where there can be no choice. So far as the defendants' system is 'practically exclusive,' the ele-

ment of good will should not be considered. *Bristol vs. Water Works, supra.*

"The defendants in request 9 ask that in determining the amount to be added to structure value, in consideration of the fact that the system is a going concern, the appraiser should consider, among other things, the present efficiency of the system, and length of time necessary to construct the same *de novo*, the time and cost needed after construction to develop such new system to the level of the present one in respect to business and income, and the added net incomes and profits, if any, which, by its acquirement as such going concern, would accrue to a purchaser during the time required for such new construction, and for such development of business and income. We think this instruction should be given. These are all proper matters for consideration 'among other things.' They are not controlling. Their weight and value depend upon the varying circumstances of each particular case. Of course a plant, as such, already equipped for business, is worth more, if the business be a profitable one, than the mere cost of construction."

In

Galena Water Co. vs. City of Galena, 74 Kan. 644,

the supreme court of Kansas recognized a valuation of $75,400 by the referee, including $15,214.73 on account of going value. The district court refused to allow this. On this account its decree was reversed by the supreme court, which says:

"We think the district court erred in excluding from its estimate of the 'fair and equitable' value of the water works system the sum of $15,214.73, that being the amount found by

the referee to be the value of the plant as a going concern, including the franchise. A system of water works in a city, without the right to operate there, or without being connected with water takers, and not in a running condition, would be comparatively worthless. *The water company was the owner of these important elements of value, and it seems reasonable that they should not be taken without compensation.*"

This opinion quotes from the

Town of Bristol vs. Bristol and Warner Water Works, 23 R. I. 274,

"Everything which the defendant can sell to another he can sell to the town. *A fair and reasonable price to the town is what would be a fair and reasonable price to anyone else.*"

Newburyport Water Co. vs. City of Newburyport, 168 Mass. 541,

was decided by the supreme court of Massachusetts while Mr. Justice HOLMES was a member of that court, and the opinion is written by him. We make the following extract:

"The commissioners state the elements of valuation which they have taken into account. In addition to the value of the tangible property and easements, they have allowed $40,000 for the fact that the plant was a going concern and in full operation. They have allowed for everything for which the petitioner was entitled to be paid. They have approached the question in a manner in which it was within their discretion to approach it. *National Waterworks Co. vs. Kansas City*, 62 Fed. 853."

Venner vs. Urbana Water Co., 174 Fed. 348,

involved a question of rates in connection with which there was a valuation. The court says at page 352:

> "It is well established that fair compensation for such service includes operating expenses, taxes, cost of administration, and a fair yearly allowance for the maintenance of the plant and such return on the value of the capital and property employed as is just and reasonable. Upon consideration of the testimony of the experts, Hays, Williams, Mead and Hill, I am of the opinion that the fair reproduction value of the property is $155,000, to which should be added $25,000 as the 'going value' of the property, the definition of which is given by Justice BREWER as follows:
>
> > 'The fact that it is a system in operation, not only with capacity to supply the city, but actually supplying many buildings in the city, not only with a capacity to earn, but actually earning, makes it true that 'the fair and equitable value' is something in excess of the cost of reproduction. * * * It should pay, therefore, not merely the value of a system which might be made to earn, but that of a system which does earn.'

Note here the amount allowed is over 15 per cent of the value of the property exclusive of this item.

In

Spring Valley Waterworks vs. City and County of San Francisco, 192 Fed. 137,

the court says:

> "I shall consider the fact that complainant has an established business, not by fixing a definite value therefor, but along the lines suggested by the sound and practical utterances

of Judge SAVAGE in *Brunswick Water District vs. Main Water Co.*, 99 Me. 371, 376; 59 Atl. 537, 539:

> 'We speak sometimes of a going concern value as if it is or could be separate and distinct from structure value—so much for structure and so much for going concern. But this is not an accurate statement. The going concern part of it has no existence, except as a characteristic of the structure. If no structures, no going concern. If a structure in use, it is a structure whose value is affected by the fact that it is in use. There is only one value. It is the value of the structure as being used. That is all there is to it.'

The good will of complainant will not be considered as a proper element for valuation in this proceeding. Good will rests on the probability that customers as a matter of personal choice will continue to trade where they have been doing business. Here there is no such choice. They must take water from the Spring Valley Water Company or go without. *Willcox vs. Consolidated Gas Co.*, 212 U. S. 19, 21, 52; 29 Sup. Ct. 192, 53 L. Ed. 382; *Contra Costa Water Co. vs. City of Oakland (Cal.)*, 113 Pac. 668, 676."

This was a rate case, not a condemnation case.

A late rate case sustaining this contention is

> *People ex rel. Kings County Lighting Co. vs. Willcox, et al.*, 156 App. Div. (N. Y.) 603, 141 N. Y. S. 677.

We quote all of the opinion which bears on this subject:

> "1. *Going Value.* It claims that as an established business there should have been added

an item for 'going value' of $600,000, the smaller of the estimates given by its two expert witnesses. In condemnation cases this has been settled by the Supreme Court of the United States.

In *Omaha vs. Omaha Water Company*, 218 U. S. 180, 30 Sup. Ct. 615, 54 L. Ed. 991, the question was as to the amount to be paid by a municipality on taking over a system of waterworks. Nearly $600,000 had been allowed by the appraisers for going value. The Court said:

> 'The option to purchase excluded any value on account of unexpired franchise; but it did not limit the value to the bare bones of the plant, its physical properties, such as its lands, its machinery, its water pipes or settling reservoirs, nor to what it would take to reproduce each of its physical features. The value in equity and justice must include whatever is contributed by the fact of the connection of the items making a complete and operating plant. The difference between a dead plant and a live one is a real value, and is independent of any franchise to go on, or any mere good will as between such a plant and its customers. • • • That there is a difference between even the cost of duplication, less depreciation, of the elements making up the water company's plant, and the commercial value of the business as a going concern, is evident. Such an allowance was upheld in *National Waterworks vs. Kansas City*, 62 Fed. 853, 10 C. C. A. 653, 27 L. R. A. 827, where the opinion was by Mr. Justice Brewer. We can add nothing to the reasoning of the learned justice, and shall not try to. That case has been approved and followed in *Gloucester Water Supply Co. vs. Gloucester*, 179 Mass. 365 (60 N. E. 977), and *Norwich Gas Co. vs. City of Norwich*, 76 Conn.

565 (57 Atl. 746). No such question was considered in either *Knoxville vs. Knoxville Water Co.*, 212 U. S. 1 (29 Sup. Ct. 148, 53 L. Ed. 371), or in *Willcox vs. Consolidated Gas Co.*, 212 U. S. 19 (29 Sup. Ct. 192, 53 L. Ed. 382, 15 Ann. Cas. 1034). Both cases were rate cases, and did not concern the ascertainment of value under contracts of sale.'

It is true the question has not been directly decided in a rate case in the United States Supreme Court. In the Knoxville Case, *supra*, Mr. Justice MOODY said of the valuation:

'It was made up by adding to the appraisement, in minute detail of all the tangible property the sum of $10,000 for "organization, promotion, etc.," and $60,000 for "going concern." The latter sum we understand to be an expression of the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is in active and successful operation and earning a return. We express no opinion as to the propriety of including these two items in the valuation of the plant, for the purpose for which it is valued in this case, but leave that question to be considered when it necessarily arises. We assume, without deciding, that these items were properly added in this case.'

And the United States Supreme Court again left the question undecided in *Cedar Rapids Gas Co. vs. Cedar Rapids*, 223 U. S. 655, 669, 32 Sup. Ct. 389, 390 (56 L. Ed. 594), HOLMES, J., saying:

'Then again, although it is argued that the court excluded going value, the court expressly took into account the fact that the plant was in successful operation. What it

excluded was the good will or advantage incident to the possession of a monopoly, so far as that might be supposed to give the plaintiff the power to charge more than a reasonable price. * * * In this case the court fixed a value on the plant that considerably exceeded its cost and estimated that under the ordinance the return would be over 6 per cent.. Its attitude was fair, and we do not feel called upon to follow the plaintiff into a nice discussion of details.'

But 'going value' has been considered and allowed for in the following rate cases: *Missouri, Kansas & Texas Ry. Co. vs. Love* (*C. C.*), 177 Fed. 493, 496; *Shepard vs. Northern Pacific Ry. Co.* (*C. C.*), 184 Fed., 765, 810; *Des Moines Water Co. vs. City of Des Moines* (*C. C.*), 192 Fed. 193, 197; *Pioneer Tel. & Tel. Co. vs. Westenhaver*, 29 Okla. 429, 118 Pac. 354, 38 L. R. A. (N. S.) 1209.

"I am unable to perceive a logical difference between allowing 'going valuation' in the valuation of a plant when it is to be taken entirely by the public and allowing the same element when valuing the same plant for rate making purposes. In each case the thing to be done is the fair appraisement of present value. What difference in principle can there be because in one instance all is taken for the use of the public and in the other the public limits the earnings?

In the case at bar the Commission says it 'disallowed this claim in determining fair value, * * * but did consider it in fixing the rate of return.' If so, there is no proof of that fact in the record."

(c) The rule is the same in rate cases and condemnation cases.

The *Omaha Water case* contains the following statement:

> "No such question was considered in either *Knoxville vs. Knoxville Water Co.*, 212 U. S. 1, or in *Willcox vs. Consolidated Gas Co.*, 212 U. S. 19. Both cases were rate cases, and did not concern the ascertainment of value under contracts of sale."

It will be argued that this supports the contention that value is one thing when it is proposed to take property in violation of the fourteenth amendment and another thing when it is proposed to take the same property in violation of the fifth amendment. The language quoted does not warrant this contention, but because the contention may be made, we desire to briefly consider it.

The provision of the fourteenth amendment which is invoked in the present case is

> "Nor shall any state deprive any person of life, liberty or *property* without due process of law."

The provision in the fifth amendment, controlling in condemnation cases, is:

> "Nor shall private *property* be taken for public use without just compensation."

These provisions are incorporated in the constitutions of practically all of the states.

It is inconceivable that this word "property" should mean one thing in the one case and another thing in the other. It is the word that is used to describe what may not be taken. Unless this be

true, if a municipality desired to acquire one of these plants by condemnation, the first step would be by a rate schedule to destroy every element of value except what was represented by the mere bare bones of the plant. It could then condemn what was left upon its own terms.

In

Willcox vs. Consolidated Gas Company, supra,

this court in discussing the question whether franchises were protected by the fourteenth amendment, said:

> "It cannot be disputed that franchises of this nature are property, and cannot be taken or used by others without compensation."

The court cites in support of this proposition,

Monongahela Navigation Company vs. United States, 148 U. S. 312.

This was a condemnation case arising under the fifth amendment, and if the contention which we have referred to were sound, would have been entirely beside the point.

In the *Monongahela Navigation Company case*, the court says:

> "The value of property, generally speaking, is determined by its productiveness—the profits which its use brings to the owner."

It says further:

> "Demand for the use is another factor. The commerce on the Monongahela river, as appears from the testimony offered, is great; the demand for the use of this lock and dam con-

> stant. A precisely similar property, in a stream where commerce is light, would naturally be of less value, for the demand for the use would be less. The value, therefore, is not determined by the mere cost of construction, but more by what the completed structure brings in the way of earnings to its owner. For each separate use of one's property by others, the owner is entitled to a reasonable compensation; and the number and amount of such uses determine the productiveness and the earnings of the property, and, therefore, largely its value."

The court says further, showing a striking analogy with the case at bar:

> "In this case, it being property devoted to a public use, the amount of compensation was subject to the determination of the State of Pennsylvania, the state which authorized the creation of the property. The prices which may be exacted under this legislative grant of authority are the tolls, and these tolls, in the nature of the case, must enter into and largely determine the matter of value."

We have already seen that if this element of value is to be disregarded in a rate case, the municipality can confiscate it, then condemn the property for less than its value, and then enjoy this element of value. Note in this connection what Mr. Justice BREWER says at page 337:

> "And here it may be noticed that, after taking this property, the government will have the right to exact the same tolls the Navigation Company has been receiving. It would seem strange that if by asserting its right to take the property, the government could strip it largely of its value, destroying all that value which comes from the receipt of tolls, and,

> having taken the property at this reduced valuation, immediately possess and enjoy all the profits from the collection of the same tolls. In other words, by the contention this element of value exists before and after the taking, and disappears only during the very moment and process of taking. Surely, reasoning which leads to such a result must have some vice, at least the vice of injustice."

This case is referred to in

> *Fairbanks vs. United States,* 181 U. S. 283,

where, after stating the provision of the act of congress, the court says in stating what the *Monongahela Navigation Company case* decided:

> "The idea being that simply the value of the tangible property was all that need be paid for; and it was held that such proviso could not be sustained; that while the right of condemnation was clear, it was limited by the clause in the fifth amendment, 'nor shall private *property* be taken for public use without just compensation,' and that that language required payment of the *entire value of the property of which the owner was deprived.*"

Like the fifth amendment, the fourteenth amendment protects the entire property and therefore requires a return upon the entire value of the property.

We submit that this is the only possible conclusion upon this question. That upon which the appellant is entitled to earn a return is the present value of its property. This means that every material factor affecting that value must be taken into account. This is a rule which has been iterated and reiterated by this court. It is said in the

> *Minnesota Rate Cases,* 230 U. S. 434,

"The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts. The scope of the inquiry was thus broadly described in *Smyth vs. Ames*, *supra* (pp. 546-547): 'In order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property. What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience. On the other hand, what the public is entitled to demand is that no more be exacted from it for the use of a public highway than the services rendered by it are reasonably worth.'"

This is one of the elements that must be taken into account in arriving at a sound conclusion as to the value of this property. As the master said, any man purchasing the property would take it into account, and any man selling the property would take it into account. The court below held that we were entitled to it, and then through a misapprehension of the master's figures held that we had already received it. In this the court below erred.

VI.

What is a fair return?

A public authority may not by compulsion make a schedule of rates so low as to amount to confiscation. As a minimum, a public utility is entitled to a fair return. The distinction between a reasonable rate and a fair return is admirably stated in

> *Public Service Gas Company vs. Board of Public Utility Commissioners, et al.* 87 Atl. 651 (not yet officially reported),

where the court says:

> "The next question is whether the rate fixed was just and reasonable. On the one hand a just and reasonable rate can never exceed, perhaps can rarely equal, the value of the service to the consumer. On the other hand, it can never be made by compulsion of public authority so low as to amount to confiscation. A just and reasonable rate must certainly fall somewhere between these two extremes, so as to allow both sides to profit by the conduct of the business and the improvements of methods and increase of efficiency. Justice to the consumer, ordinarily, would require a rate somewhat less than the full value of the service to him; and justice to the company would, ordinarily, require a rate above the point at which it would become confiscatory. To induce the investment and continuance of capital there must be some hope of gain commensurate with that realizable in other business; the mere assurance that the investment will not be confiscated would not suffice."

What is a reasonable return, that is, what return will secure the investment necesary to carry on the

business, is a question of fact, varying under varying conditions at different times and in different localities. This court said, in

Willcox vs. Consolidated Gas Company, 212 U. S., 19, 48,

> "There is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested in business enterprises. Such compensation must depend greatly upon circumstances and locality; among other things, the amount of risk in the business is a most important factor, as well as the locality where the business is conducted and the rate expected and usually realized there upon investments of a somewhat similar nature with regard to the risk attending them."

The supreme court of Iowa has definitely held that what is a fair return is a question of fact, to be determined by the testimony in each particular case. We make the following excerpt from its opinion in

Cedar Rapids Gas Light Company vs. Cedar Rapids, 144 Ia. 426, 448,

> "What compensation will be reasonable is a question of fact to be determined in the light of the evidence in each particular case. No court of last resort has undertaken to say what per cent. on the value such an investment should yield its owner in all cases."

In that case, obviously there was no evidence upon this question. The court says at page 450:

> "Possibly the plant should earn a return equal to the interest paid in the community on investments equally permanent in character, *but what this was is not disclosed by the record.*"

In the case at bar the testimony upon this question was full and complete, and the master found (transcript, page 73) that this evidence clearly justified 8%. We will refer to this testimony somewhat in detail in the other division of this brief.

The investment by the Des Moines Gas Company of $2,540,000 in the gas plant in Des Moines is a permanent investment. Not only must this investment remain, but common experience and the history of this particular plant as disclosed by the testimony, confirm the conclusion of the master that there must be continual additions to this investment.

It is fundamentally and radically wrong to assume that the return to which this investment is entitled and which it must in the long run receive, if the service is to continue, is something which may be determined by a consideration of abstract rules, or by the discretion or whim of any regulatory body, or even of any court.

The money which goes into public utilities comes from the general investing public. It will go, just as inevitably as water will run down hill, into those investments which, all things being considered, promise the highest return. The effect of the laws of demand and supply is certain.

Consequently, so long as these public utilities are not municipally owned, so long as these public services are furnished by privately owned plants, it will be necessary to pay, in order to secure the capital for these investments, returns which, taking into account the hazards and all of the other material circumstances, will place these investments on a parity with other investments seeking the general supply of capital. These factors determine what is

a fair return, and they will continue to determine it, so long as fundamental economic laws remain unchanged.

It is worth while to remember that the price of money can no more be fixed by legislation than can the price of coal or of any other commodity; that the price of money, that is, the fair return, must be determined through the consideration of the testimony of those who know, just like any other matter of fact, and cannot be determined by mere speculation.

VII.

Upon the facts found, the complainant was entitled to a decree upon the merits in its favor.

The master in his consideration of the testimony, construed the rule which requires the facts to be established by clear and satisfactory evidence to mean that each material fact should be established beyond a reasonable doubt. Our discussion of the evidence elsewhere demonstrates that his conclusions were without exception extremely conservative, and, we believe, less favorable to the complainant than a proper application of the clear and satisfactory rule would have produced. Without considering here the weight of this testimony, the proposition which we wish to urge is that upon the master's own findings, which the court approved, there was but one possible conclusion, namely, a decree for the complainant.

The testimony was more complete than that in any like case as to which we are informed. It em-

braced, among other things, in minute detail the cost of reproduction of the plant and the amount of depreciation; the cost of the plant and the additions made to it from year to year for a long series of years; the actual cost of manufacturing gas, showing this cost in minute detail for the five (5) years preceding December 31, 1910 (Complainant's Exhibit 24, transcript, opposite page 3466), and for the next ten (10) months up to the first of the month in which the case was submitted to the master (Complainant's Exhibit 93, transcript, opposite page 3478), and showing these costs generally for nearly twenty-five (25) years; the revenue derived from the sales of gas for th same periods (see same exhibits); for the period commencing June 30, 1886, and ending December 31, 1910, for each year, the population per meter and per mile of main, the sales per capita, per meter and per mile of main, the revenue per thousand cubic feet per meter, per capita and per mile of main, and the operating expenses without depreciation, showing the cost per thousand cubic feet, per meter, per capita and per mile of main (Complainant's Exhibit 36, transcript, opposite page 3468); exhaustive studies of the financial history of the plant as shown by its records and accounts, by W. J. Hagenah (transcript, page 3427) and by Mr. Hall, a chartered accountant and witness for the city (transcript, page 3611); the history of the plant and of its surroundings, and innumerable other facts and circumstances. The showing was many times more complete and exhaustive than what would be required by a banker who proposed to buy the plant's securities, or by a purchaser who proposed to buy the plant itself.

There is another most important consideration. It is suggested by the master's remark (transcript, page 108): "Judicial prophecy is a new role for me."

What we wish to emphasize is that this is not and was not a case calling for the exercise of prophetic gifts. What the master failed to realize is that the gas business is as was said by this court in the *Consolidated case*, a most stable business. One who is familiar with the business and with the circumstances of a particular case, may predict with substantial accuracy what the operations of that plant will be in the immediate future. This is done every day; and it is the certainty of such predictions that makes the stability of this industry. If this were not true, if the past did not furnish a sure guide as to the future, if the future were mere speculation, what would be the consequences?

If there were such instability in the business, the return which would attract capital to it would have to be very largely increased. A purely speculative business does not attract capital at the rate of 6% in New York or of 8% in Iowa.

Intelligent and economical engineering would be impossible. What makes it possible to build a gas plant of the proper capacity so as to secure economy in its construction and operation is the fact that it is possible to tell with substantial accuracy what the requirements of the plant will be, and its output for a reasonable time in the future.

The testimony showed that this plant was well designed, and had been economically and efficiently managed. Its experience of twenty-five (25) years, with careful studies of the community, established normal conditions as facts, so that it was entirely possible to tell with substantial certainty what

this property would do. A study of the curves later referred to will show that the master, from the testimony, did this in a way to command confidence in his conclusions as to future sales.

The very fact that capital will undertake investments of this character with a return not much greater than what can be secured from sound loans to be repaid at a fixed time, is conclusive evidence that common business experience has demonstrated the stability of this business.

The question then is not a matter of speculation, it is not something which requires the exercise of the gift of prophecy; its determination requires only sound skilled business judgment.

The master himself reached certain and definite conclusions. Upon every hypothesis which he considered he found that at the 90 cent rate the plant did not and would not earn a fair return. He had no doubt about the fact of a deficit; his only difficulty was that he could not measure the exact amount of this deficit.

We have then this situation. In the *Consolidated case,* at page 49, the court said, as to the investment:

> "In an investment in a gas company, such as complainant's, the risk is reduced almost to a minimum."

In the instant case, the plant had been in operation nearly fifty (50) years. What would be accomplished under normal conditions was established. The things which differentiate it from the New York plant, such as the power of the municipality to regulate the rates, some question as to the franchise situation, and the power of the municipality to authorize competing plants, are things

whose influence is not in the direction of a conclusion that a rate now confiscatory may become compensatory, but whose influence is strongly in the opposite direction.

Upon every hypothesis suggested by the master, and he looked at the question from many angles, the proposed rates would not yield a fair return. He said (transcript, page 108):

> "Should the Court hold that the $140,000 for taking up and replacing mains (paving) where none existed at the time the mains were laid, then a decree for the complainant would be imperative, should 'Going Value' be included in the basis for a return."

He did not recommend a decree for the complainant because he believed that the *Cedar Rapids case* required him to hold that the city had the power to confiscate the element of $300,000 in the value of this plant.

We propose now to call attention to the findings showing that at the $1.00 rate the plant did not earn a fair return in 1910; that it would not have earned a fair return in 1911, or 1912, or 1913, or 1914, at the 90 cent rate; that it would not do this at the average operating cost of the preceding five (5) years, after deducting every questionable item; that it would not do this at the operating costs of 1910 and 1911, after making like deductions; that it would not do this at the lowest operating cost of the preceding five (5) years; that the deficits were substantial, amounting to a large proportion of the entire return; that it could not reasonably be anticipated that a reduction of 10 cents in the rate would increase the sales so as to make the return compensatory because there was a remarkable development in Des Moines, one meter for

every four and one-half people—that is practically one meter for every family; because the plant had not the capacity to manufacture enough gas to earn this return; because there was not a sufficient population in Des Moines to buy and consume the gas if it had been possible to manufacture it and offer it for sale; and because the prior experience of the company when reductions in rates were made, negatived the contention that such a reduction could produce such increased sales.

These facts are not the speculation of witnesses. They are the deductions made by the master and confirmed by the court below from a detailed history of the operations of this property in this community for a quarter of a century.

This is clear and satisfactory evidence. If it is not, then there is no such thing as clear and satisfactory evidence upon such a question as this. It is evidence that shows that upon every hypothesis which is consistent with the facts as to the operation of this property, it will not in the immediate future at the 90 cent rate earn a fair return. Any assumption that the property may earn a fair return at this rate involves the assumption that the operating costs will be radically less than experience has shown that under efficient management they can be; or that the plant must produce over fifty per cent more gas than its capacity; that sales must be immediately increased even at a valuation of only $2,100,000 by over forty per cent., and this in the face of a development which shows one meter for every family; and notwithstanding the fact that the population is insufficient to consume such increased sales, and that such increased sales have never followed like reductions in the history of this property.

We will now call attention to the specific things in the master's report which sustain these general statements.

(a) The estimates as to future net revenue and deficits.

The master estimated the future net revenue in his report (transcript, page 98). *Note that these estimates are based upon such increases in sales as the history of the plant indicated as probable.* The curves which we insert later confirm the soundness of these estimates.

Valley Junction was a small suburb where the investment was only about $45,000, and would not affect the result. The master, for accuracy, however, takes it into account. As has been noted, the master's returns are computed upon $2,400,000 as the value, which excludes the item of paving, which means that his deficits are each $11,200 less than they would have been if this item of value had been included.

The computations made by him were based for the year 1910 on the $1.00 rate and thereafter on the proposed 90 cent rate. In all cases all doubtful items of operating cost were disallowed. For the year 1910 and for ten (10) months of the year 1911, the master used the actual sales. For the other years the master made assumptions as to sales based upon the evidence. He took the average operating costs for the five (5) years preceding December 31, 1910, as adjusted by him, the operating cost for the lowest year in this period, and for the years 1910 and 1911 the adjusted actual

operating cost for these years. The results obtained by him were as follows:

	Deficit.
1910, $100 rate (transcript, page 99, line 4)	$27,272.80
1911, 90 cent rate (transcript, page 99, last line)	73,031.84
1912, 90 cent rate, average operating cost for five (5) years (transcript, page 100, last line)	72,799.00
1912, 90 cent rate, operating cost for lowest of five (5) years (transcript, page 101, line 9)	60,329.50
1912, 90 cent rate, adjusted operating costs of 1910 (transcript, page 101, line 13)	75,119.50
1913, 90 cent rate, operating cost of 1911 (transcript, page 102, line 4)	72,050.00
1913, 90 cent rate average adjusted operating cost (transcript, page 102, line 6)	77,192.56
1913, 90 cent rate, adjusted 1910 operating cost (transcript, page 102, line 8)	79,612.56
1913, 90 cent rate, operating cost of lowest year (transcript, page 102, line 10)	64,185.06
1914, 90 cent rate, adjusted operating cost for 1911 (transcript, page 102, fourth line from bottom)	78,815.20
1914, 90 cent rate, adjusted operating cost for 1910 (transcript, page 102, last line)	86,790.20
1914, 90 cent rate, lowest operating cost for five (5) years (transcript, page 103, line 3)	70,521.20
1914, 90 cent rate, adjusted average operating cost for five (5) years (transcript, page 103, line 6)	84,238.00

It should be borne in mind that to each of these deficits there should be added $11,200, and that each of them is a large fraction of the total net revenue to which the master found the company entitled which was only about $200,000 a year. Not one of the cost factors was as large as the expense actually incurred by this company, whose management the master approves as sound (transcript, page 75). These deficits run over 40% of the fair return; that is, they mean confiscation of about one-half of the property.

In other words, the master determined that upon no hypothesis predicated upon any actual experience of the plant was it possible for the property to earn much more than one-half of a fair return.

Such facts would be good enough to convict a man under the Sherman act; they would be good enough to set aside a deed or a contract for fraud, and we think they compel a decree for the complainant.

This case is not on the border line like the *Consolidated Gas case*. There, at the existing rate, the company was earning more than a fair return—here it was earning less; there the proposed reduction was 20 cents—here it is only 10 cents; there the proposed rates applied to past sales showed a return of nearly 5½%, or 90.5% of a fair return; here, upon the basis most adverse to the company, that is, assuming a value of only $2,100,000 and taking the operating costs for the lowest of five (5) years as the basis and adding to the

actual sales the estimated increases, and taking the year up to 1914 showing the result most favorable to the city, that is 1912, the plant would only earn 78.52% of a fair return. This case is not close to the line, but belongs to the class of cases of which this court says, in the *Consolidated Gas case:*

> "It may be, as already suggested, that in many cases the rates objected to might be so low that there could be no reasonable doubt of their inadequacy upon any fair estimate of the value of the property. In such event the enforcement of the rates should be enjoined even in a case where the value of the property depends upon the value to be assigned to real estate by the evidence of experts."

(f) Future increased sales.

We have already stated that the master, in making his estimates for the future, took into account increased sales. We have prepared and here insert, a diagram which shows the actual sales of this property from 1895 to January 1, 1911, the date of the valuation, and also the master's estimated future sales.

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This diagram confirms the soundness of the master's estimate. It also demonstrates the impossibility of sales in such volume as would be required to earn a fair return upon any reasonable value of this plant.

On the diagram is shown the volume of sales that would be necessary in order to earn a fair return upon the value of $2,100,000, which excludes paving and going value, on $2,400,000 which includes going value, and on $2,540,000, which includes both of these items. The sales in the year 1910, including Valley Junction, were 531,991,000 cubic feet (transcript, page 84). For the year 1911, taking its actual operating expenses, less the deductions made by the master, for the three valuations, in order to earn a fair return the sales and the necessary increases over the preceding year would have been as follows:

Valuation.		*Cubic Feet.*
$2,100,000.....	Estimated sales	777,777,800
	Actual sales	531,991,000
	Increase	245,786,800
$2,400,000.....	Estimated sales	888,888,900
	Actual sales	531,991,000
	Increase	356,897,900
$2,540,000.....	Estimated sales	940,740,800
	Actual sales	531,991,000
		408,749,800

These increases are not within the range of possibilities. The actual sales for ten (10) months of 1911 were 450,011,489 (transcript, page 99, heading "1911"). The total sales estimated by the master for that year were only 557,778,529, against 777,777,800 above. Transcript, page 84, shows in the table the increase each year from 1896 to 1910 inclusive. During this period, rates were reduced from $1.30 to $1.00. The increase in 1910 was 34,746,000. To assume that this could jump to 245,000,000 is to go outside of the limits of what is possible.

We insert here a tabulation showing with references to the transcript the population, sales, annual increases in sales, the number of meters, the sales per meter, the sales per capita and the population per meter from 1895 to 1910 inclusive:

Rate Net.	Year.	Population.	Sales in Cubic Feet.	Annual Increase in Cubic Feet.	Meters.	Sales Per Meter.	Sales Per Capita.	Population Per Meter.
Page 43.	Page 89	Page 89.	Page 84	Page 84	Page 84	Page 84	Page 89	Page 90
	1895	56,500	61,100,000	. . . . .	2,448	24,560	1,080	22.71
$1.30	1896	57,000	76,437,000	15,335,000	2,868	26,650	1,340	19.88
	1897	57,800	83,951,000	7,514,000	3,479	24,130	1,450	16.61
1.25	1898	59,000	93,613,000	9,662,000	4,127	22,680	1,590	14.30
	1899	60,500	109,821,000	16,208,000	5,308	20,690	1,820	11.40
1.20	1900	62,100	141,931,000	32,110,000	6,425	22,090	2,290	9.67
	1901	64,500	160,990,000	19,059,000	7,682	20,960	2,500	8.40
1.15	1902	67,200	206,765,000	45,775,000	8,898	23,240	3,080	7.55
	1903	70,000	244,245,000	37,480,000	10,395	23,500	3,490	6.73
	1904	72,900	292,407,000	48,162,000	11,436	25,570	4,010	6.37
1.10	1905	75,600	334,405,000	44,998,000	12,940	25,840	4,420	5.84
1.00	1906	78,000	372,102,000	37,697,000	14,640	25,420	4,770	5.33
	1907	80,200	429,519,000	57,417,000	16,073	26,720	5,360	4.99
	1908	82,300	461,178,000	31,659,000	17,100	26,970	5,600	4.81
	1909	84,400	497,245,000	36,067,000	18,439	26,970	5,890	4.58
	1910	88,900	531,991,000	34,746,000	19,736	26,960	5,980	4.50

This also shows in the first column the rate prevailing at the time in question. A study of the last column, "Population Per Meter," and of the column headed "Sales Per Meter," shows where increases came from. They did not come from increased sales to the individual subscriber on account of decreased prices, but from intensive development of the business resulting in the installation of more meters until the population per meter was reduced to 4.50.

Note also the following computations which show for each of the years 1911, 1912, 1913 and 1914 the sales necessary to earn a return upon each of the three valuations, the sales estimated by the master for each of these years, and the shortages. The operating cost taken is that for the ten months preceding the submission to the master, with his deductions from it:

1911 ADJUSTED—(RETURN 21.60 CENTS PER 1,000 CUBIC FEET.

Year.	Sales Necessary to Earn Return, Cubic Feet.	Sales Estimated by Master, Cubic Feet.	Shortage Cubic Feet.
	VALUATION, $2,540,000.		
1911	940,740,800	550,800,000	389,940,800
1912	946,062,600	580,000,000	366,062,600
1913	990,417,000	605,000,000	385,417,000
1914	1,054,737,400	638,000,000	416,437,400
	VALUATION, $2,400,000.		
1911	888,888,900	550,800,000	338,088,900
1912	894,210,700	580,000,000	314,210,700
1913	938,565,100	605,000,000	333,565,100
1914	1,002,885,500	638,000,000	364,885,500

VALUATION, $2,100,000

1911	777,777,800	550,800,000	226,977,800
1912	783,099,600	580,000,000	203,099,600
1913	827,454,000	605,000,000	222,454,000
1914	891,774,200	638,000,000	253,774,200

(c) The finding that increased sales must be due to increased population.

The prices for gas in Des Moines were during 1896 and 1897, $1.30; 1898 and 1899, $1.25; 1900 and 1901, $1.20; 1902, 1903 and 1904, $1.15; 1905, $1.10; from 1906 to 1910 inclusive, $1.00 (transcript, page 89). Discussing there some of the evidence, the master says:

> "There is a very slight increase after it reaches one dollar per M. C. F., but the preceding years does not indicate whether from decrease in price, judging from the preceding years, it is difficult to say. They vary so greatly up and down during that time that I am at a loss to determine why, but if from cheapness not much over 1,000 feet per meter. While a slight increase in consumption may result from a reduction of ten cents per M. C. F. in price, in my judgment, it is much more apt to result in an increase of customers, and the table in Schedule 4 very clearly shows it, in the increase thereof, in proportion to the inhabitants of the city, as shown by the first column on the right of the table."

Again, he says on page 90 of the transcript:

> "From 1906 to 1910 inclusive, there is only a difference of .83 of a person to the meter. It is clear to me that in the future the annual

> gain will largely depend upon the increase in population and the erection of new residences, for their accommodation and consequently the extension of mains, to accommodate them."

These statements to the effect that an increase in the sale of gas must come from an increase in population are thoroughly borne out by the testimony. Complainant's Exhibit 36, preceding transcript page 3469, is of great value in this connection. The first significant fact is the population per meter. This in 1887 was 35.60. In 1910 it was 4.50; that is, in 1911 when this proposed decrease was to take place, there was practically one gas meter for every family in the city of Des Moines. This is saturation.

The sales per meter are extremely interesting in this connection. In 1887 they were 33,740 C. F. With a constantly decreasing rate, they become in 1910 26,955 c. f. They had varied, having been 26,652 c. f. in 1896, as low as 20,689 c. f. in 1899, 26,689 c. f. in 1907, and 26,955 c. f. again in 1910.

> Note that the next to the last line in the exhibit is for ten (10) months only, and so is not comparable with what precedes it.

In other words, the increase in the consumption of gas in Des Moines has been due to increases in the number of persons using the gas and not to increases in the amount used by each consumer.

In 1905, the rate was decreased from $1.10 to $1.00. The sales in 1910 exceeded those in 1905, 197,586,000 c. f. The following computation which

disregards fractions demonstrates that this increase must be attributed to the following causes:

To decrease in price,	7.33 per cent.
To increase in population,	30.6 " "
To decrease in population per meter, due to efficient management,	61. " "
	98.93 " "

This computation is as follows:

1910, rate $1.00, sales	531,991,000 c. f.
1905, rate $1.10, sales	334,405,000 c. f.
Increase in 5 years with 10c. reduction in price	197,586,000 c. f.

which is accounted for as follows:

(1) Increase due to increased sales per meter:

Sales per meter, 1910	26,960 c. f.
Sales per meter, 1905	25,840 c. f.
Increase in sales per meter	1,120 c. f.
Number meters, 1905	12,940
1,120 c. f. × 12,940 gives increase in sales to meters in use in 1905	14,492,800 c. f.

(2) Increase due to increase in population:

Population, 1910	88,900
Population, 1905	75,600
Increase	13,300
Population per meter, 1905	5.84
$\frac{13300}{5.84} = 2277$ = additional meters due to increase in population.	
Sales per meter, 1910	26,960 c. f.

26,960 c. f. × 2277 gives increase in sales due to increase in population		61,387,929 c. f.
(3) Increase due to decreased population per meter:		
Meters, 1905	12,940	
Increase in meters due to increase in population	2,277	
	15,217	
Actual meters, 1910	19,736	
Increase in meters due to decrease in population per meter	4,519	
26,960 c. f. × 4,519 gives increase in sales due to increased population per meter		121,832,240 c. f.
Total increase as above		197,712,960 c. f.

(NOTE: For the sales, population and number of meters in 1905 and 1910, see Complainant's Exhibit 33; for the sales per meter, see Complainant's Exhibit 36, transcript, opposite page 3468.)

The population per meter in 1905, was 5.84; in 1910 it was 4.50. This is saturation, so that practically for the future, all factors except increase in population are eliminated.

We omit reference to the testimony showing gradual increases in taxes and the cost of labor and materials, and especially oil. The tendency of these things is notorious. The facts negative the possibility of any substantial decrease in operating costs.

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(d) The population necessary to a fair return.

To sell gas, there must be persons to buy it. We insert here a diagram showing the population of the city of Des Moines from 1895 to 1910, with the normal increase in population projected, and with additional curves showing the population which it would be necessary for the city to have to provide the people who would be necessary to buy the gas if the company could manufacture and sell it. Gas cannot be sold without purchasers.

This necessary population is readily computed from the gross sales by taking either the per capita sales, or the sales per meter and population per meter.

The normal population of Des Moines at the end of 1911 was something over 92,000 people. To earn a fair return on $2,100,000 would have required 129,820 people, an increase of over 30%, and to earn a fair return on $2,540,000 would have required 157,023 people, an increase of over 60%. Such things have happened in mining countries, but they have never happened in Iowa. Note in this connection the table showing the population in each year since 1895, page 119 of this brief.

(e) The plant had not the capacity to manufacture enough gas to afford a fair return.

The capacity of the existing plant was about 600,000,000 cubic feet per annum. The master says (transcript, page 87):

> "Professor Marks testified (Pages 2349 and '50, Vol. 2, Record) that when the annual output reached 600,000 M. C. F., that a new holder would become a necessity. (See also Record, pages 2708 to 2716, Vol. 2); Henry I. Lea (Record, pages 1034 to 1046); W. A. Baehr (Record, pages 1581 and 6, Vol. 2); W. W. Randolph (Record, page —, Vol. 2).
>
> "5. According to my recollection, the maximum for any day during the year was 2,228,000 C. F. (See Record, page 1581, Vol 2) and the capacity of all the holders is only 1,607,000 C. F. and, comparing the highest daily output therewith, it will be seen at their utmost capacity they cannot keep in the holders more than two-thirds of such a day's supply for dis-

tribution. The highest daily output must be considered in determining the holder capacity necessary, and the increase in their annual sales will soon render it imperative that greater holder capacity must be provided. Any accident occurring that would stop its manufacture would put the city in darkness and render it necessary before they could turn on the gas to see that every burner in the city was closed, otherwise very disastrous results might follow."

Professor Marks was an engineer who testified for the city. Lea, Baehr and Randolph were engineers who testified for the complainant.

The master says further (transcript, page 88, paragraph 7):

"What this new holder would cost, rendered necessary when the annual sales reach 600,000 M. C. F., Professor Marks did not state, but it should be at least a 2,000,000 C. F. holder, and judging from the cost of the other holders, would probably cost $175,000."

The master said further, on the same page:

"There will be necessary, also, other additions in the manufacturing plant. The enlargement of the purifiers and also additional generators. (See former references.) These are matters that must be considered in determining results in the future upon the increase of sales."

The annual capacity of this plant is 600,000,000 c. f., so that it appears that to warrant the assumption that this plant may earn a fair return it must be assumed that it will manufacture and sell gas to an amount of from one-third to one-half in excess of this capacity, and that there will be a like increase in the population of Des Moines, and that this will immediately occur.

The master estimated (transcript, page 87) that each increase of 1,000 cubic feet in sales would involve the investment of additional capital of at least $2.00. We have already inserted a memorandum showing for each year upon each valuation how much the sales estimated by the master fall short of the sales which would be requisite to earn a fair return. If the sales should reach the volume necessary to earn a fair return, this would involve radical increases in the investment, and this again would radically increase the amount upon which the return is computed, and therefore the necessary return. Taking, for instance, the lowest valuation, the shortages and the necessary additions to the investment on this basis would be as follows:

1911 .....shortage 226,999,200 c. f.
Additional investment $453,998.40

1912 .....shortage 203,099,600 c. f.
Additional investment $406,199.20

1913 .....shortage 222,454,000 c. f.
Additional investment $444,908.00

1914 .....shortage 253,774,200 c. f.
Additional investment $507,548.40

These amounts would have to be added to the amount upon which a fair return must be earned, so that the assumption can not be that possibly the present plant may sell enough gas to earn a fair return on $2,540,000 or $2,400,000 or $2,100,000. To sustain the decree, the assumption must be indulged that it does not clearly appear that there will not be manufactured and sold enough gas, not only to earn a fair return upon the present plant, but also to earn a return upon the additional investment which will be necessary to sell and distribute this gas.

VIII.

The inevitable conclusions from the established facts.

We have attempted to compute and tabulate the results which would ensue if the findings of fact made by the master and approved by the court below are sound. The fundamental factors are the various values, the rate of return, the various operating costs after the master's deductions, and the sales as estimated by the master for each year.

With these fundamental factors it is merely a matter of computation to ascertain the actual net return, the amount on which this would be a fair return, the percentage which this would afford on the various valuations, the amount of property which would earn no return, and would therefore be confiscated, the deficit in dollars and per cent. and the percentage of return confiscated.

These matters have been computed and the results, condensed as much as possible, are shown in the tables attached to this brief. Four operating costs are used, viz.: the average for the five (5) years preceding the date when the ordinance was to be effective, January 1, 1911, giving a net return of 20.75 cents per m. c. f.; the year 1910, giving a net return of 20.35 cents per m. c. f.; the first ten (10) months of 1911, giving a return of 21.60 cents per m. c. f.; and the lowest of the five (5) years, giving a return of 22.90 cents per m. c. f. These are adjusted operating costs, and are less than the actual cost of operation to the company in each instance except the lowest year.

We take for comment here the results most unfavorable to the appellant, based on the lowest operating costs and highest return.

Note that this is based on an operating cost without depreciation, of only 60.43 cents, which includes as an adjustment for taxes 7 mills (transcript, page 80, paragraph 10), while the average for five (5) years, without depreciation, had been 62.58 cents (*Id.*, paragraph 8). We call attention to this because the master's report contains a suggestion (which we believe the other division of this brief shows to be a clear misapprehension) that the company might get this cost down to 60 cents (transcript, page 106).

Returning from this digression, this computation shows as to 1910, based on actual sales and the $1.00 rate, that on $2,100,000 the company barely earned a fair return, and that on the other valuations there was a deficit. The figures are:

	Valuation as Found by Master	Per cent of Return on Valuation.	Amount of Property Confiscated.	8 Per Cent Return on Valuation.	Deficit in Return		Percentage of Total Property and Return Confiscated.
					Dollars.	Per Cent.	
(a)	$2,540,000.00	6.80	$380,526.25	$203,200.00	$30,442.10	1.20	14.98
(b)	2,400,000.00	7.20	240,526.25	192,000.00	19,242.10	.80	10.02
(c)	2,100,000.00	8.22	.....	168,000.00	.....	....	.....

This is the old rate. The same year, at the 90 cent rate, would have given these results:

	Valuation as Found by Master	Per cent of Return on Valuation.	Amount of Property Confiscated.	8 Per Cent Return on Valuation.	Deficit in Return		Percentage of Total Property and Return Confiscated.
					Dollars.	Per Cent.	
(a)	$2,540,000.00	4.73	$1,036.901.25	$203,200.00	$82,952.10	3.27	40.82
(b)	2,400,000.00	5.01	896,901.25	192,000.00	71,752.10	2.99	37.37
(c)	2,100,000.00	5.72	596,901.25	168,000.00	47,752.10	2.28	28.42

This 90 cent rate, if in effect in 1910, would have confiscated from 28.42% to 40.82% of the return and of the property devoted to the public use, and this upon a basis of operating costs lower than were or could have been then attained.

The subsequent years show similar results, with the very significant fact that the deficit increases each year after 1912, when the master's estimated additional investment first manifests itself.

The master intimated (transcript, page 81) that the valuation of the property for taxation might well be increased $1,000,000. This factor has been worked in when it would become effective, and largely reduces the return.

The figures show the results, **with all doubts resolved against the appellant.** It is unnecessary to go farther—but, because the safest measure of future operating costs is the average for five (5) years, we refer briefly to that table. It will not be forgotten that these costs were adjusted down. This table gives the following results for 1910, at the unreduced $1.00 rate:

	Valuation as Found by Master	Per cent of Return on Valuation.	Amount of Property Confiscated.	8 Per Cent Return on Valuation.	Deficit in Return		Percentage of Total Property and Return Confiscated.
					Dollars.	Per Cent.	
(a)	$2,540,000.00	6.36	$521,646.87	$203,200.00	$41,731.75	1.64	20.54
(b)	2,400,000.00	6.73	381,646.87	192,000.00	30,531.75	1.27	15.90
(c)	2,160,000.00	7.69	81,646.87	168,000.00	6,531.75	.31	3.86

Its results for 1911 at the 90 cent rate are:

	Valuation as Found by Master	Per cent of Return on Valuation.	Amount of Property Confiscated.	8 Per Cent Return on Valuation.	Deficit in Return		Percentage of Total Property and Return Confiscated.
					Dollars.	Per Cent.	
(a)	$2,540,000.00	4.50	$1,111,362.50	$203,200.00	$88,909.00	3.50	43.75
(b)	2,400,000.00	4.76	971,362.50	192,000.00	77,709.00	3.24	40.47
(c)	2,100,000.00	5.44	671,362.50	168,000.00	53,709.00	2.56	31.97

The sales for these two years are actual, except the last two months of 1911. At the unreduced rate, at a valuation of only $2,100,000 the plant failed to earn a fair return, and for 1911 showed $671,362.50 or 31.97% of this value, earning nothing. At the actual value, $2,540,000 the amount confiscated is $1,111,362.50 and the percentage 43.75.

The court said in his opinion (transcript, page 163) that the master found that the 90 cent rate would afford a fair return. His error is demonstrated. The master said (transcript, page 109) that this rate would return at least 6% on $2,100,000. The returns on this sum which his figures show for each year, at the various operating costs, are:

	Average 5 years adjusted.	1911 adjusted.	10 months 1910 adjusted.	Lowest year.
1910	5.18%	5.40%	5.08%	5.72%
1911	5.44%	5.66%	5.33%	6.00%
1912	5.69%	5.92%	5.58%	6.28%
1913	5.62%	5.85%	5.51%	6.20%
1914	5.50%	5.72%	5.39%	6.07%

It is only the lowest operating basis that brings this up to 6% in any year.

To make the net earnings approximate a fair return it is necessary to cut the value the amount of the paving and going value items, $440,000 (17% of $2,540,000) and the return 25%, and to radically adjust down the actual operating expenses.

Facts such as these negative the doubt that sometimes renders a trial of rates necessary.

In

Lincoln Gas and Electric Light Company vs. City of Lincoln, 223 U. S. 349,

the court below ordered the bill dismissed without prejudice to permit a trial of the rates. This court reversed that order and provided for a restraining order, thus establishing the doctrine that a trial of the rates is not in all cases necessary to the establishment of the facts. The evidence in that case was by no means as complete and definite as it is here. Nor is the *Consolidated Gas case* a precedent for the contention that under the facts here, the rates should be tried.

(1) The evidence in the *Consolidated case* as to revenues and operating costs was confined to a single year (page 48, line 10), while here it covered a period of over twenty-five years.

(2) The evidence as to annual sales, sales *per capita*, sales per meter, and the population per meter, in the instant case covers a period of twenty-five years, during which the rate was reduced from about $1.90 per m. c. f. to $1.00, furnishing the most complete information for the determination of future sales, and the effect of decreases in rates; while in the *Consolidated case* the record did not contain a full or complete history of the plant. (See printed transcript in that case, page 5754.)

(3) In the *Consolidated case* the proposed reduction was from $1.00 to 80 cents, a reduction of 20 cents, while in the present case the proposed reduction is 10 cents.

(4) In the *Consolidated case*, the values accepted were those of the complainant's witnesses, while in the instant case the master's valuation is less than three-fourths of the average of the complainant's witnesses.

We quote from page 50 of the opinion in the *Consolidated case*:

> "In this case a slight reduction in the estimated value of the real estate, plants and mains, *as given by the witnesses for the complainant*, would give a 6 per cent return upon the total value of the property as above stated."

If the same thing be done here, instead of a slight reduction in the estimated value as given by the witnesses for the appellant, to afford a fair return upon the total value of the property, it would be necessary to reduce this average value from $3,207,047 to $1,230,333. In the *Consolidated case* a reduction of 10.88% in the valuation as fixed by the complainant's witnesses afforded a full return. In this case, to produce a like result, it would be necessary to reduce this valuation over 60%.

(5) In the *Consolidated case*, at the existing rate for the year preceding the date when the ordinance became effective, the plant earned a net return of 10.575% upon the valuation adopted by this court; in the instant case the plant earned at the $1.00 rate in 1910 less than 8% upon $2,100,000, the lowest valuation fixed by the master.

(6) In the *Consolidated case*, the proposed rate, applied to the sales for the single preceding year, showed a return of 5.439%. This is .561 of one per cent. less than the fair return of 6% found in that case, a confiscation of only 9.35% of such fair return. In this case, the proposed 90 cent rate, applied to the actual results of the single preceding year, showed (taking 21.60 as the net return per m. c. f.) upon the valuation of $2,100,000 a confiscation of 32.49% of the return, and upon $2,400,000 a confiscation of 40.93% of the return, and upon $2,540,000 a confiscation of 44.18% of the return.

Nor is the case of

Knoxville vs. Knoxville Water Company,
212 U. S., 1,

a parallel case. There, the testimony as to the income and expense was limited to the fiscal year ending March 31, 1901, while it was not until seven years later that the case was presented to this court. The deficits claimed in the *Knoxville case* were between $2,480 and $4,640. This is not comparable with the deficits that exist here.

IX.

What does the clear and satisfactory evidence rule require?

In arriving at the facts we have been discussing every doubt was resolved against the appellant. The analysis of these facts shows that there is no reasonable hypothesis upon which the 90 cent rate will afford the appellant a fair return.

We submit that the limit of the rule is to require the establishment of each ultimate fact by this clear and satisfactory proof. Doubts as to these facts, where such doubts exist, may properly be resolved in favor of the validity of the enactment. But after this has been done, this rule neither requires, nor may it be invoked to justify, unreasonable, improbable or speculative inferences from the established facts. Unless this be true, it is useless to establish facts.

Let us apply this concretely to the case at bar.

(a The master, after deducting from the operating costs all debatable items, ascertained the average for five years, the lowest year, the year 1910, and the first ten months of 1911. These are facts established by uncontroverted proof.

Would any reasonable man be justified in assuming that in 1911, 1912, 1913 and 1914 the plant could be operated for less?

(b) The master found that the sales for 1910 were, including Valley Junction, 531,991,000 c. f. and that the increases for the five (5) years, 1906 to 1910 inclusive, were respectively 37,697,000 c. f., 57,417,000 c. f., 31,659,000 c. f., 36,067,000 c. f., and 34,746,000 c. f.

These are undisputed facts. Would any reasonable man consider it possible that the sales for the next three years could possibly be respectively 777,777,800 c. f., 783,099,600 c. f. and 827,454,000 c. f.?

(c) The population of Des Moines in 1910 was 88,900. To consume enough gas to earn a fair return on even $2,100,000 in 1911 a population of 129,820 would be required.

Would any reasonable man deem this possible?

These assumptions are based on a valuation of only $2,100,000. If what we believe to be the correct valuation, $2,540,000 be taken, then these results already absolutely unreasonable become wholly absurd.

The master required in this case the establishment of the facts beyond a reasonable doubt. Where facts are so established, reasoning based upon them must accept and treat them as facts; otherwise it becomes mere speculation.

Willcox vs. Consolidated Gas Company, 212 U. S. 19,

recognizes the right to a decree without a trial of the rates if the proof be sufficient. In

Lincoln Gas Company vs. Lincoln, 223 U. S. 349,

the order reversing the case and directing the court below to grant a temporary injunction pending the trial on the merits recognizes the same rule.

If this be the rule, then we submit that proof more complete and convincing than that offered in the case at bar is impossible.

How much of the fair return is confiscated is immaterial. The city has no right to confiscate any part of the appellant's property. If a case be close to the line, it may suggest a doubt as to whether there will be *any* confiscation; but where, as here, it is demonstrated that some of appellant's property will be confiscated, the appellant is entitled to a decree, even though it appears that not all of its property will be destroyed; and, further, even though it may be debatable whether the proportion confiscated will be 46% or 31%.

X.

The peculiar nature of the decree.

The court below in his opinion found that the complainant's suit should be dismissed "with prejudice" and incorporated the quoted language in his decree (transcript, pages 167 and 173). After this decree on the merits, he provided further (transcript, page 173):

> "At any time on and after three years from this date, complainant, its successors or assigns, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such subsequent hearing. And each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable."

Three courses depending upon its conclusion as to the proof were open to the court below:

> (a) To dismiss the suit without prejudice, or
>
> (b) To direct a trial of the rates and the production of further proof as to the results of this trial, the court, in the meantime, holding the suit undecided, or
>
> (c) To dismiss the bill on the merits.

The provision of the decree which dismisses the bill upon the merits and renders a judgment against the complainant for the costs is an adjudication that the complainant did not have the right to maintain this suit at the time it was brought. The provision which we have quoted from the decree is anomalous. It provides that after three years the

case may be reinstated, that the old proof may be used and that additional pleadings and additional testimony may be filed and taken.

The decree which has already been entered, from which this appeal has been taken, adjudicates that the appellant had no right to maintain this action when it was brought, and in any supplemental proceeding after three years the court below would be without jurisdiction to review or modify this decree. In any supplemental proceeding, this decree would undoubtedly be pleaded as an adjudication.

By the amendments which the court suggests perhaps a new cause of action might be set up, if there be anything left not determined by the adjudication already had. But if there were such a new cause of action, it could only be tried in a new suit, and no order in any other suit could make the testimony in such other suit competent in this new suit.

Cases frequently arise where courts temporarily retain jurisdiction in order to make such further orders as may be necessary to give effect to and carry out the decrees which they have entered, but there, so far as we are advised, are no cases where courts have attempted to retain jurisdiction in order to review or reverse or modify their own final decrees. The rule as stated by this court in

Bronson vs. Schulten, 104 U. S. 410,

is as follows:

> "It is a general rule of the law that all the judgments, decrees, or other orders of the courts, however conclusive in their character, are under the control of the court which pronounces them during the term at which they are rendered or entered of record, and they

may then be set aside, vacated, modified, or annulled by that court.

But it is a rule equally well established, that after the term has ended all final judgments and decrees of the court pass beyond its control, unless steps be taken during that term, by motion or otherwise, to set aside, modify, or correct them; and if errors exist, they can only be corrected by such proceeding by a writ of error or appeal as may be allowed in a court which, by law, can review the decision."

The first part of the decree in the instant case which dismisses the bill with prejudice completely disposes of the case and is final in its character. If the decree had said in so many words that notwithstanding this, the court would at any time after three years, hear the parties upon the same or additional pleadings and upon the same or additional testimony as to the correctness of this final decree which it entered in 1912, it would hardly be contended that such an order was within the power of the court. The court might have refused to decide the case upon the merits and have postponed this decision, but it had not the power to decide the case upon the merits and then to reserve to itself the right after three years to decide it over again either upon the same or different pleadings and testimony.

XI.

The situation so far as the appellant is concerned.

The one essential thing, so far as the appellant in this case is concerned, is that it have the right to have the facts which would ensue from the ap-

plication of this 90 cent rate determined and a decree entered in accordance with those facts. The master has estimated the actual deficits which would ensue from the application of this rate if the item of going value be included, in amounts varying from $60,329.50 to $86,790.20. These amounts so far as this record goes, measure the importance to the appellant of determining this question without an actual trial of the rates, if without such a trial the facts have already been shown by clear and satisfactory evidence. But this is not essential; if it is necessary for the appellant to sustain this loss, as the price of the evidence which will establish these facts by clear and satisfactory evidence, it must bear the loss.

It is essential, however, that at some time, either by testimony such as was introduced upon the trial in the court below, or by testimony based upon the actual trial of the rates for such period as is necessary, the appellant have an opportunity to present to the court the facts necessary to clearly establish whether this rate is or is not compensatory.

The master was in doubt, but his doubt would have been removed if he had not erroneously eliminated the items of paving and going value. He said, referring to an order such as was made in the *Consolidated Case*, for a dismissal of the bill without prejudice (transcript, page 107):

> "On the other hand, should a like order be made in this case, it might result in a loss to the complainant of from two to three hundred thousand dollars in the next five years, which does not look like a 'square deal' nor comport with my ideas of justice, but that was also true in the *Consolidated Gas Co.* case, and in that case a loss of from half a million to a million

> dollars might result therefrom annually. It is one of the hardships that may result from rate making by a tribunal charged with that power and duty."

The court below was in doubt because, without such a doubt, he never would have put into his decree the anomalous provision to which we have called attention; and this doubt may have been due to his error in excluding the item of paving, and to his error of fact in assuming that the value fixed by the master was $2,240,928, and that this included the item of going value.

Under these circumstances, we submit that it is clear that if these facts have not yet been established by clear and satisfactory evidence, such an order should be entered now as will permit this. It would add nothing to the force of what we have already said for us to urge that the facts in this case which the master found to be established beyond a reasonable doubt compel the conclusion that the property would not earn a fair return upon even $2,100,000. We believe we are not wrong upon this proposition, but whether we are right or wrong, there remains the fact that is the fact of paramount importance, namely, that if these facts cannot be established without an actual trial of the rates, it is essential that such a decree be entered as will permit such a trial. The temporary losses are important, but the vital thing is that there be preserved to the appellant its right to have these facts established and to have a decree in accordance with them.

It has been the practice of this court, we believe, without exception, to preserve this right in these cases. Where the bill has been dismissed it has been in each case without prejudice.

Stanislaus County vs. San Joaquin C. & I. Company, 192 U. S. 201;
Knoxville vs. Knoxville Water Company, 212 U. S. 1;
Willcox vs. Consolidated Gas Company, 212 U. S. 19;
Gas Company vs. Cedar Rapids, 223 U. S. 655;
Minnesota Rate Cases, 230 U. S. 352;
Missouri Rate Cases, 230 U. S. 474;
In re City of Louisville, 231 U. S. 639;
City of Louisville vs. Cumberland Telephone & Telegraph Co., 231 U. S. 652.

This court affirmed the court below in

Northern Pacific Railway Company vs. North Dakota, 216 U. S. 579;

because of uncertainty in the proof, but modified the decree so as to permit the appellant to present the facts disclosed by a trial of the rates, saying in this connection:

> "It seems to us that the nearest approach to justice that can be made at this time is to follow the precedent of *Willcox vs. Consolidated Gas Co.*, 212 U. S., 19, as nearly as may be, and affirm the decree, but without prejudice to the right of the railroad company to reopen the case by appropriate proceedings if, after adequate trial, it thinks it can prove more clearly than at present the confiscatory character of the rates for coal."

The city may always protect itself. After a decree against it, even on the merits, it may re-enact the ordinance with or without modifications,

if and whenever it believes there has been such a change in conditions as to warrant it. The appellant is without any protection, if it is deprived of the right to show to the court the actual facts.

The decree of the court below does not furnish adequate protection to the appellant. It provided that the bill should be dismissed "with prejudice," that after three years the complainant might move to reinstate the case, that the provision for refunding the difference of ten cents per thousand cubic feet between the rate charged and the rate in controversy could be superseded by filing a bond in the sum of $150,000, but that unless an appeal was taken within sixty days, claims for this refund should be presented to the court. The only order that would furnish adequate relief to the appellant, if it were necessary to try the rates, would be an order which would continue the present case, and afford an opportunity to present to the court the results of such a trial. If upon the results of such a trial the court found that the ordinance was not compensatory, the appellant would be entitled to the excess collected while the restraining order was in force and would be protected against claims for this excess, which, if the bill were dismissed without prejudice, it would have to meet before the rights of the parties were actually determined. Such a course was pursued in the *Louisville case* by the court below, and was held by this court to be within the discretion which the mandate permitted.

We respectfully submit that the decree of the court below should be reversed and that a decree upon the merits for the appellant should be ordered;

or, if the appellant should not be found entitled to this relief, that the case should be reversed with such directions to the court below as will permit a submission to that court of the facts which have been disclosed by the trial of the rates, which have actually been in effect since October 10, 1912, when the decree of the court below was entered, so that the court may determine the rights of the parties as these facts show them to be.

Respectfully submitted,

NATHANIEL T. GUERNSEY,
Solicitor for Appellant.

GEORGE H. CARR,
Of Counsel.

CHARTS

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FOR

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Supreme Court of the United States.

No. 75

OCTOBER TERM, 1913.

DES MOINES GAS COMPANY,
Appellant,

vs.

CITY OF DES MOINES *et al.*

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

BRIEF AND ARGUMENT FOR APPELLANT.

DIVISION II.

NATHANIEL T. GUERNSEY,
Solicitor for Appellant.

GEORGE H. CARR,
of Counsel.

Stillman Appellate Printing Co., 51 Broad St., N. Y.

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Supreme Court of the United States,

No. 397.

DES MOINES GAS COMPANY,
Appellant,

against

CITY OF DES MOINES, *et al.*,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

BRIEF FOR APPELLANT.

Division II.

In this division of the brief, we propose to discuss the testimony for the purpose of making clear the soundness of our statement that the facts found by the master were most conservative, and were so clearly established that it may be confidently asserted that these findings are not more favorable to the appellant than the facts. In considering these questions, we shall substantially follow the order of their consideration by the master.

I.

Real Estate.

This term included merely the ground, without the improvements (transcript, page 48). The

master first stated the location to be an advantageous one, commenting upon some of its features. He says as to the witnesses (transcript, page 48):

> "These witnesses both for the complainant and defendant appear to be excellent men and qualified from their occupation and business to testify concerning the market values of this property, but they differ very widely in relation thereto, and it is simply impossible to reconcile their evidence."

Without going into details, the names of the complainant's witnesses and the total value arrived at by each of them, with references to the pages of the transcript where these totals are stated, are as follows:

H. N. Porter	(page 444)	$235,000
Mack Olsen	(page 386)	232,400
R. R. McCutchen	(page 460)	225,000
B. F. Kauffman	(page 357)	223,670
R. P. Bolton	(page 413)	221,160
Total		$1,137,230
The average of these witnesses is...		$227,446

A like statement as to the witnesses for the appellee is as follows:

F. A. Mathis	(page 1560)	$101,020
B. S. Walker	(page 1487)	97,500
A. O. Hauge	(page 1472)	97,000
W. H. Arnold	(page 1516)	96,200
A. S. Wilcoxen	(page 1531)	85,000
E. C. Pease	(page 2290)	92,900
Total		$569,620
The average of these witnesses is....		$94,936

The average of all the witnesses is $155,168.19. The amount allowed was $150,000 (transcript, page

48). The master says at that page, referring to the witnesses for the appellant and the appellee:

> "In my judgment the former are all too high and the latter too low. As a rule, under such circumstances, it has been my experience that the true value lies between them and have reached the conclusion that $150,000 is about right. In my judgment, should the Complainants sell their property and undertake to change their location, they could not get as good a place for less than $150,000, and it is very doubtful if they could get it for that."

An important factor should not be overlooked in this connection. It would be necessary to buy real estate at the very outset and there would be a loss of not less than three years' interest and taxes, which would have to be added to its original cost. Taking the interest at 6% and the taxes at the then current rate, 2¼%, we have for the three years 24¾%. The master made no addition to this $150,000 on this account (transcript, page 60, near bottom of page), so that it is 124¾% of the base value of the real estate without these carrying charges. This would make the base value of the real estate as found by the master about $121,000, which is about $106,000 less than the average of complainant's witnesses, about $34,000 less than the average of all of the witnesses, and less than $30,000 more than the average of the witnesses for the city.

If the defendants' base value on real estate were accepted it would not change the total valuation $30,000, and could not affect the general result.

This condition differs radically from the condition which exists where the complainant's testimony is accepted substantially without modification.

II.

The base figures for the manufacturing plant and distribution system.

The next step of the master in making the valuation was to ascertain what were called the base figures in the cost of reproduction of the manufacturing plant and distribution system; that is, of the buildings and apparatus and other things used in connection with the manufacture of gas and the distribution system. He defined base value (transcript, page 53), as

> "what it would cost to produce it at the present time new, without adding thereto any overhead charges."

As will appear as we follow his report and take up the overhead charges, he meant by base value the cost of the labor and material going into any structure without anything for going value, or for engineering, interest and taxes during construction, contingencies, omissions, personal injuries and the various other items which are grouped under the heading "overhead charges" or "underlying charges." These he takes up separately.

The complainant offered as witnesses three "experienced consulting gas engineers" (transcript, page 52); two, Henry I. Lea and William A. Baehr, from Chicago, and one, William W. Randolph, from New York; while the defendants offered one en-

gineer, Professor William D. Marks, of New York. The master says (transcript, page 52):

> "These engineers are each and all competent witnesses, and of large experience in their profession, and qualified to testify in relation to the value of the property of the complainant."

He says further, on the same page, that they were each and all extensively examined and cross-examined, and that their testimony was very full, and clearly rendered.

The master adopted as his basis for the buildings, contents of buildings, yard structures, miscellaneous, and distribution system *a combination of the lowest figures* placed on these respective items by the engineers who testified as witnesses for the complainant. He says (transcript, bottom of page 53):

> "As before stated, an average valuation gives a result to which none of them agree, and which in my judgment would not result in obtaining a 'Base' upon which to build, that would be sustained by evidence in the case. However, it will be observed by the Exhibits to this report as before stated, that the Complainant's three engineers, in fact only agree on the lowest valuation on each item as shown in the comparative valuations as stated in the Exhibits to this report—'J,' 'F,' and 'K.'
>
> It is true that they do not all agree that it is not worth more than the lowest valuation made by any of them. But the greater includes the less, and when they value it more, then they do agree that it is at least worth the lowest valuation made by any one of them, and we then have a 'Base' value sustained by all three of them and sustained by the clear weight of the evidence in the case. Exhibits

> 'C-a,' 'G,' 'H,' 'I,' and 'K' to this report, show the figures selected and the letters 'B,' 'L,' 'R' show whose valuations they are, followed by the number and page of the exhibit from whence they are taken, and are intended to be self-explanatory and the totals are as follows:"

Omitting the totals and referring to Exhibit C-a, to the master's report which follows the report (transcript, page 119), it will appear that some twenty-two buildings are listed. On the purifying house and generator house, Randolph's figures which were the lowest, were adopted; on the fire brick shed, meter and governor house, retort and generator house, coal shed and condenser room, boiler and engine room, boiler house extension, and some other buildings, Baehr's figures, which are the lowest, were adopted; while for the barrel oil store room, fire hose house, coke shed, coke rack and the oil barrel storage house, Lea's figures, which were the lowest, were adopted.

The same method was followed as to the contents of buildings, Exhibit G to the master's report (transcript, page 123), and holders and other yard structures, Exhibit H to the master's report (transcript, page 124); miscellaneous, Exhibit I to the master's report (transcript, page 125); and the distribution system, Exhibit L to the master's report (transcript, page 128).

The result at which the master arrived, $1,975,020, exceeded the corresponding items in the valuation of Professor Marks. This the master refers to (transcript, page 66), saying:

> "The valuation of the physical property by all of the complainant's witnesses *have each*

and all been reduced very greatly, and the result exceeds the valuation of Prof. W. D. Marks. When his unit valuation of the works and their equipment is ascertained it amounts

to	$429,004
To this add mains	652,947
House services	274,720
Lamp services	18,653
Meters in use, page 61	188,981
Distribution tools, page 64	2,977
Work tools, page 63	2,977
Rejected items, page 76	280,081
Total	$1,850,340
Add building, omitted by him, at	15,000
Total unit cost	$1,865,340
While the unit cost adopted is	$1,975,020

An examination of the evidence will show that the professor did not include in his valuation of the mains, any overhead charges, save what he calls contractor's profit, or else I am unable to understand his evidence. (See Record, Vol. 2, pages 2387, 2327 to 30, 2792; 2606 and 7; 2622.) It is not necessary to discuss the Buffalo Chart, from which he obtained the unit prices per foot. I simply invite an examination of his entire evidence."

The last sentence in this extract is significant. The master believes that an examination of the evidence of Professor Marks will vindicate his (the master's) conclusions.

Certainly, the master's method of a combination of low items, if it is subject to criticism at all, is subject to criticism from the standpoint of the appellant and not from that of the appellees.

III.

Overhead Charges.

The master defines what these items include, beginning at the middle of page 54 of the transcript. He says generally, on page 55:

> "It must be borne in mind that these expenditures are all made during the promotion and construction of the plant, and are necessarily a part of the cost thereof. No overhead charges that do not inhere in and add to the cost thereof should be allowed as a part of its physical value. It is not a question of what was actually expended therefor in the plant in question, but what would it cost to reproduce a similar plant at the present time. It is through this method we reach the present value of this plant new, and then when it is properly depreciated, according to the condition, life and age of its various parts, we reach the present value of the plant in its present condition. It is not a perfect method, but it is the best method therefor, and results as nearly as possible in giving the present value of the plant. No other method known has proved so satisfactory. These overhead charges are treated by the various engineers under the subtitles of—promotion, organization, engineering, casualties, contingencies, administration, loss of interest and taxes, and briefly are as follows."

After listing them the master discusses the various overhead charges that are allowed by the witnesses. He states that the most satisfactory witness on this subject was John W. Alvord (transcript, bottom of page 56), and that his lowest percentage was 17. He then adopts an allowance of 15% (transcript, page 57). Professor Marks con-

ceded 12½% (transcript, page 56). The master also allowed in making his physical valuation, that is, the valuation before he considered his item of going value, $6,923 for organization expenses (transcript, page 60, fourth line from bottom), which may be properly treated as an overhead item. The total amount which he allowed, therefore, was

15% of total $1,975,026 (transcript, page 54)	$296,253.90
Organization	6,923.00
Total	$303,176.90

It is worth while to compare this with the estimates of the complainant's witnesses. Lea made the overhead charges $524,118 (transcript, page 56, lines 9 and 10) plus $68,023. Baehr made them $615,603 (transcript, page 56, line 23). Randolph made them $420,086 (transcript, page 56, line 28).

The result of the master's conservatism in determining his base and conservatism in the adoption of his percentage of overhead charges is to practically cut in two the testimony of the appellant's witnesses upon this subject.

IV.

Depreciation.

This is the next item which the master takes up. He begins his discussion of it by this statement (transcript, page 57):

> "The 'Base Value' with the 'Overhead Charges' added, give us the present value of the physical plant new, and in order to get the

present value of the physical plant, it becomes necessary to determine to what extent this amount should be depreciated. The plant in question is not new, but much of it has been in use for many years and it is therefore, not as valuable as a new plant would be."

The master proceeds to discuss the testimony of the various witnesses upon this subject, and here adopts the highest rate of depreciation, giving the lowest present value. The lowest figure for the present per cent. condition of the plant was Lea's, 85.3%, and this the master adopted (transcript, page 59).

On page 59 of the transcript, the master states that his report shows the total cost new with overhead charges to be $2,271,280, from which he deducts the present value, 85.3%, arriving at the amount of his depreciation. The entire computation from which he reaches this conclusion is:

Base figure	$1,975,026	
Add to cover overhead charges, 15%	296,254	
		$2,271,280
Present value, 85.3%		1,937,402
Depreciation		$333,878

The master comments upon the fact that this depreciation happens to correspond with the average of the four engineers. He says (transcript, page 60):

"The results above stated in relation to depreciation are reached in the manner above stated, and after examining the many phases of the subject by those whom I have regarded competent to speak on the subject, and I was a little surprised that the result is the average

of rate as given by the four engineers on the totals of their depreciation.

William A. Baehr, total depreciation	$310,325
W. W. Randolph, total depreciation.	282,381
Henry I. Lea, total depreciation...	380,009
Prof. Marks, total depreciation ...	363,363
Total	$1,336,078
Divided by 4	$334.019
Depreciation actually made	333,878

By comparing these amounts it will be seen there is less than $150 difference in the total amount of depreciation, and the average depreciation of the four engineers, who are really the most competent to speak upon the subject, and hence my conclusion is that it is about as near correct as can be reached by the evidence in the case."

To digress here for a moment, the master obtains his total physical value by adding to the items which we have considered working capital and organization expenses, the computation being made by him at page 60 of the transcript, and being substantially as follows:

Working capital	$140,000
Real estate	150,000
Organization expenses	6,923
Meters in stock	6,603
Present value of physical property aside from above items	1.937,402
Total physical value	$2,240,928

The analysis which we have just made of the manner in which this amount, $2,240,928, was built up, taken in connection with the fact that the master next (transcript, page 61) takes up paving over mains and says that $140,000 should be deducted on this account and next, on page 62 of the trans-

cript, takes up going value, and on page 63 says that he regards $300,000 as all *"it is worth over and above its physical value,"* conclusively demonstrates that the court below was wrong in his assumption that this $2,240,928 was the value adopted by the master, and also was wrong in his assumption that this includes going value.

V.

Going Value.

The master takes this up at page 62 of the transcript. The only testimony upon this question offered by the defendants was that of the witness Marks, who put this item at $352,000 based on 90 cent gas (transcript, pages 63 and 3610).

The estimates made by the three witnesses for the appellant, with the references to the pages of the transcript, are

W. W. Randolph (pages 63 and 3415),	$500,000
Henry I. Lea (pages 63 and 3245),	583,000
William A. Baehr (pages 63 and 3343),	509,795

The master's estimate is a little over 80% of the testimony of the lowest witness, and is less than 60% of the testimony of the other witnesses upon this proposition. The master discounts all the witnesses and puts this at an amount which he is satisfied a purchaser would be willing to add to the physical value if buying the plant, and which the owner would be warranted in demanding in addition to this value, if selling it. We quote from the transcript (page 63):

> "But I am not inclined to accept without discounting, any of these estimates, but fix the

'Going Value' at $300,000. It may be asked on what basis this amount is determined. The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the 'Going Value' of this concern is worth more, but I cannot feel satisfied that such is the case, and regard $300,000 as every dollar it is worth *over and above its physical value,* and in my judgment, it is worth that much more than a plant would be that had to develop its business. But that would be much more rapid, in my judgment, than is estimated. I think a purchaser would be willing to add this amount for its developed business, and that a seller would not be willing to sell unless he got that much more than its physical value, but I could not give the mental process by which this conclusion is reached any more than a jury could do so, under like circumstances, but it is nevertheless my judgment under all the evidence in the case."

VI.

The comparison of the totals.

This continual paring down by the master resulted in a very large deduction from the estimates of value shown by a strong preponderance of the evidence. As we have already said, there were four witnesses on this proposition. The witnesses which were sworn by the appellant were William A. Baehr, Henry I. Lea and W. W. Randolph. Each of them was a gas engineer who for years had devoted himself solely to gas engineering in its practical aspects, and neither of them had any connection with the appellant.

Lea states his experience, beginning at transcript, page 652; Baehr his, beginning at page 974; Randolph his, beginning at page 1143; Professor Marks, the only engineer who testified in behalf of the city, had had little, if any, recent practical experience in gas matters.

We call special attention to transcript, pages 1619, *et seq.* It appears that in 1872, Professor Marks (transcript, page 1623) kept the books for a construction company engaged in constructing a gas plant in St. Louis; that his next work with reference to a gas plant was in 1900, a small plant at Fostoria, Ohio (transcript, page 1623), having not more than eight or ten miles of mains (transcript, page 1624), where they were making and selling gas when Professor Marks arrived there, and his attention was given particularly to the electric lighting end of the plant (transcript, page 1624). In 1903 or 1904, Professor Marks was concerned in the construction of a small gas plant in Durham, North Carolina, having five or six miles of mains (transcript, pages 1624-1625). He says at page 1625:

> "Q. Aside from your experience in St. Louis and Fostoria and Durham you have mentioned, have you had any experience in the construction of a gas plant? A. You mean as engineer?
>
> Q. Yes, or any other way what have you had to do with building a gas plant, I don't care whether it is as engineer or as contractor or as laborer? A. I have had no experience in the actual building of anything more than these three plants, but in the estimating for others I have had a great deal of experience.

Mr. Guernsey: I move to strike out the last part of the answer, I didn't ask the witness for that.

Q. Now what experience have you had in designing gas plants or gas machinery other than with reference to the three plants that have been referred to, during the entire forty years? A. I have originated none whatever.

Q. Did you design the plant at St. Louis, you did not, I understand? A. I said I had originated none whatever."

Professor Marks had testified for the city in the *Consolidated Gas case*, in a Buffalo rate case before a commission, and in a Jersey City case before a tax commission, and also before the Minneapolis city council, and he did some work in Cleveland.

Comparing the work done in the instant case with these, he said as to the inventory furnished by the company in this case (transcript, page 1631):

"I admire it very much for its extraordinary completeness."

He says at the top of page 1632:

"Q. Does that cover the appraisals that you referred to on your direct-examination? A. Let's see, New York 11, Buffalo 4, Cleveland 3, Jersey City—yes, I may have forgotten some, but I think that is all."

The master held that Professor Bemis, who testified largely in an argumentative way from the facts developed by the other witnesses, was not a competent witness upon value, saying (transcript, page 67):

"He is undoubtedly a very valuable man to assist in a case like the one at bar. But he is not a qualified expert upon values.

> There is a very great difference between information gained by investigation and from statistics, and that gained by actual experience in the business. It is evident that for some time his efforts have been directed in the work of securing lower rates for the public, who are patrons of public utilities, and his efforts in that direction are laudable, and in this work he has gained a large amount of general information, but any man in so doing will have his eyes open for everything bettering his side of the case. Much of his evidence was purely argumentative and incompetent, unless made so by the extensive cross-examination by complainant."

The testimony presented, therefore, was the testimony of three witnesses of large experience offered by the appellant against one witness of very limited experience offered by the appellee, all of the witnesses being in the judgment of the master "excellent men." Under these circumstances, the preponderance was clearly with the appellant; but the master was far from accepting the conclusions of its witnesses.

The present value of the plant, including going value and deducting depreciation, as found by the three engineers who were the complainant's witnesses, was, with the pages of the transcript, as follows:

William A. Baehr,	(page 3343)	$3,221,166
Henry I. Lea,	(page 3245)	3,261,705
W. W. Randolph (page 3415, $3,420,514 less $282,331),		3,138,183
Average,		$3,207,018

The valuation adopted by the master, and including going value, is $807,018 less than the aver-

age of these three witnesses, or just under 75% of this average. If going value be also excluded and the value of $2,100,000 taken, it is $1,107,918 less than this average, or about 60% of it.

Certainly, it cannot be said that the value has not been established by clear and satisfactory evidence. The master says (transcript, page 46):

> "It is perhaps true that in determining the value of the complainant's property that a preponderance of the evidence under the circumstances would be sufficient but, it has not been necessary for me to adopt such a rule under the evidence in this case, because findings of value are not only sustained by a preponderance of the evidence, but also by such evidence, as clearly satisfies me of their correctness. It is true that the evidence is quite conflicting, but the conflict therein has been eliminated as far as possible and when this is done, in my judgment, **the conclusions reached are fully sustained by the evidence, which meet the requirements of the rule as enunciated by the Supreme Court of the United States,** as hereinbefore shown and at the same time are the same as would have been reached in case the rule only required a preponderance of the evidence to sustain them. In determining the value of the complainant's plant, **it has not been necessary to distinguish between preponderance of the evidence, and clear and satisfactory evidence. Under either rule, the result in my judgment should be the same.**"

VII.

The Rate of Return.

This is a question of fact. The appellant introduced a large amount of testimony upon this question, the witnesses being Homer A. Miller (transcript, page 1291), Simon Casady (transcript, page 1301), and Arthur Reynolds (transcript, page 1396), each of them a banker in Des Moines; Andrew Cooke (transcript, page 1375), vice president of Harris Trust and Savings Bank, which with its affiliated concerns, Harris Forbes and Company of New York, and N. W. Harris and Company of Boston, handles over one hundred and fifty millions of investment bonds annually; Harold Almert (transcript, page 1365), engaged with H. M. Byllesby and Company of Chicago, in examining and reporting on public utilities; W. C. Harbach (transcript, page 1401), furniture manufacturer in Des Moines; C. S. Walker (transcript, page 1405), a vehicle manufacturer in Des Moines; J. E. McDonell (transcript, page 1410), an iron manufacturer in Des Moines, and E. S. Root (transcript, page 1414), a manufacturer of caskets, ambulances and hearses in Des Moines.

The master states the effect of this testimony (transcript, page 73) as follows:

> "The evidence shows that in the banking business in Des Moines, from 8 to 15 per cent. is expected and usually realized, that the rate of interest on notes secured by farm mortgages, from 5½ to 6 per cent.; on manufacturing plants from 12 to 25 per cent.; on loans secured by mortgage on residence property in the city, from 6 to 8 per cent.; on business houses with an assured rental income, from 4½ to 6½ per cent."

He says, in his consideration of this question (transcript, page 72):

> "We have quoted so fully from this opinion, because so much that is said therein applies with equal force to the case at bar. Especially is it true, of what is said in regard to the danger of competition and the rule of law which should govern in fixing the rates. The allowance of a rate which will enable the company to earn 6 per cent. on the value of its property in the City of New York by the lower Court, is clearly approved by the Supreme Court in its opinion, although on other grounds it was reversed. It was stated by Prof. Marks that the plant in question in the case was perhaps the richest gas territory in the world, unless it be in the City of London, and no mains laid less than 8 inches in diameter. Naturally, there would be less hazard under such circumstances, and much less expense in laying and maintaining its mains in proportion to the gas consumed."

And his conclusion he states (transcript, page 73) in the following language:

> "So far as the hazards of the business of complainant are involved in this action are concerned, it is not necessary to discuss them. They are at least as great as in the *Des Moines Water Works Case*, in which this Court during the past year held that the company was entitled to 8 per cent. What the evidence may have been in that case cannot be considered here. *The evidence in this case clearly justifies 8 per cent under the rule established in the Consolidated Gas Case.*"
>
> "* * * It is a matter of common knowledge that the City of New York is the great money center of the United States, and an investment in the city itself, of so large an

amount of capital as invested in the property and business of the Consolidated Gas Company, and its permanency renders it very desirable and would induce the investment of capital therein at a much less rate of return than in the comparatively smaller plant of the Des Moines Gas Company, *and really under the circumstances, 6 per cent. of return therein would be a greater return accordingly than 8 per cent. in the plant and business of the complainant herein.* Permanency is an important element in considering the rate of return."

It is worth while to note the following differences between the conditions in the *Consolidated Gas Company case*, and those in the case at bar:

(a) In the *Consolidated case* the company had a perpetual franchise; the laws of Iowa when this action was brought and now, do not authorize a franchise for more than twenty-five years.

(b) In the *Consolidated case*, the company had a virtual monopoly; here the city of Des Moines has the power to grant a competing franchise at any time.

(c) In the *Consolidated case* the regulation of rates was by a state commission; in this case the power to regulate is in the local city council, with an express statutory provision that it may not fix a schedule of rates for any definite period.

James R. Hanna, the mayor of the city, testified (transcript, page 2825):

"I have always felt as though since most companies were organized on a basis of the

capital stock and the bond issue that among the cost of operation should be included the interest on the bonds, and then such a rate as would make with fair management perhaps 8 per cent. on the capital stock, and with better management what might be called wages of management rather than profit, if you please, *ten to twelve or fifteen per cent.* or any other per cent. good management could procure."

The master found that this plant was well managed. It cannot be contended that the company was not entitled to earn at least 8 per cent.

VIII.

The adjustments made by the master in the operating expenses.

Throughout our argument, we have taken the operating expenses as found by the master. He made substantial reductions from the results attained in actually operating the property. He gave no effect to the evidence showing the probability of substantial increases in them. The testimony upon this question was unusually exhaustive.

Complainant's Exhibit 24 (opposite transcript, page 3466), showed the revenue for the five years 1906, 1907, 1908, 1909 and 1910, and in minute detail, both in dollars and in cents per thousand cubic feet, the operating costs, for this period. The operating costs are analyzed into nearly sixty items, each of which appears for each year in this period.

Complainant's Exhibit 36 (the fourth exhibit after transcript, page 3468) showed from 1887 to 1910 the population, the sales per capita, per meter,

and per mile of main; the revenue per thousand cubic feet; and the cost per thousand cubic feet.

Complainant's Exhibit 93 (transcript, opposite page 3478) showed the operating costs analyzed in detail for the ten months ending October 31, 1911, and the sales and revenue for the same period.

This brought the figures down to the submission to the master, which was in November, 1911.

The master computed the operating costs in cents per thousand cubic feet of gas. This is the method employed in the business, and its use is desirable as it affords a convenient factor which very much shortens the other computations. For instance, the price of gas was $1.00. If the operating expenses and depreciation were say 72 cents, the remainder representing the return is, at this rate, 28 cents, and at the 90 cent rate would be 18 cents, and this, multiplied by the sales, gives the net return in dollars.

We call attention to some of the items in the operating expenses which the master disallowed.

(a) Rate regulation expenses.

The appellant, as a part of its operating expenses, has been in the past compelled to pay the expenses incident to rate regulation. It is required to pay the expenses incident to this rate adjustment, and from time to time will incur such expenses in the future. Because such expenses are inevitable, the appellant claimed that in estimating its future operating expenses, a normal allowance should be made on this account. The master allows nothing on this account.

The master's report (transcript, page 74) shows that in 1910 the expense actually incurred by the

company on this account was $5,935.18, something over 1.05 cents per thousand cubic feet of sales. This item for the first ten months of 1911 (Complainant's Exhibit 93, transcript, opposite page 3478, heading "Expense," sub-heading "Rate Regulation Expense"), amounted to 13.31 cents per thousand cubic feet.

This expense will not be incurred every year, and so it would be obviously unfair to charge it all against one year, but there should be included what would amount to a fair average on this account. The master thought that 2 cents per thousand cubic feet would be a fair amount (transcript, section 3, page 103; page 108, line 28), for this item. He, however, allowed nothing on this account.

Such abnormal expenses, in order to arrive at a fair operating cost, must be taken into account and must be projected over a fair period. This is the rule adopted by the Interstate Commerce Commission in

> *Central Yellow Pine Assoc. vs. Ill. Central Ry. Co. et al.*, 10 I. C. C. Rep. 505-544,

and it seems to have been approved by this Court in the same matter. See

> *Ill. Central Ry. Co. vs. I. C. C.*, 206 U. S. 441,

where the Court says:

> "The Commission finds that the net and gross earnings of the appellant have grown from year to year, and also that what they have reported as operating expenses have also grown. But in these operating expenses there were included 'expenditures for real estate, right of way, tunnels, bridges and other strict-

> ly permanent improvements, and also for equipment, such as locomotives and cars.' The Commission expressed the opinion that such expenditures should not be charged to a single year, but 'should be, so far as practicable' and so far as rates exacted from the public are concerned, 'projected proportionately over the future.' And it was said, 'If these large amounts are deducted from the annual operating expenses reported by the defendants (appellants) it will be found that the percentage of operating expenses to earnings has in some extent diminished and in others increased to no material extent."

This is exactly the principle which the appellant sought to have applied to the case at bar.

(b) Salaries of officers.

The company paid $10,000 a year in the way of salaries to its officers, who were also officers of The United Gas Improvement Company of Philadelphia, which owns the stock of the Des Moines Gas Company. The master takes this up at page 75 of the transcript.

These services included:

(1) General services such as the matters of policy determined by these men as directors, the services of Mr. Douthirt as secretary of the company, the services of Mr. Lillie as its treasurer, the financing of the company, including furnishing new money whenever required for additions and extensions, aid in the present rate controversy, to which its secretary, Mr. Douthirt, had devoted practically a year, and for which assistance has been rendered by the engineering, accounting and

other departments, and generally all executive services, aside from the operation of the plant, so that the energies of the local officers may be devoted solely to developing and carrying on the business along lines fixed for them.

(2) Services of consulting engineers, including examinations of some twenty-six reports as to the business each month, suggestions as to improvements and economies in the management and operation and service; also engineering service in connection with extensions of and additions to the plant, including the determination of what new investments shall be made, what additions to the plant will be necessary and when they will be required, all requisitions going to Mr. Walton Clark and receiving careful consideration in his department, and bearing his recommendation when presented to the board of directors.

(3) Services of the auditing department, including services of the general auditor who examines the accounts every month, and services of traveling auditors who audit the accounts at Des Moines periodically—thus rendering the employment of outside chartered accountants unnecessary.

(4) Services of a purchasing agent whose purchases for the company amount to over $250,000 per annum, rendering the employment of a special purchasing agent for this company unnecessary, and giving it the benefit of advantageous prices, secured through purchases of larger quantities than if made for this plant alone, and through the competent service and experience of a man who specializes in this one thing.

(5) The benefits derived from an experimental plant maintained by the United Gas Improvement Company, but too expensive to be maintained by the Des Moines Gas Company for its own use, in which new processes and apparatus are tried out, and the science and art of manufacturing gas are constantly studied, to the end that new things that are good may be adopted, and that money may not be wasted in new things that are not good.

(6) Furnishing stationery, advertising and other standard supplies to the Des Moines Gas Company at cost, which is low, because of the large quantities obtained for it and numerous other companies, and furnishing to that company apparatus manufactured by the United Gas Improvement Company at the cost of manufacture, without any profit whatever added.

The evidence showed without controversy that the Des Moines Gas Company received the benefit of every special price, special discount or other advantage which the United Gas Improvement Company had in the purchase of anything intended for the Des Moines Gas Company.

The master held that this item should be disallowed upon the ground that there the evidence failed to show that these services were worth $10,000 a year. He disallowed the entire item, notwithstanding the obvious fact that these services were of value. The expenses incident to executive service, engineering service, auditing service, purchasing service, and other matters covered by this item will be incurred in the future because each of these expenses is necessary if the plant is to be well and economically designed, constructed and managed, and is to furnish to the public good service.

(c) The Greater Des Moines Committee subscription.

Various donations were made by the company in connection with its business, which are referred to by the master at paragraph 5, transcript, page 76. They amounted to an average of $2,546.62 a year for five years. The master says (transcript, page 77):

> "In my judgment, no criticism can be made for these expenditures for the past. The Greater Des Moines Committee, as I understand it, is a committee of its citizens for the purpose of 'boosting' the city, and as a matter of course any increase in the business prosperity and population, will result beneficially to the complainant. Its business will at least be affected to some extent, either by the City's prosperity or the lack of it."

He, however, only allows on this account for the future $1,739.78 per annum. Such items do not decrease; they increase.

We submit that the fact that a scrutiny of the operating expenses for five years discloses only what we have referred to as debatable items, is a demonstration that those expenses were conservative, that the expenditure of $10,000 for salaries general was justified by a resulting excellent management, and that there should have been no disallowances.

IX.

What would have been a reasonable operating cost.

We have elsewhere called attention to the fact that the master based his estimates of the future upon the average operating costs for five years, less deductions made by him, the lowest of these five years, and the actual adjusted results in 1910, and in the first ten months of 1911. Upon these bases the highest net revenue per thousand cubic feet was 22.90 cents, and the lowest 20.35 cents. We believe the following considerations demonstrate that this was unreasonably low, so that it could not reasonably be anticipated that operating results as favorable to the appellant as those found by the master would be possible.

Hall, the accountant for the city, after making such deductions as seemed to him proper, found the operating cost for the five years immediately preceding January 1st, 1911, when this ordinance was to become effective, to be 63.34 cents per thousand cubic feet.

To apply these figures to the future, some adjustments were obviously necessary. For instance, taxes increase instead of decreasing. They were for the last year 7.22 cents against an average of 6.78 for the five years. Because it cannot be assumed that they would be less, the difference .44 cents should be added for taxes. The master stated 2 cents as a fair allowance for rate regulation. This also should have been added.

The old ordinance authorized an excess charge of 10 cents per thousand cubic feet to enforce

promp payment of bills. The new ordinance omitted this, and this the chartered accountant for the City testified would involve an additional expense of 5 mills per thousand.

The salary of Mr. Haines, the president, had been increased, and this the master approved. He states that it would add .47 of a cent to the cost of gas.

The master finds that if his valuation is correct, the City would be justified in increasing the assessment for taxation $1,000,000, which would add $22,500 to the taxes (transcript, page 83). No allowance is made on this account, though it would increase the operating costs about 3.7 cents per thousand.

To tabulate the matter, we have then:

	Cents.
Mr. Hall's average operating for five years	63.34
Add for bringing charge for taxes up to the 1910 basis	.44
Add for rate regulation expense	2.00
Add additional cost because no penalty is provided	.50
Add on account of increase in Mr. Haines' salary	.47
Add on account of taxes	3.70
Total without depreciation	70.45
Add for depreciation as allowed by master	6.67
Total	77.12

This would leave as a net return at the 90 cent rate, 12.88 cents per thousand cubic feet as against the assumptions of the master ranging from 20.35

cents to 22.90 cents. Moreover, this does not take into account the probable increase in the price of oil (see testimony of J. A. Pearson, transcript, page 3058), and constantly increasing prices for other materials and for labor.

Upon this basis, taking the sales as estimated by the master, the deficits upon the various valuations for the years 1911, 1912, 1913, and 1914, would upon every hypothesis largely exceed the amount of the net return, and upon what we believe to be the sound hypothesis as to value, would leave the net return at little over one-third of what the appellant is entitled to. We insert a computation:

		(Return 12.88)		
Year	Sales—C. F.	Net Return	Valuations	Deficits
			$2,100,000.00	$ 97,056.96
1911	550,800,000	$70,943.04	2,400,000.00	121,056.96
			2,540,000.00	132,256.96
			2,114,368.80	94,445.50
1912	580,000,000	74,704.00	2,414,368.80	118,445.50
			2,554,368.80	129,645.50
			2,234,125.80	100,806.06
1913	605,000,000	77,924.00	2,534,125.80	124,806.06
			2,674,125.80	136,006.06
			2,407,790.80	110,448.86
1914	638,000,000	82,174.40	2,707,790.80	134,448.86
			2,847,790.80	145,648.86

If anything further is necessary to show that the operating costs adopted by the master are extremely conservative, it may be found in the fact that they, with one exception, are less than the estimate of Professor Marks, the engineer for the

defendant. He states (transcript, page 3600) as the cost of a 1000 feet of gas:

	Cents.	
Cash operating expenses.....	63.33	
Residual depreciation	6.00	
Giving a total of.....	69.33	
This deducted from 90 cents would give as his estimate of the net.....	20.67	per 1000.

XVI.

Some Other Items.

The revenue of the plant was fixed and undisputed. We have considered how the master arrived at his valuation, his depreciation allowance of 6.67 cents, his rate of return, and his basis for operating costs. There remain only the future investments and future sales.

The matter of sales is, we think, absolutely covered in the other division of our brief, page 116, by the diagram showing his estimate as compared with the history of the plant.

As to investment, we call attention to transcript, pages 85 and 86. It appears that the master ascertained from the evidence, the average investment per thousand cubic feet of increased sales in the distribution system alone, for the last year, for the last five years and for fifteen years, and for the first ten of those fifteen years. He then took as his basis for increased sales $2.00 per thousand feet (transcript, page 87), although he recognized the fact that additions would soon have to be made to

parts of the plant other than the distribution system (transcript, page 88).

We have considered each one of the facts which form the basis for the determination whether this rate will afford to the appellant a fair return or not. This consideration has demonstrated that every doubt as to these facts has been resolved against the appellant. Under these circumstances, the appellant is entitled to have the facts accepted as facts clearly and satisfactorily established, and is justified in taking them as the basis for the conclusions which shall determine its rights in the premises.

Respectfully submitted,

NATHANIEL T. GUERNSEY,
Solicitor for Appellant.

GEORGE H. CARR,
Of Counsel.

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JAMES D.

Supreme Court of the United States.

No. 75.

October Term, 1914.

DES MOINES GAS COMPANY,
Appellant,

vs.

CITY OF DES MOINES, *et al.*,
Appellees.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

MEMORANDUM FOR APPELLANT.

Nathaniel T. Guernsey,
Solicitor for Appellant.

George H. Carr,
Of Counsel.

No. 75.

Supreme Court of the United States,

OCTOBER TERM, 1914.

DES MOINES GAS COMPANY,
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vs.

CITY OF DES MOINES, *et al.*,
Appellees.

MEMORANDUM FOR APPELLANT.

I.

People ex rel. Kings County Lighting Company vs. Willcox.

The opinion of the supreme court of New York in this case was cited by us, pages 21, 22, 53, 83 and 95 of Division I of the brief and argument for appellant, in support of the two propositions that both going value and the cost of removing and replacing paving must be taken into account. After our briefs were prepared, the court of appeals of New York sustained this case upon the question of

going value, but reversed it upon the question of paving (210 N. Y. 479). It is therefore not an authority in favor of the appellant upon the question of paving.

The conclusion of the court of appeals of New York upon the paving question was based upon the assumption that in the *Willcox Case* this court did not hold that this item should be included (210 N. Y. 495). If our analysis of the *Willcox Case*, beginning at page 41, Division I, of appellant's brief, is correct, the court of appeals of New York has misapprehended it.

II.

The rule as to going value is the same in rate cases and condemnation cases.

This proposition is discussed, beginning at page 99, Division I, of appellant's brief. In addition to the authorities there cited, we call attention to the following excerpt from

Reagan vs. Farmers Loan and Trust Company, 154 U. S. 410.

> "The equal protection of the laws—the spirit of common justice—forbids that one class should by law be compelled to suffer loss that others may make gain. If the State were to seek to acquire the title to these roads, under its power of eminent domain, is there any doubt that constitutional provisions would require the payment to the corporation of just compensation, that compensation being the value of the property as it stood in the mar-

kets of the world, and not as prescribed by an act of the Legislature? Is it any less a departure from the obligations of justice to seek to take not the title but the use for the public benefit at less than its market value?"

Note also, in the same connection, what is said by Mr. Justice BREWER on the subject in the decision in

Ames vs. Union Pacific Railway Company, 64 Fed. 176, 178,

as follows:

"Property invested in railroads is as much protected from public appropriation as any other. If taken for public uses, its value must be paid for. Constitutional guaranties, to this extent, are explicit; and in such condemnation proceedings no inquiry is permitted as to how the owners have acquired the property, provided only it be legally held by them. If a farm belongs to an individual, and the public seeks to take it, it must pay its value, and is not permitted to diminish the price by proving the owner acquired the means of purchase by immoral or disreputable practices. He may have made his fortune dealing in slaves, as a lobbyist, or in any other way obnoxious to public condemnation; but, if he has acquired the legal title to the property, he is protected in its possession, and cannot be disturbed until the receipt of its actual cash value. The same rule controls if railroad property is sought to be appropriated. No inquiry is open as to whether the owner has received gifts from State or individuals, or whether he has, as owner, managed the property well or ill, or so as to acquire a large fortune therefrom. It is enough that he owns the property—has the legal title; and, so owning, he must be paid the actual

value of that property. If he has done any wrong in acquiring or using the property, that wrong must be redressed in a direct action therefor, and cannot be made a factor in condemnation proceedings. These propositions in respect to condemnation proceedings are so well settled that no one ever questions them. The same general ideas must enter into and control legislation of the kind before us.

* * * * * *

"* * * Is there not an element of equity which puts the reduction of rates in a different attitude from the absolute taking of the property by virtue of eminent domain? In the latter case, while only the value is paid, yet that value is actually paid, and the owners may reinvest, and take the chances of gain elsewhere, whereas, if the property is not taken, the owners have no other recourse than to receive the sum which the property they must continue to own will earn under the reduced rates."

Respectfully submitted,

NATHANIEL T. GUERNSEY,
Solicitor for Appellant.

MAY 6 1914
JAMES D. MAHER
CLERK

Supreme Court of the United States.

No. 75
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vs.

CITY OF DES MOINES *et al.*

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

REPLY BRIEF FOR APPELLANT.

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NO. 397.

Supreme Court of the United States,

OCTOBER TERM, 1913.

DES MOINES GAS COMPANY,
Appellant,

against

CITY OF DES MOINES, *et al.*,
Appellees.

REPLY BRIEF OF APPELLANT.

On the last page of division I of appellants' brief, it is stated that the 90 cent rate became effective October 10, 1912. This date is an error; it should have been November 15, 1912.

I.

The facts as found by the master must be accepted, and cannot be questioned by the appellees.

Upon the coming in of the master's report, the appellees filed twelve exceptions (transcript, page 150). These were largely directed to the findings

of the master as to the value of the appellant's property. None of these exceptions were allowed. The appellees took no appeal.

The appellant in its specification of errors relied upon, and in its argument, has accepted the master's findings of fact as to value and has confined its argument to the proper conclusions to be deduced from these facts. In the second division of its brief, attention is called to some of the evidence bearing upon these facts, solely for the purpose of showing that the master's findings were conservative.

The appellant has not asked to have any finding of any fact as to value disturbed. The appellees have not appealed, and therefore they cannot be heard now to question these findings.

See, in this connection,

Chittenden, et al., vs. Brewster, et al., 2 Wallace 191;

Mail Company vs. Flanders, 12 Wallace 130;

Field vs. Barber Asphalt Paving Company, 194 U. S. 618.

In the last case mentioned, the court says, referring to an appellee who has not taken a cross-appeal:

> "If he fails to take such appeal, the correctness of the decision as against him will be presumed."

So far, therefore, as these matters of fact, as distinguished from the conclusions drawn from them by the master and the court below are concerned, there is nothing here for debate.

II.

What we have just said disposes of several of the points urged by counsel.

(a) *Donations and gifts by managing officers.*

See brief of appellees, page 39.

The master takes this up at transcript, page 76, paragraph 5. To his conclusions the appellees filed no exceptions (transcript, pages 150 and 151). It is too late for the appellees to argue this question now.

(b) *Exorbitant salaries.*

See the twelfth point of counsels' argument, page 39.

It will be noticed that counsel refer to the salary question at page 3, and also that they refer at page 77 to an "increase in the salary of the local manager after this case was commenced of nearly fifty (50) per cent," referring to transcript, page 75. At that page of the transcript, the court will find that the master said this as to the salary in question:

> "Jansen Haines had been the general manager of the complainant's works and business at Des Moines since 1903, and has evidently been a very efficient man for the position, and rendered excellent service as such, and no question is made that he has not rendered his employers, as well as the public, satisfactory service. The nature of the business and of the product manufactured demand a man in charge of the works and its business who is an expert gas engineer, as well as a capable business

> man, in order to discharge properly and economically the duties of his position, and a salary of $10,000 per year, in my judgment, is not excessive. There is nothing to indicate that the amount of his salary depends in any way on the result of this action."

Turning again to the exceptions filed by the appellees to the master's report (pages 150 and 151), the court will find that there were no exceptions taken to this conclusion on the part of the master. This question, therefore, is not open for argument here.

(c) *"Return on money in Des Moines."*

Counsel, under this heading, beginning at the bottom of page 51, argue that 8 per cent, which was allowed by the master as a fair return, is excessive. In our opening brief (page 30), we called attention to the master's finding as to fair return, that:

> "The evidence in this case clearly justifies 8 per cent. under the rule established in the *Consolidated Gas* case" and that "really under the circumstances 6 per cent. of return therein *would be a greater return* accordingly than 8 per cent. in the plan and business of the complainant herein" (transcript, page 73).

The appellees excepted to this (see their twelfth exception, page 151), but have not appealed. The court below did not sustain this exception. The appellees cannot re-argue here, without an appeal, the question made by this exception.

(d) *Overhead charges.*

Counsel refer to this at page 66 of their brief. What these charges were and the way the master

dealt with them is shown clearly in the tenth division of his report (transcript, page 54). Here the appellees filed an exception (see transcript, page 150, fifth exception). This was not allowed by the court, and cannot be argued here.

The statement on page 66 that the appellant withheld information from the master as to this matter is entirely without support in the record. On the contrary, the record shows affirmatively that the appellant voluntarily afforded to the appellees every opportunity to examine its books and records.

(e) *Working capital.*

Counsel refer to this at page 67 of their brief. They excepted to the master's report upon this question. (See their ninth exception, transcript, page 151.) This exception was not allowed, and the appellees cannot argue the question here.

This limits the argument to the questions of law involved in connection with the items of going value and appreciation on account of paving, and to the conclusions which may be deduced from the facts found by the master.

III.

The item of going value.

We discussed this, commencing at page 67 of division I of the brief for appellant. Counsel for the city discuss it commencing at page 57 of their brief.

Counsel are not consistent in their use of the term "going value." They sometimes adopt its ac-

cepted meaning, which is the element representing the difference between the value of a property such as this, with its developed business and organization, as a going concern, and what would be the value of the same physical property completed and tested, ready for operation, but without a developed business or earning capacity. When they use the term in this sense, their contention is that this item should not be taken into account in a case such as this.

More frequently, they use this term as representing the difference between the value of the parts going to make up the physical property before they are connected and put in a condition to operate, that is, an incomplete physical plant, and the value of the same parts connected up so as to make a single operating whole, but without any developed business. So far as we know, there is no authority for the use of this term in this sense.

It is clear that a completed physical property, without organization or business, is worth more than what would be the value of its disconnected parts. It is equally clear that a gas plant such as the one under consideration here, with a completed organization and a developed business, is worth more than what would be the value of the same physical property ready to operate, but without any business or organization.

The real question here should not be obscured by any difference in definitions. Our contention is that the value to be ascertained in this case is the value of the property as it actually existed, characterized by its developed business. The contention of the appellees is that what should be ascertained is the value of something that does not exist, namely, the same physical property, ready to op-

erate, but without the value which belongs to it because it is in fact in operation and a going concern.

That we have correctly stated counsels' position is, we think, made clear by the following excerpts from their brief. They say, on page 59, commencing with the extract from the *Omaha Water Company* case:

> "That there is a difference between even the cost of duplication less depreciation of the elements making up the Water Company plant and the *commercial value of the business as a going concern is evident.*"
>
> * * * * * *
>
> "What does Justice Lurton mean by this part of his opinion? Is it not simply that duplication less depreciation would cover not only the value of the 'bare bones' of the physical property but in addition the *so-called going value* that follows the connecting up of the separate parts and making it a part of a completed working machine, *but would not cover the commercial value of the business that follows and results from the operation of the machine;* or *to put it as he does, the value of the business as a going concern.*
>
> Borrowing a term, 'Obviously' the statement of Justice Lurton in referring to the *Knoxville* and *Wilcox cases* that both cases were rate cases meant that in such cases *the value of the business as a going concern* as distinguished from the value of the plant as a connected and completed whole *was not to be considered in rate cases,* any other interpretation would involve the intelligence of the court."

Again counsel say, on page 60:

> "* * * and as to the element of going value that attaches and inheres in the physi-

cal property because of *its being connected up* and made a part of a completed workable whole *ready to take care of the business* as fast as it comes that value is included in the base figures of all the witnesses as to the valuation of the physical property.

* * * * * *

"In fact, the difference between the *scrap value* of most of this property and the value placed upon it by the witnesses represents the value that attaches and inheres in the property because it is connected up and as a live operating machine.

It is only necessary to refer to the 24-inch pipe under the Des Moines river. If that pipe were disconnected from the Des Moines Gas plant and was not bearing a part of the burden of the completed machine what would be its value? Could anybody be found anywhere that would pay the expense of removing it for the pipe?"

Putting it baldly, what they call going value is represented by the difference between an uncompleted plant and one completed and ready for operation, but not in fact doing business. Carried to its logical conclusion, upon their theory, this element of value should include the entire expense incident to building the plant after the materials have been purchased.

(a) *The sense in which the term "going value" is used in the authorities.*

Commencing at page 76 of division I of appellant's brief, we have cited a large number of cases which hold that in ascertaining the value of a property of this kind, going value must be taken into account. The force of these authorities depends

upon the sense in which this term is used. Without exception they use it to characterize the element of value due to an established business.

The leading case is

National Water Works Company vs. Kansas City, 62 Fed., 853,

cited at page 76 of division I of appellant's brief. The first sentence in the excerpt there made is:

> "Nor would the mere *cost of reproducing* the water works plant be a fair test, because that does not take into account the value which flows from the established connections between the pipes and the buildings of the city."

Justice BREWER proceeds:

> "It is obvious that the mere cost of purchasing the land, constructing the buildings, putting in the machinery, and laying the pipes in the streets—in other words, the cost of reproduction—does not give the value of the property as it is to-day."

The claim of counsel is the direct converse of this proposition.

The next sentence is:

> "A completed system of water works, such as the company has, without a single connection between the pipes in the streets and the buildings of the city, would be a property of much less value than that system connected, as it is, with so many buildings, and earning in consequence thereof, the money which it does earn."

This is directly opposed to the claim that going value does not mean the added value of the physical property due to its developed business.

The next sentence is as follows:

> "The fact that it is a system in operation, not only with a capacity to supply the city, but *actually supplying* many buildings in the city —not only with a capacity to earn, but actually earning—makes it true that 'the fair and equitable value' is something in excess of the cost of reproduction."

Counsel would stop with the "capacity to supply the city." The plant in the case at bar was actually supplying the city and was actually earning. Counsel would allow merely the value of a system which might be made to earn.

Justice Brewer says:

> "It should pay therefor not merely the *value of a system which might be made to earn,* but that of a system which does earn."

The term is used in the same sense by Mr. Justice Lurton in the *Omaha Water Company* case, in the statement quoted by counsel (page 59, brief for appellees). The expression is used in the same sense in

> *Public Service Gas Company vs. Board of Public Utility Commissioners, et al.* (not yet officially reported), 87 Atl., 651,

referred to at page 79 of division I of appellant's brief. The court says that "for going value, or *cost of developing the business,* $1,025,000 was allowed."

The proper use of this expression is shown by the following extract from

> *Appleton Water Works Co. vs. Railroad Commission of Wisconsin*, 142 N. W., 476 (not yet officially reported),

cited at page 84 of division I of appellant's brief:

> "The term 'going value' is somewhat vague, and is a comparatively recent addition to the terminology of the subject. It is not the value of the franchise, and it is not the good will of the business; certainly it cannot be the latter in the case of a monopoly like the present. It has been variously spoken of as the 'difference between a dead plant and a live one' (*Omaha vs. Omaha Water Co.*, 218 U. S., 180), or 'the element of value which comes from the fact that the property is sold as a going concern' (*Gloucester W. S. Co. vs. Gloucester,* 179 Mass., 365, 60 N. E., 977); 'the added value because of the company's being a going concern' (Commissioner Roemer in his testimony in the present case)."

The case of

> *Gloucester Water Company vs. City of Gloucester,* 179 Mass., 365,

cited in appellant's brief, division I, page 86, describes this element of value in the same way. It says:

> "It is plain that the real, commercial, market value of the property of the water company, is, or may be, in fact, greater than 'the cost of reproduction, less depreciation, of the different features of the physical plant.' Take, for example, a manufacturing plant: suppose a manufacturing plant has been established for some ten years and is doing a good business and is sold as a going concern; it will sell for more on the market than a *similar plant reproduced physically would sell for immediately on its completion, before it had acquired any business.*"

In the *City of Norwich* case (appellant's brief, division I, page 87) the same element of value is considered. The court says:

> "It was also proper for the commission to pay regard to the fact that the plaintiff has an established business, built up after experiments and changes during a long period."

It was the same element that it was held must be taken into account in another rate case,

> *Bombright et al. vs. Geary, et al.*, 210 Fed., 44,

cited in appellant's brief, division I, page 89, where the court says:

> "The courts recognize a difference between the value of a plant of this character, without customers or business, and a plant that has been fully established and connected up with a municipal lighting system and with the houses, business places, and factories of regular customers."

The same factor was involved in

> *Spring Valley Water Works vs. City and County of San Francisco*, 124 Fed., 574,

another rate case, where it is said (appellant's brief, division I, page 89):

> "The complainant next contends that it has an established business as a water company and as a going concern in supplying water to consumers, and that its plant has a value by reason of these advantages beyond the mere cost of reproducing the plant."

A later rate case between the same parties, referred to at page 90, division I, of appellant's brief, describes this element in the same way. It says:

"It also appears to be the law that whatever discoverable value may attach to the concern as a going business is proper to be considered in determining the value of complainant's plant for rate-fixing purposes."

In

Kennebec Water District vs. City of Waterville, 97 Me., 185,

cited in division I of the appellant's brief, page 91, it was held that in estimating even the structure value, allowance must be made for the fact that

"the water system is a going concern, with a profitable business * * * already established and with a present income assured and now being earned."

The case of

Venner vs. Urbana Water Co., 174 Fed., 348,

cited in division I, appellant's brief, page 93, quotes as the definition of going value which it held must be allowed in a rate case, part of what we have quoted from the *National Water Works Company* case.

In the third *Spring Valley Waterworks* case (192 Fed. 137), cited in division I of appellant's brief, page 94, the expression is used in the same sense.

In

People ex rel. Kings County Lighting Co. vs. Willcox, et al., 156 App. Div. (N. Y.) 603, 141 N. Y. S. 677,

(division I of appellant's brief, page 95), the expression is used in the same sense.

The term "going value" in the authorities is uniformly used to indicate the element in the value of the property due to the fact that the physical property is characterized by an established, developed business. It is never used in the sense in which counsel use it, namely, to designate the difference between the value of a completed physical structure and the value of its unconnected parts.

The authorities therefore are uniform in their holding that this is an element in the value of this property.

(b) *The same rule must apply in both rate cases and condemnation cases.*

This question is argued at page 99, division I. of appellant's brief.

The cases cited in division I of appellant's brief upon the question of going value, include condemnation cases and rate cases, the rate cases being

Public Service Gas Company vs. Board of Public Utility Commissioners, et al. (not yet officially reported), 87 Atl. 651;

People ex rel. Kings County Lighting Company vs. Willcox, et al., 156 App. Div. (N. Y.) 603; 141 N. Y. Supp. 677;

Bonbright, et al., vs. Geary, et al., 210 Fed. 44;

Spring Valley Water Works vs. City and County of San Francisco, 124 Fed. 574;

Spring Valley Water Company vs. City and County of San Francisco, et al., 165 Fed. 667;

Venner vs. Urbana Water Co., 174 Fed. 348;
Spring Valley Waterworks vs. City and County of San Francisco, 192 Fed. 137.

The whole matter is summed up in a few sentences by the supreme court of New York in the *Kings County Lighting Company* case, as follows:

> "I am unable to perceive a logical difference between allowing 'going value' in the valuation of a plant when it is to be taken entirely by the public and allowing the same element when valuing the same plant for rate making purposes. In each case the thing to be done is the fair appraisement of present value. What difference in principle can there be because in one instance all is taken for the use of the public and in the other the public limits the earnings?"

(c) *An additional decision.*

The *Kings County Lighting Company* case was appealed from the supreme court of New York to the court of appeals, which in an opinion filed March 24, 1914 (which has not yet been reported), affirmed the supreme court in its holding that going value must be taken into account in a rate case. Evidently the argument was made there that no allowance should be made in excess of the mere cost of reproducing the physical property as distinguished from the cost of developing the business. The court says:

> "The valuation of the physical property was determined by ascertaining the cost of reproduction less accrued depreciation. Preliminary and development expenses prior to operation were included, but no allowance was made for the cost of developing the business. By that method, the plant was valued in a sense

> as a 'going concern.' *In other words 'scrap' values were not taken; but to say that that sufficiently* allows for 'going value' is the same as to say that 'going value' is not to be taken into account."

The court says further:

> "It would have been entitled to a return on the valuation adopted by the commission, *if it had no customers, but was just ready to begin business,* whereas it had a plant in operation with an established business, which every one knows takes time, labor and money to build up."

This directly negatives the contention which counsel make here.

The court of appeals commences its opinion with this statement:

> "It is now *generally recognized* that 'going value,' as distinct from 'good will,' is to be considered in valuing the property of a public service corporation either for the purpose of condemnation or rate making, but there is a wide divergence of view as to how it is to be considered."

In sustaining the supreme court in its conclusion that no distinction can be made between rate cases and condemnation cases, it says:

> "The opinion of Mr. Justice Clarke below saves me the necessity of citing and analyzing the cases bearing on the first branch of the question. We concur fully in what he has said on the subject and in his conclusion that there is no 'logical difference between allowing "going value" in the valuation of a plant when it is to be taken entirely by the public, and allowing the same element when valuing the same plant for rate making purposes.' A case since decided should

be added to the rate cases cited by him in which 'going value' has been allowed, *i. e., Public Service Gas Co. vs. Board of Commissioners* (87 Atl. Rep. (N. J.) 651).

It is no answer to say that in condemnation cases the exchange value is taken, and that that depends on the rates charged, the thing to be determined in rate cases. Of course, a rule of valuation might be adopted in a condemnation case which would not work in a rate case; but if the cost of reproduction less depreciation rule be adopted, as appears to have been done in *National Waterworks Company vs. Kansas City* (62 Fed. Rep. 853) and *City of Omaha vs. Omaha Water Company* (218 U. S. 180), the leading condemnation cases in the Federal courts in which 'going value' was considered, it is impossible to see why the 'going value' could not be determined in both classes of cases in precisely the same way.

The difficulty of determining the 'going value' will not justify the disregarding of it. Rate making is difficult. But that will not justify confiscation. The difficulty, however, will lessen, as it does in most cases, when we cease to think about the subject vaguely."

The court says further:

> "The company starts out with the 'bare bones' of the plant, to borrow Mr. Justice Lurton's phrase in the *Omaha Water Works Case* (*supra*). By the expenditure of time, labor and money, it co-ordinates those bones into an efficient working organism and acquires a paying business. The proper and reasonable cost of doing that, whether included in operating expenses or not, is as much a part of the investment of the company as the cost of the physical property."

The opinion of the court of appeals just referred to has not yet been reported. We file a copy of it with this brief.

(d) *The item of $300,000, which is in controversy, was for going value.*

The master used this term properly. He says on page 63 of the transcript:

> "The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the 'Going Value' of this concern is worth more, but I cannot feel satisfied that such is the case, and regard $300,000 as every dollar it is worth *over and above its physical value*, and in my judgment, it is worth that much more than a plant would be *that had to develop its business.* * * * I think a purchaser would be willing to add this amount *for its developed business*, and that a seller would not be willing to sell unless he got that much more than its physical value."

At the bottom of this page, he says that good will is not included. He further says (transcript, page 109):

> "The opinion in the recent case of the *Cedar Rapids Gas Co. vs. Cedar Rapids*, adds additional emphasis thereto. Not only so, but it also renders it extremely doubtful that 'Going Value' will be included in the valuation of such a plant as the basis of return, beyond the fact that it is in 'successful operation.' *That would exclude the sum of $300,000 estimated in this case on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.*
>
> In my judgment, after considering the able and thorough arguments of Counsel, that it is decisive of the question, and holds that '*Going Value' should not be considered in determining the basis* upon which the Complainant is entitled to have its return reckoned, and feel that it is my duty to so state."

He follows this with the statement quoted by counsel that this would decrease each of this estimated annual deficits $24,000. He found that the appellant was entitled to earn at least 8 per cent. as a fair return, and this $24,000 is just 8 per cent. of this item of $300,000.

What the master disallowed, therefore, was the element in the value of this property due to the fact that it was a going concern with a developed business.

(e) *This is an element in the value of the physical property.*

In the *Omaha* case the appraisers separated this item, which was in dispute there as well as here. In that case, this court said:

> "This separation of *an element contributing to the value of each tangible part* was done because required to be done under an order made in the circuit court in a suit in which the water board of the city of Omaha was complainant and the members of the board of appraisers and the water company were defendants."

In the *Kennebec Water District* case (division I of appellant's brief, page 91), this element of value is referred to as an element in the structure value.

In the *Spring Valley Waterworks* case, reported 192 Fed., 137, the court quotes another statement of the Maine court from the *Brunswick Water District* case to the same effect. We insert the quotation:

> "We speak sometimes of a going concern value as if it is or could be separate and distinct from structure value—so much for structure and so much for going concern. But this

> is not an accurate statement. The going concern part of it has no existence, except as a characteristic of the structure. If no structures, no going concern. If a structure in use, it is a structure whose value is affected by the fact that it is in use. There is only one value. It is the value of the structure as being used. That is all there is to it."

This element of value is something which inheres in the physical property. The customers of a gas property are tied to it by the connections. They go with the property. Any valuation of the physical property which does not include this factor is not a full valuation of the physical property.

IV.

The authorities cited by counsel upon the question of going value.

In support of their contention, counsel cite, at page 26 of their brief,

> *Cedar Rapids Water Company vs. Cedar Rapids*, 118 Iowa, 258.

This case also holds that the depreciation necessary to maintain the property is not a proper charge against operating expenses, but that it must be paid out of net earnings.

In the later case of

> *Cedar Rapids Gas Light Company vs. Cedar Rapids*, 144 Iowa, 426,

the supreme court of Iowa abandoned its earlier position as to both of these items. (See the dis-

cussion of this case in division I, appellant's argument, page 69.)

It was not the decisions of the Iowa court, but the opinion of this court in this same case which the master felt compelled him to disallow this item after he had first allowed it. (Transcript, top page 109.)

The *Omaha Water Company* case is also relied upon by counsel in this connection. What that case decided was that going value was an element which contributed "to the value of each tangible part" of the property, and that it must be considered in a condemnation case. The case was not a rate case and did not involve and could not decide the question whether going value should be taken into account in a rate controversy.

The master's finding, confirmed by the court below, and not brought in question by either party here, is that the actual value of this property, excluding paving, was $2,400,000; that if it could be divested of its business, what would remain would be worth $2,100,000. The sole question here is, May the city confiscate one-eighth of the value of this property through rates which will not permit it to earn a return upon more than $2,100,000? If it can, then the property is only worth $2,100,000, because it is not worth to its present owner or to any purchaser more than the amount upon which, at reasonable rates and under normal conditions, it will earn a fair return.

V.

Appreciation on account of paving.

Counsel consider this question commencing at page 53 of their brief. It is discussed in division I of appellant's brief, page 37.

Among the cases we cited upon this question was the *Kings County Lighting* case, decided by the supreme court of New York. The court of appeals of New York has, since our brief was written, reversed the supreme court upon this question, and held that paving should not be allowed. In its discussion of the matter, the court of appeals says:

> "The Appellate Division felt bound by the decision of the United States Circuit Court in the *Consolidated Gas Case* (157 Fed. Rep. 849), and it is true that such an allowance was made in that case. But the United States Supreme Court held in that case (212 U. S. 19) that the rate established was not confiscatory, and did not pass on the propriety of that allowance. What was said in the opinion on the subject of present value was merely a general statement having no necessary relation to the question now under consideration."

Our discussion of the *Consolidated* case, commencing at page 41, division I, of appellant's brief, we think demonstrates that the court of appeals of New York was under a misapprehension in its statement that this court did not pass upon this question in the *Willcox* case.

Whatever confusion there is as to this question is due to a failure to distinguish between cost and value. The argument in the case at bar is the ar-

gument that was made in the *Willcox* case. It was there claimed that the *cost* of these mains should determine their present value; that original conditions instead of conditions existing at the date of the valuation should control.

If the criterion is cost and not value, then this item of $140,000, where the company did not actually incur the cost incident to removing and replacing the pavements, should be disallowed. If the criterion is value, the item should be allowed, because value must be determined by the conditions existing at the date of the valuation and not by those existing at the time the mains were laid.

VI.

"Duty of the Council."

At page 42 of their argument, under the heading which we have quoted, counsel attempt to excuse the fact that the council enacted the ordinance in question without consideration. Upon the issues as they appear here, this can hardly be a material question. The appellant has not questioned the existence of a presumption in favor of the reasonableness of these rates. The court below said as to this matter (transcript, page 162):

> "I deem it appropriate to call attention to another phase of this litigation. The ordinance was adopted within a few minutes from its introduction. Quite likely it had been considered by the members in their individual capacities. But in open session it received but little consideration, and without the presence of anyone for the Gas Company. And every

> member voting to reduce the earnings had a direct personal and moneyed interest in thus reducing the rates. If a judge were to so act, his acts would be absolutely void, because of the long time maxim 'No man can be judge in his own cause.'"

The ordinance in controversy was passed December 27, 1910. Counsel refer on page 43, to a return for taxation made *in February, 1908*, nearly three years prior to the enactment of this ordinance, in which they say that the value of the physical property of the gas company was stated at $1,002,020. They omit to call attention to complainant's exhibit 45, a similar return made *in 1909*, giving the value of the property at $2,192,400 and to a similar return made in March, *1910*, nine months before the enactment of the ordinance and the bringing of this suit, giving the value of the property at $2,230,400, and to a similar return made in *1911*, the first return made after the property had been inventoried and appraised, giving its value as $3,381,000. (See complainant's Exhibits 45, 46 and 47, among the exhibits following transcript, page 3470.)

If the council did in fact, when making rates at the end of 1910, "rely upon the valuation of the property as stated by these gentlemen at that time" (1908), this under the circumstances, would rather tend to discredit them.

Counsel, on page 45, refer to what Mr. Hall, found from the books to be the investment. Mr. Hall was an accountant, pure and simple. He says (transcript, page 2184) that he has not the remotest idea as to the value of this plant. What he found on the books was $1,727,675.67. Counsel omit to state that this included nothing on account

of engineering, contingencies, interest during construction, discount on bonds or any other overhead charge, or on account of paving over mains, working capital, going value or appreciation in real estate.

Taking for these various items, the figures found by the master, simply because they are lower than the estimates of the complainant's witnesses, we have

Books	$1,727,675.67	
Overhead charges, 15% of $1,975,026 (transcript, pages 57, 54).	295,254.00	
Paving, not including what master disallowed (transcript, page 61	160,043.00	
Working capital, allowed by master (transcript, page 60).....	140,000.00	
Going value, allowed by master (transcript, page 63	300,000.00	
Appreciation in real estate, ($150,000; transcript, page 60, minus $35,964)	114,036.00	$2,737,008.67
Deduct depreciation, found by master (transcript, page 59)		333,878.00
		$2,403,130.67

The master's valuation, including going value, and the paving item above, was $2,400,000.

The master discusses investment, commencing at page 64 of the transcript, and states at the top of page 66 that the book figures contain no overhead charges, and finally that "there is no greater difference than might be expected, in view of the times covering the investment."

In view of the fact that the testimony as to this investment was not given until months after the council had enacted this ordinance, it could hardly have been influenced by this factor in making the rates.

VII.

The computation of counsel beginning at the bottom of page 45.

Counsel state on page 46, that it will be at once suggested that their method is unfair. We prefer to characterize it as unsound, making the conclusions reached by them untrustworthy.

Of course, the fundamental fallacy is obvious. Counsel take estimated sales for 1911 in excess of the sales for any preceding year. They then take what they call "average operating expenses" for three years, *and take this in dollars,* not in cents per 1000 c. f. of gas.

Since the sales for each of these three years were less than the estimated sales for 1911, there would be an increase in the operating expenses on account of the increase in sales, so that the average operating expenses for this period would be much less than the operating expenses for 1911, even if there were no change in conditions except in the volume of sales.

Mr. Hall, the accountant for the city, found from the books that the average operating costs for five years prior to December 31, 1910, were, not including depreciation, 63.34 cents per 1000 c. f. (transcript, page 3616, last column). To this there should be added the master's allowance for depreciation of 6.67 cents (transcript, page 59). The master found that the sales for 1911, taking actual sales for ten months and estimating only the months of November and December, would be 557,778,529 (Tr. p. 99). Applying these figures, which include Valley Junction, we have, using round figures,

Revenue, 558,000,000 cubic feet, at 90 cents.	$502,200.00
Operating expenses, at 63.34 cents plus 6.67 cents, equals 70.01 cents per thousand cubic feet.	390,600.00
	$111,600.00

What counsel have done is to inflate the volume of sales and contract the operating expenses. Of course, profits may be indefinitely enlarged by this process.

The master's computation for this same year, shown at page 99 of the transcript, based on a lower operating cost than the average for the preceding five years, shows a deficit of $73,031.84.

VIII.

The presumption in favor of rates fixed by the City Council.

We are at a loss to understand the reference by counsel to an alleged effort on our part to show that there was no presumption in favor of the rates fixed by this ordinance. We conceded the contrary in section 2, paragraph (e) of our brief (appellants' brief, division I, page 19). We did not assert this proposition, and did not cite upon it any of the cases which counsel discuss.

IX.

A fair return on money in Des Moines.

There are two statements upon page 52 of the appellees' brief upon this subject that are open to misconstruction. It is said that there was testimony "that stock in gas and other public utility companies *earning* 6 per cent, were quoted on the market at par and over." There was no evidence in the record as to the *earnings* upon any stock in any public utility except what might be inferred from the testimony in this case as to the Des Moines Gas Company.

In the report of Professor Bemis, who the master found was not a competent witness (transcript, page 67) there was a statement as to statements by others (transcript, page 3739) as to dividends paid on stocks of some companies in Massachusetts, New York, Chicago, and St. Louis, and the dividends paid by the United Gas Improvement Company.

Everybody who has had any business experience knows that the value of a stock is not affected so much by the dividend which it pays, as by the amount of property which it represents and the amount of its earnings in excess of the portion of them distributed in the way of dividends.

It is said by counsel on the same page, that "no evidence whatever was offered by the appellants showing what return was being received on money invested in public utilities in Des Moines." Literally this is true, aside from the evidence produced

in the present case. It omits to state, l
that there was a large amount of evidenc
duced showing what return would be nece
secure money for such investments in Des
and that no evidence was offered by the a
to contradict it.

A summary of the testimony upon this
is as follows:

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is question

Counsel cite various cases in which different rates of return have been discussed. Their references to these cases are inaccurate. It was not decided in the *Lincoln* case that 5.2 per cent. is compensatory, or in the *Knoxville* case that 4% would be reasonable; but it is unnecessary to discuss these matters because what is a reasonable rate is a question of fact to be determined by the evidence in the particular case.

X.

The last Point of counsel.

Under the heading "In Conclusion," counsel discuss several matters. They say in the first place, that the valuation of $2,100,000 fixed by Judge McPherson upon the property "is from $300,000 to $500,000 higher than the estimate of any of the city's witnesses." This statement is not supported by the record.

As we have seen, Bemis was held an incompetent witness. Hall, the accountant, did not attempt to testify as to value. He says (transcript, page 2184):

> "Q. Have you any idea of what the value of this property is?
> A. None.
> Q. Not the remotest?
> A. Not the very slightest."

The only other witness is Marks. The master says that Marks made his total unit cost $1,865,340 (transcript, page 66). The statement of the items there shows that this does not include going

value or working capital. Moreover, the unit cost adopted by the master is, as shown on the same page, $1,975,020. The difference, $109,680, represents the real difference between the valuation of the master and that of Marks. These are the base figures, to each of which the same additional amounts would have to be applied.

The statement of counsel, therefore, would have been more accurate if it had been that the valuation adopted by the master was about $100,000 more than that fixed by the single witness upon this subject for the appellees.

Counsels' statements as to investment are not supported by any reference to the record or by the record itself. The facts as to the investment in the property are shown in the master's report (transcript, page 64).

Page 68 of appellees' brief contains the statement that the master found that gas could be made in the future for less than 60 cents. The master referred to this as a possibility. There was nothing to indicate that there would be any reduction in the cost of making gas in the near future.

The statement as to the evidence of the witnesses Lea and Baehr on the same page, is misleading. Each of them in connection with his estimate upon going value, estimated the cost of operating the plant in question for each year up to and including the year 1917. This was for the purpose of comparison with the hypothetical plant, and inasmuch as the taxes and depreciation would be the same in each instance, they were not included.

These operating costs as to the witness Baehr are shown in the table opposite page 3414 of the transcript, where it is stated that they do not include

taxes and depreciation, and as to the witness Lea, are shown in the second table after page 3328 of the transcript, where an inspection of the items included shows that taxes and depreciation were omitted.

These operating costs as given by Lea and Baehr for the respective years, not including taxes and depreciation, were, in cents, as follows:

	1911	1912	1913	1914	1915	1916	1917
Lea	59.82	58.65	57.67	56.56	55.63	54.71	53.96
Baehr	58.33	58.99	59.74	59.47	59.31	59.13	58.96

It appears that Baehr's figures are higher than those of Lea in every year except the first one, so that we shall ignore Mr. Baehr.

The following table shows these operating costs of the witness Lea with the taxes and depreciation added. The figure taken for taxes is the figure for the year 1910, because taxes do not decrease, and the figure taken for depreciation is the figure adopted by the master.

	1911	1912	1913	1914	1915	1916	1917
Lea	59.82	58.65	57.67	56.56	55.63	54.71	53.96
Taxes	7.22	7.22	7.22	7.22	7.22	7.22	7.22
Depreciation,	6.67	6.67	6.67	6.67	6.67	6.67	6.67
	73.71	72.54	71.56	70.45	69.52	68.60	67.85

If these figures be adopted, the remaining profit per thousand cubic feet, making the deductions from a 90 cent rate, would be as follows for the respective years:—

1911	1912	1913	1914	1915	1916	1917
90.00	90.00	90.00	90.00	90.00	90.00	90.00
73.71	72.54	71.56	70.45	69.52	68.60	67.85
16.29	17.46	18.44	19.55	20.48	21.40	22.15

If Lea's figures were adopted the deficits would be much increased. The highest net rate of return here is 22.15 cents per thousand cubic feet. The highest rate used by the master in making his computations showing his deficits exceeds this and is 22.90 cents. The lowest rate here is 16.29 cents. The lowest rate used by the master is 20.35 cents. This testimony does not support the inference that the cost could be reduced below 60 cents.

It is true that the master said that if there were an increase of sales to the present consumers, the profit *as to this increase* would be doubled, but the master found that increased sales must be due to increased population (appellants' brief, division I, page 121) and this counsel does not answer.

The burden of this division of counsel's argument is the proposition that it has not been clearly shown that these rates will not yield a fair return. Let us see what the assumptions are that must be indulged in order to raise this doubt.

(a) It must be assumed that the plant can be operated for substantially less than any actual results ever attained by it.

(b) It must be assumed that a reduction of 10 cents a thousand will result in absolutely

unprecedented increases in sales, notwithstanding the fact that such reductions in the past have not produced substantial increases. (See column "Sales per meter", appellant's argument, division I, page 119, and the first column in the same table.)

(c) At the existing sales on a valuation of $2,400,000 it must be assumed that there will be increased sales amounting to 356,897,900 c. f. (division I, appellant's argument, page 117), whereas the highest increase in any year since 1895, notwithstanding reductions of rates, was 57,417,000.

(d) It must be assumed that a population of 92,000 people would consume gas sufficient to supply a population of over 150,000 people. (Division I, appellant's brief, page 126).

(e) It must be assumed that this plant, with a capacity to manufacture annually about 600,000,000 cubic feet, will manufacture and sell from one-third to one-half in excess of its capacity. (Division I, appellant's brief, page 126).

The question is whether it is reasonable to indulge in these assumptions. We submit that it is absolutely unreasonable, and that the effect of these facts cannot be obviated by general statements as to the obligation to establish the facts by clear and satisfactory evidence.

The facts here are established by clear and satisfactory evidence, and there is no dispute as to them. The reasonable conclusions to which these facts lead may not be overthrown by pure speculation.

One further suggestion in this connection. We submit that the question is whether or not the rates would afford a fair return when they were to become effective; it is not whether at some time in the future they may afford a fair return. There is nothing in the law which would protect the appellant in working this matter out upon a doctrine of averages. If it may be required to operate for a series of years at a loss, it would require operation for a like series of years at more than a reasonable return to make the appellant whole; but if the appellant should ever earn more than a reasonable return, the city could immediately reduce rates. The result would be less than a fair return; and the deficit would be increased, if each time the rates were revised, the company could be required to begin with less than a fair return, on the theory that later the loss might be recouped.

We respectfully submit that the case should be reversed, and that the appellant is entitled to a decree upon the merits, or in any event, to such a decree as will afford it an opportunity to demonstrate by experiment the insufficiency of these rates.

NATHANIEL T. GUERNSEY,
Solicitor for Appellant.

GEORGE H. CARR,
Of Counsel.

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Supreme Court of the United States

No. 397.

DES MOINES GAS COMPANY,
Appellant,
vs.
CITY OF DES MOINES, *et al.*,
Appellees.

Appeal from the District Court of the United States for the Southern District of Iowa.

BRIEF AND ARGUMENT FOR APPELLEES.

STATEMENT.

On December 27, 1910, the appellee city adopted an ordinance, providing among other things, that:

> "From and after the 1st day of January, A. D. 1911, the rate to be charged and collected for gas by any person, firm or corporation supplying or distributing gas to the City of Des Moines, or its inhabitants, is hereby fixed as follows, to-wit: Ninety (90) cents for each thousand cubic feet." (Tr., p. 113).

On December 29, 1910, the appellant filed its bill herein alleging and charging among other things, as follows:

> "Your orator further alleges that said pretended ordinance fixing a 90c rate is unreasonable to the

extent that its enforcement will amount to the taking of complainant's property for public use without just compensation and that it will operate as confiscation of the property of complainant. That the enforcement of said ordinance will deprive complainant of its property without due process of law and will deny to complainant equal protection of the law. Its enforcement would impair the existing contract between complainant and defendant city and between plaintiff and the State of Iowa, growing out of plaintiff's incorporation under the statute of the State of Iowa and of the ordinances of the City of Des Moines, giving the right to complainant to lay its mains and supply gas to the residents of the said city.

Your orator further alleges, that unless defendants are restrained by the orders of this court, that they will enforce the provisions of the said pretended ordinance and will prevent complainant from charging or receiving in excess of ninety cents per thousand cubic feet for gas sold and distributed." (Tr., p. 6).

It was also alleged in the bill that the present value of the Gas Company's property exceeded the sum of $2,700,000, and that during a three year period preceding the adoption of the ninety cent ordinance appellant had received as interest and profits upon the valuation of its property from net earnings but 5.15 per cent annually, (Tr., pp. 2, 3, 4, 5 and 6), and on the 31st day of December, 1910, a temporary restraining order was granted and issued by his Honor, Judge Smith McPherson, enjoining the enforcement of the ninety cent ordinance and the application for injunction set down for hearing on the 6th day of January, 1911, upon three days' notice.

On the 6th day of January, 1911, the bill was amended in which amendment the value of the property of the

Gas Company was alleged to be $4,092,000 instead of $2,700,000 as stated in the original bill, and interest and profits 2.56 per cent instead of 5.15 per cent as originally alleged. (Tr., pp. 10-11).

To the bill as amended the appellee City demurred. The demurrer was on the 6th day of January, 1911, overruled, the restraining order theretofore granted continued in full force and effect, the appellees given until the first day of February, 1911, to answer, and appellant five days thereafter within which to plead thereto; and it was ordered that the cause be referred to a Special Master to take the evidence, report findings of fact and conclusions of law, the taking of testimony to begin on the 1st day of March, 1911, the Master's report to be filed prior to the 1st day of the May, 1911, session of the court. (Tr., p. 17).

Answer and replication were filed within the time allowed.

On the 16th day of May, 1911, an order was entered herein appointing Robert Sloan, Esq., Special Master in Chancery, whereupon an order was made by the Special Master setting the matter down for hearing at the United States court room at Des Moines, Iowa, commencing on the 12th day of July, A. D. 1911, at which time the taking of testimony was begun and continued from day to day until the 29th day of November, 1911, at which time the arguments of counsel on both sides were completed and the case finally submitted to the Master.

On the hearing it developed that the appellant Company was owned and controlled by the United Gas Improvement Company of Philadelphia; that the local manager, Mr. Jansen Haines just shortly before the commencement of the taking of testimony was elected president of the local company, and his salary increased from $7,500 to $10,000, or nearly fifty per cent. In addi-

tion to Mr. Haines salary $10,000 was being allowed certain officers of the United Gas Improvement Company for alleged services rendered the local company. It also developed that at about 1906 there was a re-organization of the old Capital City Gas Light Company, its property being taken over by the appellant company, the transaction being carried on between the Capital City Gas Light Company and a clerk from the office of the United Gas Improvement Company of Philadelphia.

On the 5th day of April, 1912, the report of the Special Master in Chancery was filed herein in which among other things the Master found:

First. That the value of the appellant's physical property was in round numbers $2,100,000.

Second. That the going value of the plant was $300,000; (this item, however, was not allowed as a separate item but was included in the $2,100,000).

Third. That in determining the value of the property $140,000, being the cost of taking up and replacing mains where none existed when the mains were laid, is deducted from the Master's reproduction cost of the distribution system; or in other words, nothing was allowed for this item in determining the value of appellant's plant.

Fourth. That eight (8) per cent on appellant's investment would not be an unreasonable return.

Fifth. With economy and care the cost of manufacturing and distributing gas might be reduced below sixty (60) cents.

Sixth. That an increase of sales to existing customers would practically double the profits per m c f on the increase.

Seventh. That should both the item of $140,000 for paving and $300,000 going value be added to the $2,100,000 valuation of the physical property as found by

the Master, a decree for the appellant would be imperative.

Eighth. That since the Master's finding of $2,100,000 as the value of appellant's physical property is reckoned upon the fact that the plant was in successful operation, all going value is included in this valuation.

To the report of the Master both parties filed exceptions; the appellant claiming that the Master's valuation of its property was too low and that both the item of $300,000 as going value and $140,000 the estimated cost of cutting through and replacing pavement over pipe which was laid before the pavement was constructed should be added to the value of the physical property as found by the Master; the appellee contending that the value found and fixed by the Master was too high, and that an item of $140,000 as working capital should not have been allowed and included in the physical valuation of the Gas Company's property.

There were other objections and exceptions urged, but the above in a general way covers the important questions raised on the Master's report.

On the 21st day of August, 1912, the Hon. Smith McPherson, Judge, filed his opinion on the exceptions taken to the Master's report, overruling all of the exceptions, and on the same day entered a decree dismissing appellant's bill with prejudice and at its cost, vacating the restraining order and temporary injunction theretofore issued, such vacation to be effectual at the end of sixty (60) days. The decree also provided that at any time after three years appellant, its successors or assigns, might on motion re-instate this case with all the pleadings and evidence now on file with the same and like effect as though filed for such subsequent hearing, with the right to each party to file additional pleadings and take such additional evidence as might be deemed ad-

visable, and supersedeas bond in the penalty of $5,000 was provided for.

This decree was later, on the application of the appellant, modified so that the vacation of the restraining order and temporary injunction was postponed and was to become effective on the 15th day of November, 1912, and it was further provided in the modified decree as follows:

> 6. "It is further decreed that the orders heretofore made as to refund of ten (10) cents per thousand feet of gas in excess of the rate fixed by the ordinance herein in controversy be superseded, provided the complainant file a bond for that purpose in the penal sum of One Hundred and Fifty Thousand ($150,000) Dollars, properly conditioned with ample surety, to be approved by this court or a judge thereof.
>
> 7. "Any other supersedeas than those provided for in paragraphs 5 and 6 of this decree is denied and shall only be allowed by the Supreme Court of the United States or a justice thereof.
>
> 8. "In the event an appeal is not taken, perfected and filed within sixty (60) days of the date hereof, or if said appeal is taken and this decree should be affirmed as to said refund as set forth in paragraph 6 of this decree, then the city and all parties claiming such refunds shall present such claims to this court within such time as will be hereafter fixed for allowance. And said city and all defendants and the officers and agents of such city and all persons are prohibited from presenting or urging the same in any other court than this court. And for such hearings this court retains jurisdiction over the parties and the subject matters. Each party excepts to all the foregoing insofar as adverse."

From this decree and judgment the cause was brought to this court on appeal.

BRIEF.

POINT I.

That the appelle city had ample power to pass the ordinance regulating the rates to be charged and which are complained of by the appellant is beyond dispute.

> "They shall have power to require every individual or private corporation operating such works or plant, subject to reasonable rules and regulations, to furnish any person applying therefor, along the line of its pipes, mains, wires, or other conduits, with gas, water, light or power, and to supply said city or town with water for fire protection, and with gas, water, light, or power for other necessary public purposes, and to regulate and fix the rent or rate for water, gas, light or power; to regulate and fix the rents or rates of water, gas and electric light or power; to regulate and fix the charges for water meters, gas meters, electric light or power meters, or other device or means necessary for determining the consumption of water, gas, electric light or power, and these powers shall not be abridged by ordinance, resolution or contract."
>
> *Code Section 725.*

II.

Nor is it any longer a matter or dispute that the legislature has power to provide for the regulation of rates charged for public service.

Munn vs. Illinois, 94 U. S., 113;

Budd vs. New York, 143 U. S., 517;

Cedar Rapids Water Co. vs. Cedar Rapids, 118 Iowa, 258;

Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, 120 N. W., 966.

III.

The rate or price fixed by the City Council that may be charged for public service is presumed to be reasonable, and the court is limited in its inquiry in passing upon a rate thus fixed to the question as to whether or not the rate is confiscatory.

Cedar Rapids Water Co. vs. Cedar Rapids, supra, at page 259-260, it is said:

> "The right to regulate is not unlimited, and, if the schedule be made so low that its adoption will operate as a confiscation of the water company's property without due process of law, the courts will interfere to prevent its enforcement. *Turnpike Co. vs. Sandford,* 164 U. S., 578 (17 Sup. Ct. Rep. 198, 41 L. Ed. 560); *Reagan vs. Trust Co.,* 154 U. S. 362 (14 Sup. Ct. Rep. 1047, 38 L. Ed. 1014); *Railroad Commission Cases,* 116 U. S., 307 (6 Sup. Ct. Rep. 334, 29 L. Ed. 636); *San Diego Land and Town Co. vs. National City,* 19 Sup. Ct. Rep. 810 (174 U. S. 739, 43 L. Ed. 1154). But the conclusion that a schedule of rates duly adopted by proper authority will have such destructive effect is not to be lightly assumed, nor found from doubtful or uncertain premises. It is said by our highest judicial authority that 'the judiciary ought not to interfere with the collection of rates established under legislative sanction, unless they are so plainly and palpably unreasonable as to make their enforcement equivalent to the taking of property for public use without such compensation as, under all the circumstances, is just to both the owner and the public; that is, judicial interference should never occur unless the case presents clearly and beyond all doubt such a flagrant attack upon the rights of property under the guise of regulation as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for public use.'"

In *Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, et al., supra,* at page 968, the court says:

> "The power of the municipality to regulate the rates to be charged for gas, save that these may not be so reduced as to deny to the company a fair return upon the property used in the service of the public, is not questioned. The sole inquiry is whether the ordinance, if enforced, will operate to deprive the company of fair compensation for the services to be rendered. The act of the municipality, in fixing rates, is purely legislative, and, as it is by virtue of authority given by the legislature, is presumed to have been in the proper exercise of the power conferred. *Mayor and Aldermen of the City of Knoxville vs. Knoxville Water Co.,* 212 U. S., 1, (29 Sup. Ct. 148, 53 L. Ed.). For this reason the rate established by the ordinance assailed is presumed to be reasonable, and this court, in inquiring whether this is true in fact, can only declare it otherwise upon finding that it is so low that its adoption will operate as a confiscation of plaintiff's property without due process of law."

In *San Diego Land & Town Co. vs. Jasper,* 189 U. S., 441; Justice Holmes, speaking for the court, says:

> "In a case like this we do not feel bound to reexamine and weigh all the evidence, although we have done so, or to proceed according to our independent opinion as to what was proper rates. It is enough if we cannot say that it was impossible for a fair-minded board to come to the result which was reached."

In *Cumberland Telephone & Telegraph Co. vs. City of Louisville,* 187 Fed. 637, at page 641, the court says:

> "In *Knoxville vs. Water Company,* 212 U. S., at page 17, 29 Sup. Ct. at page 153 (53 L. Ed. 371), it was said: 'It cannot be doubted that in a clear case of confiscation it is the right and duty of the court to annul the law. Thus in *Reagan vs. Farmers'*

Loan & Trust Co., 154 U. S., 362 (14 Sup. Ct. 1047, 38 L. Ed. 1014), where the property was worth more than its capitalization, and upon the admitted facts the rates prescribed would not pay one-half the interest on the bonded debt; in *Covington, etc., Turnpike Co. vs. Sandford*, 164 U. S., 578 (17 Sup. Ct. 198, 41 L. Ed. 560), where the rates prescribed would not even pay operating expenses; in *Smyth vs. Ames*, 169 U. S., 466 (18 Sup. Ct. 418, 42 L. Ed. 819), where the rates prescribed left substantially nothing over operating expenses and cost of service * * *injunctions were severally sustained.' But on page 16, 212 U. S., on page 153, 29 Sup. Ct. (53 L. Ed. 371) of the report of the same case the court has said: 'If a company of this kind chooses to decline to observe an ordinance of this nature and prefers rather to go into court with the claim that the ordinance is unconstitutional, it must be prepared to show to the satisfaction of the court that the ordinance would necessarily be so confiscatory in its effect as to violate the Constitution of the United States."

In *San Diego Land & Town Co. vs. National City*, 174 U. S., 739, at page 753, it is said:

"There is no ground to say that the appellant did not in fact have or was denied an opportunity to be heard upon the question of rates. On the contrary, it appears in evidence that the subject of rates was considered in conferences between the local authorities and the officers of the appellant. Those officers may not have been present at the final meeting of the city board when the ordinance complained of was passed. They were not entitled, of right, to be present at that particular meeting. They were heard, and there is nothing to justify the conclusion that the case of the appellant was not fully considered before the ordinance was passed."

Smith vs. Ames, 169 U. S., 466.

In *Stanislaus County vs. Joaquin Irrigation Co.,* 192 U. S., 201, at page 216, the court states:

> "Much of the capital was invested between twenty and thirty years ago, and to be able still to realize 6 per cent upon the money originally invested is more than most people are able to accomplish in any ordinary investment, and more than is necessary in order to give just compensation for property at the time it is used for the public purpose originally intended."

San Diego W. Co. vs. City of San Diego, Cal., 50 Pac., 633; 62 Amr. Rep. 297, (note).

Knoxville vs. Knoxville Water Co., 212 U. S., 1, where the court says:

> "There can be at this day no doubt, on the one hand, that the courts, on constitutional grounds, may exercise the power of refusing to enforce legislation, nor, on the other hand, that that power ought to be exercised only in the clearest cases. The constitutional invalidity should be manifest, and where that invalidity rests upon disputed questions of fact, the invalidating facts must be proved to the satisfaction of the court. In view of the character of the judicial power invoked in such cases it is not tolerable that its exercise should rest securely upon the findings of a master, even though they be confirmed by the trial court. The power is best safeguarded against abuse by preserving to this court complete freedom in dealing with the facts of each case. Nothing less than this is demanded by the respect due from the judicial to the legislative authority. It must not be understood that the findings of a master, confirmed by the trial court, are without weight, or that they will not, as a practical question, be regarded as conclusive. All that is intended to be said is, that in cases of this character this

court will not fetter its discretion or judgment by any artificial rules as to the weight of the master's findings, however useful and well settled these rules may be in ordinary litigation. We approach the discussion of the facts in this spirit."

* * * * * * * * * *

"In ordinary cases full justice would be done by reversing the decree and remanding the cause for further proceedings in the court below, there to undergo a new and doubtless prolonged investigation. It is more than seven years since the enactment of the ordinance, and it has never been observed in any respect. This litigation ought now to be ended, if it is possible to end it with due regard to the rights of the contending parties. Disregarding for the moment all the errors which were committed in the court below, the decision of this cause may be rested upon a broader ground, which is clearly indicated by the previous judgments of this court. The jurisdiction which is invoked here ought, as has been said, to be exercised only in the clearest cases. If a company of this kind chooses to decline to observe an ordinance of this nature, and prefers rather to go into court with the claim that the ordinance is unconstitutional, it must be prepared to show to the satisfaction of the court that the ordinance would necessarily be so confiscatory in its effect as to violate the Constitution of the United States. In *Ex Parte Young,* 209 U. S., 123, 52 L. Ed. 714, 13 L. R. A. (N. S.) 932, 28 Sup. Ct. Rep, 441, the last word of caution by this court was said (p. 166): 'Finally it is objected that the necessary result of upholding this suit in the circuit court will be to draw to the lower Federal courts a great flood of litigation of this character, where one Federal Judge would have it in his power to enjoin proceedings by state officials to enforce the legislative acts of the state, either by criminal or civil actions. To this it may be answered, in the first place, that no injunction ought

to be granted unless in a case reasonably free from doubt. We think such rule is, and will be, followed by all the judges of the Federal courts.' The same thought in effect, was expressed in *San Diego Land & Town Co. vs. National City,* 174 U. S., 739, 754, 43 L. Ed., 1154, 1160, 19 Sup. Ct. Rep. 804, 810: 'Judicial interefernce should never occur unless the case presents clearly and beyond all doubt such a flagrant attack upon the rights of property under the guise of regulations as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for the public use.' And in *San Diego Land & Town Co. vs. Jasper,* 189 U. S., 439, 47 L. Ed. 892, 23 Sup. Ct. Rep. 571, after repeating with approval this language, it was said (p. 441): 'In a case like this we do not feel bound to re-examine and weigh all the evidence, although we have done so, or to proceed according to our independent opinion as to what were proper rates. It is enough if we cannot say that it was impossible for a fairminded board to come to the result which was reached.'

"It cannot be doubted that, in a clear case of confiscation, it is the right and duty of the court to annul the law. Thus, in *Reagan vs. Farmers' Loan & T. Co.,* 154 U. S., 362, 38 L. Ed. 1014, 4 Inters. Com. Rep. 560, 14 Sup. Ct. Rep. 1047, where the property was worth more than its capitalization, and upon the admitted facts, the rates prescribed would not pay one-half the interest on the bonded debt; in *Covington & L. Turnp. Road Co. vs. Sandford,* 164 U. S., 578, 41 L. Ed. 560, 17 Sup. Ct. Rep. 198, where the rates prescribed would not even pay operating expenses; in *Smyth vs. Ames,* 169 U. S., 466, 42 L. Ed. 819, 18 Sup. Ct. Rep. 418, where the rates prescribed left substantially nothing over operating expenses and cost of service; and in *Ex Parte Young, supra,* where on the aspect of the case which was before the court, it was not disputed that the rates prescribed were in fact confiscatory, injunctions were severally sustained. But the case before

us is not a case of this kind. Upon any aspect of the evidence the company is certain to obtain a substantial net revenue under the operation of the ordinance. The net income, in any event, would be substantially 6 per cent, or 4 per cent after an allowance of 2 per cent for depreciation. See *Stanislaus County vs. San Joaquin & K. River Canal & Irrigation Co.*, 192 U. S., 201, 48 L. Ed. 406, 24 Sup. Ct. Rep. 241. We cannot know clearly that the revenue would not exceed that return. We do not feel called upon to determine whether a demonstrated reduction of income to that point would or would not amount to confiscation. Where the case rests, as it does here, not upon observation of the actual operation under the ordinance, but upon speculations as to its effects based upon the operations of a prior fiscal year, we will not guess whether the substantial return certain to be earned would lack something of the return which would save the effect of the ordinance from confiscation. It is enough that the whole case leaves us in great doubt. The valuation of the property was an estimate and is greatly disputed. The expense account was not agreed upon. The ordinance had not actually been put into operation; the inferences were based upon the operations of the preceding year; and the conclusion of the court below rested upon that most unsatisfactory evidence, the testimony of expert witnesses employed by the parties. The city authorities acted in good faith, and they tried, without success, to obtain from the company a statement of its property, capitalization, and earnings.

"The courts, in clear cases, ought not to hesitate to arrest the operation of a confiscatory law, but they ought to refrain from interfering in cases of any other kind."

In *Wilcox vs. Consolidated Gas Co.*, 212 U. S., 19, the court says:

"The question arising is as to the validity of the acts limiting the rates for gas to the prices therein stated. The rule by which to determine the question is pretty well established in this court. *The rates must be plainly unreasonable to the extent that their enforcement would be equivalent to the taking of property for public use without such compensation as, under the circumstances, is just both to the owner and the public.*"

In *Railroad Commission of Louisiana vs. Cumberland Telephone & Telegraph Company*, 212 U. S., 414, it is stated:

"The presumption in favor of the correctness of telephone rates established by a state commission obtains, although the data upon which the commission acted may have been insufficient, so long as the rates adopted were not based entirely upon arbitrary conjecture."

Lincoln Gas & Electric Co. vs. City of Lincoln, 182 Fed., 926.

Des Moines Water Co. vs. City of Des Moines, 192 ~~206~~ Fed., ~~637~~. 193.

Shepherd vs. Northern Pac., 184 Fed., 765.

IV.

The burden being upon the appellant to establish every fact necessary to a finding that the rate fixed if put in operation would result in confiscation before the court would be justified in holding the ordinance in question invalid because confiscatory and in violation of the Constitution the proof, like in cases of fraud or mistake in the execution of instruments, must be clear, convincing and satisfactory.

Bouvier defines "clear" to mean: "free from indistinctness or uncertainty, easily understood, plain."

The same author defines "satisfactory evidence" to be:

> "That which is sufficient to induce a belief that the thing is true."

"Satisfactory evidence" is defined in *Words and Phrases,* as:

> "Satisfactory evidence which is sometimes called sufficient evidence, means that amount of proof which ordinarily satisfies an unprejudiced mind beyond a reasonable doubt." Citing—
>
> *Thayer vs. Boyle,* 30 Me., 475-481;
>
> *West vs. West,* 90 Iowa 41; 57 N. W., 639;
>
> *White vs. C. M. & St. Paul Ry. Co.,* 47 N. W., 146.

Richmond S. D. R. Co. vs. Trummel, 53 Fed. 196, in this case the court quotes from 1st Greenleaf on Evidence, section 2, as follows:

> "By satisfactory evidence, which is sometimes called sufficient evidence, is intended that amount of proof which ordinarily satisfies an unprejudiced mind beyond reasonable doubt, the circumstances which will amount to this degree of proof can never be previously defined, the only legal test of which they are susceptibe is their sufficiency to satisfy the mind and conscience of a common man, and so to convince him that he would venture to act upon that conviction in matters of the highest concern and importance to his own interest."
>
> 2 Starkie, Ev. 512.

"Satisfactory or sufficient evidence is that amount or weight of evidence which is adapted to convince a reasonable mind."

U. S. vs. Lee Uuen, 118 Fed., 442-457.

Webster defines the word "satisfy" to mean:

"Giving or producing satisfaction, especially relieving the mind from doubt or uncertainty and enabling it to rest with confidence."

Cadman vs. Peters, 118 U. S., 73.

Lalone vs. U. S., 164 U. S., 255, where the court says:

"In all proceedings instituted to recover moneys or to set aside and annul deeds or contracts or other instruments in writing on the ground of alleged fraud the rule is of long standing and is of universal application that the evidence tending to prove fraud and upon which to found a decree must be *clear* and *satisfactory*. A mere preponderance of evidence, which at the same time is vague or ambiguous, is not sufficient to warrant a finding of fraud. * * * The trial court * * * only went so far as to say that on the whole it was satisfied that the government had a *preponderance* of evidence that the pension was obtained fraudulently, etc. This mere preponderance is not sufficient in such a case."

Howland vs. Blake, 97 U. S., 624, where it is said:

"The burden rests upon the moving party of overcoming the strong presumption arising from the terms of a written instrument. If the proofs are doubtful and unsatisfactory, if there is a failure to overcome this presumption by testimony entirely plain and convincing beyond reasonable controversy the writing will be held to express correctly the in-

tention of the parties. A judgment of the court, a deliberate deed of writing, are of too much solemnity to be brushed away by loose and inconclusive evidence, (citing Story's Eq. Jurisp. 152). In this case the evidence falls far short of affording this satisfactory conviction. It it not necessary to say that the complainant's claim is not made out, or that such claim is overthrown by the evidence of the defendants. We are all, however, of the opinion that the presumption of the deeds is not overcome by satisfactory and convincing proofs. * * * There is undoubtedly evidence produced by the complainant to sustain his claim; but after a careful perusal of it, we are by no means satisfied that it is of the character and extent required by the principles above laid down."

In *United States vs. American Bell Telephone Co.*, 167 U. S., 223, where Justice Brewer, speaking for the court, says:

> "When it is proposed to set aside, to annul, or to correct a written instrument for fraud or mistake in the execution of the instrument itself, the testimony on which this is done must be *clear, unequivocal, and convincing, and that it cannot be done upon a bare preponderance of evidence* which leaves the issue in doubt. If the proposition thus laid down in the cases cited, is sound in regard to the ordinary contracts of private individuals, how much more should it be observed where the attempt is to annul the grants, the patents, and other solemn evidences of title emanating from the government of the United States under its official seal."

In the Knoxville water case Justice Moody in the opinion, says:

> "There can be at this day no doubt on the one hand that the courts on constitutional ground may exercise the power of refusing to enforce legislation,

nor on the other hand, that that power ought to be exercised only in the *clearest* cases. The constitutional invalidity should be manifest and where that invalidity rests upon disputed questions of fact the invalidating facts must be proved to the *satisfaction* of the court."

Again he says:

"The jurisdiction which is invoked here ought, as has been said, to be exercised only in the *clearest* cases."

Knoxville vs. Knoxville Water Co., supra.

In *San Diego Land & Town Company vs. National City*, the court lays down the rule thus:

"Judicial interference should never occur unless the case presents *clearly and beyond all doubt* such a flagrant attack upon the rights of property under the guide of regulations as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for the public use."

In *Wilcox vs. Consolidated Gas Company*, Justice Peckham, at page 41, says:

"The case must be a *clear* one before the courts ought to be asked to interfere with state legislation upon the subject of rates, especially before there has been any actual experience of the practical result of such rates."

Wilcox vs. Consolidated Gas Co., supra;

Corbitt vs. Smith, 7 Iowa, 60;

Langer vs. Merservey, 80 Iowa, 158;

Gardner vs. Weston, 18 Iowa, 535;

McMillan vs. Bissell, 63 Mich., 66; 29 N. W., 737;

Sloan vs. Baker, 34 Minn., 491; 26 N. W., 730;

Milner vs. Hess, 47 Ill., 170;

Kent vs. Lasley, 24 Wis., 654;

Henry vs. Hotaling, 41 Cal., 422;

Bigler vs. Jack, 114 Iowa, 667;

Betts vs. Betts, 132 Iowa, 72;

Bradford vs. Helsell, 130 N. W., 908.

In the Betts case Justice Weaver lays down what may be said to be the established rule in this state, when he says:

> "To deprive a deed which is absolute in form of its character as a full and effective conveyance, and to convert it into a security requires something more than a doubtful showing or an uncertain preponderance of the evidence. We must start with the presumption that the instrument is what it purports to be; and although the presumption is not conclusive, it is to be overcome only by *proof* which is reasonably *clear* and *satisfactory.*"

Betts vs. Betts, supra.

In the Bradford case, Justice Sherwin says:

> "A deed purporting to convey absolute title will not be held to be a mortgage only unless the evidence is so *clear and satisfactory as to leave no doubt* that the real intention of the parties was to execute a mortgage."

Bradford vs. Helsell, supra.

The sum of all of which is that in both State and Federal courts to establish a fact by proof that is clear, satisfactory and convincing means nothing more nor less than that the proof must be free from doubt, or in other words, that in cases such as we have here the complainant is bound to put the question of the confiscatory effect of the ordinance beyond all reasonable doubt.

V.

Even if it should be found that the ordinance in question fixes the rate so low that it will return to the appellant company only the lowest current rate of interest, the rate should not be held to be unreasonable.

San Diego W. Co. vs. City of San Diego, supra;

People vs. Budd, 117 N. Y., 125; 15 Amr. St. Rep., 640; 22 N. E., 670;

Covington vs. Farmer, etc., 154 U. S., 412;

Turnpike Co. vs. Sandford, 164 U. S., 578; at pages 591-595;

Fairhaven & W. R. Co. vs. New Haven, 203 U. S., 379.

In *Cedar Rapids Water Company vs. Cedar Rapids, supra*, the court says:

> "We shall not attempt to go into any minute statement or analysis of the figures and computations relied upon by counsel. Some of the items by which plaintiff increases the alleged value of the works and reduces the showing of net earnings, as well as other items by which the defendant decreases the former and increases the latter, we think are unwarranted. The testimony, when taken as a whole, and considered in the light of all the proved and admitted circumstances, indicates the present fair value of the company's property to be some-

where from $400,000 to $500,000. The total earnings of the works, as charged upon plaintiff's books, for the year preceding the trial in the district court, were, in round numbers, $59,000, subject, however, to some discounts for advance payments. Of this income about one-third is charged to the city, and is not affected by the ordinance in controversy. The other two-thirds are collected from private consumers, and the charges for such service are reduced by the ordinance in varying proportions. Just the extent which this reduction will affect the company's earnings it is impossible to prove or predict with certainty, but we see no reason to believe that the total revenue, after making all due allowance for discounts, will be reduced below $50,000. The operating expenses charged for the year preceding the trial (being largely in excess of the average in its experience) were $23,000, or, including taxes, $28,000. On this basis the net earnings are five and one-half per cent on a valuation of $400,000 or four and two-fifths per cent on a valuation of $500,000, or six and one-half per cent on the total amount of capital stock and bonds. Stated otherwise, this will enable the company to pay its interest charge of $7,500, make a dividend of five per cent on its capital stock (including stock issued as dividends), and leave a margin of over $3,000 for contingencies. This estimate of earnings may be very materially reduced, or the estimate of the value of the plant may be very materially increased, before the court will be justified in saying that the plaintiff's property is being exposed to destruction or confiscation by an unprofitable schedule of rates."

In *Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, supra,* Judge Ladd, speaking for the court, says:

"The expense involved in the manufacture and sale of gas in 1907, including depreciation then, was $70,217.54. This deducted from the probable receipts leaves a net profit for the year of $22,553.56.

This is $1,153.56 above 8 per cent on the cost as alleged by the company. It is $1,553.36 in excess of 7 per cent if the plant be estimated at the valuation of $300,000, or a like sum above 6 per cent if it is worth $350,000. If to these several margins be added the difference in the rates mentioned and that paid on the $75,000 of bonded indebtedness, the first of these will be increased by $2,250, the second by $1,500, and the third by $750. In other words, if the interest on the money borrowed be deducted from the profits, there will remain $18,803.56 net income realized on a net investment of $192,500 or on a net value of $225,000 to $275,000 or a return of 7 or 8 per cent per annum on the value of the plant over the incumbrance. It may be that the margin is not large in view of the contingency of increased cost of collections and the risks incident to all enterprises of this kind, but we are not fixing the rates. This is purely a legislative function. The court's duty ends when it has found that the rates are not so low as to be clearly confiscatory in character.

* * * * * * * * *

"What compensation will be reasonable is a question of fact to be determined in the light of the evidence in each particular case. No court of last resort has undertaken to say what per cent on the value such an investment should yield its owners in all cases. In *Cedar Rapids Water Co. vs. Cedar Rapids,* 118 Iowa, 234-263; 91 N. W., 1081-1091, the court said: 'The net earnings upon this showing, if not large are substantial. The court cannot undertake to guarantee the company any fixed or certain return upon its investment. The exercise of such a power would work an utter destruction of the legislative right to regulate rates of water companies and other corporations operating works of public utility. We think the decisions have already gone to the verge of safety in nullifying legislative acts of this character; and to go farther, and say that

the courts will not only preserve property from confiscation and destruction by legislative power, but will also assure to its owners a definite and fixed rate of profit upon their investment, would be an act of judicial usurpation.' In that case the value of the plant was estimated from $400,000 to $500,000, and rates yielding an income of 5½ per cent on the former sum or 4½ per cent on the latter were held not to be confiscatory; the court remarking that the 'estimate of earnings may be very materially reduced, or the estimate of the value of the plant be very materially increased before the court will be justified in saying that plaintiff's property is being exposed to destruction or confiscation by an unprofitable schedule of rates.' In *Mayor, etc., of City of Knoxville vs. Knoxville Water Co.*, 212 U. S., 1, 29, Sup. Ct. 148, 53 L. Ed.—, the court, after reviewing former opinions, concluded that: 'Under any aspect of the evidence the company is certain to obtain a substantial net revenue under the operation of the ordinance. The net income, in any event, would be substantially 6 per cent, or 4 per cent after an allowance of 2 per cent for depreciation. See *Stanislaus County vs. San Joaquin, etc., Irrigation Co.*, 192 U. S., 201, 24 Sup. Ct. 241, 48 L. Ed. 406. We cannot know clearly that the revenue would not much exceed that return. We do not feel called upon to determine whether a demonstrated reduction of income to that point would or would not amount to confiscation. Where the rate rests, as it does here, not upon observation of the actual operation under the ordinance, but upon speculation as to its effect, based upon the operations of a prior fiscal year, we will not guess whether the substantial return certain to be earned would lack something of the return which would save the effect of the ordinance from consideration. It is enough that the whole case leaves us in grave doubt.' In *Stanislaus County vs. Irrigation Company*, cited, it was remarked concerning an irrigation canal that: 'Much of the capital was invested between 20 and

30 years ago, and to be able still to realize 6 per cent upon the money originally invested is more than most people are able to accomplish in an ordinary investment and more than is necessary in order to give just compensation for property at the time it is used for the public purpose originally intended.' In *Wilson vs. Consolidated Gas Company,* 212 U. S., 19, 29 Sup. Ct., 192, 53 L. Ed. ——, the court, after observing that 'there is no particular rate of compensation which must in all cases and in all parts of the country be regarded as sufficient for capital invested,' concurred in the finding of the trial court, that, in view of the facts proven, 'complainant is entitled to 6 per cent on the fair value of its property devoted to public use.' ''

Lincoln Gas & Electric Co. vs. City of Lincoln, supra:

In this case it was held that 5.2 per cent return would prevent the finding that the rate was confiscatory.

Shepherd vs. Northern Pacific, 184 Fed., 765; it is here held by Judge Sanborn that railroad companies operating in Minnesota and the Northwest subject to all the hazards of fire, wind and flood, failure of crops, financial panics, strikes of organized labor, and sharp competition, 7 per cent is a fair rate.

In Knoxville Water case, above referred to, 4 per cent after an allowance of 2 per cent for depreciation, would save the ordinance from being held void and confiscatory.

In *Stanislaus County vs. Irrigation Co., supra,* 6 per cent was held to be a fair rate.

In *Cumberland Tel. & Tel. Company vs. City of Louisville, supra,* after citing numerous hazards, a return of 7 per cent is held to be sufficient to avoid the charge of confiscation.

And in this same case on appeal to the Supreme Court

of the United States under the title, *City of Louisville, Applnt., vs. Cumberland Tel. & Tel. Co.,* the court declines to hold that to reduce the Telephone Company's return to 6 per cent would or would not be confiscatory.

In *St. Louis & S. F. R. Co. vs. Hadley,* 155 Fed., 220, Judge McPherson says 6 per cent return is sufficient.

In *Louisville & N. R. Co. vs. Siler, et al.,* 186 Fed., 176, at page 189, the court says:

> "What may be a reasonable rate or return, as a matter of legal policy, having due regard to encouraging the investment of capital in railroad enterprises is one question; but when the inquiry becomes a judicial problem, to be considered as involving the taking or not taking of the railroad's property, it is essentially a different question. The lawmakers, dealing with the legislative problem, might think that in successful business years a maximum return, for example, of 10 per cent upon the investment would be reasonable. The courts, dealing with the judicial problem, are affected by locality and attending risks and circumstances involved in the particular case, and apparently insist only upon a *minimum return* to the owner of property devoted to public use which will be reasonable (say, for example, 6 per cent) upon the properly computed investment. An illustration of this rule may be found in the announcement made by Justice Peckham in *Wilcox vs. Consolidated Gas Co.,* 212 U. S., 19-20, 29, Sup. Ct., 192, 53 L. Ed., 382."

VI.

In finding the value of appellant's plant upon which it is entitled to earn a fair return, the going value, franchise or good will is not to be considered.

Cedar Rapids Water Co. vs. Cedar Rapids, supra, at page 262, it is said:

"It is proper here to say that in reaching these conclusions we have not attempted any estimate of 'going value' of the water works as a distinct and severable item in the calculation. By 'going value' we understand is meant that value which arises from having an established 'going' business. While not the exact equivalent of 'good will' as applied to ordinary business, it is of a somewhat similar nature, and attaches to the business, rather than to the property employed in such business. The fact that the business is established is, of course, a material fact in ascertaining the value of the plant, and especially is this true where the property is being estimated for the purpose of sale or condemnation; but as a basis for estimating profits its significance is less apparent. The merchant who sells an established business may properly place a high value on the good will which he relinquishes to the buyer; but so long as he continues in the enjoyment of the business he has created he does not add the value of the good will to his capital stock in estimating the percentage of his annual profits. So, also, we may say we see no reason why plaintiff, in addition to operating expenses, repairs and other ordinary charges, should be allowed to reduce the apparent profits by deductions for a restoration or rebuilding fund. The setting aside of such a fund may be good business policy, and if the company sees fit to devote a portion of its profits to that purpose (though, as we understand the record, no such fund has yet been created), no one can complain; but it is in no sense a charge affecting the net earnings of the works. To hold otherwise is to say that the public must not only pay the reasonable and fair value of the services rendered, but must, in addition, pay the company the full value of its works every forty years—the average period estimated by plaintiff—for all time to come. We have pursued this subject far enough to demonstrate that, even taking the high estimate of value which plaintiff places upon its property, and its own showing of earnings, there

is nothing in the ordinance sought to be nullified which calls for judicial interference. The net earnings upon this showing, if not large, are substantial. The court cannot undertake to guarantee the company any fixed or certain return upon its investment. The exercise of such a power would work an utter destruction of the legislative right to regulate rates of water companies and other corporations operating works of public utility. We think the decisions have already gone to the verge of safety in nullifying legislative acts of this character; and to go farther, and say that the courts will not only preserve property from confiscation and destruction by legislative power, but will also assure to its owners a definite and fixed rate of profit upon their investment, would be an act of judicial usurpation."

Lincoln Gas & Electric Co. vs. City of Lincoln, supra.

In *Cumberland Telephone & Telegraph Co. vs. City of Louisville*, 187 Fed., 637, at page 647, the court says:

"The finding of the Master as to present value of the plant is the subject of many exceptions by both parties, and before we proceed to the consideration of the question upon the testimony of the witnesses, (which at least appears to be the best way to get at it) we may notice those exceptions of the complainant which call in question the accuracy of his conclusions in excluding several items from his estimate. Those items were: First, what are called 'overhead charges,' which are made up of various items incurred in the organization of the company and its work, the details of which need not be stated, but which it is claimed could not be avoided, and which enter, as is insisted, into the present value of the plant. These charges amounted to $90,000. Second, expenses of securing business, and particularly the value of the franchise, right of way, office furniture,

etc. The value of the franchise, it is claimed, is $80,000. Third, 'Working Capital,' amounting to $33,353.15, and supplies on hand amounting to $18,000. Fourth, the real estate and the improvements thereon of the value of $162,191.42. Fifth, the amount, somewhat indefinitely stated, of the excess in value of the toll lines over the $112,866.12 fixed upon them by the special master. Sixth, it is insisted that $50,000 should have been included in the estimate as a distinct and additional enhancement of the value of the plant because of the fact that the company is a going concern. In valuing property of the character of that involved here it would indeed be looking only at 'its bare bones' not to take into consideration the fact that the company is a going concern. *That fact, however, though possibly somewhat unconsciously to themselves,* must necessarily, we think, have been taken into account by the witnesses who testified as to the values."

Again the court says:

"'Overhead charges' consist of expenses much of which were incurred long ago. Probably those expenses may have aided very materially in increasing the present value of the plant. That present value we must ascertain, but it does not follow that 'overhead charges' as a separate item should be included as such. It seems to us that they are too intangible to be available for that purpose."

City of Omaha vs. Omaha Water Co., 218 U. S., 180.

City of Louisville, Appellant, vs. Cumberland Tel. & Tel. Co., supra.

In *Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, supra,* at page 969, it is said:

"Also the sum of $100,000 was included by these witnesses as enhancement of value by reason of be-

ing a 'going concern.' As previously intimated, the value of the plant is to be estimated in its entirety, rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value. Advantages have accrued through the sagacity of its management as contended by appellant. So, too, there are the inevitable mistakes which would not be likely in the construction of a new plant; but to put a new plant in profitable operation time would be required, and aside from the intangible element of good will, the fact that the plant is in successful operation constitutes an element of value. As said, the value of the system as completed, earning a present income, is the criterion. In so far as influenced by income, however, the computation necessarily must be made on the basis of reasonable charges, for whatever is exacted for a public service in excess of this is to be regarded as unlawful. Save as above indicated, the element of value designated a 'going concern' is but another name for 'good will,' which is not to be taken into account in a case like this, where the company is granted a monopoly."

In re Investigation of Advances in Rates by Carriers in Western Trunk Line, Trans Missouri, and Illinois Freight Committee Territories, 20 I. C. C., 347, Commissioner Lane states:

"The trend of the highest judicial opinion would indicate that we should accept neither the cost of reproduction, upon which the Burlington's estimate of value is made, nor the capitalization which the Santa Fe accepts as approximate value, nor the prices of stock and bonds in the market, nor yet the original investment alone, as the test of present value for purposes of rate regulation. Perhaps the nearest approximation to the fair standard is that of bona fide investment—the sacrifice made by the owners of the property—considering as part of the

investment any shortage or return that there may be in the early years of the enterprise. Upon this, taking the life history of the road through a number of years, its promoters are entitled to a reasonable return. This, however, manifestly is limited; for a return should not be given upon wastefulness, mismanagement, or poor judgment, and always there is present the restriction that no more than a reasonable rate shall be charged."

In *Smyth vs. Ames*, 169 U. S., 466, at page 546, Justice Harlan says:

"We hold, however, that the basis of all calculations as to reasonableness of rates to be charged by a corporation maintaining a highway under legislative sanction must be the fair value of the property being used by it for the convenience of the public. And, in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property."

San Diego W. Co. vs. City of San Diego, supra, at pp. 636-7.

Knoxville vs. Knoxville Water Co., supra, at pages 9 and 10, the court says:

"The first fact essential to the conclusion of the court below is the valuation of the property devoted to the public uses, upon which the company is entitled to earn a return. That valuation ($608,000)

must now be considered. It was made up by adding to the appraisement, in minute detail of all the tangible property, the sum of $10,000 for 'organization, promotion,' etc., and $60,000 for 'going concern.' The latter sum we understand to be an expression of the added value of the plant as a whole over the sum of the values of the component parts, which is attached to it because it is in active and successful operation and earning a return. We express no opinion as to the propriety of including these two items in the valuation of the plant, for the purpose for which it is valued in this case, but leave that question to be considered when it necessarily arises."

* * * * * * * * *

"The cost of reproduction is not always a fair measure of the present value of a plant which has been in use for many years. The items composing the plant depreciate in value from year to year in a varying degree. Some pieces of property, like real estate for instance, depreciate not at all, and sometimes, on the other hand, appreciate in value. But the reservoirs, the mains, the service pipes, structures upon real estate, standpipes, pumps, boilers, meters, tools and appliances of every kind begin to depreciate with more or less rapidity from the moment of their first use. It is not easy to fix at any given time the amount of depreciation of a plant whose component parts are of different ages, with different expectations of life. But it is clear that some substantial allowance for depreciation ought to have been made in this case. The officers of the company, *alio intuitu*, estimated what they called 'incomplete depreciation' of this plant (which we understand to be the depreciation of the surviving parts of it still in use) at $77,000, which is 14 per cent of the master's appraisement of the tangible property. A witness called by the city placed the reproduction value of the tangible property at $363,-

000, and estimated the allowance that should be made for depreciation at $118,000, or 32 per cent. In the view we take of the case it is not necessary that we should undertake the difficult task of determining exactly how much the master's valuation of the tangible property ought to have been diminished by the depreciation which that property had undergone. It is enough to say that there should have been a considerable diminution, sufficient, at least, to raise the net income found by the court above 6 per cent upon the whole valuation thus diminished. If, for instance, the master's valuation should be diminished by $50,000, allowed for depreciation, the net earnings found by him would show a return of substantially 6.5 per cent."

VII.

Increased earnings because of the reduced rate is properly considered in determining whether the rate complained of is reasonable or unreasonable.

In *Chicago & G. T. Ry. Co. vs. Wellman*, 143 U. S., 339, at page 343, the court says:

> "Can it be under these circumstances, that the court erred in peremptorily refusing to instruct the jury that an act fixing a maximum rate at two cents per mile is unconstitutional? Is the validity of a law of this nature dependent upon the opinion of two witnesses, however well qualified to testify? Must court and jury accept their opinions as a finality? Must it be declared, as a matter of law, that a reduction of rates necessarily diminishes income? May it not be possible—indeed does not all experience suggest the probability—that a reduction of rates will increase the amount of business, and, therefore, the earnings? At any rate, must the court assume that it has no such effect; and ignoring all other considerations, hold as a matter of law,

that a reduction of rates necessarily diminishes the earnings."

In *Chicago Union Traction Co. vs. City of Chicago*, 65 N. E., 451, at page 470, the court says:

> "If there was a reduction in the rate of fare which appellant was entitled to charge, by the requirement as to the giving of transfers, as set out in section 1723, it was incumbent upon the appellant to prove that such reduction has so diminished its profits so as to make the requirement unreasonable. It is possible that a reduction of rates might increase the amount of business and earnings of the appellant, instead of decreasing the same. The charge of a lower rate will often increase the number of passengers traveling upon the railroad to such an extent as to make the profits equal, if not superior, to those earned when a higher rate of fare is charged."

In *Chicago Union Traction Co. vs. City of Chicago*, 65 N. E., 470, at page 492, the court says:

> "If the original cost of the roads of the suburban companies be compared with their present value, the Consolidated Company, if it is to be considered as a separate company, has made a large profit, instead of a loss. It may be said here, as was said in the other case of *Chicago Union Traction Company vs. City of Chicago*, 199 Ill., 484, 65, N. E., 451, that a reduction of rates might have the effect of increasing the amount of business and earnings of the appellant, instead of decreasing the same. *A public service corporation is entitled, at the very most only to a profit on the actual investment.* (*Cotting vs. Stock Yard Company, supra*); and here the Consolidated Traction Company has made a profit on its actual investment."

Reagan vs. Farmers' L. & T. Co., 154 U. S., 400.

Railroad Commission of Alabama vs. Central of Georgia Ry. Co., 170 Fed., 225, at page 234, where it is said:

"The opinion in that case is very instructive as to the strict rule of evidence applicable to such cases, and the importance the court places on a test by actual trial before coming to the conclusion that an act in question in confiscatory. It appears from the statement of the case made by Mr. Justice Peckham, who delivered the opinion, that a preliminary injunction was issued by the circuit court, the cause referred to a master, who reported in favor of the complainant, and the circuit court confirmed the report. After such elaborate investigation, the Supreme Court indicated in its opinion the importance of a practical test by an actual trial, of the statute. It would clearly have been the better course in that case for the Circuit Court to have refused the preliminary injunction and let the test be made at first.

"The case of *Mayor and Aldermen of the City of Knoxville vs. Knoxville Water Company* (decided January 4, 1909) 29 Sup. Ct. 148, 53 L. Ed. —, was brought by a bill to enjoin an ordinance fixing maximum rates to be charged by the company. It was alleged that the ordinance was confiscatory, the rates being fixed too low. The complainant, after reference to a master, report, and confirmation, was granted relief by the lower court, and the injunction was made permanent. The court, speaking by Mr. Justice Moody, quoting earlier cases, said:

" 'In the first place, no injunction ought to be granted unless in a case reasonably free from doubt. We think such rule is, and will be followed by all the judges of the federal courts. * * * Judicial interference should never occur unless the case pre-

sents, clearly and beyond all doubt, such a flagrant attack upon the rights of property under the guise of regulations as to compel the court to say that the rates prescribed will necessarily have the effect to deny just compensation for private property taken for the public use.'

"The court laid strees on the fact that the case did not rest on 'observation of the actual operation under the ordinance.' "

Southern Pac. Co., et al., vs. I. C. C., 177 Fed., 963, at p. 969;

Louisville & N. R. Co. vs. Siler, et al., supra.

In *Wilcox vs. Consolidated Gas Company, supra,* at page 51, the court says:

"In this case a slight reduction in the estimated value of the real estate, plants, and mains, as given by the witnesses for complainant, would give a 6 per cent return upon the total value of the property, as above stated. And again, increased consumption at the lower rate might result in increased earnings, as the cost of furnishing the gas would not increase in proportion to the increased amount of gas furnished.

"The elevated railroads in New York, when first built, charged ten cents for each passenger; but when the rate was reduced to 5 cents, it is common knowledge that their receipts were not cut in two, but that, from increased patronage, the earnings increased from year to year, and soon surpassed the highest sum ever received upon the 10-cent rate."

Lincoln Gas & Electric Co. vs. City of Lincoln, 182 Fed. 926, at page 929, it is said:

"It appears from the evidence in this case that complainant's outstanding bonded indebtedness is $1,290,000, and that its stock is $2,500,000. The stock and bonds are each grossly in excess of the value of complainant's plant and grossly in excess of the cost of construction. Complainant's construction account shows that the entire cost of the plant to June 30, 1907, was $603,278.14. The evidence shows that complainant and its predecessor, to obtain money with which to construct the plant, sold its bonds and stock at an enormous discount, and I do not think that, in determining the reasonableness of rates the amount thereof should be considered. While complainant, I think, is entitled to at least 6 per cent upon the money invested, it does not appear that the reduced rate would not yield that sum. It is quite probable that the reduced rate would considerably increase the consumption of gas and thus increase complainant's net profits. The record shows that in June, 1902, complainant voluntarily reduced its rates from approximately $1.50 per thousand to $1.20, and the amount of gas consumed, and net profits resulting, considerably increased. The inquiry in cases of this character is not alone what has complainant theretofore earned, but it is what will be the effect of the ordinance reducing the rate upon the future net earnings of the company, and it devolves upon complainant to show not that the past rates have not produced a reasonable return, but that the rate prescribed by the ordinance will not in the future produce a reasonable return."

VIII.

In determining whether the rate in question constitutes a fair compensation for the use of appellants property, the *reasonable* value of appellants' property necessarily used in its gas business at the time of the

inquiry is to be taken as the foundation of the calculation.

Stanislaus County vs. San. Joaquín Ir. Co., supra;

San Diego L. & T. L. Co vs. N. & T. L. Co., supra;

Freeport W. Co. vs. F., 180 U. S. 600;

Spring Valley W. Co. vs. San Francisco, 124 Fed. 586;

Chicago T. R. Co. vs. City of Chicago, supra;

Souther vs. Glouster, 187 Mass., 555; 73 N. E., 558;

Kennebec W. D. vs. Water Belt, 97 Me., 203; 54 Atl. Rep. 6;

Knoxville vs. Knoxville Water Co., supra;

Wilcox vs. Consolidated Gas Co., supra;

Lincoln Gas & Electric Co. vs. City of Lincoln, supra;

Des Moines Water Co. vs. City of Des Moines, supra;

San Joaquin & Kings River Canal & Irrigation Co., Inc., vs. Stanislaus County, et al., 191 Fed. Rep. 875.

IX.

Where a gas company supplying gas to the inhabitants of a city laid its mains and pipes in unpaved streets, the value of the mains and pipes in estimating the value of the property, in fixing rates, could not be estimated on the basis that it would cost more to place the pipes because the streets had been paved.

Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, supra.

X.

Donations and gifts by managing officers, even when approved by the Board of Directors, of public service corporations are illegal, and the courts will not permit such donations and gifts to swell the operating expenses, and especially not when the effect would be to make a rate fixed by law confiscatory.

McCrory vs. Chambers, 48 Ill. App. 445;

Holt vs Winfield Bank, 25 Fed., 812;

Davis vs. Old Colony Railroad Co., 131 Mass., 258.

XI.

Large and unusual expenditures should be spread over a period of years and not charged up to a single year.

Illinois Central R. R. Co. vs. I. C. C., 206 U. S., 441.

XII.

Exorbitant salaries.

In *Chicago & G. T. R. Co. vs. Wellman, supra,* at page 345, the Court says:

> "A single suggestion in this direction: It is agreed that the defendant's operating expenses for 1888 were $2,404,516.54. Of what do these operating expenses consist? Are they made up partially of extravagant salaries; fifty to one hundred thousand dollars to the president, and in like propor-

tions to subordinate officers? Surely, before the courts are called upon to adjudge an Act of the Legislature fixing the maximum passenger rates for railroad companies to be unconstitutional, on the ground that its enforcement would prevent the stockholders from receiving any dividends on their investments, or the bondholders any interest on their loans, they should be fully advised as to what is done with the receipts and earnings of the company; for if so advised, it might clearly appear that a prudent and honest management would, within the rates prescribed, secure to the bondholders their interest, and to the stockholders reasonable dividends. While the protection of vested rights of property is a supreme duty of the courts, it has not come to this, that the legislative power rests subservient to the discretion of any railroad corporation which may, by exorbitant and unreasonable salaries, or in some other improper way, transfer its earnings into what it is pleased to call 'operating expenses.' ''

XIII.

Depreciation.

In *Knoxville vs Knoxville Water Company*, at pages 13 and 14, the court says:

> ''The company is not bound to see its property gradually waste, without making provision out of earnings for its replacement. It is entitled to see that from earnings the value of the property invested is kept unimpaired, so that, at the end of any given term of years, the original investment remains as it was at the beginning. It is not only the right of the company to make such a provision, but it is its duty to its bond and stockholders, and, in the case of a public service corporation, at least, its plain duty to the public. If a different course were pursued the only method of providing for replacement of property which has ceased to be use-

ful would be the investment of new capital and the issue of new bonds or stocks. This course would lead to a constantly increasing variance between present value and bond and stock capitalization—a tendency which would inevitably lead to disaster either to the stockholders or to the public, or both. If, however, a company fails to perform this plain duty and to exact sufficient returns to keep the investment unimpaired, whether this is the result of unwarranted dividends upon over issues of securities, or of omission to exact proper prices for the output, the fault is its own. When, therefore, a public regulation of its prices comes under question, the true value of the property then employed for the purpose of earning a return cannot be enhanced by a consideration of the errors in management which have been committed in the past.'

Cedar Rapids Gas Light Co. vs. City of Cedar Rapids, supra.

Railroad Commission of Louisiana vs. Cumberland Tel. & Tel. Co., supra, where it is said:

"The burden of showing what part, if any of the depreciation fund accumulated by the telephone company from its receipts, was added to the capital, upon which dividends are to be paid, rests upon the company seeking to enjoin, as confiscatory and unreasonable, the enforcement of rates established by a state commission.

"No part of the depreciation fund accumulated by a telephone company from its receipts can be added to the capital, upon which the company is entitled to a fair return from rates established by a state commission."

Lincoln Gas & Electric Co. vs. City of Lincoln, supra; p. 928;

Cumberland Tel. & Tel. Co. vs. City of Louisville, supra, p. 646.

ARGUMENT.

I.

DUTY OF THE COUNCIL.

As January 1, 1911 approached the duty to "regulate and fix the rent or rate" that might be charged in the city of Des Moines for furnishing gas was pressing upon the council, and in fact had been for several months prior to that date. The Des Moines Gas Company, as all of the members of the council were aware, was operating under an ordinance which was passed pursuant to an agreement between the city and the gas company, and under which, beginning with 1905, and ending with the 31st day of December, 1910, gas was to be furnished at $1.00 per 1000 c. f., with an arrangement about prompt payment, etc.

As the law is written, no method is required to be followed by the council in ascertaining what would be a fair rate for gas, nor is the council in terms required to make investigation, grant hearings to the gas company, or follow any particular procedure. It appears, however, from the evidence in this case that the council not only made a good faith effort to inform itself fully with respect to the gas business in Des Moines, and other cities, but had been furnished information by the gas company itself upon which it had a right to rely in passing the ordinance complained of, and we assert without hesitation that if the gas company is to be held to the case made by it before the council as it ought, and as we think must be, it will not be necessary for the court to worry through the mass of conflicting claims and statements as to value.

Briefly, what information did the council have to form a basis for intelligent action on gas rates? It had the information gathered by the Mayor (Tr. p. 2803) and Mr. MacVicar (Tr. 2541) as to the numerous other cities in the country where gas is being sold under 90 cents per 1,000 c. f. It had the sworn statement of W. B. Keffer, Assistant Secretary and Treasurer of the Des Moines Gas Company, employed by that company in Des Moines for twenty-six years as indicated in defendant's Exhibit 44, on file with the record, made on the 15th day of February, 1908, that the entire physical value of the gas company's property on that date was $1,002,020, supported by the sworn statement of Mr. Jansen Haines made on the 14th day of March of the same year, as is shown by defendant's Exhibit 1. (Tr. p. 338-339.)

Now, it would seem that unless statements under oath made by the officers of this corporation and in response to the requirements of the taxing laws of the state are to be considered worthless and unreliable, and the truth in such matters not important, that the council had the right to rely upon the valuation of the property as stated by these gentlemen at that time.

In addition to this the council had the information contained in the local manager, Mr. Haines', letters as set out in Exhibit 44, beginning with the letter under date of November 22, 1910. In the letter of November 22, 1910, Mr. Haines gave the gross revenue from the sale of gas for three years, years ending September 30, 1908; September 30, 1909 and September 30, 1910. He also gave the operating expenses including taxes for the same years, made certain deductions for what he claimed would be a reasonable depreciation and then asserted that the net remaining earnings would give the company 8 per cent on $1,739,094, and expressed the thought that

the company's property and assets were largely in excess of that sum, but the court will notice that nowhere in any of his letters does he indicate any other valuation upon which the council was asked to figure out a reasonable return; on the contrary, everything in his letters indicates that the amount stated was what the company wanted the council to believe at that time was the value of the gas company's property. In the Haines letter of November 26, 1910, after again stating that they were getting but 8 per cent upon $1,739,894, and that the value of the plant was in excess of that sum, he says: "*I assume that you (and the council) would be interested in knowing the value of the property and the net revenue received under the present rate, as it is apparent that the question, as to what is a reasonable rate for gas, could only be determined from these facts.*"

All this could mean but one thing, and that is that the $1.00 rate which the gas company was willing to continue was producing a net return of only 8 per cent on the valuation of $1,739,894, and to make this showing it was necessary for Mr. Haines to figure depreciation at 10 per cent of the gross revenue, which is 8 per cent higher than the lowest witness states it, and at least 4 per cent higher than the highest witness for the city fixes the depreciation.

It will be noticed that nowhere in Mr. Haines' letters does he venture to give figures of any other valuation than that above stated. If the officers of the company at that time believed the gas plant was of greater value than that stated it would not have been necessary to bring the earnings down to an 8 per cent return by deducting so large a sum for depreciation, all that would have been necessary would be to state a higher valuation, and in this connection it should be remembered that these letters were written after conference with the

Philadelphia officers of the company, and were based upon memorandum that Mr. Douthirt, Secretary of the company, of Philadelphia, and Mr. Haines of Des Moines, had taken with them to Chicago, and the conclusion is irresistible that Douthirt and Haines had gone over the books of the company and concluded that $1,739,894 would fully cover the company's investment in its Des Moines plant. This becomes all the more evident when it is remembered that this sum about equals the investment as shown by the books, as Mr. Hall states in his report (Tr. p. 3633).

The council then had a right to believe that the company was valuing its property at $1,739,894, and in view of the valuation of $1,002,020 placed upon the plant by Keffer and Haines in the tax statement of 1908, the council had a right to conclude that the valuation claimed was if anything too high. It also had a right to believe that the company would be satisfied with a net return after all possible allowances for expenses, including taxes and depreciation of the sum of $139,191.52, and if by any fair weighing of the evidence in this case it can be found that the rate fixed by the council if put in force, will produce that sum, then, no matter what may be the truth about the numerous other disputed matters in the case, appellant's bill was rightly dismissed.

In making the following computation we deal only with round numbers.

Mr. Haines, in his letter, in stating the gross revenue for the year ending September 30, 1910, as $526,000 plus, indicates that the gas sold amounted to 526,000,000 c. f. At that time under the $1.00 rate the yearly increase for the last two or three years had been about 7 per cent. Mr. Haines, however, in his annual estimate for 1911, indicated that the increase would probably be

10 per cent even under the 1.00 rate. It is therefore not too much to say that the increase under the 90c rate would have been at least 10 per cent, which would have made the sales for 1911, 578,000,000 c. f., which at 90c, would produced $520,200. Mr. Haines gives the average operating expenses, including taxes for the three years ending September 30, 1910, in round numbers at $303,000. If we accept that average as about right for 1911, at the 90c rate with a 10 per cent increase in sales we would have left after deducting the $303,000 from $520,000 gross revenue, $217,000 or $29,000 in excess of the net earnings of $188,000 odd dollars as stated by Mr. Haines in his letter of November 22, and if we take out 10 per cent for depreciation, to-wit; the sum of $57,000 we have left $160,000 or $21,000 more than $139,000 as stated by Haines in his letter as the net earnings for 1910, after taking out operating expenses, taxes and depreciation.

It will at once be suggested by the other side that this is not a fair method of reaching the possible result under the 90c rate. It will be claimed that if the sales of 1910 are to be taken as a basis for the sales of 1911, that then we should also take the operating expenses of that year. We do not proceed that way because it appears, without conflict, in the evidence that as to the sales for 1910 the year was a normal one, the increase over 1909 being about the same as 1909 increase over 1908, but as to operating expenses the year was an abnormal one, that is to say, the difference between the operating expenses for 1908 and 1909 were about $2,000, while the operating expenses for 1910 exceeded the expenses for 1909 in the sum of about $61,000, at any rate, the $21,000 of excess as above computed for 1911 over 1910, together with the items of expense charged during 1910 that should be eliminated will more than

make up for any difference between the actual operation and the average as given by Mr. Haines, the result of all which is, that the council acted not only intelligently and in good faith, but the rate fixed by them will not only not reduce the complainant's net revenues, but is altogether likely to increase them.

Under such circumstances it is the universal rule, both in state and federal courts, that nothing short of an actual trial of the proposed rate will justify the court in interfering to prevent the enforcement of an ordinance of this kind. (See authorities cited in the brief).

Mr. Justice Holmes in San Diego L. Co. lays down the rule which should be applied here when he says:

> "In a case like this we do not feel bound to reexamine and weigh all the evidence, although we have done so, or to proceed according to our independent opinion as to what was proper rates, it is enough if we cannot say that it was impossible for a fair-minded board to come to the result which was reached."

Can the court here say that it was *impossible* for a fair-minded council to come to the result which was reached in this case.

In the Cumberland Telephone & Telegraph Company case, supra, we quote from the brief:

> "The presumption in favor of the correctness of telephone rates established by the state commission obtains, although the data upon which the commission acted may have been insufficient, so long as the rates adopted were not based entirely upon arbitrary conjecture."

In *Tilley vs. Railroad Company*, Justice Woods, says:

"The officers of the railroad company declare that the rate fixed by the commission will so reduce its income that it will not suffice to pay the running expenses of the road and interest on the bonded debt, leaving nothing for dividends to stockholders. The railroad commissioners assert that their schedule was formed to produce 8 per cent income on the value of the road, after paying costs of maintenance and running expenses. Which view is the correct one, it is impossible to decide. *There is, however, a conclusive way and it seems to me the only one by which the controversy can be settled, and that is by experiment. A reduction of charges is not always followed by a reduction of either gross or net income.* It can soon be settled which is right, the railroad company's officers or the railroad commission, in their view of the effect of the rates, by allowing the tariff to go into operation."

In *Capital City Gas Light Company vs. City of Des Moines, supra,* Judge Woolson states the matter thus:

"It is insisted by defendant that the reduction in the price of gas will work a corresponding and large increase in the amount consumed, resulting in increase of net profits as well. That some increase in consumption will follow reduction in price, plaintiff admits, but insists that there is no basis for believing such increase will be large, or that the net profits will increase at all. What will be the amount or per cent of increase in consumption, and whether any increase in profits will result from reduction of rates is and must at present be an uncertain matter. Must it be declared as a matter of law that a reduction of rates necessarily diminishes income? May it not be possible, indeed, does not all experience suggest the probability that a reduction of rates will increase the amount of business, and therefore the earnings. It cannot be determined in advance what the effect in reduction of rates will be. Ofttimes it increases business, and who can

> say that it will not in the present case so increase the value of business as to make it remunerative. *After all, there can be but one certain method of ascertaining the effect of reduction of rates, and that is the test of experience.*"

That Judge Woolson was right in the suggestion that a reduction in the price would not necessarily result in a reduction in the revenue it is only necessary to refer to Mr. Hall's report, which is uncontradicted and undisputed, and in which he shows a very large increase in the output of gas following reductions in price beginning at about the time or just immediately after Judge Woolson wrote the opinion in the foregoing case.

In *St. Louis vs. Hadley*, Judge McPherson, in his opinion, makes use of the following vigorous language:

> "One class of people claim that with the 2c fare travel will soon increase so as to make it remunerative; others deny this. How can these questions be determined? Is it not at present all speculation and guess work? Of what value will be the testimony of an ordinary business man, testifying by way of opinion, and of what value will be the testimony of railway experts giving opinions and illustrating his opinions by the use of many figures? Experience over a resonable period of time ought to, and no doubt will settle these matters."

How well this language might be applied to the situation here. Who knows to what extent the demand for gas may be increased in this city in the next few years. Who has attempted in this case, expert or non-expert, to say just what would result if the gas company was to obey the ordinance and reduce its price to 90c, certainly no one on appellant's side. The whole matter is left to speculation and guess work, except in so far as the testimony furnished by Mr. Haines, and the testi-

mony of Professors Bemis and Marks may tend to show that at least there will be no reduction in the revenues of the company.

Counsel for the appellant in an effort to show that there is no presumption in favor of the rate fixed by the city council cites *Knoxville vs. Knoxville Water Company, supra; Penn. R. R. Co. vs. Penna. Co.,* 15 L. R. A., (N. S.) 108, 68 Atl. 676, and *San Diego Water Co. vs. San Diego,* 50 Pac., 633-639.

The Knoxville case not only does not sustain counsel's position, but is in complete harmony with the holdings above referred to.

The Pennsylvania case is not in point. In the first place the constitutional provision involved in that case was entirely different from the one claimed to have been violated here, but even if that were not so, the case is not in harmony with the decisions of this court, and was rendered by a divided court, three of the judges dissenting.

In the San Diego Water Company case the manner in which the council reached its conclusion amounted to a fraud, and all that that court held in this respect was that the unfairness and bad faith of the council was sufficient to overcome the presumption of the correctness of its decision. At any rate, whatever of authority may be claimed for the case is outweighed by the decision of this court in *San Diego Land & Town Company vs. National City,* where the court said:

> "There is no ground to say that the appellant did not in fact have, or was denied an opportunity to be heard upon the question of rates. On the contrary it appears in evidence that the subject of rates was considered in conferences between the local authorities and the officers of the appellant. Those officers may not have been present at the final meet-

ing of the city board when the ordinance complained of was passed. They were not entitled of right to be present at that particular meeting. They were heard, and there is nothing to justify the conclusion that the case of the appellant was not fully considered before the ordinance was passed."

How nicely this language fits into the present case. Here the subject of rates was considered in conferences between the local authorities and the officers of the company. Not only that, but the company presented its claims to the council in writing, not only once, but several times. The company was not asking for further opportunity to present what it claimed to be the situation, but was simply asking the council to examine its books and accounts for the purpose of corroborating what it had stated in writing, and we might say here in passing, that whatever importance the company may have attached at that time to an examination of its books, accounts and records, it has during most of the trial of this case repudiated the idea that an examination of the books would help in the slightest degree to settle any of the questions involved in making rates. The company not only rested its case without introducing any of its books and records, but resisted every effort upon the part of the defendant to get clearly before the master the transactions of the complainant as shown by its books and records, and we reiterate, that in all the books no statute or ordinance has been set aside upon such a showing as has been made here.

II.

RETURN ON MONEY IN DES MOINES.

The evidence upon the question of the value of the use of money in Des Moines ranged from 3½ to 8 per cent,

and that investors in bank stock, manufacturing enterprises, such as Kratzer Carriage Company and the Des Moines Casket Company, expected a return of from 10 to 30 per cent. That stock in gas and other public utility companies earning 6 per cent were quoted on the market at par and over. No evidence whatever was offered by the appellants showing what return was being received on money invested in public utilities in Des Moines.

Upon this state of the record it would be little short of a miscarriage of justice if it should be determined in this case that a return of 6 per cent upon the investment of the appellant would be confiscatory, and especially is this true when it is remembered that in the recent gas case at Lincoln, Nebraska, a return of 5.2 per cent was held sufficient to save the rate fixed from being confiscatory, and in the Shepard-Northern Pacific case 7 per cent; in the Knoxville water case, 4 per cent with an allowance of 2 per cent for depreciation; in the Stanislaus County-Irrigation Company case, 6 per cent; in the Cumberland Telephone and Telegraph Company case, 7 per cent; and finally in the Missouri rate cases, decided by Judge McPherson, 6 per cent was held to be a fair return on the value of the railroad property involved in that controversy, and this was based upon the decision in the Wilcox gas case.

Two of the above decisions were rendered by this Court, and we confidently assert that it has never been decided anywhere in a case involving the manufacture and distribution of gas that a rate that would return 6 per cent upon either the fair value of the property or the investment of the owner in the property was confiscatory.

In the Cumberland case, in a well considered opinion it is said, that in rate cases all that is necessary to save

the statute or ordinance from the charge that it is confiscatory is that the rate will produce a return that will equal at least the minimum rate of interest in the locality where the plant is operated.

In the Stanislaus case, 192 U. S., at page 216, Justice Peckman says:

> "Much of the capital was invested between 20 and 30 years ago, and to be able still to realize 6 per cent upon the money originally invested is more than most people are able to accomplish in any ordinary *investment, and more than is necessary in order to give just compensation for property at the time it is used for the public purpose originally intended.*"

This opinion of Justice Peckham is a complete answer to counsel's argument, and fits this Des Moines situation, as some dealers would say, "like the paper on the wall." We have never questioned for a moment that many of the courts in dealing with the question of rates use the term "a just return on the fair value of the property."

The trouble with counsel, we fear, is that he fails to appreciate just was the court means by "property" and "fair value." A careful examination of the authorities will convince the most skeptical that in rate cases involving such a public utility as we are dealing with here where confiscation is charged, the *fair value* of the property never exceeds the value of the owner's investment in the property. (See Divs. IV and V of Brief.)

III.

PAVING.

Upon this question it ought to be enough to say that so far as we have been able to find this court has never

allowed this item as a separate value to be added to the value of the physical property, but whatever the state of the authorities may be, if anything could be added at all it would necessarily be limited to such an amount as the evidence disclosed the value of the property itself was enhanced by the fact that it was under paving.

Our judgment is that pavement instead of being an advantage and an added value to the pipe is a detriment and a disavantage on the theory that whatever adds to the expense of reaching the pipe for substitution or repair, or makes it more inconvenient to deal with decreases its value.

As to the pipe that was actually laid after the paving was in the cost of taking up and replacing the pavement of course should be added to the construction account, and in that way would enter into the value of the property just exactly as would the labor and material, but nothing should be added to the base figures of any of the witnesses, either for the complainant or the defendant, for this item of paving because the item is included and fully covered in the estimate of the value of the distribution system just as the other cost of material and labor was included, and it is also all included in Mr. Hall's figures showing the investment in this property. (See Division IX of Brief.)

The Master in determining the cost of reproducing the mains took the figures of complainant's witnesses with some modifications, and deducted therefrom $140,000 which had been included by these witnesses as the cost of tearing up and replacing pavement over mains which were laid before the streets were paved. The Master in his report, states fully his reasons for excluding this item of $140,000. Among other things he says:

"If we adhere strictly to the process of reproduction to ascertain the value of the plant, then, the above amount should be counted, and under a like concession in this case, as in the Water Works case, would very likely be justified, but the ultimate question in this case is the reasonable value of the property, and reproduction is simply the means adopted to determine it. When mains are laid in streets already paved, the work of taking up and replacing the pavement in so doing, is the work of the complainant, and should be considered precisely in the same light, as taking up and replacing the dirt when no pavement existed. It was done at complainant's expense. But where pavements are laid after the mains are installed, they have expended no money in taking up and replacing pavements. An allowance therefor, makes reproduction, the ultimate question, and not the reasonable value of the mains unless it further appear that the value of the mains are enhanced thereby to the extent of the cost of taking up and replacing pavements, which is not shown in this case. When the whole evidence is considered the contrary is shown."

Again he says:

'But the life of the mains is not enhanced thereby, and no value added to them by the reason thereof, then where is the justice of giving the complainant the benefit of this amount, when no enhancement in the actual value resulted therefrom, and not a dollar thereof, used in laying these mains, and no right of property acquired in the pavements. There is neither justice nor equity in it, but punishes the people who have spent their money to pave the streets, simply because some other company who desired to put in a gas plant, would have to be at the expense of taking up and replacing the pavement in building their plant. Such added value is wholly theoretical, when no benefit is derived therefrom; but rather the reverse thereto by reason of the increased cost of repairing them. To hold

> otherwise would be to permit them to reap where they have not sown." (Tr. p. 61-62).

In other words, if this item is added to the value of complainant's plant it amounts to permitting the company to capitalize this expense to the amount of $140,000, no part of which has ever been expended, and collect a return upon it for all time to come. It seems to us that the mere statement of the proposition shows how absurd and unsound it is, and especially so when it is remembered that the courts without division hold that the company is only entitled to a return upon property actually used by it in the business; a prospective expenditure is in no sense property. It is easy enough to understand why the cost of cutting through and replacing pavement where mains are laid after the paving is in should be added to the value of the mains, it is because the expense is actually incurred in laying the mains and in that way inheres in and becomes a part of the mains themselves just as much so as the labor cost of laying or the cost of excavaton or any other legimate cost actually incurred.

On the other hand, where the expense has not been incurred it is difficult to see how it could become a part of the property. As the Master says, it could only be upon the theory that reproduction or duplication cost is value, a doctrine never yet approved by any respectable court of last resort in this country, and expressly repudiated by the Supreme Court of the United States in the Knoxville case where, among other things, it is said:

> "The first fact essential to the conclusion of the court below is the valuation of the property devoted to the public use, upon which the company is entitled to earn a return."

And again:

"The cost of reproduction is not always a fair measure of the present value of a plant which has been in use for many years."

All that can reasonably be claimed for the so-called duplication or reproduction cost theory is that subject to the same modifications and deductions it is just as satisfactory a method of measuring and testing present value as is the original or recent cost theory and in some cases where original and recent cost is not available more satisfactory.

Our own judgment is that original cost when properly considered is a much safer measure of value than duplication cost. It is based upon actual operations and does not depend in any sense upon either conjecture or speculation. At any rate, upon neither theory would it be either just or equitable to allow the item of $140,000 for paving over mains.

In the first place the amount allowed and included by the Master was taken from the testimony of one of appellant's experts, the witness Baer. The estimate of this witness upon this item of paving was unsually high and was arbitrary in its nature; that is to say, it was not based upon actual cost for material and labor here in this city, and from what the Master says in his report it is evident that he felt that he not only had allowed and included in his final value all that the evidence would justify, but that he had been very liberal.

IV.

GOING VALUE.

Counsel in dealing with these items says:

"Perhaps a substantially correct definition of this element in the value of this property would be

> the difference between the value of the plant as it was with its established business at the time in question, and what would have been the value of the same physical property tested out and in a condition to operate, but without business, or developed earnings."

And then he proceeds to argue for an allowance for this item based upon the method of measuring it adopted by the witnesses, Lea, and Baehr, that is, by their so-called comparative or hypothetical plant method, and he for some unaccountable reason refuses to recognize the fact that the supreme court has for years distinguished between the so-called going value that inheres in and is attached to the physical property because the component parts are connected up and the whole makes a completed workable and working machine, and the going value that does not in any way inhere in or become a part of the physical property not attached to and applies only to the *business* of a going concern.

The first of the above elements of value the supreme court of the United States has recognized as present in every rate case, while the second element of value which attaches to the business has never been recognized or allowed by that court in rate cases; but on the contrary, in the recent water case involving a sale under contract of the Omaha Water Plant the court very clearly indicates that the going value which attaches to the business of a going concern is not a legitimate element of value to be considered in rate cases. So that the confusion that counsel refers to does not exist at all, and the rules that apply to this so-called going value in rate and sale cases are as well settled now as are the rules that apply to the other elements of value.

In the Omaha Water case Justice Lurton, in the opinion at page 201, uses this language:

> "That there is a difference between even the cost of duplication less depreciation of the elements making up the Water Company plant and the *commercial value of the business as a going concern is evident.*"

He then cites, as supporting the proposition, Justice Brewer's opinion in the National Waterworks case at Kansas City, the Gloucester and Norwich cases, none of which were rate cases, and then he says:

> "No such question was considered in either *Knoxville vs. Knoxville Water Co.*, 212 U. S. 1, or in *Wilcox vs. Consolidated Gas Company, supra. Both cases were rate cases and did not concern the ascertainment of value under contracts of sale.*"

What does Justice Lurton mean by this part of his opinion? Is it not simply that duplication less depreciation would cover not only the value of the "bare bones" of the physical property but in addition the so-called going value that follows the connecting up of the separate parts and making it a part of a completed working machine, but would not cover the commercial value of the business that follows and results from the operation of the machine; or to put it as he does, the value of the business as a going concern.

Borrowing a term, "Obviously" the statement of Justice Lurton in referring to the Knoxville and Wilcox cases that both cases were rate cases meant that in such cases the value of the *business* as a going concern as distinguished from the value of the plant as a connected and completed whole was not to be considered in rate cases, any other interpretation would involve the intelligence of the court.

The going value talked about by counsel and testified to or measured by the witnesses Baehr, Lea and Ran-

dolph is the commercial value of the business as a going concern, and not in any sense the going value that inheres in and attaches to the physical property because of its being a live machine. This is evident not only from counsel's statement quoted above, but is shown conclusively in the method adopted by the witnesses, Lea, Baehr and Randolph, in measuring the amount that should be allowed, and it is our contention that since this is not a case in which appellant's business is either being taken or sold, the value of that business is not important and cannot be added to the value of the property; and as to the element of going value that attaches and inheres in the physical property because of its being connected up and made a part of a completed workable whole ready to take care of the business as fast as it comes that value is included in the base figures of all the witnesses as to the valuation of the physical property. This must be so, because otherwise an old and delapidated brick building erected some twenty or thirty or more years ago would not be listed by Mr. Lea as worth as much today as it cost then. In fact, the difference between the scrap value of most of this property and the value placed upon it by the witnesses represents the value that attaches and inheres in the property because it is connected up and as a live operating machine.

It is only necessary to refer to the 24-inch pipe under the Des Moines river. If that pipe were disconnected from the Des Moines Gas plant and was not bearing a part of the burden of the completed machine what would be its value? Could anybody be found anywhere that would pay the expense of removing it for the pipe? If not, then what is it that gave it the value Lea, Baehr, Randolph, Marks and Bemis attached to it. Was it not the fact that it was connected up and was a part of a

live operating machine? And in this connection we might suggest that neither Lea nor Baehr nor Randolph anywhere attempt to separate the value of the "bare bones" of this property from its value as a completed machine. The going value they dealt with in their so-called hypothetical machine *is* the value of the business based on earnings.

Whatever view the court may take of this question of going value the only evidence there is in the case with respect to this element applies to the commercial value of the business alone.

In the Cumberland Telephone & Telegraph case cited in Division VI of the Brief, the court in dealing with this question of going value that inheres to the physical property says:

> "In valuing property of the character of that involved here it would indeed be looking only at its 'bare bones' not to take into consideration the fact that the company is a going concern, *that fact, however, though possibly somewhat unconsciously to themselves must necessarily, we think, have been taken into account by the witnesses who testified as to valuation.*"

This is exactly what all of the witnesses in this case did who testified before the Master upon the question of value. Both the witnesses for the appellant and appellees, in arriving at their final estimate, fixed the value on the plant in operation and not a dead plant and not merely the "bare bones" of the plant, thus including in the estimate on the physical value the only going value or going concern value proper to be considered in this case; and we hasten to say here that on this question of going value, or going concern value as the term is sometimes used, it must be admitted, and we do and have

always throughout this controversy admitted, that this plant as a going concern earning profits for its stockholders is worth more than it would be if it were a dead plant, or as some of the courts put it, the plant is worth more as a going concern than the bare bones. At the same time we have urged and still urge that the witnesses whose valuations the master accepted in arriving at his final conclusions as to the value of the physical property were not dealing with bare bones nor with a dead plant, but with a plant that was in operation earning money for its owners. The difference between us on the trial below on this question of going value was largely as to whether or not the value that attaches to the property because of its being a going concern is included in the Master's finding of $2,100,000. We insist that it is. Counsel for the appellant takes the opposite view.

Every fact established by the record as well as the Master's report sustains our contention, while this court will look in vain for any fact or circumstances in the record, or statement in the Master's report sustaining complainant's view.

Take the distribution system for instance. Would any intelligent person conversant with the record in this case contend for one moment that the hundred and more miles of mains of this company buried as they are five or more feet under ground, some of them under the river, would be worth anything like a million and a half dollars if separated from the business of manufacturing gas? If not, then what is it that gives this system the value that the Master puts upon it? Is it not the fact that these miles of mains are attached to and a part of the completed plant of the complainant with a developed business and in "successful operation?" Take the buildings, some of them thirty-six years old, none of them fit

for any other purpose or business than the manufacturing of gas, would they be worth anything like $66,000 if they were not a part of an operating plant earning money for its owners? And so you might go on down through the list and you would find that at least 90 per cent of this property, if nothing was to be considered but the "bare bones," would be without any value, not even a "scrap value."

The whole question, however, is settled by the Master when he says in his report (Tr. p. 109):

> "The physical value as hereinbefore determined, is reckoned upon the fact that the plant was 'in successful operation' when the ordinance was enacted, otherwise, its value would be much less."

How much less it is not important for us to know now, but whatever the amount, it represents what has been included in the $2,100,000 valuation as the difference between the value of the "bare bones" of this plant and its value in successful operation.

Again he says:

> "Going value is that enhancement which results from a well developed and paying business. This would result in reducing the estimated deficits for each year $24,000, and yield a return to the complainant of at least 6 per cent on $2,100,000."

It is now contended by counsel that both the Master and the court below were confused upon this question of going value, and, as he says, allowed them $300,000 and then took it away from them.

This whole matter was threshed out before his Honor, Judge McPherson. What the city claimed below was, not that the Master had added exactly $300,000 to the

value of the physical property in order to reach his figures of $2,100,000, but that the figures he accepted in finding his final value of $2,100,000 were all based on the fact that the plant was a live operating plant, and that, therefore, when he found the value of such a plant to be $2,100,000 there was nothing left to be added. That we are right in this contention is shown by the following from Judge McPherson's opinion on page 166 of the transcript:

> "The Master fixes the physical value at $2,240,-928.00. He means thereby and to my mind clearly states that as the value of the gas plant. There are but five items making this grand total. Counsel on both sides and I agree that 'going value' is a part of the present value. The Master so held. It would be strange that the Master would hold that the 'going value of $300,000.00 entered into the actual value, and then by inadvertence omit it. And it would be the more strange, after considering the items set forth in the report.
>
> By the report he lists the following:
>
> | | | |
> |---|---|---|
> | 1. | Working capital | $140,000.00 |
> | 2. | Real estate | 150,000.00 |
> | 3. | Organization expenses | 6,923.00 |
> | 4. | Meters in stock | 6,603.00 |
> | 5. | Present value of physical property, aside from above items | 1,937,402.00 |
>
> Evidently because the Master used the word physical counsel seem to conclude that he did not include 'going value.' If he had omitted the word 'physical' as an identification, then no one would doubt but that he did include 'going value.' But why would the Master include five items, and omit one that he meant to include? But the criticism is too refined and technical to stand as against his entire report. After enumerating the four items he

adds 'present value of physical property aside from above items, $1,937,402.00.' This is as though he had said 'all other items of value to be considered.'

How can it be said that he meant 'junk value'? Or 'bare bones' value, as used in some of the cases? It is not fair to say that he meant junk value or bare bones value. He meant that was the value coupled with the preceding items of the gas plant; a plant making and selling gas. He meant that, and neither more nor less than that."

It is evident from reading the Master's report that up until the decision of this court in *Cedar Rapids Gas Light Company vs. City of Cedar Rapids,* 223 U. S., 655, the Master was laboring under the opinion that something should be allowed for the kind of going value that the witnesses, Lea, Baehr and Randolph, were claiming, and which they termed the value of a developed business, but after reading the Cedar Rapids decision, and after recognizing, as he did, that in finding the physical value of the property he had "reckoned upon the fact that the plant was in successful operation," he decided that to add the $300,000 that he had worked out as the value of the developed business would be to allow going value twice; or in other words, that he already had in his $2,100,000 the only going value that the appellants were entitled to have allowed in this case. At any rate, for the purposes of this case, the statement of the Master is conclusive as to the basis of his valueation and the manner in which he reached his conclusion, and when taken in connection with the decision of this court in the Cedar Rapids case—that everything in the way of value beyond the fact that a plant is in successful operation is a good will or monopoly value and is properly excluded—effectually disposes of appellant's contention that the so-called going value of this plant

has not already been included in the Master's valuation of $2,100,000.

V.

OVERHEAD CHARGES.

There should be nothing added to the value of the gas company's property on account of the so-called overhead charges further than what appears upon the books of the company as charged to construction. The burden of proof as to all these matters is upon the appellant, and in ascertaining the value of this property, certainty wherever possible should take the place of speculation and conjecture. The officers of the appellant had it within their power to give the court exact information as to these so-called overhead charges, and how much, if anything, had gone into the value of the property because of them. It not only failed to furnish this information, but upon repeated requests from the appellees refused to make any effort to ascertain for the Master the facts as to these so-called charges. On the last day that testimony was taken President Haines was asked if he had secured the information as to overhead charges for the last two years, and he somewhat impatiently replied that he had not. In the face of such conduct we are asked to take the estimates of Lea, Baehr and Randolph as to what would be the probable expenditures along this line if a new plant were being built.

See *Cumberland Telephone & Telegraph Co. vs. City of Louisville,* and other cases cited in Division VI of Brief.

VI.

WORKING CAPITAL.

In a rate case like this we have serious doubts about the justice of adding anything to the value of appellant's property upon account of working capital other than the average value of the supplies and material shown to be on hand during the year in which the inquiry is being had. It seems to us that any other method of dealing with this item would lead to questionable and doubtful results. Of course, in making rates it would be entirely proper for the rate-making body to consider such an item in determining the reasonable charge for the service in question, but whatever may be the law we are convinced that from $50,000 to $75,000 would be an ample allowance for this item. The Master allowed for this item $140,000.

IN CONCLUSION.

Since counsel for appellant confines his argument largely to an effort to convince this court that the Master who spent months in hearing the evidence was somewhat confused and uncertain as to just what items went into his valuation of the whole property, and that the court below confirmed the Master's report upon a misapprehension as to just what the Master had found, we do not go into an analysis of the testimony, but content ourselves with calling the court's attention to the fact that in fixing the value of appellant's property upon which it was entitled to a fair return at $2,100,000, the Master was, as Judge McPherson states in his opinion, liberal with the Gas Company.

The valuation fixed is from $300,000 to $500,000 higher than the estimate of any of the city's witnesses, and as shown by Hall's report, the books of the Company show

a cash investment in the company's property over and above what was put in out of earnings only the sum of $168,255.56, and the total investment in the property according to the books, after reducing the amount by the depreciation figures used by the Master, is, in round numbers, $1,500,000. The stockholders have taken out in cash between $500,000 and $600,000, and still the Master finds the value of the property now to be $2,100,000; in other words, the owners of this property have put into it in cash and earnings, in round numbers, a total of $1,700,000; have taken out between $500,000 and $600,000, and have a property left of the value of $2,100,000 upon which they will be permitted to earn a return.

These facts, together with the fact that the Master found that with economy and care the cost of manufacturing and distributing gas by this plant may be reduced below sixty (60) cents, and that Lea and Baehr, witnesses for the appellant agree with him, Lea showing in his exhibit 20 that it will cost for 1911 in round numbers 59 cents; 1912, 58 cents; 1913, 57 cents; 1914, 56 cents; 1915, 55 cents; 1916, 54 cents; 1917, 53 cents, and that, as the Master says, as increase of sales to present consumers would practically double the profits per m. c. f. on the increase, all goes to show that the appellant failed to carry even the ordinary burden of proof much less to make out its case by that clear and satisfactory evidence that is required in cases of this kind. The truth is, that the all important question in the case, i. e., what result would follow the enforcement of the ordinance providing for 90 cents gas,—was never directly touched by the appellant during the entire hearing before the Master. There is not one word of direct proof upon its side upon that question.

We have shown insofar as it was possible for us to do

so that no loss of revenue would result to the appellant under the 90 cent rate, and we content ourselves now upon that question by directing the court's attention to the decision of this court in the Wilcox Consolidated Gas case, the Cumberland Telephone & Telegraph case, opinions both written by Justice Peckham, and the Knoxville Water case, opinion by Justice Moody.

In the Knoxville case the court says:

> "At the threshold of the consideration of the case the attitude of this court to the facts found below should be defined. Here are findings of fact by a Master, confirmed by the court. The company contends that, under these circumstances, the findings are conclusive in this court, unless they are without support in the evidence, or were made under the influence of erroneous views of law. We need not stop to consider what the effect of such findings would be in any *ordinary* suit in equity. The purpose of this suit is to arrest the operation of a law on the ground that it is void and of no effect. It happens that in this particular case it is not an act of the legislature that is attacked, but an ordinance of a municipality, nevertheless, the function of rate-making is purely legislative in its character, and this is true, whether it is exercised directly by the legislature itself or by some subordinate or administrative body, to whom the power of fixing rates in detail has been delegated. * * * * The constitutional invalidity should be manifest, and where that invalidity rests upon disputed questions of fact, the invalidating facts must be proved to the satisfaction of the court. In view of the character of the judicial power invoked in such cases it is not tolerable that its exercise should rest securely upon the findings of a Master, even though they be confirmed by the trial court. The power is best safeguarded against abuse by preserving to this court complete freedom in dealing with the facts in each case. Nothing less than this is demanded by the respect due from the

judicial to the legislative authority. It must not be understood that the findings of a Master, confirmed by the trial court, are without weight, or that they will not, as a practical question, sometimes be regarded as conclusive. All that is intended to be said is, that in cases of this character this court will not fetter its discretion or judgment by any artificial rules as to the weight of the Master's findings, however useful and well settled these rules may be in ordinary litigation."

It is here stated by Justice Moody that this kind of a case is not to be disposed of as would an ordinary suit in equity, nor will the rules apply that prevail in ordinary litigation, and when Justice Moody says, as he does here, that the invalidating facts must be proved to the satisfaction of the court, he means no more nor less than that the burden was upon the appellant to put the effect of the 90 cent rate upon the business of the Des Moines Gas Company beyond doubt or question. Has this burden been met when no witness on the part of the appellant has attempted to estimate the revenue of the company under the 90 cent rate?

Again Justice Moody says:

"Before coming to the question of profit at all the company is entitled to earn a sufficient sum annually to provide not only for current repairs, but for making good the depreciation and replacing the parts of the property when they come to the end of their life. * * * If, however, a company fails to perform this plain duty and to exact sufficient returns to keep the investment unimpaired, whether this is the result of unwarranted dividends upon over issues of securities, or of omission to exact proper prices for the output, the fault is its own. When, therefore, a public regulation of its prices comes under question, the true value of the property then employed for the purpose of earning a return

> cannot be enhanced by a consideration of the errors in management which have been committed in the past."

Which means neither more nor less than that it would be proper, and, in fact, be the duty of the company to put aside out of its earnings a reasonable amount for a depreciation fund, but that where the company has failed to do that and has either taken out of the business in the shape of dividends the money that should have been put aside to take care of depreciation, or has allowed it to be used for extensions and betterments it cannot be added to the value of the property or considered in determining whether a rate is confiscatory; in other words, under the rule laid down here, nothing can be added in this case in the way of depreciation, either to the value of the property or to increase the operating cost thus reducing the profits.

Justice Moody proceeds:

> "We think it was error to confine the investigation to, and base the judgment upon, that year alone. (The year preceding the passage of the ordinance.) The precise subject of inquiry was, what would be the effect of the ordinance in the future. The operations of the preceding fiscal year, or of any other past fiscal year, were valueless if the year was abnormal, and were only of significance so far as they foretold the future. If, as in this case, sufficient time has passed, so that certainty instead of prophecy can be obtained, the certainty would be preferable to the prophecy. *In this case there could be no absolute certainty, because the ordinance had never been put in operation.*"

Appellant tried to put itself in harmony with the rule by taking the average of the five years preceding the

passage of this ordinance, one of which was admittedly an abnormal year, and in that way tried to make certain what Justice Moody here says could not be made certain because the ordinance had never been put in operation.

Again, if, as the court says, "the precise subject of inquiry was what would be the effect of the ordinance in the future" we stop to inquire as to where in all the mass of testimony presented by the appellant is there any evidence upon this subject. The appellant not only did not attempt to deal with this subject, but its witnesses refused to even estimate the effect of the ordinance on the company's revenue.

Proceeding further, Justice Moody says:

> "The valuation of the property was an estimate and is greatly disputed. The expense account was not agreed upon. The ordinance had not actually been put into operation; the inferences were based upon the operations of the preceding year; and the conclusion of the court below rested upon that most unsatisfactory evidence, the testimony of expert witnesses employed by the parties."

Every one of these statements apply with withering force here. No two witnesses agree as to value, there is dispute as to the expense account; the ordinance had never been tried; so far as the appellant is concerned, the inferences as to future operations are based upon the transactions of five preceding years, and here the evidence is that given by expert witnesses employed by the parties. We, however, make out a stronger case as applied to this part of the Knoxville decision than was made by the city in that case. We have shown by three witnesses, one of them Mr. Hall, so accurate in his computations and statements that no one questions the truth

of what he says, that there will be no real loss of revenue under the 90 cent ordinance.

In the Wilcox case, Justice Peckham after dealing with the value of the real estate and plants in that case says:

> "Both depend largely upon the opinions of expert witnesses as to the value of that kind of property. Where a large amount of the total value of a mass of different properties consists in the value of real estate, which is only ascertained by the varying opinions of expert witnesses, and where the opinions of the plaintiff's witnesses differ quite radically from those of the defendants, *it is apparent that the total value must necessarily be more or less in doubt. It, in other words, becomes matter of speculation or conjecture to a great extent.*"

We have just such a situation here as Justice Peckham refers to above. No two witnesses on either side agree as to the value of the real estate; not only that but much of the value of a large part of the services was put in doubt by one of the appellant's witnesses, Mr. Moul, in his testimony just before the evidence was closed. He says that up to 1896 the consumer paid on an average of about $7.50 for the service from the curb line to the meter. Baehr, Lea and Randolph includes the entire service in their valuation notwithstanding a large part of the services under Moul's testimony belonged to the consumers.

Again, as Justice Peckham says:

> "And again, increased consumption at the lower rate might result in increased earnings, as the cost of furnishing the gas would not increase in proportion to the increased amount of gas furnished."

This is in exact harmony with the testimony of Pro-

fessor Marks, but is not recognized by counsel for appellant in any of their computations.

Justice Peckham proceeds:

> "Of course, there is always a point below which a rate could not be reduced, and, at the same time, permit the proper return on the value of the property; but it is equally true that a reduction in rates will not always reduce the net earnings, but, on the contrary, may increase them. The whole question of how much an increased consumption under a less rate will increase the earnings of complainant, if at all, at a cost not proportioned to the former cost, *can be answered only by a practical test.*"

The opinion goes on:

> "In such a case as this, where the other data upon which the computation of the rate of return must be based, are from the evidence so uncertain, and where the margin between possible confiscation and valid regulation is so narrow, we cannot say there is no fair or just doubt about the truth of the allegation that the rates are insufficient."

In the Cumberland case, Justice Peckham, in dealing again with rates, this time, however, in a telephone case, says after stating a contention of the Railroad Commissioners upon the investment of the depreciation reserve:

> "If the onus rested upon the commission to show these facts, it is evident that the obligation has not been fulfilled, but it is just here that the difficulty lies. It was obligatory upon the complainant to show that no part of the money raised to pay for depreciation was added to capital, upon which a return was to be made to stockholders in the way of dividends for the future. It cannot be left to conjecture, but the burden rests with the complainant

to show it. *It certainly was not proper for the complainant to take the money, or any portion of it, which it received as a result of the rates under which it was operating, and so to use it, or any part of it, as to permit the company to add it to its capital account, upon which it was paying dividends to shareholders.*"

"If that were allowed, it would be collecting money to pay for depreciation of the property, and, having collected it, to use it another way, upon which the complainant would obtain a return and distribute it to its stockholders. That it was right to raise more money to pay for depreciation than was actually disbursed for the particular year there can be no doubt, for a reserve is necessary in any business of this kind, and so it might accumulate; but to raise more than money enough for the purpose and place the balance to the credit of capital upon which to pay dividends, cannot be proper treatment. The court below said it was impossible to find out from the books how much of this had been done, and it treated the fact as one to be explained by the commission, and not by the complainant. In other words, while this fact was a material one, the onus was placed upon the commission, and not the complainant, to show it. We think, on the contrary, that the obligation was upon the complainant. Now, although the books, it is said, does not show how much money collected for depreciation has been, in fact, used to increase the capital of the complainant, upon which dividends were paid to stockholders, yet still, even if the books do not show accurately, or even at all, what disposition was made of these moneys, at any rate the officers of the complainant must be able to make up some reasonable approximation of the amount, even if it be impossible to state it with entire accuracy; and this duty rests with the complainant, in order that it may discharge the duty devolving upon it to prove that the rates were not unreasonably high under

> order No. 552. It may be that the sum, if any, thus used, was not enough to affect the claim that the rates under discussion were unreasonably low. The evidence is sufficient to show clearly that which complainant is under obligations to show."

Here we have a clear and definite statement as to what the court meant in the Knoxville case when it was dealing with depreciation. These two cases establish the rule that in cases of this kind the service company has the right, and, in fact, it is its duty to lay aside out of the earnings of the business a reserve large enough to take care of depreciation, but that the amount so laid aside may not be added to capital account, and dividends earned thereon, and that whenever in any case the money has been so used before relief can be granted against a rate charged to be confiscatory the complainant must show just how much of the depreciation fund has gone into the property, thus increasing the capital account and enhancing the value of the physical property.

Here, again, we pause to inquire how this court will be able to find just how much of the surplus earnings of this appellant which was intended to cover depreciation has gone into the property or into the capital account; how much, if any, has been paid out in the form of dividends. There is absolutely nothing in the evidence, nor is there anything in the books of the company for that matter, that will aid the court in determining that question, and if, as Justice Peckham says, these are matters which appellant is under obligations to show, can there be a finding in its favor?

To make the matter even clearer, Justice Peckham says:

> "We are not considering a case where there are surplus earnings after providing for a depreciation

> fund and the surplus is invested in extensions and additions, we can deal with such a case when it arises."

The court then proceeds to point out the difference between the effect of a reduction of rates in the telephone business and in other kinds of business, and suggests that increased demand would not follow reduction of rates in the telephone business, and then says:

> "Such, it is admitted, would be the case generally in regard to water companies, gas companies, railroad companies, and perhaps some others where the rate is a reasonable one. * * * So, also, in furnishing gas at reduced rates, the reduction in the rate would very probably result in increased consumption, not only in increased demands from more consumers, but also an increased consumption by consumers already existing, and the increased cost of furnishing the gas would be nothing like in proportion to the increase in consumption. In these cases increased profits might be the result of decreased rates."

Right in this connection we call the court's attention to the fact that the testimony of the city's witnesses all indicate increased consumption with reduced rates, which when taken in connection with the fact that the company's operating expenses, evidently for the purposes of this trial, were swelled by the allowance to certain officers of the United Gas Improvement Company of Philadelphia of salaries in the sum of $10,000 (Tr. pp. 75-76), and increase in the salary of the local manager after this case was commenced of nearly fifty (50) per cent. (Tr. p. 75) and with large donations and gifts, (Tr. pp. 76-77) all indicate how impossible it was for either the Master or the court below to avoid a decision against the appellant, and how unjust it would be now, after

so long and costly a contest, for this court to enter any other order or judgment than one affirming the judgment below and ending the litigation.

Both the Master and the court below gave the appellant every opportunity to make out their claim that the 90 cent rate was unreasonable and confiscatory, and in many instances gave appellant credit in the valuation of its property for items which, to say the least, were very doubtful, among which might be mentioned an item of $120,000 for a Holder which neither accountants for the company nor the defendants could find mentioned anywhere in the books of the company, (Tr. p. 3637 Hall's report), and $140,000 working capital; this allowance was made notwithstanding the fact that all supplies and material on hand was included in the valuation; thus making in these two doubtful items alone $260,000.

In addition to this the Master, for some reason or other, relied largely on the testimony of appellant's expert witnesses notwithstanding the fact that it developed on the hearing that these experts had several conferences in advance of the hearing in which comparison of figures and methods were made, and at which counsel for the company went to the extent of going through the form of taking the testimony of the several experts; in other words, what these several experts were expected to testify to at the hearing was gone over fully, their statements taken down by a stenographer and transcribed. (Tr. pp. 1035-1053, Baehr's testimony; pp. 3224-3227 Moul's testimony).

Under these and other peculiar circumstances surrounding the case, the finding of the Master against the appellant, confirmed as it was by the lower court, should not only have great weight but should be conclusive on this appeal; especially is this true when as is shown by

the record, 3,781 pages of evidence was taken, and weeks and weeks of time was consumed by appellants in an effort through the testimony of expert witnesses to make out a case, and the decree below should be affirmed as was done in the Missouri rate cases reported in 230 U. S., 474.

Respectfully submitted,

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ESKIL C. CARLSON,
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DES MOINES GAS COMPANY *v.* CITY OF DES MOINES.

APPEAL FROM THE DISTRICT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF IOWA.

No. 75. Argued November 10, 11, 1914.—Decided June 14, 1915.

The public authority is presumed to have acted fairly, and the burden of proof is on a public utility corporation to show that a regulating ordinance has the effect to deprive it of an income equivalent to a fair return upon its property dedicated to public use. *Knoxville* v. *Water Co.*, 212 U. S. 1.

Good will, in the sense generally used as indicating that element of value which inheres in the fixed and favorable consideration of customers arising from an established and well known and well conducted business, has no place in the fixing of valuation for the purpose of rate making of public service corporations. *Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19.

There is, in some cases, a "going concern value" which is an element to be considered in determining valuation on which the owner is entitled to a fair return although the property is dedicated to a public use; there is no fixed rule for ascertaining this but each case must be controlled by its own circumstances.

Where, as in this case, the Master after exhaustive testimony certifies the value of a long established and successful public service plant, for rate making purposes, upon the basis of a plant in successful operation and overhead charges have been allowed, the court will presume that the element of going concern value has been considered and included in the total value certified.

The court will not regard the refusal of the lower court to enjoin a rate making ordinance as confiscatory upon the conclusion that it allowed a return of six per cent per annum, on the valuation of the plant, although the Master expressed the opinion that the corporation ought to earn eight per cent, where, as in this case, the ordinance was attacked before opportunity to test its results by actual experience.

Ordinarily, time alone can satisfactorily demonstrate whether a rate fixed by ordinance is or is not confiscatory so as to amount to a taking of property without due process of law within the meaning of the

Fourteenth Amendment, and in this case there should be an actual application of the rates.

Following the rule laid down in *Knoxville* v. *Water Co.*, 212 U. S. 1, and *Willcox* v. *Gas Co.*, 212 U. S. 19, the bill seeking to enjoin the putting of the ordinance involved in this case into effect should be dismissed without prejudice to the right of complainant to reinstate the case after a reasonable period for an actual demonstration of the effect of the ordinance.

199 Fed. Rep. 204, modified and affirmed.

THE facts, which involve the validity under the impairment of obligation provision of, and the due process clause of the Fourteenth Amendment to, the Federal Constitution of an ordinance of the City of Des Moines fixing ninety cents as the price of gas in that city, are stated in the opinion.

Mr. Nathaniel T. Guernsey, with whom *Mr. George H. Carr* was on the brief, for appellant:

At the time in question the City of Des Moines had the power to establish reasonable rates to be charged by appellant for gas sold and distributed in the city. Code of Iowa, 1897, Supp., §§ 724, 725.

Rates so established must be sufficient to afford to the appellant a fair return upon the value of its property, *i. e.*, a return relatively equal to what money devoted to other like investments will earn. *Minnesota Rate Cases*, 230 U. S. 352, 434; *Smyth* v. *Ames*, 171 U. S. 361; *San Diego Land Co.* v. *National City*, 174 U. S. 739; *San Diego Land Co.* v. *Jasper*, 189 U. S. 439; *Stanislaus County* v. *San Joaquin Co.*, 192 U. S. 201; *Knoxville* v. *Water Co.*, 212 U. S. 1; *Willcox* v. *Gas Co.*, 212 U. S. 19.

The value to be ascertained is the fair value of the property used in performing the public service.

Appellant was bound to establish each ultimate fact necessary to sustain a decree in its favor by clear and satisfactory evidence, but not beyond reasonable doubt.

Depreciated cost of reproduction should not have been deducted. *Willcox* v. *Gas Co.*, 212 U. S. 19; *S. C.*, below,

157 Fed. Rep. 849; *Omaha* v. *Water Co.*, 218 U. S. 180; *Steenerson* v. *Great Northern Ry.*, 69 Minnesota, 353; *State* v. *Minn. & St. L. R. R.*, 80 Minnesota, 191; *Cotting* v. *Kansas City Stock Yards*, 82 Fed. Rep. 850, 854; *Kings County Lighting Co.* v. *Willcox*, 156 App. Div. (N. Y.) 603.

Cedar Rapids Gas Co. v. *Cedar Rapids*, 144 Iowa, 426, does not hold the contrary.

The court erred in its conclusion that the total of $2,240,928 was stated by the master as the value of the plant, and in the conclusion that this included the item of $300,000 on account of going value.

The item of going value is an element contributing to the value of each tangible part. *Omaha* v. *Water Co.*, 218 U. S. 180.

The *Cedar Rapids Case, supra*, did not hold that this item should be disallowed.

Going value is an element in the value of such a property. *National Water Works* v. *Kansas City*, 62 Fed. Rep. 853; *Omaha* v. *Water Co.*, 218 U. S. 180; *Public Service Gas Co.* v. *Utility Commissioners*, 87 Atl. Rep. 651; *Kings County Lighting Co.* v. *Willcox*, 156 App. Div. (N. Y.) 603; *Monongahela Water Case*, 223 Pa. St. 323; *Appleton Water Works* v. *Wisconsin*, 142 N. W. Rep. 476; *Gloucester Water Co.* v. *Gloucester*, 179 Massachusetts, 365; *Norwich Gas Co.* v. *Norwich*, 76 Connecticut, 565; *Spring Valley Water Works* v. *San Francisco*, 124 Fed. Rep. 574; *S. C.*, 165 Fed. Rep. 657; and 192 Fed. Rep. 137; *Kennebec Water District* v. *Waterville*, 97 Maine, 185; *Water Co.* v. *Galena*, 74 Kansas, 644; *Bristol* v. *Water Works*, 23 R. I. 274; *Water Co.* v. *Newburyport*, 168 Massachusetts, 541; *Venner* v. *Urbana Water Co.*, 174 Fed. Rep. 348; *Bonbright* v. *Geary*, 210 Fed. Rep. 44.

The rule is the same in rate cases and condemnation cases. *Omaha* v. *Water Co.*, 218 U. S. 203.

The word "property" describing what is protected in condemnation cases involving the Fifth Amendment, and

in confiscation cases involving the Fourteenth Amendment, means the same thing in each Amendment. *Willcox* v. *Gas Co.*, 212 U. S. 19; *Monongahela Navigation Co.* v. *United States*, 148 U. S. 312; *Fairbanks* v. *United States*, 181 U. S. 283; *Minnesota Rate Cases*, 230 U. S. 352.

As to what is a fair return and for the distinction between a reasonable rate and a fair return, see *Public Service Gas Co.* v. *Utility Commissioners*, 87 Atl. Rep. 651.

It will vary under varying conditions. *Willcox* v. *Gas Co.*, 212 U. S. 19, 48.

What it is, is a question of fact, to be determined by the testimony in each case. *Gas Light Co.* v. *Cedar Rapids*, 144 Iowa, 426, 448.

Under the rule in the *Consolidated Gas Case*, 8% was justified by the evidence in this case. A public utility must constantly increase its investment and must pay for the new money required whatever such money is worth in the market.

Upon the facts found, the complainant was entitled to a decree in its favor.

In making his estimates, the master took into account normal increase in its sales, while the history of the plant demonstrates that increases in sales in amounts sufficient to earn a fair return would have been impossible.

To sell gas there must be persons to buy it.

The population was insufficient to afford a market for the gas necessary to earn a fair return.

The plant had not the capacity to manufacture enough gas to afford a fair return.

A large additional investment would have been required, increasing the amount upon which the return must be earned.

Computations predicated upon the facts found by the Master demonstrate that upon no reasonable hypothesis could a fair return be anticipated.

The clear and satisfactory evidence rule simply requires

that where facts have been established by testimony of this character, the rule may not be invoked to discredit sound and legitimate inferences from them. These facts may be established without evidence deduced from a trial of the rates. *Willcox* v. *Gas Co.*, 212 U. S. 19; *Gas Co.* v. *Lincoln*, 223 U. S. 349.

The court erred in dismissing the bill upon the merits and then in attempting to provide for a reopening of the case after three years. *Bronson* v. *Schulten*, 104 U. S. 410.

So far as the appellant is concerned if it is not entitled to a decree in its favor upon the merits, it is entitled to an opportunity to try the rates and to definitely establish the facts upon which the rights of the parties depend. *Stanislaus County* v. *San Joaquin*, 192 U. S. 201; *Knoxville* v. *Water Co.*, 212 U. S. 1; *Willcox* v. *Gas Co.*, 212 U. S. 19; *Gas Co.* v. *Cedar Rapids*, 223 U. S. 655; *Minnesota Rate Cases*, 230 U. S. 352; *Missouri Rate Cases*, 230 U. S. 474; *In re Louisville*, 231 U. S. 639; *Louisville* v. *Cumberland Tel. Co.*, 231 U. S. 652; *Nor. Pac. Ry.* v. *North Dakota*, 216 U. S. 579.

Mr. H. W. Byers, with whom *Mr. R. O. Brennan* and *Mr. Eskil C. Carlson* were on the brief, for appellee.

Mr. Justice Day delivered the opinion of the court.

This suit was begun in the District Court of the United States for the Southern District of Iowa, by the present appellant, hereinafter called the Gas Company, against the City of Des Moines and others, to enjoin the enforcement of the provisions of a certain ordinance of the City, passed December 27, 1910, whereby, from and after the first day of January, 1911, the rate to be charged and collected for gas in the City of Des Moines was fixed at ninety cents for each thousand cubic feet. The allegations of the bill were that to enforce the ordinance would amount

to the taking of the Gas Company's property without just compensation and operate as confiscation of its property, and thereby deprive it of the same without due process of law, and would deny the equal protection of the laws; further, that it would impair the existing contract between the Gas Company and the City, and between the Gas Company and the State of Iowa, growing out of its incorporation under the statutes of the State and of the ordinances of the City, giving rights to the Gas Company to lay its mains and supply gas to the residents of the City. A temporary injunction was allowed, and after issue made, the case was referred to Robert Sloan, Esquire, as Special Master in chancery to report his findings of fact and conclusions of law. The Master afterwards filed his report, and the same coming on before the District Court for hearing, upon exceptions, the report of the Master was confirmed, and the bill dismissed "with prejudice" (199 Fed. Rep. 204). From that decree the present appeal is taken.

The Master's report, as court and counsel agree, gives evidence of a very thorough consideration of the subject, and the facts found are accepted by the appellant. From the report we learn that the plant belonging to the Gas Company dates back to the year 1864; that it was owned and operated by the Capital City Gas Light Company until March 1st, 1906, when the present company was organized and the property, real and personal, of the Capital City Company conveyed to it; that The United Gas Improvement Company, of Philadelphia, became the owner of the entire stock of the Capital City Company on June 1st, 1886; that the capital stock then consisted of 3,000 shares of the par value of one hundred dollars each, and that subsequently the capital stock was increased to 6,000 shares of the same value each; that the growth of the City of Des Moines increased the demand for gas, and many extensions were added. In making these improvements

and extensions, the Capital City Gas Light Company became indebted to The United Gas Improvement Company for cash advanced, and otherwise, to the amount of $105,526.49, and also for gas holder $103,958 and the United Gas Improvement Company also owned $400,000 of bonds secured by mortgage on the plant of the Capital City Company. On March 1st, 1906, the Capital City Company transferred and conveyed its property to the present Gas Company, the authorized capital stock of the new company being 22,500 shares of the par value of $100 each. At the time of this transfer, the new company executed to The United Gas Improvement Company $800,000 stock contracts bearing 6 per cent. interest until paid, and also authorized and executed to the Commercial Trust Company, of Philadelphia, Pa., a deed of trust to all property of the Des Moines Gas Company, transferred to it as aforesaid to secure the payment of $1,500,000 5 per cent. gold bonds payable semi-annually, which were to be issued as provided by said mortgage. The sum of $240,000 bonds were issued at the date of execution of the mortgage, one-half thereof used in payment of the debt due The United Gas Improvement Company for the gas holder, and the other half to pay the amount due on account to that company. On January 1st, 1907, there were also issued $400,000 of these bonds to pay the bonds then due of the Capital City Company. When the transfer was made $45,000 was issued to pay for the Valley Junction property. This is a town adjacent to Des Moines, and something like six miles from the gas works of the Gas Company, to which the gas is transmitted by high pressure mains through the city, by a distribution system therein. There is nothing in the record to show the value of the Valley Junction property, except that of a high pressure main, which is also used in distributing gas in the city. Extensions and improvements have been made to the works and distribution system since the date of

transfer up to the first day of January, 1911, to the amount of $412,704.51, and, as provided by the mortgage, bonds have been issued by the trustee to the amount of $1,097,000, and these bonds have all been purchased by The United Gas Improvement Company. The total discount on these bonds is $33,950; $267,000 discounted at 10 per cent. and the balance, $145,000, at 5 per cent. No dividends have been declared by the present company upon its stock, but the interest upon the stock contracts and bonds has been regularly paid, and $389,000 has been paid on the principal of the stock contracts, leaving January 1, 1911, only $411,000 unpaid. These payments have been made out of the profits derived from the operation of the plant. The officers of the Gas Company are elected by the United Gas Improvement Company, who own and control all the stock, and these officers are also, in the main, the officers of the United Gas Improvement Company, and the latter controls the Gas Company and its business.

Various ordinances have been passed, regulating the price of gas, from which the Master finds as follows:

"1. That for the years 1896 and 7 the price of gas should be $1.30 per M. C. F. net; for the years 1898 and 9, $1.25 net; for the years 1900 and 1, $1.20 net; for the years 1902, 3 and 4, $1.15 net; and for the year 1905, $1.10 net; and for the years 1906 to 1910, $1.00 net with the proviso that it may add 10 cents per M. C. F. to each of these prices but shall be required to discount that sum for the payment by or before the 15th day of the month following that in which the gas was consumed.

"2. That the City pay for the term of fifteen years for each street lamp, $18.00 per year, until they should reach 500, when it should be reduced to $17.00 for each lamp.

"3. That its gas should not be less than 22 candle power."

There is no question of the authority of the City of

Des Moines, under the laws of the State, to regulate the rates at which gas shall be furnished to the City of Des Moines and its inhabitants. After valuing the real estate and various items of personal property as hereinafter stated, the Master adopted as the only practical way in his judgment of determining the reasonable value of the buildings, their contents, the yard structures and the mains, house and street lamp services and meters, the process of estimating the cost of reproducing them new, and then estimating the depreciation which should be deducted, in order to obtain their present value. Under this method, the Master summed up the value of the property of the Gas Company as follows:

"The new ordinance deprives the complainant of the right to add ten cents per M. C. F. to the price of gas, unless paid on or before the 15th day of the month following that in which the gas was consumed, and the evidence shows that the average working capital for the past five years was $120,000, and that when the ordinance went into effect, that they were then using $142,000 as working capital.

"Without the means of enforcing prompt payment, and without any inducement so to do, on the part of their customers, in my judgment the working capital should not be diminished, and the amount allowed is . . . $ 140,000

To this add real estate	150,000
To organization expenses	6,923
To meters in stock	6,603
Present value of physical property aside from above items	1,937,402
"Total physical value	$2,240,928"

What is called in this summary "the present value of physical property," the report shows was arrived at by the Master in the manner following: He first found what he thought was the base value of the property, i. e., "what

it would cost to produce it at the present time new, without adding thereto any overhead charges." This figure he fixed at $1,975,026. To this he added overhead charges, fifteen per cent.,—$296,254. From this he deducted depreciation, $333,878, leaving as the value of the property thus ascertained, $1,937,402.

As appears from the opinion of the court and the arguments of counsel in this case, exceptions to the Master's report so far as the Gas Company is concerned pertain principally to two questions: One as to his manner of dealing with what is termed the "going value" of the concern, and the other as to the addition of the sum of $140,000 to the valuation, because appellant insists, upon the plan of valuation by cost of reproduction less depreciation, it would cost that sum to take up and replace pavements not laid when the mains were put in but necessary to be removed and replaced in the reproduction thereof.

Before considering the correctness of the rulings of the Master and their confirmation by the District Court, it is proper to notice that there is considerable difference between counsel as to what the Master actually found, as to whether he included the sum of $300,000 which he was disposed to allow for going value in the $2,240,000 valuation found by him, or whether it was added to the estimate of the value of the property already made by him.

We think the Master intended to value the property at $2,240,000 exclusive of the $300,000 which, as we have said, he was at first disposed to allow for going value, and also that he deducted, in reaching the $2,100,000 the $140,000 claimed by the Gas Company as a proper allowance because of the cost of removing and replacing pavements, as above stated. We think too, that it was the Master's conclusion that, if the $300,000, which he was at first disposed to allow, as stated, or the $140,000 for paving, were included, the valuation of the plant would be such that a fair return could not be made upon the value

of the property, and therefore the Company would be entitled to a decree in its favor. It therefore follows that the determination of the correctness of the decree below, confirming the Master's report, depends upon and requires a consideration of these two items.

We may premise that the public authority is presumed to have acted fairly, and that the burden of proof is upon the Gas Company to show that the regulating ordinance has the effect to deprive it of an income equivalent to a fair return upon its property dedicated to public use. *Knoxville* v. *Knoxville Water Co.*, 212 U. S. 1.

As we have said, the Master was at first disposed to allow $300,000 as a separate item covering the going value of the concern. After stating that he fixed the going value at the sum of $300,000 he says:

"It may be asked on what basis this amount is determined. The evidence followed strictly might require me to make it higher, could my mind rest satisfied that the 'Going Value' of this concern is worth more, but I cannot feel satisfied that such is the case, and regard $300,000 as every dollar it is worth over and above its physical value, and in my judgment, it is worth that much more than a plant would be that had to develop its business. But that would be much more rapid, in my judgment, than is estimated. I think a purchaser would be willing to add this amount for its developed business, and that a seller would not be willing to sell unless he got that much more than its physical value, but I could not give the mental process by which this conclusion is reached any more than a jury could do so, under like circumstances, but it is nevertheless my judgment under all the evidence in the case.

"'The element of 'Good Will' as applied to the ordinary merchant or manufacturer dealing with the public generally is not considered in estimating the 'Going Value' of Complainant's plant. It cannot be considered in a

public utility like the one in question in this case, because the Complainant has a monopoly of the business in which it is engaged in the City of Des Moines, and those who desire to use its product must buy of it. They have no choice in the matter. But there is a great difference even in a monopoly which has a business already developed and one that must develop it. The plant of Complainant has all its parts working in harmony, performing their several functions in producing and conveying the gas to its customers. These several parts are not only in place, but have been brought to a harmonious operation throughout. Even the employés of the concern are familiar with their duties and experienced in performing them. But without business no matter how perfect it may be, it would be unprofitable. It is ready, however, for business, and has the business to transact. It was a small concern at the start in 1864, but its books show that it has had a steady growth for many years in the past, and everything indicates that it will continue in the future. There is great difference between such a plant and one whose business must be developed. All a purchaser of such a plant would have to do would be to take charge of the plant, 'Touch the button,' and he is making money from the start. There is no element of uncertainty connected with it.

"He can retain its experienced employés as a rule, should he so desire, at the same wages. There is no question that such a plant has a 'Going Value,' because it is a money maker from the start.

"The only difficulty is to determine how much its 'going value' is worth. No interest during its construction is allowed, nor anything that is included in the 'Overhead Charges,' which are part of the physical value. But simply the fact that it has a developed business that will make money for its owner, with reasonable rates allowed for the product which it manufactures and sells."

That "good will," in the sense in which that term is

generally used as indicating that element of value which inheres in the fixed and favorable consideration of customers, arising from an established and well-known and well-conducted business, has no place in the fixing of valuation for the purpose of rate-making of public service corporations of this character, was established in *Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19, 52. "Going value," or "going concern value," i. e., the value which inheres in a plant where its business is established, as distinguished from one which has yet to establish its business has been the subject of much discussion in rate-making cases before the courts and commissions. Many of those cases are collected in Whitten on "Valuation of Public Service Corporations," §§ 550–569, and the supplement to the same work, §§ 1350–1385. That there is an element of value in an assembled and established plant, doing business and earning money, over one not thus advanced, is self-evident. This element of value is a property right, and should be considered in determining the value of the property, upon which the owner has a right to make a fair return when the same is privately owned although dedicated to public use. Each case must be controlled by its own circumstances, and the actual question here is: In view of the facts found, and the method of valuation used by him, did the Master sufficiently include this element in determining the value of the property of this Company for rate-making purposes?

Included in going value as usually reckoned is the investment necessary to organizing and establishing the business which is not embraced in the value of its actual physical property. In this case, what may be called the inception cost of the enterprise entering into the establishing of a going concern had long since been incurred. The present company and its predecessors had long carried on business in the City of Des Moines, under other ordinances, and at higher rates than the ordinance in question established.

For aught that appears in this record, these expenses may have been already compensated in rates charged and collected under former ordinances. As we have said, every presumption is in favor of the legitimate exercise of the rate-making power, and it is not to be presumed, without proof, that a Company is under the necessity of making up losses and expenditures incidental to the experimental stage of its business.

These items of expense in development are often called overhead charges, for which, as we have already seen, the Master allowed fifteen per cent. upon the base value (exclusive of real estate), or $296,254, in addition to his allowance of $6,923 for organization expenses. Of these charges the Master said:

"In reaching the physical value of the plant in question by the process of reproduction, it is necessary to bear in mind that the present value thereof represents much more than the machinery therein, the labor of installing and constructing them, and putting them in place to perform their various functions, ready for the manufacture and distribution of gas to its customers. Were the City of Des Moines without such a plant, and such a one as the Complainant now owns was proposed, it would be found that much more than the mere cost of labor and material would be expended. Such expenditures are termed overhead charges, and are as follows:

"1. Time and money expended in the promotion of the enterprise, in the organization of the company and interesting capital therein, including, also, legal expenses, obtaining the necessary franchise, as well as the costs of incorporating the company.

"2. Then a competent engineer must be employed to prepare the plans and specifications for the plant, and make the necessary surveys, and when the work began, to superintend the construction thereof, and see that it is done properly and according to plans and specifications.

The successful operation of the plant depends largely upon its proper construction.

"3. Then losses arising from accidents and injuries to workmen as well as the material during its construction, which is such an amount as the cost of insuring against such losses, which is between 1 and 2 per cent.

"4. Contingencies are such expenditures as arise from the lack of foresight and care in preparing the plans and specifications. No matter how careful the engineer may prepare them, such expenditures invariably arise. Mr. Alvord testified that his allowance therefor would depend very much upon his knowledge of the engineer who prepared them, but that no matter who prepared them, they would invariably occur, and an allowance should be made therefor. The careful and thorough inventory in this case reduces very greatly the allowance therefor.

"5. The cost of administration, which includes the time and money expended by the parties who are engaged in the enterprise, purchasing the material, procuring the money for their payment as needed, and generally superintending the entire enterprise during the construction of the plant.

"6. It is estimated that it would take three years to complete the plant in question, and that at least one-half the time and money invested therein would give no return, and that a loss of interest would result therefrom and that such loss would be included in the overhead charges.

"7. Taxes during the construction.

"The latter is regarded by me as very questionable. It is in a certain sense making taxes an asset rather than a liability, and the amount is so vague and uncertain that it has been given very little consideration and weight in fixing the overhead charges. Either the money or the property should pay taxes.

"It must be borne in mind that these expenditures are all made during the promotion and construction of the

plant, and are necessarily a part of the cost thereof. No overhead charges that do not inhere in and add to the cost thereof, should be allowed as a part of its physical value. It is not a question of what was actually expended therefor in the plant in question, but what would it cost to reproduce a similar plant at the present time. It is through this method we reach the present value of this plant new, and then when it is properly depreciated, according to the condition, life and age of its various parts, we reach the present value of the plant in its present condition. It is not a perfect method, but it is the best method therefor, and results as nearly as possible in giving the present value of the plant. No other method known has proved so satisfactory."

The matter of going value was alluded to in *Knoxville* v. *Water Co.*, 212 U. S. 1. In that case, $10,000 was allowed for organization, promotion, etc., and $60,000 for "going concern." Of the latter item this court said (page 9): "The latter sum we understand to be an expression of the added value of the plant as a whole over the sum of the values of its component parts, which is attached to it because it is in active and successful operation and earning a return. We express no opinion as to the propriety of including these two items in the valuation of the plant, for the purpose for which it is valued in this case, but leave that question to be considered when it necessarily arises. We assume, without deciding, that these items were properly added in this case."

The question was presented in *Gas Co.* v. *Cedar Rapids*, 223 U. S. 655. That case was a writ of error to a judgment of the Supreme Court of Iowa, holding valid a certain ordinance regulating the price of gas in Cedar Rapids (144 Iowa, 426), and the judgment of the Iowa court was affirmed. Dealing with the question of "going value," the Iowa Supreme Court said:

"Also the sum of $100,000 was included by these wit-

nesses as enhancement of value by reason of being a 'going concern.' As previously intimated, the value of the plant is to be estimated in its entirety, rather than by the addition of estimates on its component parts, though the latter course will materially aid in determining the value. Advantages have accrued through the sagacity of its management as contended by appellant. So, too, there are the inevitable mistakes which would not be likely in the construction of a new plant; but to put a new plant in profitable operation time would be required, and, aside from the intangible element of good will, the fact that the plant is in successful operation constitutes an element of value.

"As said, the value of the system as completed, earning a present income, is the criterion. In so far as influenced by income, however, the computation necessarily must be made on the basis of reasonable charges, for whatever is exacted for a public service in excess of this is to be regarded as unlawful.

"Save as above indicated, the element of value designated a 'going concern' is but another name for 'good will,' which is not to be taken into account in a case like this, where the company is granted a monopoly. *Water Company* v. *Cedar Rapids*, 118 Iowa, 234; *Willcox* v. *Consolidated Gas Co.*, 29 Sup. Ct. 192. The witnesses for plaintiff took into account 'good will' in giving their opinion of the enhancement in value because of being a going concern, and we have no means of separating these so as to ascertain their estimate of the separate advantage of completion so as to earn a present income."

Dealing with the assignment of error which attacked the correctness of the ruling of the Iowa court upon this point, this court said (page 669):

"Then again, although it is argued that the court excluded 'going value,' the court expressly took into account the fact that the plant was in successful operation. What

it excluded was the good will or advantage incident to the possession of a monopoly, so far as that might be supposed to give the plaintiff the power to charge more than a reasonable price. *Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19, 52. An adjustment of this sort under a power to regulate rates has to steer between Scylla and Charybdis. On the one side if the franchise is taken to mean that the most profitable return that could be got, free from competition, is protected by the Fourteenth Amendment, then the power to regulate is null. On the other hand, if the power to regulate withdraws the protection of the Amendment altogether, then the property is naught. This is not a matter of economic theory, but of fair interpretation of a bargain. Neither extreme can have been meant. A midway between them must be hit."

As we have already said, the Master, while at first disposed to allow the additional sum of $300,000 for "going value" as a separate item, after the decision of this court in the *Cedar Rapids Case* seems to have reached a different conclusion, for he said of that case:

". . . it also renders it extremely doubtful that 'Going Value' will be included in the valuation of such a plant as the basis of return, beyond the fact that it is in 'successful operation.' That would exclude the sum of $300,000 estimated in this case, on the grounds that when the ordinance was enacted, it already possessed a well developed and paying business.

"In my judgment, after considering the able and thorough arguments of counsel, that it is decisive of the question, and holds that 'going value' should not be considered in determining the basis upon which the complainant is entitled to have its return reckoned, and feel that it is my duty to so state.

"The physical value as hereinbefore determined, is reckoned upon the fact that the plant was in 'successful operation' when the ordinance was enacted, otherwise its

value would be much less. The 'going value' is that enhancement which results from a well developed and paying business. This would result in reducing the estimated deficit for each year $24,000, and yield a return to the Complainant of, at least, 6 per cent. on $2,100,000.

"While this case is close to the border line, I cannot say on the whole case that the evidence beyond any just and fair doubt, satisfies me that the rates will prove confiscatory, should the ordinance be put into effect and an actual test thereof be made."

While there is a difference between court and counsel as to what the Master meant by this, we think it is apparent that he meant to say that, applying the rule of the *Cedar Rapids Case*, he had already valued the property in the estimate of what he called its physical value, upon the basis of a plant in actual and successful operation; for he said that otherwise its value would be much less.

As pointed out in the *Cedar Rapids Case*, if return is to be regarded beyond that compensation which a public service corporation is entitled to earn upon the fair value of its property, the right to regulate is of no moment, and income to which the corporation is not entitled would become the basis of valuation in determining the rights of the public. When, as here, a long established and successful plant of this character is valued for rate-making purposes, and the value of the property fixed as the Master certifies upon the basis of a plant in successful operation, and overhead charges have been allowed for the items and in the sums already stated, it cannot be said, in view of the facts in this case, that the element of going value has not been given the consideration it deserves and the appellant's contention in this behalf is not sustained.

As to the item of $140,000, which, it is contended, should be added to the valuation, because of the fact that the Master valued the property on the basis of the cost of reproduction new, less depreciation, and it would be

necessary in such reproduction to take up and replace pavements on streets which were unpaved when the gas mains were laid, in order to replace the mains, we are of opinion that the court below correctly disposed of this question. These pavements were already in place. It may be conceded that they would require removal at the time when it became necessary to reproduce the plant in this respect. The Master reached the conclusion that the life of the mains would not be enhanced by the necessity of removing the pavements, and that the Company had no right of property in the pavements thus dealt with, and that there was neither justice nor equity in requiring the people who had been at the expense of paving the streets to pay an additional sum for gas because the plant, when put in, would have to be at the expense of taking up and replacing the pavements in building the same. He held that such added value was wholly theoretical, when no benefit was derived therefrom. We find no error in this disposition of the question.

Nor do we think there was error in refusing an injunction upon the conclusion reached that a return of 6 per cent. per annum on the valuation would not be confiscatory. This is especially true in view of the fact that the ordinance was attacked before there was opportunity to test its results by actual experience. It is true the Master reported that in his opinion the Company ought to earn 8 per cent., but he also found that in his judgment gas could be produced for 60 cents per thousand, and the actual effect of the 90 cent rate on an economically managed plant had not had the test of experience.

The decree of the court below is peculiar in that it directs the dismissal of the bill "with prejudice," and adds, "At any time on and after three years from this date complainant, its successor or assigns, may on motion reinstate this case with all the pleadings and evidence now on file, with the same and like effect as though filed for such sub-

sequent hearing. And each party may then file such additional pleadings and take and file such additional evidence as to each party may be deemed advisable."

While we agree with the court below that it was right to confirm the Master's report and dismiss the bill, we think, in view of the fact that the attack upon the rates was made before the ordinance went into effect, and before actual application of the rates could demonstrate whether they were remunerative or not, that the court should have followed the recommendation of the Master and dismissed the bill without prejudice. We think this is particularly so, in view of the fact that ordinarily time alone can satisfactorily demonstrate in a case like this whether or not the rates established will prove so unremunerative as to be confiscatory in the sense in which that term has been defined in rate making cases. The Master's suggestion has the support of the judgment of this court in *Knoxville* v. *Water Co.*, 212 U. S. 1, and *Willcox* v. *Consolidated Gas Co.*, 212 U. S. 19.

With the modification that the bill be dismissed without prejudice, instead of, as the court below directed, with prejudice, the decree is affirmed, with costs.

Affirmed.